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"INTEGRATING FORENSICS, ALLIED SCIENCES
&
LAW FOR BETTER DELIVERY OF JUSTICE"

INPALMS

14th International Congress of Indo Pacific Association of Law Medicine and Science

2022

Abstract Book

GALADARI HOTEL, COLOMBO, SRI LANKA

13TH - 16TH DECEMBER

INPALMS 2022 – Sri Lanka

ABOUT US

Indo Pacific Association of Law, Medicine and Science (INPALMS) was founded in 1983 at Singapore to promote national and international cooperation in matters of education and research in the fields of legal medicine, forensic science and law enforcement, by the Medico-Legal Society of Singapore together with those of Japan, Thailand, Sri Lanka, India and Bangladesh. Sri Lanka will be the venue for the 14th International Congress of INPALMS (INPALMS 2022); the third occasion country hosting the event since its inception. In addition to participating in cutting edge symposia, workshops, interactive sessions and networking with renowned experts and key opinion leaders at the congress, we invite the attendees to discover the unique and timeless allure of Sri Lanka; the small island nation off the southern tip of India, full of fantastic food, kind people, cultural and historic heritage sites and astonishing natural wonder with its jungle-clad mountains, golden sandy beaches and abundant wildlife in their natural habitats.

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Plenary / Symposium / Workshop - Speakers/Resource Persons of

INPALMS 2022

PROFESSOR MSL SALGADO ORATION
MEDICO LEGAL DEATH INVESTIGATION GLOBALLY – A SNAPSHOT

Professor Stephen Cordner

AM PSM MA MB BS BMedSc DipCrim DMJ FRCPath FRCPA
Professor Emeritus, Department of Forensic Medicine, Monash University
Consultant Forensic Specialist,
Victorian Institute of Forensic Medicine Melbourne, Australia

The literature on Medico-Legal Death Investigation (MLDI) systems around the world is weak. What there is describes such systems locally or nationally, and not on a regional or global scale. The newly appointed Special Rapporteur on Extrajudicial, Arbitrary or Summary Executions, Adjunct Professor Morris Tidball-Binz, announced in August 2021 that one of his thematic reports would cover MLDI systems globally. At Monash, the Global Research Initiative on Forensic Medicine and Human Rights worked with him to undertake the research and generate the data. Some of this work formed the substance for his report to the UN Human Rights Council in June 2022, which can be accessed here:
https://www.ohchr.org/en/documents/thematic-reports/ahrc5034-medico-legal-death-investigations-mldis-report-special

The research we undertook was based on interviewing 60 senior forensic medicine actors in 60 countries, supplemented by a semi-quantitative survey. The countries represented all levels of development in all regions of the world and all the main political systems and religions. The aim of the research was, in part, to understand the extent to which countries were meeting the requirements of the Minnesota Protocol. The Minnesota Protocol is the international standard for the investigation of homicides and potentially unlawful deaths including deaths in custody. The investigations must be prompt, effective and thorough, independent, impartial and transparent. It is of course difficult to measure compliance to these standards, but pointers can be found indirectly.

MLDI systems globally, where they exist, struggle. This is true in the Global North as well as in the South. Probably about one third of the world's population exists outside MLDI systems – the causes of their deaths are not medically certified and/or the deaths themselves are not registered. 10/59 participants stated that forensic medical services were not readily available in their country or only readily available in the capital city. The major role of police in MLDI was evident from the fact that in 26/59 jurisdictions, police could authorize the autopsy compared with only 6/59 where the forensic doctor could do this. The Oration will be an opportunity to share more from the results of this unique research.

Dr Derek Congram

Board certified (DLAF, #20) forensic anthropologist and archaeologist
Forensic Specialist for the International Committee of the Red Cross Delegation for India, Nepal, Maldives and Bhutan and Co-Director of the International Centre for Humanitarian Forensics of the National Forensic Sciences University in India

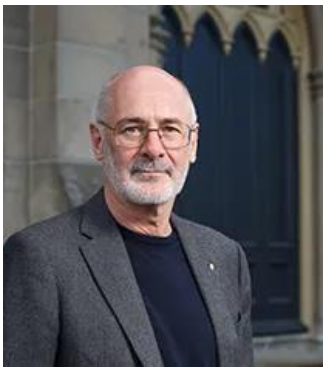
Dr Derek Congram will be a resource person for the forensic anthropology workshop scheduled to be held on 13.12.2022 and will deliver a lecture on "Forensic Anthropological Recovery: Key concepts and techniques of death scene investigation" at the workshop.

Workshop:

Forensic Anthropological Recovery: Key concepts and techniques of death scene investigation and identification of the dead

This workshop will cover the range of responsibilities that relate to forensic work, which traditionally fall within the expertise of forensic anthropology. The workshop will begin with a review of key concepts such as context, spatial association and relative and absolute timing. Techniques will be explained, which are important at recovery scenes because of the impact they have on overall interpretation of events as well as that derived from subsequent analysis in a controlled environment (e.g., mortuary). The importance of these will be demonstrated using case examples. The workshop will then address current trends and practice related to the analysis of skeletal remains and teeth, with a focus on the biological profile (e.g., sex, stature, age) for identification purposes.

In the afternoon, participants will be engaged in two practical group exercises: scene documentation of human remains, and skeletal analysis, reinforcing the concepts and techniques explained in the morning. The workshop will conclude with a review by participants of what was learned, about how recovery techniques, good documentation, and contextual interpretation both at a recovery scene and in the mortuary impact each other and why they are necessarily complementary to have as complete an understanding as possible.



Professor Roger Byard
AO PSM PhD, MD, DSc, FAHMS, BMedSci, MB, BS, MMedSci-paed, FCAP, FRCPC, FRCPath, FRCPA, FFFLM, FFSc, FRSN
George Richard Marks Chair of Pathology at The University of Adelaide and Senior Specialist Forensic Pathologist at Forensic Science SA in Adelaide, Australia

Workshop:

Academic Forensic Publishing

Publishing in peer-reviewed journals is an expected activity for academic forensic practitioners, as well as a means of effectively assessing individual contributions to both science and the profession. A wide variety of parameters have been devised to measure academic standing for both researchers/practitioners and journals that have included the H index and Impact Factor. While these indices have been variably criticized, they have at least attempted to provide objective means of evaluation. Nowadays, however, the world of publishing has changed. Authors can expand their CVs by paying to have their work published in predatory journals or can link in with sometimes many hundreds of authors in mega-authorship papers. Material can be almost instantly published electronically without peer review through preprint services. Journals are also changing under the impact of financial constraints resulting in many traditional publishing house activities being sent offshore. For example, copyediting is no longer performed and hard copy journals are soon to become a feature of the past. While Mohammed considered that “the ink of the scholar is more sacred than the blood of the martyr”, Samuel Johnson provided an alternative view that “no man but a blockhead ever wrote, except for money”. Perhaps the truth lies somewhere in between. However, to write for peer-reviewed journals nowadays is not an easy task and is one that requires considerable dedication, attention to detail and time commitment. This workshop will discuss how work should be undertaken and summarized, examine the types of publications to avoid, and give guidance on how best to present material for acceptance.

Dr Richard Harruff
MD, PhD
Chief Medical Examiner
King County Medical Examiner's Office
Seattle, Washington, USA

Plenary Lecture:

Medical Examiner Response to the Drug Overdose Epidemic in the US

The continuously accelerating drug overdose crisis overwhelmed resources of medical examiner offices and toxicology laboratories throughout the US, resulting in long delays in receiving toxicology results and completing death certificates. The delays frustrated families, impeded criminal justice and public health responses, and interfered with timely collection of drug-related mortality data. This presentation describes the King County Medical Examiner's Office (KCMEO) efforts to manage the crisis in King County, which has a mixed urban and rural population of 2.3 million. In 2019, KCMEO developed a "real-time" fatal drug overdose surveillance system encompassing multiple activities: developing an algorithm to identify overdose deaths through scene investigation, performing in-house testing of decedents' blood and urine, testing drug evidence collected at scenes, certifying most overdose deaths within 2 days of death, validating in-house testing and rapid drug certification with results from formal toxicology testing and chemical analysis, creating a database containing detailed information about each overdose death, assembling a network of over 20 local, state, and federal partner agencies of law enforcement and public health, and disseminating weekly bulletins with timely information tracking overdose deaths. The surveillance project established KCMEO as a central repository for overdose information in King County and the State of Washington and served as a national model of comprehensive overdose surveillance. The project also attracted outside funding to support additional employees, develop novel methods of using data science, and initiate multiagency overdose death review. In summary, this project demonstrated the critical role of the medical examiner in epidemic surveillance.

Keywords: death investigation, drug overdose epidemic, real-time surveillance, toxicology,

Professor Christopher M Milroy
MBChB MD LLB BA LLM FRCPath FFFLM FRCPC DMJ
Full Professor, University of Ottawa and
Director, Eastern Ontario Forensic Pathology Unit, Canada
Editor-in-Chief Academic Forensic Pathology

Plenary Lecture:

The correct investigation of childhood deaths: The Ontario, Canada experience

In Ontario, Canada's most populous Province in the 1980s to the start of the 21st century, Pediatric forensic pathology was provided by Charles Smith, a pathologist with Pediatric training but no forensic pathology training. Concerns were expressed about the quality of his work within the Ontario Coroner's system such that major miscarriages of Justice resulted from his work. As a result, a Public Inquiry led by a judge, Mr Justice Goudge, was organized by Ontario's Attorney General.

This inquiry included an analysis of Smith's work by five qualified and experienced forensic pathologists. A lack of oversight was recognized and a need for a better structure within the coroner's system. A correction of some miscarriages of Justice occurred and the Inquiry by Mr Justice Goudge resulted in the formation of the Ontario Forensic Pathology Service with a strengthening of the delivery of forensic pathology to the criminal Justice and public health systems.

This talk discusses failures in the delivery of forensic services and how they were corrected in Canada.

Barry A. J. Fisher
BSc MSc MBA
Former Crime Laboratory Director for the Los Angeles County Sheriff's Department from 1987-2009
Past president of the American Academy of Forensic Sciences; past-president of the International Association of Forensic Sciences, past-president of the American Society of Crime Laboratory Directors and a past-chairman of the American Society of Crime Laboratory Directors – Laboratory Accreditation Board

Plenary Lecture:
Forensic Science Awareness: It's Importance to Effective Public Safety

Forensic science is defined as the application of science to law. What are the elements of a robust forensic science system? There are micro or individual forensic scientist issues and macro or system elements. This presentation will discuss both.

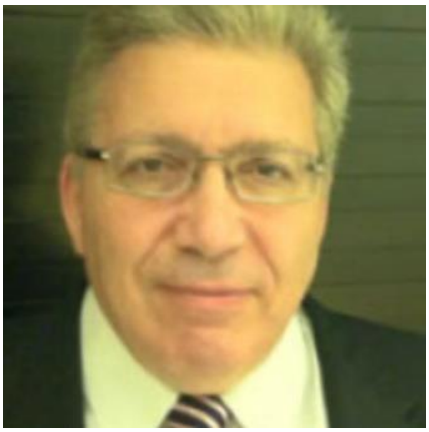
At the micro level:

- Crime scenes are fluid - get it right the first time!
- Have 2 CSIs go through a scene.
- Avoid "tunnel vision,"
- Test your hypotheses.
- Collect fragile evidence first.
- With nighttime crime scenes, if possible, wait for daylight.
- Consider external factors in budgeting time.
- Be aware of weather conditions.
- Know who the officer in charge is.
- Secure the scene.
- Appropriately collect physical evidence.
- Label evidence and take good contemporaneous notes.
- Document the crime scene well with photos, sketches, and video (if available).
- Look out for things out of the ordinary.
- Canvas the adjacent area for evidence.
- Before leaving the scene, do a final walk-through.
- Use your COMMON SENSE.
- Consider alternative theories.
- NETWORKING
- Work to improve your communication skills.
- Join and become involved in professional societies.
- Attend conferences, present papers, and publish in peer-reviewed journals
- Be willing to say, "I don't know."
- Professional ethics.
- Outreach to groups such as the press, crime victims, senior personnel, judges, and lawyers.
- Know who your clients are and work to gain their support.

Critical elements at the system level:

- Facility
- Personnel
- Staffing
- Management
- Budget
- Political Support

These topics will be explored in this presentation.



Professor Peter Vanezis
OBE MB ChB MD PhD FRCPath FRCP(Glasg) FFFLM FCSFS FAFMS(UK) DMJ(Path)
Professor Emeritus of Forensic Medical Sciences
Cameron Forensic Medical Sciences
Clinical Pharmacology
Barts and the London,
United Kingdom

Plenary Lecture: Physician Complicity in Human Rights Abuses

The complicity of physicians and other healthcare givers in human rights abuses is not a new nor uncommon occurrence in many parts of the world. The reasons for participation are many and complex including fear for the physicians' own safety and their families if they do not comply. Others, however, may support the activities of the abuser, regarding it as a justified to achieve the desired end. The involvement of physicians and their reasons for support of such abuses has changed historically from a passive role, agreeing that it was necessary in order to extract information from the prisoner, to a more active one in the 20th Century where involvement is more direct in assisting in torture or inventing different techniques for such abuses. There are numerous examples of the part played by physicians in the last 100 years to support governments, militia and other groups, particularly during social upheaval and armed conflicts. We have seen this in Nazi Germany, Guantanamo Bay, Iraq, South Africa, Afghanistan, to name but a few examples. Direct participation in such abuses, can include not just active physical abuse or the administration of psychoactive drugs, but also includes attempts to conceal the actions of the perpetrators, such as falsification of medical documents and giving misleading evidence.

In relation to judicial executions, the moral and legal position of medical personnel who participate in capital punishment has been seriously questioned. Despite objections by many professional organizations particularly in the United States, the participation of medical and nursing practitioners continues and is likely to become more common in the years ahead. This participation raises important questions about the ethical standards of the medical profession and how they should be enforced.

Prof. Jayantha Herath
MD, MSc, DLM, MD (Forensic), FCFP (SL), D-ABMDI, FRCPC (AP), FRCPC (FP)
Deputy Chief Forensic Pathologist, Ontario Forensic Pathology Service, Canada &
Associate Professor, Faculty of Medicine, University of Toronto
Canada

Special Lecture:
Recent Changes in Toxicological Deaths in Ontario, Canada

Drug toxicity deaths are defined as deaths with drug toxicity (including drug/alcohol toxicity) as the primary death factor for this study. During the pre-pandemic year, the natural death autopsy rate was 52%, and it went down to 47% during the first year of the pandemic and 46% by the second post-pandemic year. During the first year of the pandemic, the number of drug toxicity deaths in Ontario increased by 54% relative to the pre-pandemic year. Drug toxicity deaths remain elevated in the second year of the pandemic.

The total caseload from January 2017 to October 2019 was 23,115. The total caseload from January 2020 to October 2022 was 28 195. There was an overall caseload increase of 5080, and the percentage increase in total caseload for this period was 22%. The total number of drug-related deaths from January 2017 to October 2019 was 5516. The total number of drug-related deaths from January 2020 to October 2022 was 8397, and the percentage increase in drug-related deaths was 52%. There was a 23,115 total caseload increase in Ontario from January 2017 to October 2019 and a 28,195 total caseload increase from January 2020 to October 2022, with a 22% total caseload increase. In Toronto forensic unit, we performed 10 054 autopsies from January 2017 to October 2019. We performed 17,190 autopsies from January 2020 to October 2022, with a 71% increase in caseload mostly due to toxicological-related deaths.

During the pandemic, the percentage increase of toxicological caseload in Ontario was 52.2% and 103.9 % in Toronto unit alone. In 2021, the mortality rate for opioid toxicity in Ontario was 19.7 per 100,000 population (more than double the rate in 2017). In 2022, the mortality rate decreased by 13% compared to 2021; however, it remains 55% higher than the mortality rate in 2019 (pre-pandemic). During the first year of the pandemic, the number of opioid toxicity deaths in Ontario increased by 74% relative to the previous year. Opioid toxicity deaths remain elevated in the second year of the pandemic. The majority of toxicological-related deaths were due to opioids. The commonest substances were fentanyl, carfentanil, heroin, oxycodone, morphine, codeine and methadone. The commonest non-opioid substances were cocaine, methamphetamine, ethanol and benzodiazepines. The 30-59 age group continues to be the most impacted, accounting for over 50% of deaths in 2022 and 3 in 4 deaths among males since the start of the pandemic.

Keywords: Natural deaths, toxicological deaths, pandemic, pre-pandemic, Ontario, Canada

Virginia A. Lynch
MSN RN FCNS D-IAFN D- FAAFS FAAN AFN
Distinguished Fellow American Academy of Forensic Sciences
Founding President International Association of Forensic Nurses

Plenary Lecture: Worldview of Forensic Nursing Science

The science of forensic nursing represents an emerging worldview of the forensic sciences. Crime and violence bring together the two most powerful systems affecting the global population - *health and justice*. Effective forensic case management is an area lacking in policy and legislation to ensure protection of the legal, civil and human rights of both victims and the accused. An identified shortage of skilled forensic physicians has resulted in serious deficits of quality forensic services in the U.S. and encompasses countries worldwide. Recent strategies to improve global standards of care for victims of crime, the falsely accused and those wrongly convicted necessitate the application of forensic science to nursing practice. Forensic nursing science combines the principles and philosophies of the traditional forensic sciences and those of contemporary nursing science in the clinical investigation of crime-related trauma and death. Primary forensic responsibilities include the identification of trauma and the recovery of medical/forensic evidence. When sexual violence is reported it is imperative to identify both genital and non-genital trauma, skillfully interview patients with appropriate sensitivity, evaluate the nature and scope of the injury, accurately document findings, recover, preserve and secure evidence, coordinate with police and testify as required. The American Academy of Forensic Sciences (AAFS) was the first forensic forum to recognize the specialized skills of Forensic Nursing as a scientific discipline in 1991. Since that time the number of forensic nursing members has grown and expanded across the globe.

Professor Victor G Petreca
Ph.D., DNP, PMHNP-BC, CNP
Assistant Professor
Program Director,
Psychiatric-Mental Health Nurse Practitioner Program
Boston College
William F. Connell School of Nursing
Massachusetts USA

Special Lecture:

Sexual Offending - An exploration of Experiences and Meanings

On 13.12.2022

Individuals with a criminal history face several barriers upon reentering society. For individuals with a history of sexual offenses, the challenges are even more aggravated. In many instances, society perceives individuals charged with a sex offense (ICSO) as “evil,” “monsters” and “the highest form of evil.” Additionally, upon reentry, ICSOs are subject to several sanctions that are uniquely directed towards those who have committed sexual crimes, such as civil commitments, housing, and employment limitations, and the Sex Offender Registry Board (SORB). While treatment specializing in sex offending is available and has been associated with reduced sex offending, issues associated with stigma, protracted or inhibited reintegration, and overall recidivism are still common occurrences.

This study was guided by Heidegger’s hermeneutic phenomenology philosophical principles, Max van Manen’s approach guided data collection and analysis. Only male adults (>18) were included in the study, and those who had a current “prisoner status” were excluded. An iterative process was used for data analysis. Data was coded and interpreted through a hermeneutic circle. To ensure rigor and trustworthiness, Lincoln and Guba’s criteria were used, which include credibility, confirmability, dependability, and transferability. Audit trails, triangulation, and reflexivity were essential strategies.

The study sample consisted of fourteen men, ranging in age from 23 to 68 years old ($\bar{x}$ = 51.7 years; table 1). One participant identified his race/ethnicity as Asian American, while all other participants identified their race/ethnicity as white. Five of the participants were assigned a level 3 in the SORB, while four were assigned a level 1, three were assigned a level 2 and two were awaiting a level designation. The major themes identified were: (1) Exposed secret leads to humiliation (2) Being considered a sex offender is living in fear of the unknown, (3) Stigma consumes the identity of the individual charged with a sexual offense (4) Reframing and “leveling” of the crime are coping strategies; and (5) The path towards healing and forgiveness is complex. These themes represent different facets of the phenomenon of interest.

INPALMS 2022 - INTERNATIONAL FORENSIC CONGRESS
DECEMBER 13-16, 2022
COLOMBO, SRI LANKA

Special Lecture:

The Coroner Investigator – Emerging Roles for Nursing in Ontario's Death Investigation Team

on 13.12.2022

Speakers:
SUSAN ROBINSON– CORONER INVESTIGATOR – OCC
NICOLA STEWART - CORONER INVESTIGATOR – OCC
ANDREY KAPUSCINSKY - CORONER INVESTIGATOR – OCC

Susan Robinson

Nicola Stewart

Andrey Kapuscinsky

OFFICE OF THE CHIEF CORONER OF ONTARIO

Abstract:

The role of the Coroner Investigator was established in 2019 to better meet the needs of the Death Investigation requirements for the Office of the Chief Coroner of Ontario. At that time, it was decided to pilot a small team of diversly experienced Registered Nurses to assess and investigate natural deaths reported to the Coroner's Office. The program is currently expanding in number and scope as the outcomes have demonstrated significant impact on the review and processing of Natural Deaths. The goal of today's session is in part to celebrate nursing's role enhancement and to share the experience of this journey with our international colleagues.

INPALMS 2022 - INTERNATIONAL FORENSIC CONGRESS

DECEMBER 13-16, 2022
COLOMBO, SRI LANKA

Special Lecture:

Role of Forensic Nursing in Humanitarian Forensics

On 13.12.2022

Dr. Shalini Gupta
Professor, King George's Medical University,
Lucknow, India

Abstract

Forensic nursing is developing rapidly in India and in other countries and forensic nurses have gained importance in various fields. It is a branch which brings together both the law and nursing science concepts. Forensic nurses also have a expertise of knowledge about injuries identification, documentation and evaluation. They work in different fields and have various roles like child abuse and neglect, sexual assault (as Sexual Assault Nurse Examiners), elder mistreatment, domestic violence, death investigation and corrections. It is one of the recent forms of discipline in forensic science. Forensic nurses play a vital role in humanitarian forensics, which is an application of forensic science to humanitarian purposes which can benefit humanity through its skills and purposes. Humanitarian forensics works under the International humanitarian laws. This field further requires more research and development for forensic nurses to work efficiently with the forensic humanitarian team. This presentation aims to describe the utility of forensic nurses in humanitarian forensics and discuss their roles & responsibilities, along with the upcoming future trends.

Professor Michael S. Pollanen

BSc MD PhD FRCPath DMJ (Path) FRCPC
Chief Forensic Pathologist for Ontario, Ontario Forensic Pathology Service, Director, Centre for Forensic Science and Medicine, University of Toronto
Director, Forensic Pathology Residency Program, University of Toronto
Professor|Vice-Chair (innovation), Department of Laboratory Medicine and Pathobiology, University of Toronto

Professor Michael Pollanen will deliver a plenary lecture on the topic of "Pathology of Torture" at the INPALMS 2022 international congress on 13.12.2022

Prof Dr Duarte Nuno Vieira

MD MSc PhD
Full Professor of Forensic Medicine and Forensic Sciences and of Ethics and Medical Law at the University of Coimbra, former President of the International Academy of Legal Medicine, International Association of Forensic Sciences, World Association of Police Medical Officers, European Council of Legal Medicine, Mediterranean Academy of Forensic Sciences, and Latin American Association of Medical Law.

Professor Duarte Nuno Vieira will deliver a plenary lecture on the topic of "Clinical forensic medical aspects of injury examination' at the INPALMS 2022 international congress on 16.12.2022

The assessment, documentation and interpretation of injuries is one of the most common tasks in forensic clinical practice. A function that will be increasingly requested, given that injuries and violence are one of the main public health problems of the 21st century. Often, the first approach to injuries is carried out by clinicians, especially in the context of hospital emergency services. However, in these situations, their assessment, documentation and interpretation tend to be very poor and insufficient, not providing the necessary information for the courts that will later have to rule on the case, adding that the forensic relevance of the injuries can only become noticeable weeks or months after its occurrence.
The author addresses the various aspects relating to an adequate forensic assessment, documentation and interpretation of injuries, in the various domains of law in which an adequate medico-legal approach may prove to be fundamental, namely in the context of criminal, civil, labor and administrative law, etc, given specific practical examples.

WORKSHOPS

WORKSHOP - 01

Topic: Forensic Anthropology
13th December 2022 - 8.30am to 5.00pm

Bougainvillea Room, Galadari Hotel
Colombo, Sri Lanka

Overview and Objective: This workshop will cover the range of responsibilities that relate to forensic work that traditionally fall within the expertise of forensic anthropology. The workshop will begin with a review of concepts and techniques that are important at recovery scenes because of the impact they have on analysis in a controlled environment (e.g., mortuary). The workshop will then address current trends and practice related to the analysis of skeletal remains and teeth, with a focus on the biological profile (e.g., sex, stature, age) for identification purposes.

Participants will be also engaged in a table-top exercise of scene recovery to illustrate key concepts. The workshop will conclude with a review of what was learned about how each activity impacts the other and why they are necessarily complementary.

Program

8:00 am	Registration
8:30 am	Welcome Dr. Rohan Ruwanpura, Congress Chair Cheryl Katzmarzyk, Forensic Coordinator, ICRC Sri Lanka
8:40 am	Program Overview
8:45 am	Pre-test
9:00 am	Forensic Anthropological Recovery: Key concepts and techniques of death scene investigation Dr. Derek Congram, Forensic Specialist, ICRC India
10:00 am	**Tea break**
10:30 am	Dental Identification in forensic anthropology work through case studies Dr. Jayanie Weeratna, Forensic Specialist, ICRC Iraq
11.30 am	Recovery to Analysis of Skeletal Remains: The Sri Lankan experience Dr. Ajith Jayasena, Consultant Judicial Medical Officer, Kurunegala Dr. Selliah Pranavan, Consultant Judicial Medical Officer, Jaffna Dr. SPA Hewage, Consultant Judicial Medical Officer, Colombo
12:45 pm	**Lunch**
1:30 pm	Table-top exercise on scene documentation and recovery + skeletal examination Participants will engage in group work on both activities: documenting mock recovery scenes and analyzing osseous remains.

3:00 pm	**Afternoon tea**
3:30 pm	Debrief and experience sharing by participants
4:30 pm	Post-test & Feedback
4.45 pm	Closing remarks
5:00 pm	Group Photo

WORKSHOP - 02

Topic: Investigating Deaths in Childhood

13th December 2022 - 8.30 am to 12.45 pm

Galadari Hotel, Colombo, Sri Lanka

Deaths in the pediatric age group are complex and present with a different pattern of pathology from deaths in adults. This workshop will examine deaths in infancy and childhood, including the forensic aspects of stillbirth, sudden deaths in infants and young children along with the investigation of child abuse deaths.

The workshop will present the modern approach to deaths in these age groups, distinguishing the different approaches depending on the age of the child and the nature of medico-legal investigation required.

WORKSHOP - 03

Topic: Forensic Neuropathology

13th December 2022 - 1.45 pm to 5.00 pm

Galadari Hotel, Colombo, Sri Lanka

Forensic neuropathology is a subspecialty area of pathology where forensic pathology overlaps with neuropathology in the investigation of trauma, sudden natural death and the effects of drugs and other toxins on the brain.

This workshop is designed for autopsy pathologists who may need to examine the brain in detail or consider referring to a neuropathologist, if one is available. The workshop will examine deaths in adults and children relating to deaths related to the brain. It is delivered by a forensic pathologist who has written the standard textbook - Forensic Neuropathology by Whitwell, Milroy and Du Plessis - CRC Press 2021.

The workshop will examine deaths in adults and children that may be present during a medico-legal autopsy with illustrative cases presented.

WORKSHOP - 04

Topic: Management of the Deceased in Mass Fatality Situations

14th December 2022 - 8.30am to 5.00pm

Bougainvillea Room, Galadari Hotel
Colombo, Sri Lanka

Objective: The main objective of this workshop is to ensure that those who die as a result of mass fatality situations are managed with dignity and in a way that quickly restores their identity, allowing their return to families and communities.

The workshop is intended for those who are responsible for managing the deceased in a multidisciplinary environment. A combination of presentations and a table-top exercise is facilitated by experienced course instructors and national/regional/international presenters.

Outcome: Participants will learn both principles and practical methods of managing the deceased in a mass fatality situation together with an emphasis on the need for pre-planning with policies and procedures. The workshop focuses on the main components of managing the deceased in mass fatality situations including data collection procedures and consideration of the needs of bereaved families.

8:30 Registration

9:00 Opening Remarks and Welcome
Prof. Indira Kitulwatte, Department of Forensic Medicine, University of Kelaniya
SDIG Mr. Sajeewa Medawatte, National Police Academy

9:15 Participant Introductions
Dr. Saminda Rajapaksha, Consultant JMO, Institute of Forensic Medicine & Toxicology, Colombo

9:30 IHL/IHRL in Management of the Deceased in Mass Fatality Situations
Ms. Samindika Elkudawe, Senior Legal Advisor, ICRC

10:00 Tea Break

10:30 Role of the Law Enforcement Agencies in Mass Fatality Situations
SDIG Mr. Sajeewa Medawatte, National Police Academy

11:00 Protection of Family Links: Principles and Recommendations
Elodie Magnier, Protection of Family Links Deputy Coordinator, ICRC

11:30 Psychological Support in Mass Fatality Situations for Families, Victims and First Responders
Dr. Chathurie Suraweera, Senior Lecturer, Department of Psychiatry, University of Colombo

12:00 Management of the Deceased in Mass Fatality Situations: Principles and Sharing Experiences
Dr. Uthpala Attygalle, Consultant Judicial Medical Officer, Homagama

12:45 Buffet Lunch

1:30 Scene Management and Body Recovery Exercise
Dr. Uthpala Attygalle, Consultant Judicial Medical Officer, Homagama
Dr. Sunil Hewage, Consultant JMO, Institute of Forensic Medicine & Toxicology, Colombo
Dr. Saminda Rajapaksha, Consultant JMO, Institute of Forensic Medicine & Toxicology, Colombo
Dr. Jayanie Weeratna, Forensic Specialist, ICRC Iraq
Ms. Cheryl Katzmarzyk, Forensic Coordinator, ICRC Sri Lanka

3:00 Tea Break

3:30 Forensic Human Identification: General Principles
Prof. Anuruddhi Edirisinghe & Prof Indira Kitulwatte,
Department of Forensic Medicine, University of Kelaniya

3:50 Fingerprints and the Identification of Human Remains
SSP MTT Ruwankumara, Director, Criminal Records Division

4:10 Forensic Odontology and the Identification of Human Remains
Dr. Jayanie Weeratna, Forensic Specialist, ICRC Iraq

4:30 Forensic Genetics and the Identification of Human Remains
Dr. Ruwan Illeperuma, Senior Lecturer, Faculty of Natural Sciences, Open University, Nawala

4:50 Closing Remarks
Prof. Indira Kitulwatte, Department of Forensic Medicine, University of Kelaniya
SDIG Mr. Sajeewa Medawatte, National Police Academy

5.00 Group Photo

WORKSHOP - 05

Title: Academic Forensic Publishing (online)

14th December 2022 - 8.30 am to 12.45 pm

Professor Roger W. Byard, University of Adelaide, Adelaide, Australia

WORKSHOP - 06

Title: Forensic Action in Humanitarian Settings – examples from the International Committee of the Red Cross from Asia and the Pacific

14th December 2022 - 1.30pm to 5.00pm

Description: In this interactive and hybrid workshop, the ICRC Forensic Unit is going to present aspects of their humanitarian work carried out in different contexts in the Asia and the Pacific Region, highlighting operational opportunities and challenges and best practices in relation to its institutional mandate. Forensic experts from Afghanistan, Bangladesh, India, Indonesia and Timor Leste, Pakistan, Philippines and Thailand are going to share perspectives of their work with the Medico-legal Systems including authorities and practitioners on policy, procedure and forensic practice.

Objective: To inform participants to the workshop on ICRC's forensic action in humanitarian settings and to familiarize the attendees with operational aspects in the Asia and the Pacific region.

Time	Topic	Facilitator
12.45 – 13.30	Lunch	
13.30 – 13.50	Introduction and welcome to the participants	Severine Chappaz Head of ICRC Delegation Sri Lanka
13.50 – 14.00	ICRC forensic action in humanitarian setting	Udo Krenzer Regional Forensic Manager Asia and the Pacific
14.00 – 14.20	Changes of authorities and their impact on forensic services	Patricia Fischer, Abdul Rahman Annous, Forensic Specialists Afghanistan
14.20 – 14.40	Post-conflict intervention to clarify the fate and whereabouts of missing and deceased persons and their identification process	Eyad Al Hakeem, Forensic Specialist Philippines
14.40 – 15.00	Guidelines and policies on Mass Fatality preparedness and response	Sari Lestari Tjiang, Forensic Specialist Indonesia and Timor Leste, Prashantha Bhagavath, Forensic Specialist Bangladesh
15.00 - 15.30	Tea break	
15.30 – 15.50	Regional Centre of excellence – the International Centre for Humanitarian Forensics	Derek Congram, Forensic Specialist, New Delhi, Dr. Rajesh Babu Co-Head of the ICHF
15.50 – 16.10	Deceased persons in aquatic environments and migration	Prashantha Bhagavath, Forensic Specialist Bangladesh
16.10 – 16.30	Rehabilitation programs of medico-legal infrastructure	Muhammad Imran Mahmood Khan, Pakistan, Prashantha Bhagavath, Forensic Specialist, Bangladesh
16.30 – 16.50	Science versus spirituality – limitations of forensics at community level	Udo Krenzer Regional Forensic Manager Asia and the Pacific
16.50 – 17.00	Closing remarks	ICRC Forensic Team

SYMPOSIUMS

SYMPOSIUM - 01

Theme: Child Protection - the Challenges to Sri Lanka and Asia- Pacific region in times of Global Economic Crisis

15th December 2022
Bougainvillea ballroom, Galadari Hotel, Colombo, Sri Lanka

Co-Chairs: Hon. Justice Shiranee Tilakawardane, (Judge of Supreme Court, Sri Lanka Rtd) &
Ms. Miranda Armstrong, Child Protection Specialist, UNICEF, Sri Lanka

11.00 a.m. : Opening remarks: Hon. Justice Shiranee Tilakawardane

11.05 a.m. : Commitment of the UNICEF in Child Protection Sri Lanka Ms. Marinda Amstrong, Child Protection Specialist

11.10 a.m. : International Guidelines on Justice in Matters involving Child Victims and Witnesses of Crime Dr. Hemamal Jayawardena, Child Protection Specialist, Unicef, Sri Lanka

11.30 a.m. : The strengths and weaknesses in providing health and medico-legal services to abused children in Hong Kong
Dr. Philip Beh, Principal Clinical Practitioner, University of Hong Kong

11.50 a.m. : Ethical and legal perspectives of Child protection in India: The challenges in the global economic crisis
Prof. K Padmakumara, Professor of Forensic Medicine, Jubilee Mission Medical College and Research Institute, Kerala, India

12.10 p.m. : Child friendly services in medico-legal, legal and law enforcement: the way forward
Ms. Ayesha Jinasena, Additional Solicitor General Sri Lanka

12.30 p.m. : Discussion

12.45 p.m. : Concluding remarks: Hon. Justice Shiranee Tilakawardena

SYMPOSIUM - 02

Theme: Hospital waste management in pandemics including mortuary waste and preparedness for emerging global pandemics

15th December 2022
Bougainvillea ballroom, Galadari Hotel, Colombo, Sri Lanka

Co-Chairs: Dr Deepika Attygalle,
Senior Health Specialist, Health Nutrition and Population South Asia Region World Bank &
Professor Stephen Cordner, Emeritus Professor Monash University Australia

3.30 p.m. : Preparedness and Response in emerging pandemics: Regional and Global Perspectives - Dr Suresh K Mohammed, Senior Health Specialist, Health Nutrition Population South Asia, The World Bank, New Delhi (online)

4.00 p.m. : Mortuary waste management in pandemics –
Dr Channa Perera, Consultant Judicial Medical Officer, Office of the JMO-Colombo East, Mulleriyawa (National Institute of Mental Health/National Institute of Infectious Diseases) Sri Lanka

4.30 p.m. : Management of Mortuary waste from a Forensic Pathology Department during the COVID pandemic-An Australian perspective
Dr. Jodie Leditschke, Manager, Forensic Technical Services & Coronial Admissions & Enquiries Forensic Services, Victorian Institute of Forensic Medicine Melbourne, Australia (online)

5.00 p.m. : Panel Discussion

SYMPOSIUM – 03

Theme: Combating Violence against Women and Girls in Times of Global Economic Crisis

16th December 2022
Bougainvillea Room, Hotel Galadari, Colombo, Sri Lanka

Co-Chairs: Hon. Justice S. Thurairaja, PC (Judge of the Supreme Court of Sri Lanka) &
Mr. Kunle Adeniyi, UNFPA Country Representative

11.00 a.m. : Opening remarks: Combating violence against women and girls in times of global economic crisis- Justice S. Thurairaja, PC Judge of the Supreme Court of Sri Lanka

11.05 a.m. : Commitment of the UNFPA in combating violence against women and girls - Mr. Kunle Adeniyi UNFPA Country Representative

11.10 a.m. : Combating violence against women and girls in times of global economic crisis; lessons from India – Prof. Adarsh Kumar, AIIMS New Delhi, India

11.30 a.m. : Challenges in providing criminal justice services to women and girls subjected to sexual and gender based violence (SGBV) in Sri Lanka in present economic crisis - Mr. Navarathna Marasinghe, High Court Judge, Colombo, Sri Lanka

11.50 a.m. : Providing medico-legal & health care services to women and girls subjected to SGBV in Sri Lanka; Challenges in present economic crisis - Prof. Anuruddhi Edirisinghe, University of Kelaniya, Sri Lanka

12.10 p.m. : Ethical media reporting in violence against women and girls; National & International perspectives - Ms. Sujata Tuladhar, Technical Advisor on Gender Based Violence, UNFPA Asia Pacific Regional Office

12.30 p.m. : Discussion

12.45.p.m. : Closing remarks - Hon. Justice S. Thurairaja, PC

SYMPOSIUM – 04

Theme: Perspectives on Missing Persons as a Result of Conflict, Disasters and Other situations of Violence

16th December 2022
Bougainvillea Room, Hotel Galadari, Colombo, Sri Lanka

Co-Chairs: Professor Stephen Cordner & Ms Cheryl Katzmarzyk

3.30pm – 3.50pm: ICRC's Integrated Approach to Address the Issues of Missing Persons and their Families
Cheryl Katzmarzyk, Forensic Coordinator *Presenter
Ynske Vandormael, Protection Coordinator,
Elodie Magnier, Deputy Protection Coordinator
Erwin Salosagcol, Protection Data Manager, ICRC Sri Lanka

3.50pm – 4.05pm: Missing persons and Mass graves in Iraq (the identification process) – Dr Zaid Ali Abbas, Director General Medico-Legal Directorate, Iraq

4.05pm – 4.20pm: Problems in Identification and management of victims of Nepal earthquake 2015 – Professor Dr. Pramod Kumar Shrestha
Dept. of Forensic Medicine, College of Medicine, Nepalese Army Institute of Health Sciences, Sano Bharyang, Kathmandu, Nepal

4.20pm – 4.35pm: Role of Forensics in ensuring Justice for the Missing in Nepal – Dr Rijen Shrestha, Past President, Medico-Legal Society of Nepal (2018-2020)

4.35pm – 4.50pm: Missing in Sri Lanka: a lost Agenda – Professor Clifford Perera
Professor of Forensic Medicine, Faculty of Medicine, University of Ruhuna, Sri Lanka

4.50pm – 5.00pm: Panel Discussion and Concluding Remarks

Symposium 01 - Abstracts

Theme: CHILD PROTECTION - THE CHALLENGES TO SRI LANKA AND ASIA- PACIFIC REGIONS IN TIMES OF GLOBAL ECONOMIC CRISIS

S1-01: International Guidelines on Justice in Matters involving Child Victims and Witnesses of Crime Combating Violence against women and girls in times of global economic crisis: lessens from India

Dr. Hemamal Jayawardena,
MBBS (NCMC), DLM, MSc (Forensic Medicine), MD (Forensic Medicine) (Colombo), MSc (App Psy) Colombo, LLM (Harvard), Attorney at Law
Child Protection Specialist, UNICEF, Sri Lanka

Children interact with the justice system as victims, witnesses, and as alleged wrongdoers. Such interactions (with police, in judicial medical settings, courts etc) can cause worry, nervousness, and unease even for an adult and the situation is worse for children. Further the mental trauma (esp. victim/ witness) will leave permeant scars for the adulthood. Therefore, it is the duty of all of us to minimize the mental trauma of these children who go through the justice system.

Realizing this need, from the year 2000 to 2005, the International Bureau for Children's Rights with active support from the Canadian Government partnered with UNICEF, UNODC and an intergovernmental group of fifty (50) experts from twenty-nine (29) countries in a project that culminated in the passage a UN resolution. This is referred to as the 'International Guidelines on Justice in Matters involving Child Victims and Witnesses of Crime' or Resolution 2005/20, of the United Nations Economic and Social Council (ECOSOC).

The presentation highlights ECOSOC Resolution 2005/20's reference to the Committee on the Rights of the Child and emphasizes the need for Professionals (eg. Judicial Medical Officers) to respect the dignity, ensuring non-discrimination and the best interests of the child, protection, harmonious development, and the right to participation to ensure justice for child victims and witnesses.

Reference is made to the 'model law' that is developed in this area and makes a recommendation to the Governments in the Asian and Pacific Regions to adopt a statute that could be cited as "Justice in Matters involving Child Victims and Witnesses of Crime Act"

S1-02: The Strengths and Weaknesses in Health and Medico-Legal Services to Abused Children in Hong Kong

Dr. Philip S.L. Beh,
MBBS (HK), DMJ (Clin et Path) (Lond), CTLHE (HK), FHKCPath, FHKAM (Pathology)
Principal Clinical Practitioner,
Department of Pathology, The University of Hong Kong

The modern concept and recognition of child abuse and the setting of a systematic approach to how the social-medicolegal sectors respond to them were developed in the early to mid-90's in Hong Kong. Prior to that period, the prevailing societal view was that hoe children are handled was essentially an issue for their family and outsiders should not interfere.

The system that was put in place was essentially adopted from developments in the UK and Australia and based on a multi-disciplinary approach with the "well-being" and safety of the child as the key guiding principle. However, at that time, mandatory reporting of child abuse was deemed too controversial and was not introduced.

Over the last 25 years or so, the system is ingrained, however several highly publicized cases triggered not only the introduction of "mandatory reporting of child abuse but also the introduction of the legal concept of "duty to care" and "duty to protect" on adults who have the care of children. Breach of such duty if resulting in death or grievous body harm are liable to long prison sentences.
It remains to be seen if such changes will lead to a "better world" for the children of Hong Kong.

S1-03: Ethical and Legal Perspectives of Child Protection in India: The Challenges in The Global Economic Crisis

Prof (Dr) Padmakumar. K
MD, DNB, PGDMLE, FIAMLE
Professor& Head, Forensic Medicine,
Jubilee Mission Medical College & Research Institute,
Thrissur, Kerala, India

All children deserve a happy childhood and the opportunity to lead a dignified life safe from violence, exploitation, neglect, deprivation and discrimination. Child protection refers to Prevention of and response to violence exploitation and abuse of children in all contexts. Issues and problems faced by children are health issues, survival issues, lack of education, exploitation in the form of child labour child marriage and child abuse. COVID pandemic has forced millions of children in to child labour, and exacerbated child trafficking. During pandemic an alarming surge of child marriage also did occur.

Protection of this young population is a matter of protection and of their human rights and investment towards building a strong and healthy nation. So a national child protection policy is formulated which is based on various measures taken to protect the rights of child. There is a strong legal framework to protect the children. Various child centric laws, international treaties, constitution and various policies for the wellbeing of children are the backbone of child protection policy. For the holistic development of children ensuring children to grow in a secure and protected environment is required. Right to decent life if deprived will hinder the development of a strong nation. Policy measure to ensure care and safety of children affected by pandemic is also the need of hour and an ongoing process in many states.

S1-04: Child friendly services in medico-legal, legal and law enforcement: the way forward

Ms. Ayesha Jinasena, P.C.
LLM(Lond), Dip For Med(Col), Dip Trade Law, Dip Intellectual property
Additional Solicitor General
Attorney General's Department, Sri Lanka

As enshrined in Article 12(1) of the Constitution, "all persons are equal before the law" and are "entitled to the equal protection of the law". Thus, the children from their birth are protected and not discriminated on race, religion, language, cast, sex or place of birth.

Notwithstanding this legal frame work, crimes are being committed against children. If a court is satisfied with its pre-examination, even a child of tender years can be considered as a competent witness in terms of Section 118 of the Evidence Ordinance.

For a court to dispense justice, the grievance of the victim should be unfolded accurately in a manner enhancing victim's credibility. Thus, careful and skillful handling of the child victim is necessary. This commences from the inception of recording the complaint itself. In this process different stakeholders come into contact with the child victim. At every such stage unless the scheduled services are not rendered properly and the approach adopted is not in the best interest of the child, the results can be to the detriment of the child and the Criminal Justice System.

Unless in a child-friendly environment the investigators interview the child; medico-legal expert examines the physical injuries; psychiatrist investigate into the mental trauma; prosecutor places the investigative material; judicial officer tries the case, the social and the mental stigma of today's child and tomorrow's adult, will be a life-time scar.

It is not the toys or the sweets or the favorite cartoon characters they want, but the love, empathy, understanding, confidence, friendliness, protection and motivation. If the stake holders are trustworthy and friendly, the child will share his harrowing experience.

Sri Lanka is gradually strengthening its administrative and the legal framework in establishing this child friendly environment; the guidelines for the police & the best practices, the legal admissibility of the video recorded evidence, ability to testify from a remote location; clearance of court when their cases are taken up, multi-disciplinary management and the institutional case conferences are some currently making the environment friendly for the child and more are in the pipeline to follow.

Symposium 03 - Abstracts

Theme: COMBATING VIOLENCE AGAINST WOMEN AND GIRLS IN TIMES OF GLOBAL ECONOMIC CRISIS

S3-01: Combating Violence against women and girls in times of global economic crisis: lessons from India

Prof. (Dr.) Adarsh Kumar
BSc, MBBS, MD, PGCHM, FRSM, FIAMLE, FISCA, FIST, FIAFM,
Double Commonwealth Fellow, UK,
Department of Forensic Medicine & Toxicology,
All India Institute of Medical Sciences,
New Delhi, India

Medico-legal and health services to children and women subjected to sexual and gender-based violence in India is primarily provided by the Ministry of Health & Family Welfare through the government hospital network while forensic examination of various exhibits is taken care of by Home Ministry. Providing these services to 1.4 billion population is a mammoth challenge. It is observed that current pandemic coupled with global economic crisis is expected to increase all forms of violence at all levels and even leading to fatalities.

There have been significant changes in the way sexual assault cases were dealt by various agencies now and a decade ago. The Protection of Children from Sexual Offences Act, 2012 (POCSO) was notified on 14 Nov. 2012. Immediately after that a gruesome gang rape and murder of a female student occurred on 16 Dec. 2012 which shook the conscience of whole nation. In the aftermath of so called *Nirbhaya Gang Rape*, the existing act was repealed and Criminal Amendment Act came into force on 3 April 2013. The new act also covered other sex related offences like Stalking, Voyeurism and sexual jealousy crimes like Vitriolage (Acid attacks) by inserting new subsections in existing penal acts. Author was at the forefront of that activism and in fact part of whole process in providing scientific inputs to various agencies. Afterwards guidelines and protocols for Medico-legal care for survivors/victims of sexual violence were notified by Director General Health Services, Govt of India in 2014 having exhaustive documentation and procedural changes in medicolegal examination of the victims. Concept of 'One Stop Centre-multidisciplinary management of survivor' having use of SAFE kits during medicolegal examination was advocated. Later providing training to government medical officers who are involved in examination process of survivors and accused was initiated through Ministry of Home affairs in 2016. Distribution of SAEC Kits is now being done through Bureau of Police Research & Development (BPRD) under Ministry of Home Affairs to various police stations. Police investigation officer is supposed to carry that kit to hospital whenever the survivor approaches police/hospital.

Previously there used to be huge pendency of cases in the court leading to dragging for years. Now the trial for all these cases is held under designated Fast Track Courts as well as Special POCSO Court for expeditious process. Even all the judges and staff who are appointed there are sensitized and trained to the needs of the survivor. In these current times of shortages & cost-cutting measures are bound to affect all spears of

life. Yet health and psycho-social professionals working towards multi-disciplinary management will be a cost-effective strategy where benefits to the society will escalate. The talk will provide a deep insight into various aspects of holistic handling of sexual and gender-based violence during this decade of journey in India.

S3-02: Challenges in providing criminal justice services to women and girls subjected to sexual and gender-based violence (SGBV) in Sri Lanka in present economic crisis

Mr. Nawarathne Marasinghe
LLB, LLM, DFMS, Hubert H Humphrey Fellow, USA
Barrister & Solicitor of the Republic of Fiji.
Judge of the High Court of the Western Province -Colombo, Sri Lanka

The British introduced century old Penal Code of Sri Lanka did not have sufficient statutory provisions to combat SGBV offences committed against women & girls other than the offence of Rape. In the landmark amendment Act No 22 of 1995 of the Penal Code, many new offences introduced. Introduction of minimum mandatory & enhanced sentences in order to mark deterrence & gravity of such offences, awarding of substantial amount of compensation to victims in respect of physical and mental harm caused are also introduced. The Victim & Witness protection Act No 4 of 2015 also has introduced several positive measures to be adopted by law enforcement agencies & the judiciary to provide safeguards to victims in general. However, in the present economic crisis, there are many challenges encountered by law enforcement agencies and the judiciary at large. One of the major challenges faced by trial judges hearing SGBV cases is that victims show general reluctance to come to court to testify against perpetrators even though the trials are taken *in camera.* When the perpetrators are close family members, sometimes victims inform court that they do not wish to proceed with the case. Inordinate delay in filing Charges or Indictments, delay in the trial proceedings, due to social issues such as married victim's reluctance to come to court to give evidence due to pressure from husband and immediate family relatives, fear of secondary victimization and lack of confidence in the criminal justice system are some of contributing key factors preventing SGBV victims testifying in courts.

The Covid-19 pandemic & the unexpected economic crisis has also resulted in adverse effects to victims' access to justice process. Due to poverty, financial insecurity and less transport facilities caused by the impact of economic crisis, women & girls are unable to access to criminal justice services available to them. Due to delayed complaints, it would cause delay in medico-legal services. Ultimately it would affect subsequent judicial proceedings as well.

In order to overcome this issue, there should be multi-disciplinary, collaborative efforts with the participation of law enforcement authorities, medical personnel and agencies working in the area of gender justice to sensitize all stake holders for attitudinal & ideological changes towards SGBV victims to encourage judges to use their judicial discretion in adopting victim

friendly practices. Creating more public awareness about SGBV and the remedies available to victims and social support to victims is of paramount importance. As done in India, establishing “Fast track courts” to expedite cases relating to SGBV would enable courts to conclude such cases expeditiously. However, to achieve this end, there has to be sufficient infrastructure, technical & financial support.

S3-03: Providing medico-legal & health care services to women and girls subjected to SGBV in Sri Lanka; Challenges in present economic crisis

Professor P. Anuruddhi S. Edirisinghe
MBBS(NCMC), MD (For Med, Col), DLM(Col), DMJ(Lond), FFFLM(UK)
Cadre Chair and Professor
Department of Forensic Medicine, Faculty of Medicine
University of Kelaniya, Sri Lanka

Medico-legal and health services to children and women subjected to SGBV in Sri Lanka is provided by the Ministry of Health through the government hospital net-work. Providing health care services to a 22-million-population is a challenge, especially a free-health care service. The present economic crisis is expected to increase violence at all levels and SGBV in family setting (IPV, child abuse, elder abuse), even leading to fatalities such as suicides and homicides. Further economic constraints will affect not only the access to health care, but also health care itself, both preventive and curative.

Medico-legal and health services have significantly improved over last two decades. Development of National Guidelines on examination, management and reporting of sexually abused/ assaulted women and children were published in 2014 was a milestone which was initiated by professional bodies together with relevant ministries. With the training and implementation of guidelines where multi-disciplinary management is encouraged, improvement in the medical and psychosocial care was evident over the years. Examination rooms at medico-legal units, availability of SAFE kits at forensic units of hospital improved. Continuous professional development activities in SGBV also increased. One of the observations is that many of the good practices were individual/project driven and internalization to practice is yet to be seen. Guidelines getting incorporated into the undergraduate and post-graduate curricula and teaching and training initiations are strong foundations for a better system.

Establishment of ‘Mithuru-Piyasa’, a hospital-based center for women/girls subjected to IPV (befriending and counselling services) by the Family Health Bureau is a great strength to the system, yet safe houses for children and adults in all provinces is yet to be seen. A 24-hour call center for mental health and a separate help line for children are commendable improvements in the system. Further, research in SGBV also increased over the time, to find

solutions and recommendations for the policy changes.

The economic crisis has already led to temporary suspension of ongoing activities as well as any new developments including recruitments. Shortages and cost cutting will definitely have an effect in all spears, both short and some long term. Health and psycho-social professionals working towards multi-disciplinary management will be a cost-effective strategy where benefits to the society will escalate. A short-term plan to improve mental health services (trauma informed care) is the need of the hour.

S3-04: Ethical media reporting in violence against women and girls; National & International perspectives

Ms. Sujata Tuladhar
BA (International Relations), MA(International Relations)
Technical Adviser on Gender Based Violence,
UNFPA Asia Pacific Regional Office

The National Women's Wellbeing survey (WWS, 2019) provided evidence for the first time on the prevalence of Intimate Partner Violence in Sri Lanka, indicating that one in five (20.4%) ever-partnered women have experienced physical and/or sexual violence by an intimate partner in their lifetime. And two in every five women (39.8%) have experienced physical, sexual, emotional, and/or economic violence and/or controlling behaviors by a partner in their lifetime and one in four (24.9%) have experienced physical and/or sexual violence since age 15 by a partner or non-partner. The DHS (2016) indicated 17% of ever-married women aged 15-49 have experienced domestic violence from an intimate partner within the last 12 months. Though the country has basic support structures built into a national system, the lack of a comprehensive integrated response mechanism across sectors to address this issue is compounded by a culture of impunity based on societal norms. While the prevalence on violence against women and girls may differ, ethically reporting such issues are crosscutting. While accurate media coverage on reporting such sensitive content can assist survivors and at-risk individuals it may also enhance underlying harmful social/gender norms that would increase the risk of GBV at large and most often the risks and potential outcomes are too often ignored. Most often the media reportage is harmful not only to the victims/ survivors but to their families and the consequences.

Symposium 04 - Abstracts

Theme: PERSPECTIVES ON MISSING PERSONS AS A RESULT OF CONFLICT, DISASTERS AND OTHER SITUATIONS OF VIOLENCE

S4-01: ICRC's Integrated Approach to Address the Issues of Missing Persons and their Families

Ms. Cheryl Katzmarzyk
Forensic Coordinator, ICRC Delegation, Sri Lanka

Coauthors:
Ynske Vandormael, Protection Coordinator
Elodie Magnier, Deputy Protection Coordinator
Erwin Salosagcol, Protection Data Manager
International Committee of the Red Cross, ICRC Sri Lanka

Hundreds of thousands of people are missing around the world due to armed conflict, other situations of violence, disasters and in the context of migration. The resolution of a missing file is a complex process, and a multitude of aspects are taken into consideration when addressing missing persons and their families. This presentation will focus on considerations of a missing persons mechanism and the integrated approach of the search and identification process.

Often, efforts to address missing persons may include the establishment of a dedicated national mechanism on the missing with the aim of clarifying the fate and whereabouts of missing persons and providing support to their families according to their needs. When setting up a mechanism, several components may affect the success of the mechanism including political will, scope of the mandate, context-specificities, stakeholder support, inclusion of families and their associations as well as data and information management.

The effective search for and identification of missing persons, alive or dead, are core components in the prevention and in resolving the issue of Missing Persons. The proper and dignified management and identification of human remains are also essential for the protection of the dead and the respect towards their families. The identification process is an overarching concept that includes the search or preliminary investigation phases of the missing in any state (dead or alive), in any scenario (with or without bodies), with an integrated, multidisciplinary, and multiagency approach for implementation by all actors involved in the investigation and identification phases of missing persons and unidentified individuals.

S4-03: Problems in Identification and management of victims of Nepal earthquake 2015

Professor Dr. Pramod Kumar Shrestha
Dept. of Forensic Medicine
College of Medicine
Nepalese Army Institute of Health Sciences
Sano Bharyang, Kathmandu, Nepal

A 7·8 magnitude earthquake struck Nepal at 11:56 am local time on Saturday, April 25. The epicenter was 77 km northwest of Kathmandu. Besides the toughest hit central Nepal, the adjoining areas of India, Tibet, and Bangladesh were affected and avalanches were generated on Mount Everest. Kathmandu's centuries old temples suffered extensive damage. Historic buildings collapsed and many villages in remote mountains were destroyed causing casualties and deaths. A week later, it was noted that more than 7400 people had died and more than 14000 were injured.

As Nepal was recovering from the aftermath of 7.8 Richter mega quake that hit us on 25th April 2015, we, a team of local forensic Experts in Kathmandu, wish to share our first-hand practices at ground zero.

The aim is to provide a scenario that any forensic expert on any given day may encounter globally. It is also believed that the lessons learnt from the method of work commenced and the encounters faced by this team during crisis can certainly act as a learning tool to other nations globally whilst coming up with national protocols and policies.

Some lessons learnt by the team were; it was found that the greatest concern in the minds of laymen and misinformed professionals was the 'myths' regarding spread of disease from dead bodies. A need for development of the capacity of the local experts in managing with dead bodies is a prerequisite. International teams are only a temporary respite. If international DVI teams are involved, it should be ensured that all documents be provided to local experts. One should always plan for obtaining temporary units that can be fitted with refrigeration units for storage of large number of bodies. There are less than 30 bodies and around 30 body parts left from the earthquake that are yet to be identified.

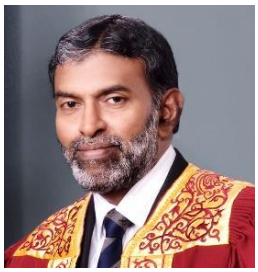
S4-04: Role of forensics in ensuring justice for the Missing persons in Nepal

Dr Rijen Shrestha
MBBS, MD (Forensic Medicine), PhD Scholar (Anthropology)
Past President, Medico-Legal Society of Nepal (2018-2020)

The Commission for Investigation of Enforced Disappeared Persons (CIEDP) in Nepal was established in 10 February 2015, to investigate disappearance during the decade long Maoist

war in Nepal. For the fulfillment of its functions, the CIEDP has confirmed 2,545 individuals from 73 of the 75 districts as missing from the war and prepared guidelines on ante-mortem data collection. Forensic exhumation, forensic anthropological examination and DNA profiling have been developed. Additionally, hands-on exhumation workshop as well as refresher workshop along with an ante-mortem data collection training and Orientation workshop were conducted. Similarly, training in psycho-social counseling was conducted to develop the investigative and humanitarian capacity of the Commission. However, there is still a long way to go. The ante-mortem data that had been collected by the Commission were analysed by forensic experts from Medico-Legal Society of Nepal. A total of 2,475 files were examined. From these files, 40 individuals were found to be alive, a further 100 were confirmed to be dead while an additional 109 individuals were alleged to have been killed. Information about the suspected burial site was available in 59 cases, with only 3 among these having detailed information. Following discussion between the stakeholders, five cases were prioritized for investigation and 5 teams were deployed for collection of detailed ante-mortem data and reference samples for DNA profiling. In spite of these developments, the transitional justice mechanism has been deadlocked due to a myriad of causes, including lack of political will, lack of expertise and resources as well as a lack of legal framework.

S4-05: Missing in Sri Lanka – a lost agenda



Professor Clifford Perera
MBBS DLM MD MA LLB DMJ(Path) Lond MFFLM(UK) Attorney-at-Law FCFPSL
Professor of Forensic Medicine, Faculty of Medicine, University of Ruhuna, Sri Lanka

Missing people are a unique multi ethnic community in Sri Lanka conveniently forgotten by many for well over five decades and their numbers keep increasing. Various actors involved in
the issue of the missing are heterogeneous and represent different points of view, which may at times be political, and/or may not be representative of the views of the families of the missing.

This politicization of victims' needs has also affected the discourse on the missing in Sri Lanka.

In addition to the armed conflict between the Sri Lankan armed forces and the LTTE, the country also saw two other situations of violence involving the leftist rebels Janatha Vimukthi Peramuna, once in 1971 and then again from 1987 to 1989. During these situations of violence, in addition to loss of life, thousands were reported missing. Enforced disappearances have also been a recurrent phenomenon in Sri Lanka even following the end

of the war. The government of Sri Lanka has come under constant pressure from the international community to address the needs of war-affected communities.

Addressing the issue of missing persons is vital in the quest for truth and justice for civil society and for families of the missing, and is, in the long term, a necessary precondition for sustainable peace. Not only will investigations and policies to address the missing ensure justice for families and provide them with some level of closure, the fact that the government is willing to address these issues – even in instances where the state is culpable – signals to the public the start of a new era of accountability and begins to build the foundations for trust among citizens and between citizens and the state.

A landmark achievement related to the issue of missing in Sri Lanka is establishing an Office of Missing Persons (OMP) through local legislation in 2016. The debate on whether the OMP's functions are seen as humanitarian or accountability-focused cannot be understood without considering the domestic & global socio-political context which gave rise to it. In light of the above, this presentation intends to analyze where the OMP stands in relation to varying approaches to mechanisms for searching for the missing.

When one delves into the mandate of the OMP, it can be deduced that its purpose and powers go beyond a purely humanitarian mechanism which has no links whatsoever to the justice system. On the contrary, the OMP's mandate is a broad one, which considers the multifaceted needs of families of the missing and which adopts a forward-thinking attitude in dealing with the issue of the missing. Accordingly, the OMP has the power to make recommendations to the relevant authorities, relevant to its mandate, including recommendations relating to the prevention of future disappearances, based on patterns identified in the course of its work.

The task before the OMP is not a simple one, and the road to finding those who went missing is long and arduous. The Office will have to engage in fulfilling its mandate while also contending with changes in political regimes domestically and internationally. Accordingly, political will, which is indeed an important contributive element in the OMP successfully implementing its mandate, is at best variable. The OMP's ability to balance its humanitarian mandate while not jeopardizing potential criminal prosecutions, efficient cooperation between the OMP and other governmental entities, the security provided to victims and witnesses who engage with the mechanism, the appointment of commissioners who are suitable to carry out the mandate, and the overall perception with which the society at large views the OMP will be largely dependent on this consistently volatile political climate.

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ABSTRACTS

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A CASE OF ELDER ABUSE SEXUAL ABUSE AND MURDER BY THE NEPHEW OF THE CAREGIVER

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Sri Lanka has a rapidly aging population with one in four expected to be elderly by 2041. Consequently, non-communicable diseases causing disability have increased elderly dependence on caregivers and institutions. Although still under-reported, elder abuse is a serious concern, and neglect of care, physical abuse by a caregiver, and financial abuse are the most common forms. A 90-year-old unmarried elderly female was found dead under suspicious circumstances in her rural home. She was a pensioner dependent on her neighboring brother's family for food and care. Her caregiver had discovered her dead on her bed, covered only in a sheet, with her thighs wide apart. At autopsy, there were perioral contusions and lacerations, bite marks on breasts, and injuries to the genitalia. The cause of death was concluded to be asphyxia due to smothering with evidence of recent sexual activity. Police investigations revealed the culprit to be her nephew. Although prevalent and protected against by law in the protection of the rights of elders Act. No. 9 in Sri Lanka, elder abuse is yet under-reported due to shame or concerns of retaliation by caregivers, increasing elderly vulnerability. Tracing and punishing perpetrators and correcting the situation also becomes difficult when the victim is non-cooperative and socially isolated. Therefore, this incident serves to emphasize the need for improvement in early identification and intervention to prevent elder abuse.

Keywords: *Caregiver abuse; elder abuse; sexual abuse and murder*

393- OP

FORENSIC EXAMINATION OF FATAL KNIFE INJURIES

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Knife-related injuries are not an uncommon finding in forensic autopsies. They present with diagnostic challenges, including, but not limited to, explaining the mechanism of injury and determining the cause of death. The data of forensic autopsies performed by the Lithuanian State Forensic Medicine Service in the period 2010–2019 in 166 fatal knife injury cases were retrospectively reviewed. The manner of death was homicide in 136 (81.9%) cases, suicide in 7 (4.2%) cases, and undetermined in 23 (13.9%) cases. 131 (78.9%) victims were male, age 41.8±12.7 years; 35 (21.1%) victims were female, age 47.3±12.4 years. Ethanol intoxication was confirmed in 128 (77.1%) cases, and in 70 (42.2%) cases was severe (BAC > 2.5‰). Fatal injuries by their location: thorax – 82 (49.4%), abdomen/pelvis – 25

(15.1%), neck – 20 (12%), leg – 16 (9.6%), arm – 6 (3.6%), multiple areas – 17 (10.3%). Heart injury was found in 53 (31.9%) cases. Most injuries were stab wounds, and only 6 (5 in the neck, 1 in the arm) were incised wounds. The immediate cause of death was either exsanguination or cardiac tamponade. In 76 (45.8%) cases the knives were presented for examination to comment on the possibility of their usage for causing fatal injuries. Fatal knife injuries are usually related to homicides, when the victim is intoxicated, often severely. The most common fatal injuries are stab wounds in the vital areas of the trunk, the neck, or the limbs, resulting in fatal blood loss or cardiac tamponade.

Keywords: *Exsanguination; fatal knife injury; forensic autopsy; stab wound*

417- PP

A DEATH OF A FEMALE FOLLOWING SURGERY FOR RIGHT FEMUR FRACTURE; IS IT CORONARY ARTERY ECTASIA?

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Coronary artery ectasia (CAE) is a rare abnormal aneurysmal dilatation of the coronary arteries. Its prevalence ranges from 0.85 % to 5.3 % according to some studies. It is described as arterial dilation with a diameter 1.5 times that of the normal coronary artery and is differentiated from coronary artery aneurysms by its dilation that exceeds 1/3 the length of the coronary vessel. A 74-year-old previously healthy female was admitted to a National Hospital with a right femur fracture following an accidental fall. She has undergone surgery for internal fixation under anesthesia. Operative notes reveal she had a hypotensive episode during surgery. She suddenly died while under postoperative care at the ward. The post-mortem revealed dilated thin wall coronaries with less than 30% of eccentric atherosclerosis with fibrosis of the left ventricular wall. The postmortem was negative for fat embolism and pulmonary embolism. After exclusion of other causes, the possible cause of death, in this case, is ischemic heart disease due to coronary artery ectasia contributed by corrective surgery for the right neck of femur fracture. Even though exact aetiological factors for causing coronary artery ectasia are not well established there are possible aetiological causes and various mechanisms of causing sudden death and ischemic heart disease described in the literature. Though coronary artery ectasia is rare, it should be considered a cause of sudden cardiac death.

Keywords: *Aneurysmal dilatation; coronary artery ectasia; ischemic heart disease; sudden death*

661- OP

MEDICO-LEGAL ASSESSMENT OF THE BEGINNING OF EXTRAUTERINE LIFE – JUDICIAL CONSEQUENCES AND PRACTICAL DIFFICULTIES

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The medico-legal evaluation of the beginning of the extrauterine life is one of the important objectives of fetus or stillborn newborn autopsies and it is not always easy to do. According to the Romanian legislation, as well as that of many other countries, the conceived children can acquire rights from conception, if they are born alive. Therefore, the acquisition of legal capacity is subject to a legal condition. This condition is met if the child breathed even once, which is proven by the macroscopic and microscopic necropsy findings. The basic criterion of the extrauterine life is represented by the signs of the installation of pulmonary breathing, even if the child later died. The purpose of the paper is to show the legal consequences of the medico-legal assessment of the establishment of the extrauterine life and to identify the practical difficulties that appear in this activity. The authors present the problematic aspects and difficulties found following the autopsies of fetus and newborns, with examples from personal casuistry, showing what major implications these can have in the correct medico-legal assessment of the establishment of extrauterine life (breathed, non-breathed or partially breathed lung, cases difficult to interpret, advanced putrefaction, tracheobronchial aspirate of amniotic fluid, intrauterine pneumopathy). The role of the medico-legal autopsy in providing essential scientific data for assessing the installation of pulmonary breathing (macroscopic data, through the hydrostatic docimasia test and microscopic data) is overwhelming and the legal consequences of these assessments are major.

Keywords: *Beginning of extrauterine life; judicial consequences; necroptical difficulties*

740- PP

A PSYCHOLOGICAL AUTOPSY; AN IMPORTANT TOOL IN DEATH INVESTIGATION.

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The psychological autopsy is a mental state examination of the deceased and is used as the method to determine the mode of death when it is unclear. Although it is not used very often it has been used to estimate the role of various risk factors in suicidal deaths. An elderly religious monk who was residing in a meditation center in a small island was found floating on the water. The personnel fiber boat which he used to reach the mainland was floating and was free of any mechanical damage. According to the fellow monks he was a very good swimmer and used to swim to the main island sometimes. The moderately decomposed body was clothed and two nylon threads were knotted separately around the ankles and the free end were knotted around 5 kg stones each. The crime scene examination of the locus, his room and other areas in the island were done by a team of forensic pathologists, forensic psychiatrists, government criminal investigation officers several times. The forensic psychiatric team gathered a large amount of information from the documents recovered from the scene, studying the lifestyle of the deceased and by interviewing various people with whom the deceased associated. The autopsy and the histopathology revealed sand particles, water weeds in the terminal respiratory passages and alveoli. The cause of death was concluded as drowning. The psychological autopsy revealed that the suicide is the most possible manner of death. The psychological autopsy combined with other investigations played an important role in determining the cause and the manner of death in this controversial death investigation.

Keywords: *Investigation tool; psychological autopsy; suicide*

762- OP

MEASUREMENTS OF PULMONARY AND TRICUSPID VALVES OF THE HEART AND ITS RELATIONSHIP WITH SOCIO-DEMOGRAPHIC FACTORS: AN AUTOPSY STUDY

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There was no constant protocol in the measurements of the heart valves in the literature. These values disagree in the population according to the background, race, and demographic area. The measurements also depend on the study's methodology, such as Echo-cardiogram measurements, direct measurements from transplanted hearts, and formalin-fixed and unfixed hearts from autopsies. The presence of discrepancies can lead to confusion in the interpretation of valve sizes in the autopsy as well as in the clinical setting. This study was a descriptive cross-sectional study conducted at Colombo South Teaching Hospital / Sri Lanka. The healthy formalin unfixed adult heart recovered from autopsies conducted in traumatic and suicidal cases from September 2018 to September 2019 were included. The study aimed to find the mean circumferential values of tricuspid and pulmonary valves and also investigate the association withage, sex, body weight, and body length. Out of 282 samples, a hundred and twenty-two (122) samples were included in this study. The number of males and females was 68 and 54. The mean circumferential length of the Tricuspid and Pulmonary valves for males and females were 11.67 cm, 10.56 cm, and 6.85 cm, 6.25cm. The valve sizes were slightly larger in males than in females. There was a significant association between pulmonary valve and age ($P<0.019$). This study validates the mean values of the tricuspid and pulmonary valves in autopsies conducted at Colombo South of Sri Lanka. There was no significant association with socio-demographic factors except pulmonary valve with age. ($P<0.019$) in contrast to other studies conducted in the past. Therefore, we endorse a study with large sample sizes to determine the association between tricuspid and pulmonary valves and socio-demographic factors.

Keywords: *Colombo south of Sri Lanka; formalin unfixed heart; pulmonary valve; tricuspid valve*

851- PP

SUDDEN CARDIAC DEATH OF A YOUNG MAN: A CASE OF MULTIPLE CORONARY ANOMALIES

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Congenital coronary anomalies are uncommon. This is a rare, simultaneous presentation of multiple coronary artery anomalies and aneurysms. A 35-year-old male was had a sudden death while he was engaging in his routine manual work. The post-mortem revealed multiple coronary artery anomalies and aneurysms. The most important anomaly identified was the origin of the left circumflex artery from the pulmonary artery. Histologically there was chronic subendocardial infarction. Coronary arteries showed medial degeneration and dissection in aneurysms. Congenital coronary artery anomalies are associated with sudden cardiac death. Here, a part of the left coronary circulation originated from the right coronary artery while the other part was from the pulmonary artery. Anomalous origin of the coronary arterial system from the pulmonary artery is a rare condition associated with high mortality in infancy. The most common type, occurring in 30% of all coronary anomalies, is the ectopic origin of the left coronary artery from the pulmonary artery. Other forms of partial origin of the coronary arterial

system from the pulmonary artery have been described, including the origin of the right coronary artery from the pulmonary artery and the origin of individual coronary arterial branches from the pulmonary artery. In our case, the left circumflex originated from the pulmonary artery.

Keywords: *Coronary aneurysms; coronary anomalies; sudden death*

868- PP

UNIVENTRICULAR HEART: A RARE CASE OF COMPLEX CONGENITAL HEART DISEASE

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The univentricular heart is a rare congenital cardiac anomaly identified by a single ventricle manifesting various functional and physiological defects. A 30-year-old mother in her second pregnancy delivered a baby by cesarean section at 38 weeks of gestation. They were discharged on postoperative day two, following an uncomplicated delivery. Two days after the discharge, the baby was found unresponsive at home & pronounced dead upon immediate admission to the hospital. An autopsy revealed a male infant with no gross external anomalies or external injuries. Dissection of the heart disclosed a single ventricle with the total absence of an interventricular septum. Two atriums were separated by the atrial septum and the foramen ovale was patent. Caval veins and pulmonary veins drained into the right and left atria respectively. Two well-defined atrioventricular valves were present. Two great arteries were originating from the ventricle. The anterior most artery gave branches of coronary arteries & subclavian arteries while the other artery divided to form right & left pulmonary arteries to supply bilateral lungs and the rest of the body. No communication existed between the two arteries. Other internal organs were unremarkable except the lungs showing pulmonary hemorrhages. The cause of death was concluded as congenital heart disease. Comprehensive autopsies of complex cardiac anomalies will provide great insights into the constantly evolving management strategies. Also, the collaborative efforts of referring the parents for genetic screening, family education, and psychiatric support are of utmost importance in the comprehensive management of fetal cardiac anomalies

Keywords: *Autopsy; congenital heart disease; single ventricle; univentricular heart*

924- PP

A RARE CASE OF HAEMOPERITONEUM FOLLOWING SPONTANEOUS RUPTURE OF A GIANT SUBCAPSULAR CAVERNOUS HAEMANGIOMA OF LIVER DETECTED AT AUTOPSY

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Cavernous haemangioma is a common benign tumor of the liver and is usually found incidentally during abdominal ultrasonography. It is often asymptomatic and undergoes enlargement in fewer than 10% of cases. Spontaneous rupture of a giant (>4cm) hepatic haemangioma occurs very rarely. A 49-year-old male who worked as a painter is suddenly found dead inside the bathroom of his residence by his wife. He is asymptomatic. He is a non-smoker and occasional alcoholic. Covid-19 PCR is negative. He has not undergone an ultrasound scan of the abdomen before. He has not sustained any blunt-force trauma

recently. A haemoperitoneum of 2000ml, a giant subcapsular hematoma is found in the liver in the abdomen. Pallor in the conjunctiva and kidneys is noted. Histopathological evidence of a subcapsular cavernous haemangioma of the liver is found. Potential complications of a giant subcapsular hepatic haemangioma are rupture with haemoperitoneum, mass effect on adjacent structures (biliary tree, hepatic vessels), and Kasabach-Merritt syndrome (a form of consumptive coagulopathy). A hepatic haemangioma can be detected by ultrasonography, computed tomography, magnetic resonance imaging, and single photon emission computed tomography. Although a haemoperitoneum points towards a traumatic cause we should be mindful of a natural cause as well.

Keywords: *Complications; haemangioma; haemoperitoneum*

971- PP

DEATH OF A YOUNG LADY DUE TO TRANSFUSION-RELATED LUNG INJURY: A CASE OF MEDICAL NEGLIGENCE

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Blood transfusion is a potentially life-saving procedure and it will help to replace the blood loss due to surgery, injury, or chronic illness. However, in the absence of life-threatening hemorrhage, the topic of blood and blood product transfusion is somewhat controversial. Allogeneic blood transfusion can lead to life-threatening conditions including transfusion-related lung injury (TRALI), Hemolytic transfusion reactions, anaphylaxis, transfusion-associated circulatory overload, graft - versus - host disease, and transfusion-associated sepsis. A 53-year-old lady was admitted to the surgical ward of a general hospital Kegalle with right leg cellulitis. While she was in the recovery stage the senior house officer decided to transfuse packed cells without clear indications to do so. During the transfusion, her saturation dropped significantly, and crepitations and rhonchi were detected in lung fields. Subsequently, she was intubated and managed in the intensive care unit. Post transfusion chest X-ray showed opacification on the lung fields. However, she succumbed five days after the blood transfusion. An autopsy revealed features of hypoxic encephalopathy, acute respiratory distress syndrome, acute kidney injury, and hepatocellular necrosis. Transfusion of blood products has its risks causing immediate and delayed adverse reactions; TRALI is one such outcome. Therefore, it is necessary to ensure that patients get blood only when required and that they get the correct product of the correct blood group, at the right dose, at the appropriate infusion rate, to the correct patient, at the right time.

Keywords: *Adverse reactions; blood transfusion; hypoxic encephalopathy; transfusion related lung injury*

1055-OP

ESTABLISHING A VIRTUAL AUTOPSY CENTER - NEIGRIHMS, SHILLONG EXPERIENCE

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Virtual autopsy, also known as virtopsy, digital autopsy is the procedure of autopsy based on examination of the body without any incision with the help of images generated through CT scan or MRI and other gadgets which are then analyzed using appropriate software.Many a time, there are

requests from the relatives of the deceased to avoid the dissections which they consider as mutilation of the body and virtual autopsy may be an alternative to the conventional autopsy in some of the cases.Moreover, from the perspective of the autopsy room staff also it is a better alternative particularly in cases of hazardous dead bodies.This a fast and reliable technique where one can acquire all the findings related to the case and the same can be stored and transferred in digital format.However, like all other techniques, it has also limitations and disadvantages.NEIGRIHMS, Shillong, Meghalaya, India is the 2nd center in India to have the facility of Virtual autopsy; it started functioning from March 2022.This presentation is an effort to share the experience as well as basic requirement for establishing a virtual autopsy center the benefit of all concerned.

Keywords: *Digital autopsy; NEIGRIHMS virtual autopsy; no incision autopsy; virtual autopsy*

1060- PP

A CASE REPORT OF A NEONATE, BORN TO A SARS-COV-2 INFECTED WOMAN

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Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is a coronavirus that has caused a worldwide outbreak of infections. We herein present a case of a neonate born to a SARS-CoV-2-infected woman. A baby was born to a 21-year-old Primi-Gravida mother who tested positive for SARS-CoV-2 at the 40th week and 4 days of gestation. At birth, the APGAR score was 13591010. The baby was floppy, cyanotic, and had thick meconium in its mouth. During the gastric lavage, a thick, meconium-stained fluid was aspirated. The baby was monitored in the neonatal intensive care unit (NICU). At the NICU, the baby was given to the mother for breastfeeding and the baby's saturation dropped. The baby died despite resuscitation. The baby's post-mortem COVID-19 PCR was negative. At autopsy, there was greenish-colored material in the stomach and the bronchioles, and both lungs were consolidated. The histological findings were consistent with primary pulmonary hypertension, aspiration of milk mixed with meconium, early pneumonitis, and pneumonia. In this case, even though the mother was infected with SARS-CoV-2, the baby was negative for SARS-CoV-2. The low APGAR score of the baby could be due to primary pulmonary hypertension. Secondary manifestations of low levels of oxygen saturation could be due to aspiration of milk mixed with meconium while breastfeeding by a young primi mother at the NICU, diagnosed with COVID-19. Based on the findings, it is concluded that the cause of death was the aspiration of milk mixed with meconium.

Keywords: *Autopsy; cause of death; coronavirus; meconium aspiration; milk aspiration*

1062- PP

CONVEYOR BELT HAZARD- A CASE REPORT

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Conveyor machines with moving belts in coir factories need to have proper safety guards to prevent accidental injuries. The employee should be provided with proper face shields, goggles, caps, and overalls to avoid unnecessary trauma. Accidents due to human errors, especially among the elderly, are frequent. A 75-year-old female labourer who worked in a coir factory covered her head with bed sheet-

like clothes while at work. At the time the co-workers recovered her, the victim was found dead in situ entrapped in the belt of the conveyor by partially hanging from a head-covered cloth. At autopsy, parchment-type abrasions over the right side and back of the upper neck and left-side of face were present, representing the application of force around the neck and dragging towards the head. Upper limbs were free of injuries. Visceral organs were unremarkable. In old age, a person is feeble in all forms of activities like vision, hearing, muscle cooperation, and coordination. Even though the labor law of the country has no provision to employ the elderly, irrespective of age any person who is employed in a machine of moving parts needs to be regularly assessed by medical checkups to avoid this kind of unnecessary death. Once the ligature material is wrapped around the neck and dragged headwards a person's death can occur due to hanging. Hanging from improper head cover is negligence by the worker, as well as the employer.

Keywords: *Accidental hanging; employee negligence; employer negligence; moving belt injuries*

1169- OP

THE ROLE OF HISTOLOGICAL EXAMINATION AS A PARAMETER IN DETERMINING CAUSE OF STILLBIRTH AT AUTOPSY EXAMINATION

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The question of whether the fetus is born alive is a frequent topic of discussion in the forensic literature. In the case of findings of fetal remains, determining whether the fetus has the ability to survive outside the womb is a challenge, one of which is the determination of fetal viability. But is determination of fetal viability alone sufficient in a forensic context or postmortem examination to state that the remains were born alive? Various approach modalities have been applied from macroscopic and microscopic examination. In terms of microscopic examination, the assessment of fetal development can be seen from the histological condition of the organ. Where each stage of development has specific histological criteria that allow us to assess the level of change in organ cells from week to week or from month to month. In addition, histological examination also allows us to see any congenital abnormalities in cellular fetal remains. In fact, under certain conditions, it is possible to see the possibility of abnormalities during pregnancy which can cause abortion or preterm birth, both for the fetus and even for the mother. This gives us an overview of the forensic cases we manage. It does not only focus on the problem of found fetal bodies but also provides a view of the possibility for a forensic doctor to understand regarding the involvement of the fetal death which is related to the mother not only regarding criminal matters but also medical problems. In this literature review and case report, we will discuss the findings of a fetus suspected of having abnormalities in its organs from a histological point of view in assessing the possible cause for stillbirth.

Keywords: *Fetus; newborn; still birth*

1338- PP

ACUTE SUBDURAL HAEMATOMA IN A SUDDEN INFANT DEATH: A NON-ACCIDENTAL HEAD INJURY, A POST-MORTEM OR RESUSCITATION ARTEFACT?

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It is the wisdom of forensic pathologists to differentiate the original injury from those introduced by treatment, resuscitation, or post-mortem phenomena especially in sudden infant deaths as they might

be complicated with non-accidental injuries. A two-month-old healthy baby boy was breastfed in the morning and kept in the prone position on the bed. After 10 minutes father found him floppy and rushed him to a hospital where he was managed for milk aspiration, but pronounced dead following unsuccessful resuscitation. The autopsy revealed injuries suggestive of resuscitation and bilateral acute subdural haematomas (SDH) without features of cerebral oedema, midline shift, cerebellar herniation, or retinal haemorrhages. Histomorphology was evident of acute subdural and subarachnoid haemorrhages (SAH). The toxicology was negative. SDH is typically associated with trauma and it is usually a widespread, bilateral, thin film following the rupture of bridging veins. Death is due to the complications of increased intracranial pressure (ICP) which we couldn't observe here making it unlikely the cause. Shaken Baby Syndrome (SBS) is also a very distant possibility with the absence of cerebral oedema, diffuse axonal injury, and retinal bleeding. There are a few reported cases of SAH following CPR. It is postulated that elevation of ICP due to chest compressions leads to the oozing of blood from dural and arachnoid vessels when there is hypoxic endothelial damage. Therefore, authors are of the opinion that SDH, in this case, is unlikely due to trauma or SBS and could be a post-mortem or resuscitation artefact.

Keywords: *Artefacts; shaken baby syndrome; subdural haematoma*

1432- PP

A DEATH DUE TO EXSANGUINATION; A CASE REPORT ON SMALL PIECE OF GLASS CAUSING DEATH IN A YOUNG ADULT

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This is a case of death due to exsanguination, in which the crime scene and the histopathology were much helpful to come to the cause and mechanism of death. A 20-year-old male was stabbed with a piece of glass following an argument. The places he was stabbed inside the room as well as the place he was waiting for the arrival of medical treatment had remarkable evidence for the incident and cause of death. He died before reaching the hospital and the time of survival according to the circumstantial evidence was around 15 to 20 minutes. An autopsy revealed the source of bleeding as damaged the left common carotid artery while the histopathology was helpful to confirm the early features of shock due to hemorrhage. The cause of death was extensive bleeding due to damaged left common carotid artery by a stab injury to the neck and the mechanism of death was shock due to extensive hemorrhage. The manner and cause of death, time of survival, and the volitional activities were able to reconstruct easily with the help of available evidence at the crime scene. The importance of a full autopsy despite the positive covid 19 state of the victim was highlighted at the end of the case. Histopathology played an important part in formulating the manner of death in this case. This case has a forensic value from its beginning at the crime scene to the laboratory level and gives some clues to think differently which may help to improve the quality of cases like this.

Keywords: *Crime scene investigation; exsanguination; hemorrhagic shock; histopathology of shock*

1463- OP

PATTERN OF SUICIDE DEATHS: A RETROSPECTIVE AUTOPSY ANALYSIS IN PAKISTAN

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In this study, we evaluated autopsy reports of suicidal deaths for 5 years, to study the demographic distribution of the suicide victims, and methods of suicides. It is a descriptive cross-sectional study of suicide autopsies conducted at the mortuaries of two large Forensic departments/Medicolegal Centers in Punjab and Sindh (King Edward Medical University/Mayo hospital, Lahore, and Jinnah Postgraduate Medical Centre Karachi) for 5 years, between January 2017-December 2021. Data was collected on pre-designed proforma and was statistically analyzed using SPSS 26. Cases of 98 of suicide were examined in the two study centres (67 males ,68.4% and 31 females, 31.6 %). Fifty-six suicides (57%) were in age group under 30 years old. The most frequently used methods for suicide were hanging (41,41.8%), use of firearms (23, 23.5%), Self-poisoning (11,11.2%), and jumping from heights (6, 6.1%). Significant differences were noted regarding method of suicide among gender and different age groups as well as different study centres (P value<.05). Firearms were used solely by males, and all deaths due to jumping from heights were in Karachi. Due to local cultural and religious beliefs, the autopsy rate in suicide seems too low. There was a male preponderance amongst suicidal death autopsies in our study sample. Hanging, firearms and self-poisoning were the most frequent suicidal methods. Provision of psychological and social supports along with restriction to easy access to firearms and poisons should be considered by policy makers and healthcare authorities to tackle this quite preventable public health problem.

Keywords: *Autopsy; medicolegal; methods; Pakistan; statistics; suicide*

1518- OP

STUDY ON WEIGHT OF THE HUMAN HEART AND ITS RELATIONSHIP WITH THE PHYSICAL PARAMETERS OF THE BODY IN SOUTH REGION OF SRI LANKA

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The main aim of the study was to find the average value of the weight of the human heart and its relationship with the physical status of the body in autopsies conducted at Teaching Hospital-Karapitiya, Galle, Sri Lanka. This was a descriptive, cross-sectional study conducted from March 2022 to September 2022. Fresh human hearts of persons from 20 to 65 years of age, who died following non-cardiac pathologies and trauma and were subjected to autopsies were included in this study. During this study period, 63 samples were obtained according to the inclusion and exclusion criteria. The average heart weight was 286.12 g in males and 230.62 g in females. The heart weights of males and females in the age group were 272.77, 223.90 (20 – 35 years), 295.23, 234.73 (36 – 50 years), and 293.00, 233.38 (51 – 65 years). The P values of the associated relationship with gender, age, body weight, body length, and abdominal circumference were 0.000, 0.484, 0.000, 0.026, and 0.252. There was a significant relationship demonstrated in heart weight with gender, body weight, and body length in keeping with similar studies conducted in western and eastern countries. A gradual rise in heart weight was noted up to the age of 50 years with a slight reduction after that, however, it was statistically not significant. There was no statistically significant liaison between human heart weight and abdominal circumferences in contrast to other studies conducted in the past. These values could be used as reference values of human heart weight in the southern part of Sri Lanka as this study was limited to the South of Sri Lanka, but caution should be exercised when using these values in other provinces of Sri Lanka as well as in other countries.

Keywords: *Autopsy; heart weight; Karapitiya; south of Sri Lanka; teaching hospital*

1707- PP

FATAL BRUSH CUTTER INJURY OF A PLANTATION WORKER

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Brush cutters are used often in the fields of agriculture, landscaping, and road maintenance. Non-fatal disabling injuries are common and fatal injuries are occasionally reported, due to not adhering to safety measures. This is a case of accidental injury to the lower limb where the worker died. A 32-year-old female plantation worker was brought to the local hospital following an injury to the left leg in the field. She and her fellow workers were clearing land using portable hand-held brush cutters. Suddenly her left leg was injured by a broken piece of the blade of a brush cutter of a nearby worker. As there was a delay in transporting her as it was a remote area and there was no proper first aid, she passed away on admission. There was a cut injury over the popliteal fossa of the left leg and half of the metal blade was found inside. The muscles of the popliteal fossa and the neurovascular bundle were completely cut with a partial cut of the femoral condyle. The cause of death was given as hemorrhage due to cut injury to the left popliteal artery and vein following sharp force trauma. Even though fatal injuries are uncommon these injuries can be prevented by using safer brush cutters and proper personal protective equipment. Workers should be advised on the safe usage of brush cutters, proper personal protective equipment, and adherence to safety protocols during work.

Keywords: *Fatal; hemorrhage; portable hand-held brush cutter; safety*

1750- PP

DEATH DUE TO RUPTURED OVARIAN ECTOPIC PREGNANCY FOLLOWING IN-VITRO FERTILIZATION

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In-vitro fertilization (IVF) is a type of assisted reproductive technology where an ovum is fertilized with a sperm in-vitro. Ectopic pregnancy, including ovarian ectopics, is a recognized complication following IVF, though rarely reported. A young female treated for primary subfertility for four years had undergone oocyte retrieval followed by in-vitro fertilization and implantation. After four weeks of pregnancy, she suddenly developed vomiting and lower abdominal pain. She became unresponsive after several hours from the onset of abdominal pain and was pronounced dead on admission. An autopsy examination revealed a collection of fresh blood and clots measuring up to 1.5 L confined to the peritoneal cavity. The uterus, both fallopian tubes, cervix, and vagina were intact. There was a cystic-hemorrhagic mass attached to the right ovary. The rest of the organ systems were devoid of significant pathologies except for the features of hypovolemia. Histology of the ovarian mass revealed embryonic tissues. The diagnosis of ovarian ectopic pregnancy was made with the aid of Spiegelberg's criteria. Furthermore, rupture of the ovarian ectopic which has resulted in haemo-peritoneum, and features of hypovolemia are noted during the autopsy examination. The cause of death was concluded as haemorrhagic shock due to ruptured ovarian ectopic pregnancy. This case signifies the importance of close observation for emerging potentially life-threatening complications following IVF as well as the specific ethical issues related to maternal deaths following IVF.

Keywords: *In-vitro fertilization; maternal death; ovarian ectopic pregnancy; subfertility*

1835- PP

AUTOPSY FINDINGS IN A CASE SERIES OF DEATHS DUE TO HUNTINGTON'S DISEASE

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Huntington's disease is an autosomal dominant neurodegenerative disease mainly affecting the basal ganglia of the cerebrum. Here are the autopsy findings of a case series of deaths due to the complications of Huntington's disease. Case 1 History: 46 years old female diagnosed with Huntington's disease had symptoms of choreoathetoid movements, was bedridden for 9 years, and died suddenly on the bed at home. Case 2 History: 49-year-old female diagnosed with Huntington's disease had symptoms of hyperkinetic movements, was bedridden for 5 years, and died suddenly on the bed at home. Case 3 History: 62 years old female diagnosed with Huntington's disease had symptoms of poor cognition, and hyperkinetic movements, was bedridden for 3 months, and died suddenly on the bed at home. In all three cases, findings of hypostatic pneumonia were present as a complication. Macroscopically in all three cases, gross atrophy in major organs such as the brain, heart, lungs, and liver were noted. In the brain, atrophy of the caudate nucleus was identified in all three cases. Histopathological findings of enlarged astrocytes in the basal ganglia. Huntington's disease when previously diagnosed poses no problem with the cause of death due to its known complications. But when an individual die without being diagnosed with Huntington's disease and has a family history of the death of siblings after being bedridden by unknown causes with similar autopsy findings of the above three cases, we should suspect Huntington's disease and advise other siblings to get a clinical opinion and get genetically screened.

Keywords: *Astrocytes; atrophy; huntington's disease*

1954- PP

A SELF-MADE ARTIFICIAL PHALLUS USED BY AN EXHIBITIONIST-AN INCIDENTAL POST-MORTEM FINDING A QUARTER CENTURY AGO

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Body modifications may be permanent such as tattooing, piercing, prosthetic penile and breast implants, or temporary such as body painting, temporary tattooing, coloured iris, and external penile extensors. Silicone external penile extensors are worn to increase the length and girth of the male organ during sex. Exhibitionism or derivation of sexual gratification through the compulsive display of one's genitals is considered a deviant behaviour when happens outside the context of intimate sexual relations. The exhibitionist almost always being a male, obtains gratification from the reaction of the unsuspecting victim who is mostly a female. The incident took place 27 years ago when silicone sex toys such as artificial phalluses, penile extensors, and dildos were almost unheard of in Sri Lanka. A homeless person of around 65 years of age who lived in the bus stop adjoining the wall of a tertiary care hospital in Sri Lanka for more than 15 years had been found dead and was subjected to a medico-legal autopsy following a magisterial inquest. External examination revealed an artificial phallus remarkably similar to a natural penis, probably made by himself using multiple condoms stuffed with cloths, wrapped around his waist covered by his undergarments. The police revealed that he was incriminated on several occasions for exposing his penis to unsuspecting females in dark places along the hospital's boundary wall. Though exhibitionism using one's own penis is not uncommon, this is a rare case of practicing exhibitionism using an artificial penis, especially in an era where artificial sex toys were quite uncommon.

Keywords: *Artificial phallus; body modification; exhibitionism; sexual perversions*

2021- PP

AORTIC ARCH RUPTURE DUE TO AORTITIS COMPLICATING LEFT UPPER LOBAR PNEUMONIA

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Aortitis and paraaortic arch abscess complicating pneumonia are seldom reported. We report a sudden death following aortic arch rupture associated with aortitis complicating pneumonia. A 70-year-old female was admitted with a cough, shortness of breath for one week, fever, and loss of appetite for three days. The patient was diagnosed with hyperthyroidism on regular medical treatment for ten years. No history of diabetes mellitus, previous cardiovascular or respiratory diseases, or trauma was recorded. The patient was febrile, and other clinical parameters were normal. There were no infected wounds or other septic focus in the body. Available investigations showed low haemoglobin levels, high differential counts, and elevated neutrophils. Despite treatment, she expired within 12 hours after admission. The autopsy revealed left upper lobar pneumonia and the presence of a mass around the arch of the aorta with associated aortitis and rupture of the aorta, resulting in massive left-sided hemothorax. Intima of the aorta consisted of advanced atheroma without ulceration. Since there was no gross evidence of abscess, gram staining, and pus culture were not sent. Microscopy confirmed left upper lobar pneumonia and the mass lesion around the ruptured aorta was a para aortic abscess associated with paraaortic suppurative lymphadenitis eroding into the aorta. The possible spread of infection could be infectious pathogens in the lungs that had been drained into closer lymph nodes causing suppurative lymphadenitis of periaortic nodes. Inflammatory focus close to the aortic wall may cause a contagious spread of infection, leading to aortitis causing rupture resulting in fatal hemorrhage.

Keywords: *Aortitis; fatal hemorrhage; para aortic abscess; pneumonia; rupture*

2105- OP

DESCRIPTIVE STUDY ON FATAL ROAD TRAFFIC ACCIDENTS AND ITS LEGAL PROCEDURE IN PELIYAGODA POLICE DIVISION

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Road traffic accidents (RTA) is a rapidly growing problem in the world and data shows annually around 3000 deaths, and 8000 serious injuries in Sri Lanka. This study is to identify the profile of fatal RTA and the related legal procedure. Retrospective descriptive study was carried out on purposely selected 108 incidents of fatal RTA which had completed its legal proceedings from 2009 to 2017 in Peliyagoda police division. In certain incidents there was more than one fatality. Information was extracted using pre-prepared Proforma. There were a total of 116 fatalities. Majority of the victims were males (75.9%) with the mean age of 50 years. The fatal victims of RTA were mostly pedestrians (49.1%), followed by occupants of vehicles (22.4%), motorcycle riders (21.6%) and drivers (6.9%). Analysis of time taken for legal procedure revealed that facts were presented to the magistrate courts immediately after the fatal accident. Total of 101 cases were referred to the Senior Deputy Inspector General of Police to get opinion on indictment in high court and directives had taken a few months (43.5%) and years in more than half of the cases. Only 19 cases were concluded within a year and time taken to conclude a case varied up to 5 years. Economically active male population and vulnerable road uses are more susceptible for fatal RTA. Even though the investigations were started early, most of the cases concluded after many years. Multidisciplinary approach with law reforms and revision of administrative procedures are required for management and prevention of RTA.

Keywords: *Fatal RTA; legal procedures; vulnerable road user*

2108- PP

DEEP BURNS DUE TO CONTACT WITH HOT LIQUID – A CASE REPORT

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This case report describes first and second-degree burns due to a drop into a hot pot on a prison inmate. The negligent behavior of the prison officers which may have contributed to the death is also discussed. A -62-years old male prison inmate who was on duty in the kitchen had accidentally dropped into a large hot meat curry pot that was on the kitchen floor while carrying another curry pot. He was taken to a primary care hospital 3 hours later without giving any first aid management, after completion of the administrative procedures in the prison. He was managed in the intensive care unit and died a few days later due to multi-organ failure following septicemia and its complications. The autopsy revealed nearly 60% of the body surface area with 1st and 2nd-degree burns including facial burns, tongue, oral and nasal mucosal burns. This case report emphasizes that the prison officers and the administration have to be more caring about the prison inmates and should be aware of the emergency management of inmates. The delay of the management may have contributed to this death. The temperature of hot liquid in a boiling curry is above the boiling water temperature level and can cause 2nd-degree burns seen on this person. When a person drops into a large vessel with liquid, the person may swallow and inhale hot liquid causing burns in the upper gastrointestinal and respiratory passage.

Keywords: *Complications; hot liquid burns; prison inmate*

2206- PP

DEATH OF A CHILD DUE TO EXTENSIVE SYSTEMIC MUCORMYCOSIS

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Mucormycosis is an emerging angio-invasive infection caused by the ubiquitous filamentous fungi of the Mucorales order of the class of zygomycetes. We report the first autopsy case of systemic mucormycosis in forensic literature in Sri Lanka. A 12-year-old previously healthy boy was admitted to the casualty paediatric ward, Teaching Hospital, Karapitiya with a history of mild fever followed by abdominal pain and diarrhea for 3 days. On day 3 the child was diagnosed to have multi-organ dysfunction with hepato- renal failure and admitted to Paediatric ICU for ventilation. His past medical history, immunization history, and family history were uneventful. His WBC was 12.8 x103 / uL. Hb was 8.8 g/dl. The platelet count was 90 x103 /ul. C reactive protein was 17.2 mg/l. Creatinine was 212 mg/dl ALT was 177. The child was treated with intravenous antibiotics to cover possible bacterial and viral meningitis. On day 4 the child was pronounced to death with circulatory collapse. Histopathology with special stains revealed systemic mucormycosis affecting the brain, heart, liver, and kidneys. Mucormycosis is a rare but fatal fungal infection with a high mortality rate. The pleomorphic clinical manifestations and elusive presentation almost always miss the diagnosis

Keywords: *Angio-invasive; hepato- renal syndrome; systemic mucormycosis*

2394- OP

DIGNIFIED MANAGEMENT OF THE DEAD IN COVID-19 PANDEMIC: AN EXPERIENCE FROM CENTRAL INDIA

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The emergence of coronavirus disease-2019 (COVID-19) had caused an unprecedented challenge to managing the dead bodies in a dignified manner. Challenges included unwarranted fear in handling the dead, inadequate training of staff and a crunch of resources. India handled the pandemic successfully using vaccines and holistic management of COVID-19 cases. However, the healthcare staff's role in managing the dead remains undiscussed and ignored. In the present case, experience in handling the dead in a dignified manner is discussed with emphasis on training of manpower, capacity building, humanitarian handling of the dead and empathy towards the relatives in grief. The integrated approach of healthcare staff, public authorities and humanitarian support by the International Committee of the Red Cross (ICRC) was very vital and was a learning milestone in the effective management of the dead in epidemic/pandemic of communicable diseases.

Keywords: *Body bag, dignified management of the dead, humanitarian approach, ICRC, Pandemic*

2542- PP

FATAL RUPTURED CORNUAL PREGNANCY: A CASE REPORT

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Ectopic pregnancy (EP) is a potential life-threatening occurrence which accounts only for 1-2% of pregnancies. But it's a leading cause of death killing 4% of all pregnant women. A 42-year-old previously healthy mother of two with a POA of 7 weeks presented with acute severe abdominal pain. On admission she collapsed and the resuscitation was unsuccessful. Autopsy revealed pale conjunctiva, faint hypostasis, >2 litres of blood within peritoneal cavity and a breach in left cornua of uterus. Right fallopian tube was unremarkable. Uterus was bulky with an endometrial thickness of 2.3 cm and was decidualised. No inflammation, foreign bodies or injuries were seen in the vagina or cervix. Internal organs were pale. Heart showed sub-endocardial haemorrhages. Histology confirmed ruptured EP and toxicology was negative. Cause of death was stated as extensive haemorrhage secondary to rupture of left cornual pregnancy manner being mostly likely spontaneous and of undetermined aetiology. In this case, no physical or circumstantial evidence of induction was found. Misdiagnosis or late diagnosis of EP results in torrential bleeding following rupture. Clinical suspicion and early diagnosis are essential in EP.

Keywords: *Cornual pregnancy ruptured ectopic; torrential bleeding*

2718- PP

UNRESPONSIVE AFTER RUPTURING OF MEMBRANES – A RARE CASE OF SYSTEMIC AMNIOTIC FLUID EMBOLISM

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Amniotic fluid embolism (AFE) in pregnancy, is a rare but potentially catastrophic obstetric emergency characterized by sudden cardiorespiratory collapse and DIC. Despite early detection and prompt treatment, morbidity and mortality rates following AFE remain high. A 28-year-old term healthy pregnant woman was admitted for her second pregnancy. Her current antenatal period was unremarkable. On admission, she had no signs of infection or early labor and routine investigations were unremarkable. On the following day, an artificial rupture of membranes (ARM) was done and in 30 minutes she complained of difficulty in breathing and excessive sweating. Fetal distress with bradycardia was observed on a cardiotocograph (CTG) and while resuscitating she collapsed and became unresponsive. An emergency caesarian section was performed and she was pronounced dead. The autopsy revealed multiple petechial hemorrhages over the pleura and pericardium, bilateral blood-stained pleural and peritoneal fluid, and large retroperitoneal and mesenteric bleeding. No evidence of mesenteric artery rupture or aneurysm was detected. Microscopic examination of the tissue sections revealed a widespread distribution of fetal squamous cells and amniotic debris consisting of mucin in the microvasculature of the lungs, brain, kidneys, liver, and heart. Performing Special stains with Alcian blue and immunohistochemistry further confirmed the histologic diagnosis of AFE. The pathophysiology of AFE is not clearly understood. The process is more similar to anaphylaxis, so the term anaphylactoid syndrome of pregnancy has been suggested. This case highlighted the value of histopathology and special stains confirming the findings in AFE.

Keywords*: Alcian blue; Amniotic fluid embolism; artificial rupture of membranes; immune; histochemistry special stains*

2766- PP

LATE DEATH FOLLOWING ENDOSCOPIC REMOVAL OF FISH BONE IMPACTED IN THE OESOPHAGUS.

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Fish bones are common foreign bodies in the upper gastrointestinal tract following food ingestion. Though most of the fish bones pass through the gastrointestinal tract without impaction, some may lead to oesophageal perforation and related consequences including deep neck abscess, mediastinitis, retro oesophageal hematoma, or even aorto-esophageal fistula (AEF). Therefore, it is very important to appropriately evaluate possible complications and provide treatment. A 48-year-old female was admitted to a teaching hospital, with dysphagia and retrosternal pain, following the previous day's lunch. On the 3rd day, the patient had an episode of hematemesis and UGIE showed an impacted foreign body in the oesophagus with a stomach full of blood. Ultrasound scan of the neck and chest X-Ray was normal with mild leukocytosis and elevated CRP. On the 5th day, after the diagnosis of mere oesophageal penetration, an impacted fish bone was removed endoscopically with 10 days of conservative management at the ICU. On the day of discharge, the patient developed repeated attacks of hematemesis at home and was found dead on admission. Autopsy revealed AEF associated with blood in the Gastrointestinal tract. In this case, the clinical diagnosis of fatal AEF had been missed as the failure to carry out a diagnostic CT scan. Therefore, foreign body impaction in the esophagus must be thoroughly investigated to evaluate possible complications and to avoid tragedies like these.

Keywords*: Esophageal perforation; hematemesis; aorto-oesophageal fistula*

2838- PP

HEMOTHORAX FOLLOWING HEMIDIAPHRAGMATIC PERFORATION: A HOMICIDAL SHOTGUN INJURY

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Shotgun injuries are not uncommon in Sri Lanka and exhibit multiple injuries in victims. A 33-year-old ex-soldier was admitted to a rural hospital following a firearm injury. On admission he was conscious, blood pressure was 100/70 mmHg, pulse rate was 100 bpm with a respiratory rate of 18 per minute. Following initial stabilization, he was transferred to a tertiary care center for CT abdomen and on arrival, he developed sudden onset shortness of breath and collapsed. The autopsy revealed a defense cut injury on the right hand, rat hole appearance with satellite injuries over the lateral aspect of the right lower abdomen, hemoperitoneum of 1.5 L, and several perforations in left hemidiaphragm with massive left-sided hemothorax complicated with lung collapse. No exit wounds were found. Multiple pellets and a wad were recovered. The right hemidiaphragm and left lung were unremarkable. Analyzing the history, types of injuries, and range of fire it appears to be homicidal. The cause of death was haemorrhage complicated with hemothorax consequent to hemidiaphragmatic perforation. Delayed onset shortness of breath, in this case, was due to lung collapse secondary to the accumulation of blood in the left thorax through several perforations in the diaphragm in the background of the haemoperitoneum caused by pellets discharged from a shotgun.

Keywords: *Diaphragmatic perforations; shotgun injury; hemothorax*

2904- PP

DEATH OF A CHILD FOLLOWING ACUTE RHEUMATIC CARDITIS- A CASE REPORT

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According to the WHO data rheumatic heart disease (RHD) is the most common acquired heart disease in the world. RHD is a systemic autoimmune disease following Group A beta-hemolytic streptococcal infection. It is a disease with a clear clinical history and clinical sequelae. This case highlights the death of a child following acute rheumatic fever. A 7-year-old girl was admitted to the Emergency Department of a teaching hospital with worsening SOB, fever, palpitation, and chest pain for 3 days. She has also been treated by a general practitioner 5 weeks back for acute pharyngitis. At the ETU she was diagnosed as having atrial fibrillation. Bedside 2-D ECHO showed acute pulmonary oedema, several valvular dysfunctions, and features of acute heart failure. The child expired on the 2nd day of admission. The cause of death was given as acute rheumatic carditis following post-mortem examination. Adequate attention to the high-risk group of people during primary healthcare services and improved awareness by the public are important factors for early detection and prevention of complications of acute rheumatic fever.

Keywords: *Rheumatic carditis; heart disease; streptococcal infection*

2923- OP

ACUTE HAEMORRHAGIC PANCREATITIS FOLLOWING INFLUENZA INFECTION- A CASE OF MATERNAL DEATH

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Acute haemorrhagic pancreatitis (AHP) is a life-threatening condition leading to shock and multi-organ failure. Although prevalent in the general population, it is a rare complication of pregnancy with a high maternal and foetal mortality rate, with the highest incidence in the third trimester/ early post-partum period. Gallstones, alcohol abuse, and hyper-triglyceridaemia are the commonest causative factors identified during pregnancy. We present the case of a 29-year-old pregnant lady in the third trimester presenting with mild productive cough and abdominal pain. She was managed with oral antibiotics for an upper respiratory tract infection. Elective LSCS was done at 37 weeks of gestation due to a past section. Post-op day 3 she developed a fever with difficulty in breathing. She was intubated and managed as pneumonia complicated with ARDS (adult respiratory distress syndrome). Despite intensive treatment, she died on post-op day 6. The autopsy revealed extensive fat necrosis with saponification in the abdominal and chest cavities. The pancreas was necrosed and haemorrhagic, the lungs showed features of ARDS, the kidneys were oedematous and liver necrosis was present. Gallstones and fatty liver of pregnancy were not observed. PCR of post-mortem lung tissues detected influenza virus. Histology confirmed acute pancreatitis and ARDS of the lungs with a lymphocytic cell infiltrate. Compared to well-known causes of AHP, infectious aetiology is rarely documented in the literature. Viruses are recognized as the commonest pathogens responsible for infection-induced AHP. A few cases of influenza infection leading to AHP have been reported in the literature.

Keywords: *Maternal death; acute haemorrhagic; pancreatitis; influenza virus*

2947- PP

THREE UNIQUE FATAL CASES OF AORTIC DISSECTION: A CASE SERIES

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Aortic dissection (AD) is a devastating condition with very high mortality with an estimated incidence of 5-30 / million/ year. A 71-year-old British lady with hypertension presented with acute severe chest pain and expired on admission. Autopsy revealed acute on chronic thoracic AD up to the bifurcation of the abdominal aorta (Stanford B) complicated with fusiform aortic aneurysm with evidence of severe atheromatous disease. Histology demonstrated significant medial degeneration with dissection at the outer one-third of the media. The toxicology was negative. A 38-year-old previously healthy lady presented with acute chest pain radiating to the back. CT aortic angiogram showed acute AD (Stanford A). She suffered an on-table cardiac arrest during surgery. The autopsy revealed evidence of marfanoid habitus and mild atherosclerosis in the aorta. Histology demonstrated dissection in the middle of the media. A 71-year-old lady with hypertension was found dead in bed. Autopsy revealed cardiac tamponade following acute AD of the ascending aorta (DeBakey 1) with evidence of severe atherosclerosis. Histology demonstrated significant medial degeneration and dissection at the outer one-third of the media. Both elderly ladies had the major risk factor hypertension and also evidence of severe atherosclerosis unlike in the case of young female, who probably suffered a connective tissue disorder which has to be confirmed with genetic studies. The difference in the point of dissection in media could be due to acquired weakness occurring mainly on the outer third following degeneration of vasa vasorum caused by hypertension whereas the middle of the media could be due to immaturity of it attributable to genetic mutations.

Keywords: *Aortic dissection; hypertension; medial degeneration*

2963- PP

ABDOMINAL PAIN IN PAEDIATRIC AGE GROUP, NEVER TAKE IT LIGHTLY

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There are multiple causes of abdominal pain in children and causes for such complaints ranging from congenital to acquired and benign to life-threatening. An 8-year-old boy complained of abdominal pain and it gradually subsided with local remedies. The parents took him to a general practitioner about 18 hours after the commencement of abdominal pain. They were advised to hospitalize the child for further management but they took him home. The child vomited again profusely and became unresponsive and was then taken to a tertiary care hospital within a few minutes. After vigorous attempts of resuscitation, the child succumbed. Autopsy revealed 100 ml of free fluid in peritoneal cavity mixed with faeces and dilated jejunal bowel loops. The large bowel including the appendix was unremarkable. There was a stricture of the small bowel at 20 cm proximal to the ileocecal junction and the remaining small bowel distal to the lesion showed features of infarction. The proximal bowel was markedly dilated and perforated at 12 cm proximal to the stricture. Both parents and treating physicians should be vigilant enough to have an early diagnosis of the cause of abdominal pain to avoid a disastrous outcome.

Keywords: *Abdominal pain; congenital; stricture; infarction*

3001- PP

NECROTIZING FASCIITIS FOLLOWING CELLULITIS IN A PATIENT WITH UNDETERMINED PREGNANCY

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Necrotizing fasciitis (NF) is a rare life-threatening invasive soft tissue infection. It is a surgical emergency with high mortality. A-35-year-old woman presented with cellulitis over her right ankle joint and fever to the emergency treatment unit. She denied any recent trauma and her past medical history was unremarkable. An empirical IV antibiotic was started. On the third day, surgical debridement and amputation of the right lower limb were done up to mid-thigh. Post-op day 2 in ICU, she developed per-vaginal bleeding with clots. The urine HCG test was positive and an ultrasound scan of the abdomen and per vagina revealed an incomplete miscarriage. Subsequently, the victim developed lobar pneumonia with shortness of breath and died. The autopsy showed massive hepatomegaly with fatty change, congestion, and exudative discharge in the lungs with characteristic histopathological features of lobar pneumonia. The histology of the infected amputated right lower limb stump revealed scattered polymorphonuclear cells in between deep layers of the skin and skeletal muscles. There were no external visible injuries on the genito-vaginal region and the uterus showed a mild amount of blood clots. The cause of death was attributed to lobar pneumonia and necrotizing fasciitis in a patient with undetermined pregnancy. This case emphasized the effects of potential immunosuppression during pregnancy on the development of severe necrotizing soft tissue infections. Early recognition, aggressive therapy, and intensive care support are important predictors of survival in patients with NF.

Keywords: *Immuno suppression; Necrotizing fasciitis; pregnancy*

3074- PP

A DEATH OF A YOUNG MALE DUE TO FIREARM INJURIES

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Though there are strong legal provisions to control gun usage in Sri Lanka, deaths due to firearm injuries are not rare. The deceased was a 30-year-old male, a victim of a firearm injury. The police investigation revealed the gunman had approached from the back of the victim and 4 shots were fired. The victim was pronounced upon admission. Autopsy revealed 07 injuries in the body, which were compatible with that caused by 3 bullets, into the head, right shoulder, and right lower abdomen. The entry on the head was located on the left cheek and traversed through the brain tissue and exited at the left side of the back of the head. Its direction was below, upward, and backward. The entry on the right shoulder was located on the anterior axillary fold. The wound track traversed through the soft tissue of the axilla and exited at the upper aspect of the shoulder joint. The bullet which caused 2 guttering-type injuries over the front aspect of the right thigh entered through the anterior abdominal wall causing an atypical injury and is found embedded within the soft tissue in the 3rd intercostal space of the posterior chest wall, without exiting. In this case, the gunman has fired 4 shots. It was supported by the history and the scene visit. Police have recovered 4 empty cartridges and 3 bullets at the scene. During the autopsy examination, another bullet was recovered from the body. This case highlights the comprehensive death investigation is mandatory for sound forensic opinions.

Keywords: *Entry wound; firearm; wound track*

3156- PP

AN AUTOPSY EXPERIENCE IN A CASE OF ACHALASIA

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Achalasia is a rare disorder characterized by aperistalsis at the oesophageal body and by the incomplete opening of the lower oesophageal sphincter (LOS). Death in Achalasia may be related to respiratory complications. A 56-year-old known schizophrenic male was admitted to a psychiatric hospital with a history of behavioural change. He was pronounced dead on admission. He was diagnosed with achalasia cardia two years prior to this admission and lost to follow-up. During this period, he had dysphagia, loss of weight, laboured breathing, and frequent vomiting, especially during the night. At autopsy, the body was that of an emaciated man with no injuries. There was no vomitus staining of the face. The striking finding was the narrowing of the cardio-oesophageal junction with the megaoesophagus. The oesophagus was filled with a large amount of soft, partially masticated food paste. The stomach contained only a small amount of liquid. Neoplasms were not detected. There was no significant aspiration of gastric or oesophageal contents. Both lungs were heavy and consolidated. Other internal organs were unremarkable. The cause of death was determined to be aspiration pneumonia aggravated by Achalasia. As in this case, aperistalsis, incomplete LOS relaxation, and increased LOS tension result in megaesophagus. By compressing the trachea and main-stem bronchi, this megaesophagus produces coughing and dyspnea, and predisposes the patient to regurgitation and pulmonary aspiration of stagnant esophageal contents, as in this case.

Keywords: *Achalasia cardia; autopsy; cause of death; mega oesophagus; pneumonia*

3391- OP

A MODIFIED COSMETIC TECHNIQUE FOR HEAD AND NECK DISSECTION IN AUTOPSY

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The autopsy is a specialized surgical procedure in which a pathologist performs a thorough external and internal examination. In the dissection of an intact dead body, disfiguration and destruction are likely. The currently practiced conventional autopsy dissection techniques can result in minimal tell-tale autopsy marks on the deceased, in exposed areas of the head and neck even when the other areas of the body are covered with clothing during a funeral service.

We propose a modification to the conventional skin incision over the head and neck in a way that the incision is placed over the back of the head and neck. In this way, the incisions and their stitch marks are hidden making it cosmetically sound. The duration of the autopsy and the exposure gained through the proposed method is similar to the existing method and the new method appeared pathologist-friendly.

Keywords: *Modified cosmetic autopsy technique; head and neck dissection; conventional skin incision*

3481- OP

RIGHT VENTRICULAR LIPOMATOSIS; A POSTMORTEM STUDY

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The presence of adipose tissue in the right ventricle is frequently found during forensic autopsies. Intramyocardial fat is correlated with various cardiomyopathies. However, the pathological significance of right ventricular lipomatosis was not established. This study aims to identify the relationship between right ventricular lipomatosis and sociodemographic factors, BMI, and waist circumference. A prospective study was undertaken on men and women aged 18 to 60 who had died, either natural or traumatic. Assessment of the fatty infiltration and fibrosis was performed by two pathologists who read all specimens separately. The average of the two values was taken for analysis. A total number of 100 decedents were examined in this study, of which 70 were male, 76 were Caucasians, and 76 were aged more than 30 years. Seventy-one out of a hundred recorded a BMI of more than 25, and 63 decedents had a normal waist circumference. Fat infiltration of the anterior wall, lateral wall, and average fat infiltration of the right ventricle showed significant association with the female sex and the Caucasian population at a 95% confidence interval. Neither cause of death, past medical history, nor fibrosis of the right ventricle walls showed significant association with the fat infiltration of the right ventricle. Yet, age above 30 years and body mass index over 25 showed a significant association in the fat infiltration of the posterior wall (p-value < 0.05). At the same time, higher waist circumference was significantly associated with the average right ventricular fat infiltration (p-value < 0.05). This study highlights that right ventricular lipomatosis is significantly associated with BMI, waist circumference, age, sex, and race.

Keywords*: Body mass index; Right ventricular lipomatosis; waist circumference*

3709- PP

ARTERIO-VENOUS MALFORMATION OF THE BRAIN – A RARE CAUSE OF SUDDEN DEATH

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Vascular malformations of the brain are a spectrum of structural abnormalities which are responsible for sudden deaths by means of spontaneous haemorrhages and epilepsy. Majority of the patients diagnosed with AVM present with haemorrhage whereas seizures are the second most common clinical manifestation. We herein report a case of a brain arterio-venous malformation of a young adult who died following an episode of a seizure. A 37-year-old man was found unresponsive following a convulsion and he was immediately taken to the hospital where the death was pronounced. He was diagnosed with a seizure disorder approximately 10 years ago and a MRI scan showed a brain AV malformation. He had several episodes of seizures over the last few years. At autopsy, the brain was oedematous, and an engorged vascular lesion, 3cm x 3.5cm was seen in the left frontal lobe involving the inferior frontal gyrus and superior temporal gyrus. Microscopy of the lesion showed cross-section of dilated vessels placed close to each other. Some areas showed micro-haemorrhages in the immediate surroundings. There was a perivascular inflammation around some vessels which consisted of mononuclear cells (lymphocytes). Considering the above post-mortem findings, the cause of death was concluded as epilepsy which is a complication of brain AVM. Though vascular malformations represent a very small fraction of the general population, it has a huge impact on a patient's quality of life. This exercise highlights the importance of performing a meticulous autopsy including histopathology and special stain techniques to diagnose those pathologies and arrive at a cause of death.

Keywords: *Arterio-venous malformation; histopathology; seizure*

3777- PP

FATAL GUNSHOT INJURY TO THE CHEST: IS IT ACCIDENTAL OR HOMICIDAL?

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Several unarmed civilian deaths were reported during the past few months which occurred while trying to control public unrest due to the current economic crisis in the country. It is the duty of the forensic pathologist to assist legal authorities to reconstruct the event by doing an impartial death investigation. A 29-year-old father of one child was brought to the mortuary at a teaching hospital following a gunshot injury. According to his wife, the victim was in a petrol queue for 2 days. According to the evidence given by the police, he was shot accidentally while struggling to take a police officer's weapon by force. Postmortem examination revealed that a single rifled firearm entry wound at the front chest, a track, and an exit wound at the back chest. The entry wound, track, and exit wound were almost perpendicular to the body surface. Interpretation of the injuries further revealed that it is a single bullet discharged from a rifled firearm weapon in near contact range. The direction of firing was angulated upwards slightly from left to right. Meticulous examination of the wound not only gives clues about the entry and exit wounds but also the range of fire and the weapon used. The manner of death can also be interpreted from the position and characteristics of the wound. In this case, autopsy findings were not compatible with the evidence given by the police.

Keywords: *Gunshot; near contact; homicide*

3851- OP

C1 ESTERASE INHIBITOR DEFICIENCY -A RARE CASE OF SUDDEN DEATH

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Hereditary angioedema is a rare autosomal dominant genetic disorder. It is caused by reduced functional levels of the C1 inhibitor protein and there is a risk of suffocation and death. Further, this type of angioedema does not respond to antihistamines, corticosteroids, or epinephrine. A young man died within a few hours after admission to a hospital from his workplace. He had been complaining of abdominal pain, neck swelling, and gradually worsening shortness of breath. The autopsy revealed an averagely-built male without dysmorphic features, blood-stained frothy nasal discharge, and an anterior chest wall contusion compatible with resuscitation attempts. The larynx showed extensive oedema, completely obstructing the airway. Both lungs were heavily congested and oedematous, with microscopic haemorrhages and alveolar rupture. The brain was congested. The spleen was enlarged. The chest cavity was free of pneumothorax or hemothorax. The heart, liver, kidneys, and gastrointestinal tract did not show any significant gross or light-microscopic pathological changes. The past medical history revealed being investigated into recurrent abdominal pain and body swelling, with a diagnosis of Hereditary Angioedema due to C1 esterase inhibitor deficiency, along with a family history of the mother and three of four siblings being affected. The cause of death was ascertained as acute laryngeal oedema due to C1 esterase inhibitor deficiency. In such circumstances, an emergency tracheostomy would have helped, however, treatment with specific factors would be the best and should be made available in the country.

Keywords: *Hereditary angioedema; laryngeal oedema sudden death;*

3979- OP

MEDICAL EXAMINER SURVEILLANCE OF THE COVID-19 PANDEMIC IN SEATTLE, KING COUNTY, WASHINGTON, USA

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In this study we review and evaluate the role of the King County Medical Examiner's Office (KCMEO) in the public health response to the COVID-19 pandemic in King County, Washington. KCMEO serves a mixed urban and rural population of 2.3 million and, from January 2020 to July 2022, took jurisdiction of 10,679 deaths. Of these, 6,516 had a postmortem examination that included 4,725 autopsies. An additional 1,691 decedents from funeral homes and targeted care facilities were selected for virus surveillance with collection of nasal and nasopharyngeal swabs. From jurisdictional and surveillance cases, a total of 13,850 PCR tests for SARS-CoV-2 were performed; in 6,115 cases two samples were tested, each in two different laboratories. The discordant rate of the results between the two laboratories was 3.8%. From 4,226 autopsies PCR results were positive in 645 swabs and in those with positive results, the cause of death in 96 was COVID-19. The three most common comorbidities of decedents

dying of COVID-19 were cardiovascular disease, diabetes mellitus, and chronic drug use. During the same time KCMEO reported to the local health department 1,035 deaths that occurred within 28 days of receiving a COVID-19 vaccine of any type. The results of this study showed that the medical examiner provided a valuable adjunct to the public health surveillance of COVID-19 by monitoring the presence of virus in decedents, accurately certifying deaths, correlating comorbidities with respect to anatomic cause of death, and confirming vaccine safety.

Keywords: *COVID-19; pandemic; epidemic surveillance; medical examiner's role in public health*

4010- OP

MELIOIDOSIS MIMICKING AMOEBIASIS IN A MALE WITH LIVER ABSCESS

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Liver abscesses are relatively rare in modern times and can be bacterial, amoebic, or fungal in etiology. In the pre-antibiotic era, amoebic liver abscesses were very common and still are very frequently seen among those who consumed locally brewed alcohol, like toddy. A 47-year-old male herdsman, with a history of recently-diagnosed diabetes mellitus and a history of consuming toddy, was presented to a local base hospital with a fever for three weeks, poorly responding to medical treatment. An ultrasound scan of the abdomen revealed an abscess 1.5cm in diameter in the liver and a clinical diagnosis of the amoebic liver abscess was made which initiated the treatment with intravenous metronidazole. However, since he further deteriorated and developed shortness of breath and an acidotic pattern of breathing, he was transferred to intensive care in a tertiary care facility. But he died 8 hours after the admission. The autopsy revealed generalized jaundice with no external evidence of septic foci. Both his liver (2460 g) and spleen (480 g) were enlarged with multiple abscesses filled with light yellow color pus. Both lungs were enlarged and oedematous with diffuse miliary-type foci. Microscopic examination and culture from the abscesses for amoebiasis were negative and yielded pure growth of Burkholderia pseudomallei confirming the diagnosis of melioidosis. This case emphasizes the importance of microbiological and parasitological investigations at autopsy even having a strong clinical diagnosis of amoebiasis. The diagnosis of melioidosis can be missed when the case history and the clinical picture are suggestive of amoebiasis.

Keywords: *Amoebiasis; autopsy; diabetes mellitus; liver abscess; melioidosis*

4127- OP

MULTIDISCIPLINARY APPROACH IN A SUSPECTED CASE OF SUDDEN DEATH OF AN INFANT DUE TO MILK ASPIRATION

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A three days old male infant was pronounced dead following acute respiratory failure and cardiopulmonary arrest in the emergency department. According to the history, the parents immediately rushed their baby to the hospital, stating the baby was found unresponsive after being fed with milk. In case of sudden infant death from milk aspiration, a broad diagnostic approach is essential for the

identification of the cause of death. It is not justifiable to give a cause of death without investigating with post-mortem radiology, special staining, and screening for genetic and metabolic diseases. However, comprehensive postmortem investigations, death scene inspection, meticulous autopsy, and pertinent biomedical diagnostics are crucial in narrowing the field of inquiry substantially. In deaths from aspiration, immunohistochemistry staining is an essential step that showed marked immune positivity within alveolar spaces for alpha-lactalbumin (milk protein) helping to clarify the nature of aspirated material and confirm its presence within cellular infiltrates. It is wise to keep the cause of death uncertain in the absence of necessary investigations. Furthermore, sudden infant death from milk aspiration is a strong emotional and psychological impact on the family.

Keywords: *Immunohistochemistry; milk aspiration; sudden infant death*

4179- PP

A RARE ACCIDENTAL DEATH OF AN EPILEPTIC PATIENT.

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Death of a person with epilepsy is bimodal. A 42-year-old male diagnosed with epilepsy with poor compliance and employed as a three-wheeler driver was found dead close to his three-wheeler. His body was on the ground close to the driving seat and his neck had been entangled in a tree web that was on ground level, causing neck compression. Autopsy revealed a congested face, petechial hemorrhages in both conjunctivae, bitten tongue resulting in contusion, two parallel abrasions on the front aspect of the chest and upper neck which was compatible with the impact of the arms of the tree web and there were no underlying soft or hard tissue injuries. There were no injuries that are suggestive of violence detected at the autopsy. Histological analysis of the brain confirmed the areas of cerebral ischemia and analysis of blood for antiepileptic drugs and toxic substances was negative. Though rare, fatal pressure on the neck by the entanglement of the neck and required force by the weight of the body could lead to accidental death in an epileptic patient.

Keywords*:* *Accidental entanglement; epilepsy.*

4249- PP

LARYNGO-HYOID FRACTURE- IS IT A STRONG EVIDENCE OF PRESSURE ON THE NECK?

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Fractures of the hyoid bone and larynx, especially the thyroid cartilage, are important findings in autopsies to determine the application of pressure on the neck. Fracture of those structures with bleeding into surrounding tissue indicates antemortem injury by pressure on the neck. A 65-year-old female was found dead in ‘Way’ river. She was missing from the previous day. The police found the suspected place of the fall into water, a tributary of the ‘Way’ river, which was situated about 1.5 km before the place of recovery of the body. In the middle of the waterway, there was a waterfall about 50 to 75 feet in height. Autopsy revealed multiple lacerations of the head with underlying linear fractures of the skull. A thin sub-dural hemorrhage with spotty sub-arachnoid hemorrhage was seen. Fracture of the left

greater horn of the hyoid bone with fractures of both superior horns of the thyroid cartilage were observed. The cartilage was calcified. A transversely ruptured inter-vertebral disc in between the 6th and 7th cervical vertebrae with a lacerated anterior longitudinal ligament was seen. No external injuries to the neck or contusions of the neck muscles were found. Multiple rib fractures were seen. There were multiple abrasions and contusions on the different parts of the body. An open fracture of the left leg was noted. Lungs had increased crepitus with a mild amount of froth on cut surfaces. There was water inside the stomach. A probable cause of death was given as drowning though the diatom test was negative. Though the commonest mechanism of causation of laryngo-hyoid fractures is pressure on the neck, there are other mechanisms like hyper-extension that can cause laryngo-hyoid fractures.

Keywords: *Hyper-extension; laryngo-hyoid fractures; pressure on the neck*

4404- PP

A CASE OF CUT THROAT

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Injuries caused by cutting tools to the neck are called cut-throat, and this type of injury is particularly important because of its high mortality rate. These injuries cause damage to the airway, esophagus, neurological structures and blood vessels. It may be suicide or homicide. Suicide cutthroat is rare. A 22-year-old youth was found dead in a pool of blood at his home. There was a sharp knife near the body and the scene was not disturbed. He had been addicted to heroin and cannabis. A 20 cm horizontal sharp cut was seen in the upper and anterior part of the neck between the thyroid cartilage and the hyoid bone. It involved a complete cut of the larynx, the external jugular veins, and the sternocleidomastoid muscles. Blood was seen in the respiratory tract. There was evidence of aspiration of blood. A horizontally placed 5cm size superficial cut was seen in the upper part and back of the neck. It was possibly a hesitation cut. Parallel two linear scars were seen on the anterior aspect of his left wrist. No other injuries in the body and no damage was seen on clothes. In this case, the cause of death was a cut injury to the neck. The possible mechanism of death is an aspiration of blood and asphyxia. This case reemphasized the features suggestive of suicidal cutthroat which are injuries placed at the higher neck, hesitation cut, absent defense wounds, weapon usually present at the scene, no cut or damage to cloths, and the undisturbed scene.

Keywords: *Aspiration of blood; cut throat; hesitation cut*

4813- PP

POST COVID-19 DEATH OF A WOMAN DUE TO MUCORMYCOSIS: A CASE REPORT

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The complex pathology of COVID-19 deaths includes acute lymphocytic interstitial pneumonitis, direct lung damage, organizing pneumonia, secondary bacterial infections, rare opportunistic infections, multisystem inflammatory syndrome in adults/children, and exacerbation of pre-existing disease due to current infection. A 59-year-old woman with a past medical history of type-2 diabetes

mellitus and chronic liver cell disease due to hepatitis C infection had been treated for COVID-19 pneumonia with oral corticosteroids and supplementary oxygen therapy. She was readmitted to the hospital with a complaint of sudden onset left-sided headache with nasal bleeding 40 days after the initial infection. Preliminary examination and investigations revealed an ulcerated oral growth that had eroded through the hard palate with lower motor neuron facial weakness on the left side. At autopsy, she was icteric. A black discoloration was observed over the left maxillary region and the sinuses contained in-situ drains. Bilateral pleural cavities contained straw-coloured pleural effusion with patchy consolidation of both lungs. The liver was noted to have mixed nodular cirrhosis. Histological studies revealed lung tissues to have extensive alveolar damage filled with exudates and necrosis. There was hyaline membrane formation on thickened alveolar walls with infiltration of polymorphic cells with predominant lymphocytes, consistent with acute respiratory distress syndrome. Apart from this, there were few branching fungal hyphae seen. The cause of death was concluded as extensive pneumonia in a patient with post-COVID-19 mucormycosis infection. Mucormycosis should be suspected in all immunocompromised patients. Prompt coordinated surgical debridement with the administration of antifungal drugs is needed to bring down the mortality rate.

Keywords: *Acute respiratory distress syndrome; mucormycosis; post COVID-19; opportunistic infection*

4829- OP

INFECTIVE ENDOCARDITIS LEADING TO MATERNAL DEATH CAUSED BY A RARE CAUSATIVE AGENT; *KLEBSIELLA PNEUMONIAE* - A CASE REPORT

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Infective endocarditis (IE) in pregnancy is associated with high maternal morbidity and mortality. This is a case of IE in a postpartum woman with a previously deformed valve by *Klebsiella pneumoniae*, which is an organism rarely causing IE. A 29-year-old mother of two children in her 3rd pregnancy was admitted with a history of shortness of breath at 37 weeks of pregnancy. Cardiology opinion revealed moderate mitral stenosis due to previously diagnosed rheumatic heart disease. She delivered a live child under prophylactic antibiotic coverage and was discharged two days after the delivery. She had defaulted her cardiology and postnatal clinic follow-up. Six weeks after the delivery she was admitted to a tertiary care hospital with a history of fever, dyspnoea, and impaired consciousness. She died 2 days after admission despite intensive care management. The autopsy was performed 8 hours after the death. A large destructive vegetation on the mitral valve leaflets obstructing the inflow to the left ventricle was noted. Microscopy of tissues confirmed infective bacterial endocarditis with features of multiorgan failure. Antemortem blood culture and post-mortem swabs of the vegetation, spleen, and kidney revealed the causative organism as *Klebsiella pneumoniae*. *The Klebsiella* species causes opportunistic infection in the human body. However, it is a rare organism responsible for IE. Microbiological investigations in narrow post-mortem intervals are extremely important in the post-mortem diagnosis of infectious disease.

Keywords: *Infective endocarditis; postmortem microbiology; rheumatic heart disease*

4927- PP

AN AUTOPSY EXPERIENCE IN A CASE OF BECKER MUSCULAR DYSTROPHY

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Becker Muscular Dystrophy (BMD) is an X-linked recessive form of muscular dystrophy caused by dystrophin gene mutations. Patients with BMD are more likely to die from cardiac-related causes than those with Duchenne Muscular Dystrophy. Respiratory issues are infrequent during childhood in BMD, but presentation with respiratory failure in the third or fourth decade is typical.
A 21-year-old bed-bound male with BMD died during sleep. At autopsy, the deceased was identified as an obese male with lordosis/kyphoscoliosis, muscular atrophy, and pseudo hypertrophy. An internal examination revealed bronchopneumonia of the right lung. The myocardium had fibrosis without considerable atherosclerosis in the coronary arteries. The cardiac chambers were not dilated. The abdominal cavity was deformed, and the abdominal organs were pushed into the chest cavity. The extensive infiltration of skeletal muscles with fatty tissue was a striking finding. Interestingly, the histological investigations of the myocardium showed fatty infiltration with significant fibrosis in the absence of acute ischemia changes. There was no evidence of occult cancer, sepsis, or trauma, and no other diseases that could have caused or contributed to his death.
In our case, the cause of death was determined to be bronchopneumonia due to BMD. BMD-related bronchopneumonia was most likely caused by increased muscular weakness and wasting, particularly of the diaphragm, resulting in immobility, hypoventilation, ineffective cough, sleep-disordered breathing, and poor swallowing. However, there is a high possibility of death secondary to ventricular arrhythmias caused by myocardial fibrosis and adipose tissue infiltration that we cannot completely rule out.

Keywords: *Autopsy; Becker Muscular Dystrophy; bronchopneumonia; cause of death*

4953- PP

SUDDEN UNEXPECTED DEATH OF A YOUNG BOY FOLLOWING UNBEARABLE HEADACHE: A CASE REPORT

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Colloid cysts are congenital slow-growing benign neoplasms that usually occur in young adults. The cyst is attached to the roof of the third ventricle, and it can obstruct one or both foramina of Monroe, resulting in non-communicating hydrocephalus which may be rapidly fatal. We present a case of a young boy who died following a severe headache secondary to a colloid cyst. of the third ventricle.
The deceased was a 14-year-old schoolboy who was living with his parents. He complained of gradually progressing on and off positional headache for one year. The deceased had an unbearable positional headache on the day before the incident and was found unresponsive the following morning by his mother. He was pronounced dead upon admission to the hospital.
The autopsy showed a dilated ventricular system with a whitish-gray colloid cyst measuring 2cm in diameter, obstructing the opening of the third ventricle. No significant microscopic pathological findings were identified other than mild cerebral oedema. Histopathological features were compatible with the colloid cyst of the third ventricle. There were no findings suggestive of traumatic impact.
In the absence of any other significant natural pathological cause, traumatic event, or any relevant positive investigation findings, the cause of death was concluded as a colloid cyst of the third ventricle. This case highlights the importance of early detection and prompt treatment of such potentially life-threatening causes of headaches.

Keywords: *Colloid cyst of the third ventricle; foramina of Monroe; non-communicating hydrocephalus*

4954- OP

SUDDEN ARRHYTHMIC DEATH FOLLOWING THE DEPLOYMENT OF AN ELECTRONIC CONTROL DEVICE IN A MAN WITH CARDIOMYOPATHY AND COCAINE TOXICITY

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A knife-wielding 31-year-old man was walking outside, scaring passers-by. The police were called to the scene and a police officer discharged his Electronic Control Device (ECD), striking the decedent. He collapsed during the deployment of ECD and was pronounced dead.
The autopsy showed two penetrating injuries on the right lateral chest and the right back of the chest related to barbed probes, parasuicidal-type superficial incised wounds and puncture wounds on wrists, and evidence of cardiomyopathy. The genetic testing revealed three genotypic variants of uncertain significance. One of those mutations in the MYH7 gene has been reported in association with cardiomyopathy. Toxicology testing revealed cocaine.
Death was attributed to cardiac arrhythmia following the deployment of an Electronic Control Device in a man with cardiomyopathy and cocaine toxicity. The penetrating injuries of the torso are caused by barbed probes. The superficial incised wounds and puncture wounds are caused by a sharp and pointed weapon like a knife. The cardiomyopathic nature of the heart, cocaine toxicity and physiologic stress from the circumstances preceding his death would likely have increased the risk of ventricular arrhythmia and cardiac arrest of this young man. Death resulted from multiple synergistic factors, including ECD deployment, cocaine toxicity, physiologic and emotional stress, and cardiomyopathy. Each of these factors could reasonably have contributed to an increased risk of cardiac arrhythmia leading to sudden death; each is temporally related to collapse and subsequent death. It is difficult to ascertain to what degree each has contributed to cardiac arrhythmia.

Keywords: Cardiomyopathy; cocaine toxicity; Electronic Control Device; MYH7 gene; ventricular arrhythmia

5063- PP

A RARE FINDING OF ADRENAL INFECTION LEADING TO ADDISONIAN CRISIS: A CASE REPORT

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Adrenal pathology is a commonly underdiagnosed entity both clinically and during autopsy. Infective pathology in the adrenal glands leading to the Addisonian crisis is rarely reported in the literature. We present the case of a 72-year-old known patient with ischaemic heart disease and hypertension, presenting with intermittent diarrhoea, abdominal pain, fatigue, and darkening of the skin with loss of weight and appetite over a period of two weeks. He was managed at the local hospital for acute gastroenteritis. He subsequently developed deranged renal and liver functions and persistent hypotension with elevated inflammatory markers. He was managed with intravenous inotropes and antibiotics. While awaiting haemodialysis he succumbed to death. During autopsy bilateral adrenal glands were noted to be markedly enlarged, each weighing 70g. The cut surfaces contained an abundance of caseous material without any obvious haemorrhage. Necrosis of the liver parenchyma, swollen kidneys, and significant pulmonary oedema was noted. Post-mortem adrenal swabs isolated a heavy growth of coagulase-negative staphylococcus. Histology of the adrenals showed extensive tissue

necrosis.
A multitude of pathogens including bacteria, viruses, fungi and parasites has been identified in the literature to cause infection of the adrenals. With increased awareness and a high level of clinical suspicion, prompt testing and guided therapy may help in reducing adrenal pathology-related mortality.

Keywords: Addison's disease; adrenal insufficiency; infection

5077- OP

PATTERN OF FATAL INJURIES IN ACCIDENTAL FALLS: A RETROSPECTIVE ANALYSIS OF FORENSIC AUTOPSY CASES IN NATIONAL HOSPITAL, KANDY, SRI LANKA

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Deaths following accidental falls are frequently seen in forensic practice. According to the literature, the pattern of injury is different in accidental falls compared to intentional falls. The cause of the fall can be influenced by many factors such as the consumption of alcohol. The aim of this study is to analyse the pattern of fatal injuries seen in accidental falls.
Autopsy reports of known fifty cases of fatal accidental falls presented to the forensic unit of the National Hospital, Kandy from January 2020 to December 2021 were retrospectively analysed. Age, sex, circumstances of the fall, alcohol status at the time of the incident, and regional analysis of the injuries were done. There were 44 males and 6 females included in the sample. 62% (n=31) of the victims had sustained head injuries which was the commonest area that was fatally injured. Out of them, 90.3% (n=28) had suffered skull fractures and 71% (n=22) had subarachnoid haemorrhages. Chest and neck were the next commonest areas involved in 28% (n=14) and 22% (n=11) respectively. Males (88%) were mostly affected and falling from a tree was the commonest circumstance (56%). Alcohol smell was detected only in 4 cases involving males. Fatal injuries due to accidental falls mainly involve the head followed by the chest and neck regions. Males were predominantly affected, and circumstances mainly involved falling from trees.

Keywords: *Accidental; falls; fatal*

5199- PP

A FATAL CASE OF CAFÉ CORONARY IN A PATIENT WITH PARKINSON'S DISEASE

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Café coronary, also known as foreign body aspiration, occurs commonly in individuals with difficulty in swallowing. Neurological conditions that are associated with difficulty in swallowing include cerebrovascular disease, Alzheimer's disease, and Parkinson's disease.
A 77-year-old elderly male diagnosed with Parkinson's disease for 12 years with a history of dysphagia, developed sudden shortness of breath while he was being fed bananas by his daughter in a seated position. He collapsed to the floor and did not respond afterward. He was pronounced dead at the scene.
At the autopsy, a food bolus completely obstructing the vocal cords in the larynx was noted. Macroscopically diminished pigment in substantia nigra of the brain stem was observed.

Histopathological examination revealed Lewy bodies in the substantia nigra.
Parkinson's disease is a long-term neurodegenerative disease mainly affecting the motor nerves due to the loss of dopaminergic neurons in the substantia nigra of the brain stem. Dysphagia can lead to a fatal case of café coronary in a patient with Parkinson's disease. The public should be made aware of simple manoeuvres such as abdominal thrusts during a choking episode. Levodopa only temporarily controls motor symptoms. Due to the COVID-19 pandemic and due to current financial issues people may refrain from getting vital medication which may lead to complications and death of individuals.

Keywords: *Café coronary; Parkinson's disease; substantia nigra*

5231- PP

EVALUATION OF CORTISOL AND GASTRIN IN CAUSATION OF WISCHNEWSKY SPOTS

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Gastric mucosal petechiae (Wischnewsky spots) are well known as a common occurrence in hypothermic patients, but the mechanism is unknown. Our previous research has revealed elevated cortisol levels in hypothermia. This study aimed to determine the relationship between cortisol and Wischnewsky spots by performing cortisol immunostaining in the stomach. We also immunostained and observed gastrin, which is involved in gastric acid secretion. 182 autopsy cases were included in the study. Gastric mucosal samples were immunostained for cortisol and gastrin. Cells were classified into four groups according to the degree of nuclear and cytoplasmic staining, and the number of cells was counted at two locations in the mucosa of each subject. The percentage of cells with strong cortisol staining in both the nucleus and cytoplasm was significantly higher in subjects with hypothermia as the cause of death than for other causes of death. No significant difference in gastrin staining was observed between hypothermia and other causes of death. There was no association between the number of cortisol- and gastrin-stained cells. The distribution of cells according to the cause of death (including hypothermia) was compared among all subjects. The increased number of cortisol-stained cells in subjects with hypothermia as the cause of death may be due to the accumulation of cortisol that was secreted as a stress response to cold exposure. Cortisol may be also involved in Wischnewsky spots, but gastrin does not appear to be involved.

Keywords: *Cortisol; gastrin; hypothermia*

5409- PP

HOMICIDE BY COMBINATION OF DIFFERENT ASPHYXIA METHODS

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Homicide using multiple methods of asphyxia is a challenge to a forensic expert. When these methods include a relatively rare mechanism, positional asphyxia, the case becomes unique and interesting. A 67-year-old slaughter man left home for business and did not return home as expected. Upon inquiry by the family members, he had been witnessed to be with two other persons near the Muthurajawela wetland. The next morning, they were informed that a body had been recovered from the wetland and was later identified to be him. According to the police, the body was partially naked and placed in a prone position in the shallow water. There was a nylon rope wrapped around his body, tying his upper limbs to the torso. At the autopsy, the body was noted to be in an early state of decomposition. There

were several ties of rope around the wrists, arms, thighs, and ankle joints. There were eight fabric ligatures around the neck, and one was around the mouth. Underlying the ligature, there was a midline fracture of the ala of the thyroid cartilage. There was no evidence of drowning other than signs of immersion. It was difficult to demonstrate conjunctival petechial haemorrhages due to post-mortem changes associated with decomposition. Musculoskeletal dissection did not reveal other fatal injuries in other areas of the body.
The cause of death was concluded as asphyxia following the application of pressure on the neck, restrained position, and gagging. This case highlights the importance of evaluating and appreciating the contribution of multiple methods causing death by a single mechanism

Keywords: *Asphyxia; gagging; homicide; pressure on the neck; restrain*

5424- OP

A STUDY ON MEDICO-LEGALLY SIGNIFICANT BLUNT THORACIC TRAUMA

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Thoracic trauma (TT) accounts for significant mortality and morbidity. Blunt thoracic trauma is reported more frequently than sharp force trauma, where motor traffic collisions account for the majority. Addressing medico-legal issues is often a challenge in TT. The purpose of this study was to evaluate blunt chest trauma from a medico-legal point of view.
A retrospective descriptive study was conducted based on case records of the victims (living and dead) of TT over three years presented to a Teaching Hospital and a District General Hospital in Western Province.
There were 248 living patients and 195 deceased. Road accidents accounted for TT in 236 (53.3%), followed by 166 (37.5%) assaults. Out of the deceased, 89% had a very short survival period. "Multiple chest injuries" was the cause of death in 83 (42.5%), and 91 (46.7%) died due to TT. Road accidents accounted for 71 (78%) deaths due to TT. Out of the live patients, 87 (35.8%) had grievous or above-category injuries to the chest, and victims of assault were commonly having non-grievous injuries with a significant association ($p<0.001$). The type of road accident was not significantly associated with the category of hurt ($p=0.094$).
A total of 175 (39.5%) had rib fractures, and 125 were following motor traffic accidents, with 76% pedestrians and 36% motorcyclists.
Blunt TT accounts for significant mortality and morbidity, with the most common circumstances being road accidents. Most of them come under a severe category of hurt with a short survival period among the dead.

Keywords: *Blunt force; medico-legal significance; thoracic trauma*

5570- OP

CO-EXISTENCE OF INTRINSIC AND TRAUMATIC RUPTURES OF THE AORTA: AN AUTOPSY CASE REPORT

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A light truck driver in his 70s was found unconscious in the cabin of his vehicle after a head-end collision with a concrete wall. Emergency services responded but resuscitation efforts were unsuccessful. A bruising was observed in the lower part of the front neck with a tracheal rupture and a separation of the right sternocleidomastoid muscle with a small amount of haemorrhage at autopsy. There were two ruptures in the ascending part and isthmus of the aorta. The left pleural cavity contained a massive haemorrhage (1,620 ml) from the aortic rupture, while the pericardium had only 60 ml of hematoma. Histology showed vulnerable changes of the aortic wall with infiltration of lymphocytes and defect of the internal elastic plate, which suggested that a spontaneous rupture took place. At the other rupture site in the ascending aorta, the wall showed a normal microscopic structure with a fresh tear of the external elastic membrane. It was presumed that the rupture in ascending aorta was brought about by upward force due to impact with the steering wheel or an oblique part of a seat belt. We considered that the accident was brought about by the loss of the vehicle by the driver due to impaired consciousness due to intrinsic rupture of the aorta.

Keywords: *Arteriosclerosis; multiple ruptures of aorta; traffic accident*

5605- PP

UNUSUAL PRESENTATION OF A RUPTURE OF COMMON ILIAC ARTERY ANEURYSM: A CASE REPOT

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Common iliac artery aneurysms are asymptomatic and difficult to diagnose. They are associated with higher mortality rates. A 54-year-old male patient with hypertension, dyslipidaemia, and diabetes, presented with sudden onset generalized tonic-clonic seizure. On admission to the emergency treatment unit, a non-contrast computed tomography brain was performed and was found to be unremarkable. The history revealed that the victim was suffering from abdominal pain during the last week and the ultrasound scan of the abdomen was performed a few days ago which was normal. He was kept under observation in the emergency treatment unit. Within 2-3 hours of admission, the patient developed hypotension and bradycardia and died despite resuscitation attempts. The autopsy revealed haemoperitoneum originating from a ruptured right common iliac artery aneurysm. There was a 1.5cm longitudinal tear in the intima of the distal part of the right common iliac artery with a thrombosed false lumen extending to the level of bifurcation of the common iliac artery.
Ruptures of isolated common iliac artery aneurysms are rare. As revealed in this case, the specific symptoms that directed us to diagnose aneurysmal rupture are very vague. This case highlights the importance of consideration of spontaneous dissection of iliac arteries with rapidly progressing symptoms in patients with hypertension and other risk factors. Post mortem imaging such as CT angiograms assists in autopsy diagnosis in cases of this nature.

Keywords: *Aneurysms; common iliac artery; tonic-clonic seizure*

5668- OP

IS COVID-19 A TRUE RISK FOR ACUTE PANCREATITIS?

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A few cases of acute pancreatitis have been reported in patients infected with SARS COVID-19. Nonetheless, due to a lack of evidence, the causal relationship and aetiology are not fully ascertained. This case of maternal death due to COVID-19 infection, emphasizes the diagnostic approach to the association of COVID-19 and acute pancreatitis. The deceased was a 33-year-old pregnant woman who had a cough and loose stools in her 37th week of gestation. On admission, she tested positive for COVID-19, and the baby was delivered with an emergency Caesarean section. She was given intensive care following severe hypoxaemia and succumbed to her illness on the 12th day of admission despite therapy. The autopsy revealed rubbery lungs and an inflamed pancreas with massive omental fat necrosis. The lung histology showed diffuse alveolar damage, small vessel thrombosis, and interstitial pneumonia with secondary infections, all of which were consistent with severe complicated COVID-19 pneumonia. It was perceived that the patient had acute necrotizing pancreatitis secondary to severe hypoxemia; either due to COVID-19 pneumonia or vascular thrombosis or both. Renal, hepatic, and cardiac tissues all had necrotic foci with thrombosis. The post-mortem amylase level was 936 U/L. The histomorphology of the presenting case is coherent with acute pancreatitis precipitated by hypoxaemia following COVID-19 infection rather than being a primary pathology. However, the association of the direct effect of COVID-19 on pancreatic tissue is yet to be substantiated with further research on the identification of the virus in pancreatic tissue itself.

Keywords: *COVID-19, pancreatitis; viral infection*

6145- OP

STREAMLINED GRAVESITE DOCUMENTATION FOR THE ADMINISTRATION OF CRIMINAL JUSTICE

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Proper identification of the gravesite of a legally disposed body at a cemetery is a primary requirement in an exhumation. Presented here are two cases of legally disposed bodies with natural causes of death, which were subsequently ordered for exhumation due to suspicious circumstantial evidence. However, some bodies could not be recovered due to incorrect identification of the gravesite.

In the 1st case the body of a 65-year-old female had been buried at the Municipal Council cemetery after the cause of death was given by the Grama Niladhari. After 4 years the accused of another homicide confessed that he had raped and murdered the above female. As there was no documentation of the gravesite, exhumation commenced at a site shown by the relatives. However, a male human corpse was found at that site, making the exhumation unsuccessful.

In the 2nd case the body of a 53-year-old female had been buried in the cemetery of Pradeshiya Sabha after a natural cause of death was given by the family doctor. Two years later an exhumation was ordered due to allegations of homicide by family members. The gravesite was identified by relatives and the graveyard keeper. The relatives were able to confidently verify that the recovered body was not that of the said female. Again, the exhumation was unsuccessful.

Failure to identify the gravesite leads to the loss of important forensic evidence, jeopardizing the rightful administration of criminal justice. Also, exposing unrelated bodies violates their dignity. This highlights the necessity for laying down laws and regulations for documentation of a gravesite with a plot map and coffin plate to overcome these issues.

Keywords: *Coffin plate; exhumation; gravesite; plot map*

6301- PP

CAN VOLITIONAL ACTIVITY BE ELICITED THROUGH DEATH INVESTIGATION?

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Volitional activities are the actual voluntary acts or physical activity observed in a victim of a fatal injury. It is a major medicolegal issue in most forensic cases.
A dead body of an old male was found in an empty swimming pool which was about 1 m in depth. This swimming pool base had sand. Sand around the dead body was disturbed. There was no evidence of anyone else entering the pool. The body was moderately putrefied. The sand was seen only over the back of the body. There was a laceration of 3x0.5cm on the top of the head. But there was no blood at the scene. A displaced fracture was seen in the third cervical vertebra. The spinal cord was putrefied. Third cervical vertebral injury can lead to possible phrenic nerve injury (at C3 and C4 roots) which may be unilateral or bilateral and spinal cord damage. This injury can be complete or partial. Spinal cord injury results in sensory and motor paralysis below the lower level of the neck. Partial injury may spare some motor and sensory pathways. Therefore, some movements of the limbs are possible. Phrenic nerve damage affects respiration. It can lead to cerebral hypoxia. Convulsions can occur due to cerebral hypoxia. Convulsions can cause limb movements. These movements can worsen a cervical spine fracture and result in a complete or partial spinal cord injury. Cerebral hypoxia can cause death.

Keywords: *Phrenic nerve; spinal cord injury; volitional activities*

6707- PP

PREGNANCY AND STILLBIRTH IN COVID-19-A CASE REPORT

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COVID-19 infection during pregnancy is a perplexing situation that poses serious clinical challenges. A case of maternal death with COVID-19 infection and aborted foetus highlighting the clinicopathological correlation will be discussed here.
The deceased was a 45-year-old primi who was diagnosed and treated in-ward for COVID-19 infection at 24 weeks of gestation. The dead foetus had been delivered spontaneously while the mother was on Extra Corporeal Membrane Oxygenation (ECMO) at 25 weeks of gestation. The mother succumbed to death despite medical management. Autopsy findings of the mother showed interstitial viral pneumonia followed by secondary bacterial infection, features of diffuse alveolar damage, thrombosis, and micro abscess formation. There were widespread pulmonary haemorrhages which could be due to complications of ECMO support. The brain showed diffuse thin subarachnoid haemorrhage and features of meningoencephalitis. Features compatible with multiorgan failure and disseminated intravascular coagulation were noted in other organs and confirmed with microscopic examination. The cause of death of the mother was attributed to complicated severe COVID-19 pneumonia. Histomorphology of the foetus showed features of severe hypoxia most probably due to jeopardized maternal blood flow. Polymerase Chain Reaction tests on samples taken from the respiratory tract, lung parenchyma, and placenta of the foetus were negative.
The presenting case highlights the severe outcomes of COVID-19 infection in pregnancy. Authors suggest considering pregnancy per se as a high-risk factor during this pandemic and commencing more frequent clinic follow-ups with screening the mothers for COVID-19 irrespective of the symptoms and period of gestation.

Keywords: *COVID-19; pregnancy; stillbirth*

6740- PP

TOXIC EPIDERMAL NECROLYSIS DUE TO KLEBSIELLA SEPTICAEMIA

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Toxic epidermal necrolysis is a potentially life-threatening condition characterized by extensive exfoliation of the epidermis and mucous membranes resulting in sepsis and death. The mortality rate is high, and it has been estimated as 20% to 30% in the USA. We present the first case reported in Sri Lanka.
A 67-year-old person who had a history of allergy to Augmentin was admitted to the National Hospital Sri Lanka with a complaint of extensive exfoliation of the skin with blisters with an associated reduced level of consciousness. He was diagnosed to be in an impending shock state with multi-organ dysfunction and was pronounced dead within 43 hours of admission.
Clinical investigations revealed a white cell count of 4.1 x 10^3/µl, platelet count of 87 x 10^3/µl, C-reactive proteins 297 mg/l, Serum creatinine 1.6 mg/dl, AST 220 U/l, and ALT 146 U/l. A blood culture had not been done. The post-mortem examination revealed extensive exfoliation of the epidermis involving 40% of the body surface area with skin blistering, multi-organ dysfunction, bronchopneumonia, and oesophageal erosions. All organ histopathology, microbiology, and serology were done. Blood culture and swab culture of skin lesions were sent to Medical Research Institute, Colombo and revealed Klebsiella pneumonia. The authors hope that this case report will motivate Asian researchers to conduct large multicentred research regarding this important fatal condition.

Keywords: *Erosion; exfoliation; toxic epidermal necrolysis*

6771- PP

A FATAL CASE OF TRAUMATIC AORTIC RUPTURE IN A VICTIM OF A ROAD TRAFFIC COLLISION

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Trauma is a leading cause of death worldwide and is increasingly seen with escalating numbers of high-speed road traffic collisions. The majority (60%) of the victims are with thoracic trauma which has a 20-25% mortality rate. A 50-year-old previously healthy car driver was brought to the emergency department following a high-speed head-on collision with a truck. His initial assessment revealed low blood pressure, left-sided flail chest, numerous long bone fractures, and a reduced level of consciousness. He was immediately resuscitated and upon stabilization, he was taken for a contrast-enhanced CT head, thorax, and abdomen during which he suffered a cardiac arrest. He was pronounced dead following unsuccessful resuscitation. The autopsy revealed pale conjunctivae, diagonally placed imprint contusion across the front chest wall with underlying multiple left-sided rib fractures, mediastinal haemorrhage, and left-sided haemothorax. There was a full-thickness annular aortic tear with clean margins at the proximal descending aorta. Toxicology was positive for alcohol and morphine. Traumatic aortic rupture is the second commonest cause of death in blunt trauma and is seen in 18% of deaths in road traffic collisions. Usually, it appears as a complete tear involving all three layers in the transverse plane with smooth margins as in this case. The imprint contusion observed on the chest is compatible with the seat belt injury and raises high index suspicion of internal organ damage. The alcohol and morphine intoxication may have contributed to the collision.

Keywords: *Road traffic collision; seat belt injuries; traumatic aortic rupture*

6969- PP

A DEATH DUE TO BLUNT CARDIAC RUPTURE

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Blunt cardiac rupture (BCR) is often a fatal injury. Rupture of the cardiac chamber with closed injury is a rare finding in autopsies. A 63-year-old, previously healthy carpenter, was brought to a tertiary care unit, following blunt force trauma to the chest. He was pronounced dead on admission. According to the history given by the co-worker, while he was working on a cutting machine the log got stuck and struck him on the chest. He had complained of severe pain and difficulty in breathing and had sat down on the floor, following which he was brought to the hospital. The autopsy examination revealed a roughly rectangular-shaped contusion associated with an abrasion on the center of the chest with contusions in the underlying tissue structures. Haemopericardium with a ruptured right ventricular wall was detected. The cause of death was concluded as haemopericardium due to traumatic rupture of the heart due to blunt force injury to the chest. BCR can occur even if no severe injuries are present on the body surface.

Keywords: *Blunt cardiac rupture; contusion; haemopericardium*

7143- PP

DEATH OF AN INFANT DUE TO PERIOPERATIVE ANAESTHETIC COMPLICATIONS

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The laryngeal mask airway (LMA) plays an important role in airway management in modern anaesthetic practice. There is a very rare possibility of an anaesthetic-related death due to the handling of the LMA. Unstable positioning of LMA can cause bradycardia due to stimulation of the carotid sinus or hypoxic brain injury due to poor airway patency. The patient can develop hypoxic brain damage and die during the recovery period. So active monitoring of the vital parameters during the recovery is mandatory, as it will help to detect hypoxic brain damage in the early stage and prevent death related to anaesthesia. We did the autopsy of a 2-month-old baby boy who died following herniotomy surgery done under general anaesthesia. He was diagnosed with patent foramen ovale and small mid-muscular VSD and was admitted to a tertiary care hospital for inguinal-herniotomy. All vital parameters were normal throughout the surgery. One hour following the surgery while the child was in the recovery area, doctors noticed the baby had bradycardia, intermittent respiratory apnoea, and low oxygen saturation. The baby died 2 hours following the surgery despite active resuscitation. The autopsy did not reveal any significant findings except a patent foramen ovale. The medical records revealed there was a lack of monitoring during the recovery period of anaesthesia and poor documentation. The death of this baby could have been prevented if adequate care and monitoring had been done during the recovery period.

Keywords: *Anesthesia; bradycardia; LMA*

7215- OP

PROJECT CAPSULA MUNDI - GREEN BURIAL FOR A GREENER FUTURE

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Forensic taphonomy is the study of what happens to a body between death and recovery. This paper discusses planned alteration to the routine sequence of this phenomenon. The objective of this is to facilitate a natural process allowing the decomposition of human cadavers in a more environmentally responsible manner. There is a growing concern about the limitation of land to be utilized as cemeteries. The impact of toxicants in preservation procedures, burial, or cremation procedures has been reported. Capsula Mundi is an eco-friendly burial method, where bodies will be laid down in a foetal position in an egg-shaped pod that is made of biodegradable material. The tree of choice of the deceased from when he was alive will be planted on the top of the burial pod. The suggested pilot intervention targets unidentified bodies after the completion of a medicolegal procedure. It is also suggested to retain a sample for DNA analysis if needed on a future date. Rather than burying bodies in a single grave, they are buried in an identified location. This promotes a natural boost in biodiversity. Specifically, in certain geographical locations, it can be used as a tool to protect native plants and animals, endangered species as well as temporary habitat makers such as migratory birds. Community outreach may commence with the popularization of the concept via printed and electronic media. Attention must be paid to the legal aspects governing a natural burial. Planned reforestation is a key objective of this method of green burial.

Keywords: *Biodegradable material; biodiversity; capsula mundi; forensic taphonomy; green burial; reforestation*

7250- PP

WAS THIS A PREVENTABLE DEATH OF A PREGNANT MOTHER?

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Pregnancy and the puerperium are well-established risk factors for venous thromboembolism (VTE), a condition that includes pulmonary embolism (PE) and deep venous thrombosis (DVT). VTE is commoner and more complex to diagnose in patients who are pregnant than in those who are not. PE is the leading cause of maternal death in the developed world. Delayed diagnosis, delayed or inadequate treatment, and inadequate thromboprophylaxis account for many of these deaths. A 33-year-old female who was detected to be pregnant at a POA (period of amenorrhea) of 8 weeks presented to the hospital following sudden onset generalized tonic-clonic seizure and shortness of breath. On admission, she was unconscious and cyanosed and died despite resuscitation attempts. A few days before this incident, she had developed immense pain in the calves and swelling relieved by native oil massage. The post-mortem examination, including microscopy, revealed pulmonary thrombo-embolism with deep vein thrombosis with hypoxic changes of the brain. The cause of death was given as pulmonary thrombo-embolism due to deep vein thrombosis in a pregnant woman. Hyper-coagulability is a normal physiological response in pregnancy that occurs to prevent haemorrhagic complications of pregnancy and delivery. Treatment and prevention of VTE in the pregnant patient population is complicated by the need to consider foetal, as well as maternal well-being when making therapeutic decisions. But there are treatment options when there is a diagnosis of deep vein thrombosis. Seeking the correct and accepted medical advice at the right time would have prevented these types of deaths.

Keywords: *Deep vein thrombosis; pulmonary thrombo-embolism; pregnancy*

7355- PP

THE DEATH OF A MANUAL LABOURER FOLLOWING COMPLICATIONS OF AN OCCUPATIONAL INJURY: A CASE REPORT

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Infective Endocarditis (IE) is a microbial infection of the heart valves or mural endocardium which leads to the formation of vegetation. This can lead to valvular insufficiency, congestive cardiac failure, and myocardial abscesses. Most endocarditis cases are bacterial although fungi and other microorganisms can be responsible. The presentation, signs, and symptoms may vary but unless an early diagnosis is made and prompt treatment is given, IE is fatal. A 38-year-old previously healthy manual labourer was admitted to the hospital following fever and dyspnoea for one-week duration. He had a non-healing left foot ulcer due to a cut injury causing pain and swelling of the limb. Limb X-ray showed periosteal reaction and cortical irregularity. Blood investigations showed high white cell count, high CRP, and positive blood culture for staphylococcus aureus. IV antibiotics were started but despite treatment, he was pronounced dead on the 3rd day of his hospital stay. The autopsy revealed tissue necrosis around the foot ulcer involving the deep tissues up to the bone. The heart was enlarged with thickened pericardium, and large, irregular masses over the mitral valve cusps obstructing the outflow. Dissection of the other organs was unremarkable. Histology revealed features of chronic osteomyelitis, suppurative pericarditis, and valvular vegetation. Gram and Grocott's stains were used to confirm the diagnosis of bacterial endocarditis. Although uncommon, acute infective endocarditis can present in a previously healthy heart by highly virulent organisms causing rapidly destructive lesions. These infections may be difficult to cure with antibiotics alone and usually require surgery.

Keywords: Infective endocarditis; osteomyelitis; suppurative Pericarditis

7359- OP

INJURY DYNAMICS IN A FATAL AIR CONDITIONER BLAST

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Accidental blasts are seen in a variety of circumstances, especially from pressurized containers. This case presents a rare case of an air-conditioning machine explosion. A fatality from the blast of an air-conditioning machine is reported providing an insight into the injury dynamics. A 23-year-old male technician was brought to the outpatient department with fatal injuries following a blast while attending to maintenance work on an outdoor air conditioning unit fixed on the first floor of a tourist hotel. The autopsy revealed torn clothing with burns on the face, front aspect of the chest, and abdomen. Extensive lacerations involving the abdomen, inner thighs, and genitalia with shrapnel within the lacerations were noted. There was near-complete amputation of the left lower limb and the right lower limb at the ankle level. Widespread haemorrhages in the lungs and intestines were identified. These injuries were due to primary blast and secondary impact injuries. Grazed abrasions due to tertiary explosive injuries were seen over bony prominences in exposed areas. Pulmonary (vascular and parenchymal damages) and vascular injuries (large vessel injuries at amputated sites and microvascular damages) were attributed

to the cause of death and the manner was concluded as accidental. The cautious evaluation of findings at autopsy and scene investigation is mandatory for the forensic pathologist to correlate the injuries to the mechanism of causation in the investigation of deaths due to blasts.

Keywords: Air conditioner; burns; explosive injuries; haemorrhage; vascular injuries

7421- PP

POSTMORTEM DIAGNOSIS OF HERPES SIMPLEX VIRUS TYPE 2 (HSV-2) INFECTION IN A FETUS

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We report a case of foetal demise in a 19-year-old primigravid presenting at 30+ 2/7 weeks gestation following fulminant herpes simplex virus type 2 (HSV-2) infection. The mother gave a history of symptoms of HSV infection at 18 weeks of gestation with genital ulcers. This condition was serologically confirmed for HSV-2 and treated with acyclovir. Antenatal follow-up imaging studies revealed congenital foetal hydrocephalus and polyhydramnios. Later it was found that the foetus was dead. The autopsy of the foetus revealed extensive skin blisters and necrosis. Internal examination revealed holoprosencephaly, pericardial, and pleural effusions with ascites. Microscopy revealed multiple patchy liver necrosis and cytopathic effects in adjacent parenchymal cells of both adrenal glands. Necrotizing funicitis of the placenta was detected (stage 3 acute foetal inflammatory response). Intracranial membranes with congested blood vessels, choroid plexus, and a scanty amount of autolyzed brain tissue were seen. Polymerase chain reaction (PCR) studies of the cerebrospinal fluid, skin blisters, lungs, liver, kidney, adrenal glands, and placenta were positive for HSV-2 DNA. This communication highlights a rare case of intra-uterine HSV-2 infection, which was likely following primary maternal infection in early pregnancy.

Keywords: *Congenital anomalies; HSV-2; intra-uterine infection; trans-placental transmission*

7492- OP

VIRTUAL AUTOPSY FINDINGS VIS A VIS TRADITIONAL AUTOPSY FINDINGS IN ROAD TRAFFIC ACCIDENTS- EXPERIENCE IN AIIMS DELHI

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Postmortem imaging or virtual autopsy is an advancing field of postmortem investigations of trauma victims. In this presentation, we are depicting the feasibility of complementing or replacing conventional autopsy with postmortem imaging in road traffic accident cases. PMCT can function as an important adjunct that detects many additional injuries. All road traffic accident fatalities brought for medico-legal autopsy to the Department of FMT, AIIMS, were included. The relevant history and information were taken from relatives and friends of the deceased and the investigating police officers. This study is part of a thesis and still going on. Computed Tomographic of the whole body was performed before starting the traditional autopsy dissection by using 16 slices multidetector row CT scanner Image acquisition was performed on a volumetric spiral scanning with detector collimation of 0.5 mm. Traditional autopsy procedure i.e., Gross external examination of the dead body followed by

an internal examination of various structures and organs after dissection was done.Both the CT scan and Autopsy features were compared and assessed in a predesigned proforma.PMCT proved to be a sensitive tool for detecting underlying internal injuries like fractures and finding out the exact cause of death. In this case, PMCT was able to pick up minute internal fractures in addition to conventional autopsy findings, giving more evidentiary value for documentation of injury patterns. It also helped in targeted area dissection of the body without much mutilation for dignified management of the dead.

Keywords: *Conventional autopsy, postmortem computed tomography; road traffic accidents; virtual autopsy*

7571- PP

CUSTODIAL SUICIDE-A CASE SERIES AND REVIEW OF LITERATURE

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Suicidal deaths while in custody have been reported worldwide and are considered a cause for great distress for the deceased's family members, other prisoners, prison authorities as well as the public. Custodial suicides highlight the lack of attention and inadequate preventive efforts employed by the relevant authorities. We have retrospectively analyzed post-mortem records of suicidal deaths while in custody presenting to the JMO office of the National hospital Kandy during the past three years. A total of 5 cases were detected, and all were males. Three of the deceased were in the age range of 35-45 years, with one below 35 years and one above 45 years. The commonest method of suicide was hanging (n=4) with only one case following a medicinal overdose. In three cases the suicide had happened while on remand after being confined for less than one week, whereas the other two cases were given life sentences for murder and had been confined for more than 2 years. A literature review was done using the PubMed database for suicidal deaths in custody worldwide during the past 10 years (2012- 2022). It was observed that suicide was the commonest manner of custodial death, with hanging being the commonest method used. A wide range of risk factors including overcrowding, isolation, long prison sentences, drug and alcohol misuse, and pre-existing psychiatric disorders were identified.

Keywords: *Custody; prison; suicide*

8015- PP

DEATH FOLLOWING COVID-19 VACCINATION

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Vaccination is reckoned to be the most appropriate, and safe preventive measure for the COVID-19 pandemic. The presenting case is a rare fatal outcome, probably due to severe post-immunization complications following COVISHIELD vaccination. A 39-year-old previously healthy adult male who exhibited common post-vaccination discomfort within 10-12 hours, which unusually continued over the next couple of days with associated severe headache, and petechial rash on upper limbs. The platelet count was 130,000/ml on the eighth day. CT brain showed left-sided intracerebral haemorrhage which was expanding progressively on repeated images. Serological investigations excluded dengue, leptospirosis, and other possibilities for thrombocytopenia. He succumbed to his illness on the fifteenth

day following vaccination. Post-mortem PCR for COVID-19 was negative. The autopsy showed widespread petechial haemorrhages in serosal and mucosal surfaces. The brain showed cerebral venous thrombosis including the sagittal sinus and massive intracerebral haemorrhages. Multiple thrombi associated with haemorrhagic infarcts were seen in pulmonary, renal, and hepatic vasculature and confirmed with microscopic examination. Bone marrow was unremarkable. The COVID -19 antibodies were positive in the post-mortem blood sample. The other possible primary and secondary causes of severe thrombocytopenia and bleeding disorders were excluded to the extent of the resources available. The cause for the death was ascribed to the complications of probable post-COVID vaccination. The clinical features and the autopsy findings of the presenting case which are in keeping with the characteristic but rare fatal adverse outcome of COVID-19 vaccination may be helpful for prompt recognition and effective management of post-vaccination reactions.

Keywords: *Acquired bleeding disorder; COVID-19; vaccination*

8047- PP

THE METICULOUS AUTOPSY SORTED OUT THE WAY OF CRIME IN A BURNT BODY

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Surreptitious disposal of corpses through burning to destroy evidence of criminal activity is commonly reported. When burnt corpses are found in an isolated place it is challenging for forensic pathologists to address the issues in identification, cause, and manner of death. The burnt body of a 74-year-old lady was found in her fire-captured bedroom with evidence of stranger activity. At the scene, there were burnt clothes, a mattress, and some paper money over the body. The autopsy revealed burns of varying degrees involving the anterior aspect of the body. A fabric ligature encircled the neck with underlying soft tissue injury and fracture of the right greater horn of the hyoid bone, left superior cornu, and the midline of the ala of the thyroid cartilage. There was soot mixed with mucus present in the upper and lower bronchial tree. The cause of death was concluded as the combined effect of fatal pressure on the neck and flame burns. Destruction of external injuries due to the fire is a challenge when explaining the exact mechanism used to apply pressure on the neck. The scene visits, meticulous autopsy, and toxicological investigations are mandatory to address the above issues.

Keywords: *Burns; cause of death; manner of death; meticulous autopsy; strangulation*

8054- PP

SUICIDE BY HIGH VOLTAGE ELECTROCUTION: A RARE PRESENTATION

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High-tension electric energy causes many hazardous effects depending on the circumstance, namely electrocution, heat burns, electric shock, flash burn, and explosions. It is usually accidental at the workplace and suicide by high voltage current is one of the rarest methods in the literature. A 66-year-old male, diagnosed patient with depression, was found to be missing from home. A suicide letter was

found in his room. Two days later his body was found in the thicket below a 33000-voltage high-tension electric line. A piece of his shirt was anchored to the protective barbed wire fence, which was placed 6 meters above the ground around the transmission tower. The body was moderately putrefied with larva infestation. His nylon shirt was melted and ripped. Flash burn was identified in the front aspect of the chest and right upper limb. His dominant hand was amputated above the wrist and the stump did not contain any bite marks or gnawing. The autopsy did not reveal other significant injuries. Gross and histological findings of the internal organs were unremarkable. Histology of the burnt skin showed a necrotic epidermal layer. Explosive effects and thermal injuries were evidence of high-voltage electrocution in the given case. The presence of a suicidal letter, not being a worker in the electricity board, and not using protective gear were supportive evidence to conclude the circumstance of death as suicide. Further, findings from crime scene visits and police inquiries were very much helpful in reconstructing the circumstances of the death.

Keywords: *Crime scene visit; high voltage electric current; suicide*

8187- PP

AUTOPSY EVALUATION OF CIRCUMSTANCES OF RAILWAY-RELATED DEATHS: A CASE REPORT

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Railway-related deaths give rise to extensive inquiries because it is mandatory for investigators to determine the circumstances of death. Often the pathologist would not be able to comment on circumstances related to the death and consequently, these cases are very often declared as suicides without adequate evidence. Because of this, there is a possibility of confusion about homicide, post-mortem disposal, or mutilation of the body among investigators, relatives, and the public. An engine driver had reported a death on the railroad and handed over a decapitated body at the next arriving railway station. The body was identified by the wife as a 38-year-old army soldier. The brother of the deceased was suspicious of the death and complained that his wife is behind his death. The wife too was suspicious of the death of her husband and she complained that his friends were behind his death. At autopsy analysis of injury patterns, histological analysis of the healing stage of injuries helped in the evaluation of circumstances to a great extent. It is important to make every possible attempt to analyze circumstances in railroad deaths to resolve questions and doubts in interested parties.

Keywords: *Circumstances**;** decapitation**;** railway deaths**;** suspicious**;** wound healing*

8407- PP

A SUDDEN DEATH OF YOUNG FEMALE BY UNDIAGNOSED PULMONARY HYPERTENSION

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The death of a young female is always subjected to intensive investigation. The case would be complicated when circumstances are suspicious. Sudden death due to complications of pulmonary hypertension is rare but still a potential cause of death to be considered. A 37-year-old previously healthy female presented following an alleged assault by her drug-addicted husband. There had been frequent similar incidents in the past. The last such incident was two days before her hospital admission.

During the assault, her neck had been squeezed and she was rescued by her aunt. The victim had difficulty breathing since the assault. She was taken to several general practitioners and found to have a low oxygen saturation and was advised to get admitted suspecting COVID-19 infection. On admission, she was intubated, and ICU care was given. She expired in two days and the cause of death was not evident. The autopsy revealed no injuries suggestive of violence. There was macroscopic evidence of right heart failure. Histological assessment of the lungs revealed evidence of chronic pulmonary hypertension secondary to pulmonary disease. Extensive death investigation is vital in sudden deaths with suspicious circumstances.

Keywords: *Pulmonary hypertension**;** right heart failure.**;** sudden death*

8418- PP

EXERCISING DOUBLE PATHOLOGIST POST-MORTEM IN THE INVESTIGATION OF SUDDEN UNEXPECTED DEATHS IN INFANTS AND CHILDREN (SUDI AND SUDC) IN COUNTRIES WITH LOW RESOURCE SETTINGS

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Investigation of SUDI and SUDC requires a collaborative, multidisciplinary approach, involving specialists in paediatric pathology, paediatrics, microbiology, virology, radiology, toxicology, genetics, and metabolic studies, and the police, to determine the cause and manner of death. Errors in medico-legal investigation and interpretation of findings may cause psychological trauma to parents as well as an injustice to the deceased child. The seriousness of these errors was highlighted in the UK after the prosecution of a mother for causing the deaths of her babies creating public anxiety in 2003. Subsequently proposed guidelines for the investigation of sudden unexpected deaths in infancy were endorsed by the Royal College of Pathologists and the Royal College of Paediatrics and Child Health in 2004 and updated in 2016. The postmortem in infants and children dying suddenly and unexpectedly should ideally be carried out by a paediatric pathologist. A joint post-mortem examination with a forensic pathologist should be followed when concerns have been raised regarding the possibility of abuse or neglect. This is considered worldwide as the best practice when investigating SUDI and SUDC. This type of post-mortem examination is not practical in most developed or developing countries, as experts and resources are not readily available. This practice can be modified in those countries with a single specialist forensic pathologist who is trained in paediatric pathology to balance the standard and cost of such investigations. This practice may be the way forward for low-income countries as well as in other developed countries where a single pathologist conducts forensic paediatric post-mortems.

Keywords: *Double pathologist**;** low resource settings**;** post mortem**;** sudden unexpected death in infants and children*

8478- PP

A CASE OF FIRST-TRIMESTER MISCARRIAGE: IS IT SPONTANEOUS OR TRAUMA RELATED?

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Trauma in pregnancy is commonly reported following accidental falls, physical violence, and road traffic trauma. This is a case of first-trimester miscarriage after blunt force trauma to the abdomen during physical violence. A 20-year-old previously healthy primi mother with a period of amenorrhea of 9 weeks, was admitted to the hospital complaining of abdominal pain and vaginal bleeding. It was following an assault by a fist to the lower abdomen about 20 hours before. On the 2nd day following the incident, an intrauterine pregnancy of 8 weeks with radiological features of a missed miscarriage was noted. The medico-legal examination did not reveal any external injuries other than mild tenderness of the abdomen. Subsequently, a silent miscarriage was diagnosed 2weeks after the incident with spontaneous loss of dead foetal tissues by 3 weeks. As this cascade of events commenced following the assault, there is a possibility of a relationship between the assault and the miscarriage. During any pregnancy, the highest risk of miscarriage is in the 1st trimester. Foetal loss is less common with minor injuries, but it is higher in the 2nd and 3rd trimesters than in the 1st trimester. Therefore, it was difficult to give a firm opinion based on scientific evidence to confirm or exclude the contribution of trauma to this foetal loss. This case emphasizes the importance of obstetric referral even in minor trauma during pregnancy. The medico-legal opinion should be based on scientific evidence considering all possible circumstances.

Keywords: *First-trimester miscarriage**;** pregnancy**;** spontaneous abortion**;** trauma*

8565- PP

PULMONARY THROMBO-EMBOLISM FOLLOWING ROAD TRAFFIC TRAUMA: DOES IT AMOUNT TO MEDICAL MISMANAGEMENT- A CASE REPORT

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Though pulmonary thromboembolism (PTE) is not a frequently encountered cause of death, it is well-recognized following significant trauma and should always be considered during the acute and long-term management of trauma patients. Not giving due consideration to this phenomenon may amount to medical mismanagement. A middle-aged male was admitted with shortness of breath and died within the first hour of admission. He had been discharged three days ago after recovering from a road traffic accident that happened 26 days before, for which he underwent an emergency splenectomy due to a splenic laceration with an ICU stay for 13 days for pneumonia possibly following a lung contusion. After being discharged, he developed dyspnoea with mobilization. At the autopsy, healed abrasions over lower limbs and healing wounds of surgical interventions were noted. The right leg was swollen. The brain, liver, and kidneys were free of gross pathology. Dilatation of the right ventricle of the heart with a thinned-out wall (0.2cm) was noted. A large thrombo-embolus was noted obstructing the right pulmonary artery extending to the main pulmonary trunk. Dissection of the right calf revealed thrombosis of the popliteal vein. The histology of the lungs showed features of resolving pneumonia. This case highlights the significance of clinical suspicion and timely diagnosis of PTE. Exclusion of other thrombotic conditions and dating of the thrombus is important to address concerns of medical mismanagement if the possibility of thrombotic phenomena was not regarded during trauma management.

Keywords: *Deep vein thrombosis**;** medical mismanagement**;** pulmonary thrombo-embolism**;** trauma management*

8593- PP

UNUSUAL INJURIES TO THE HEAD- IS IT DUE TO THE "COWCATCHER" OF A TRAIN?

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The circumstance of railway trauma is commonly accidental or suicidal. But homicidal or even post-mortem disposal of a body for concealment of a crime is not uncommon. Therefore, thorough knowledge of injury patterns of railway accidents is vital for the death investigation of such fatalities. The case presented was found dead on a railway track with a rare injury pattern on the head. A 23-year-old male with minimally haemorrhagic injuries to the head was found on the railway track. The engine driver was the only eyewitness, and he had seen the victim lying on the railway track. The autopsy revealed undisturbed clothes, stained with grease. There were three deep lacerations obliquely placed on the left vertex, forehead, and face in the same plane, associated with extensive fractures of the skull. The underlying brain showed crush injuries. The rest of the body was free of external and internal injuries. Blood alcohol was quantified as 135mg/dl. Death investigation including the examination of the scene and train was able to identify the injuries of the head and face to be caused by the lower edge of the "cowcatcher" of the train engine. This injury pattern and socio-psychological findings observed during the death investigation concluded the manner as suicidal. This case highlights the importance of examining the scene and the train to understand the dynamics of the injury causation, especially when interpreting unusual injury patterns.

Keywords: *Head injury; railway injuries; suicide*

8638- PP

PATTERN OF SUICIDAL HANGING: A STUADY IN SRI lANKA

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Thorough knowledge of demographic and circumstantial evidence in suicidal hanging is important to recognize suspicious cases of suspended bodies. The objective of this study was to identify demographic patterns, circumstantial evidence, motives, and type of ligature associated with suicidal hangings. 108 cases of suicidal hanging were reported for a medico-legal autopsy to the National Hospital, Kandy, Sri Lanka from January 2020 to December 2021. In the study sample, 79% (n=86) were male. The most prevalent age group was 21 to 40 years. Incidents were equally distributed throughout the year without any seasonal variation. The time of the incident in the majority of cases (72%, n= 48) was approximately between 6 pm and 6 am. Recent dispute with intimate partner or parents was observed in 29%(n=31) of cases. A history of substance abuse was noted in 26% of cases while 16% had a history of psychiatric illness. The beam of the roof was the point of suspension in 54% (n=58) of cases whereas 29% used trees. Ropes were used as ligatures by 41%(n=44) and cloths were used by 39%. The non-sliding knot was observed in 70% and 79% used only a single fold of ligature. Complete hanging was observed in 68%(n=74) of cases. Only 21% had a knot at the nape of the neck while the most common site was the right mastoid area (41%). Suicidal recordings were available only in 23 % of cases. An extensive understanding of the patterns of suicidal hanging is crucial for medico-legal experts to rule out suspicious circumstances.

Keywords: *Hanging; ligature; substance abuse; suicide*

8666- OP

UTILITY OF INQUEST AND MEDICO-LEGAL AUTOPSY IN COMMUNITY DEATHS AT A TERTIARY CARE HOSPITAL IN INDIA

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In India, an inquest is carried out by the police or magistrate depending on the type of death. A medico-legal autopsy is carried out by a doctor. In some cases, the inquest is sufficient to make out necessary information related to the death and a medico-legal autopsy can be avoided. However, the medico-legal autopsy has its own benefits. A retrospective record-based study was carried out at RVRS Medical College, Bhilwara, Rajasthan, regarding the correlation between inquest and medico-legal autopsy findings in community deaths presented to the hospital in the year 2020. A total of 467 cases of community deaths were presented for medico-legal autopsy in the year 2020. As per the inquest, the cause of death was hanging in 7.28%, burns in 3.85%, electrocution in 3.43%, and poisoning in 16.27%. The same was established via medico-legal autopsy without any difference from the inquest report. However, after an inquest, in 3% of cases the cause of death remained undetermined, whereas, after a medico-legal autopsy, it was only 0.86%. The manner of death was undetermined in 3% of cases after an inquest while it was undetermined in only 0.86% of cases after a medico-legal autopsy. We recommend proper training of the investigating officers who conduct inquests to minimise the discrepancies observed between inquests and medico-legal autopsies in ascertaining the cause and manner of death in unnatural deaths in India. If a well-trained person conducted an in-depth inquest, medico-legal autopsies may be avoided in certain situations.

Keywords: *Community death**;** inquest**;** medico-legal autopsy*

8831- OP

IS IT A SAFE ENVIRONMENT FOR CHILDREN AT INSTITUTIONS IN SRI LANKA?

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It is the responsibility of a community to provide a safe living environment for children. Failing to do so would be considered child abuse under the category of child neglect. In any community, child safety should be ensured starting from the family up to the community level. But in situations where the children are away from their families and separated from society, like in monasteries or in schools, where guardianship has changed temporarily, there is a question regarding safety and security. Case 01- a 10-year-old child monk had collapsed while eating rambutan fruit and was found dead on admission. It was said that the child monk had attempted to taste a rambutan in the afternoon. Since it is prohibited for monks to eat after lunch he tried to eat in a hurry. Choking with the rambutan fruit was observed during the autopsy examination. Case 02- a 14-year-old boy had fallen from a swing while he was attempting to play with his schoolmates during lunchtime. He died from a head injury caused because of being hit by the moving swing. A safe and free-living environment should be provided for all children irrespective of the age, institution, religion, and community they belong to and that should be monitored and safety should be established. The government should formulate protocols and standard operating protocols (SOPs) for these institutions in view of ensuring the safety of the children.

Keywords: *Child abuse; choking; head injury; negligence*

8927- OP

DEATH OF A TEENAGE BOY DUE TO SPONTANEOUS PNEUMOTHORAX ASSOCIATED WITH COL3A1 VARIANT

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This 13-year-old boy was found unresponsive in his bedroom. He had a history of spontaneous pneumothorax in early childhood but had been well recently. On the day of his death, the parents were awakened by a thump, and he was found in the bed unresponsive, dangling one foot. Paramedics were called and suspected of pneumothorax, but resuscitation efforts were unsuccessful. The autopsy showed marked anterior subcutaneous emphysema, left-sided pneumothorax, moderate bilateral haemothoraces (Right 100 cc, Left 70 cc), a ruptured bulla, and an intact bulla. There were no rib fractures. There is no significant trauma or other natural diseases to cause death. The histology of other sampled organs showed no significant abnormalities. Toxicology testing was negative. Molecular testing identified a likely pathogenic variant in COL3A1. COL3A1 is associated with autosomal dominant Ehlers-Danlos syndrome and autosomal recessive brain malformation. Death was attributed to spontaneous pneumothorax in association with the COL3A1 variant. In most cases of spontaneous pneumothorax, the cause is unknown as we have not done molecular studies in such cases. Tall and thin adolescent males are typically at the greatest risk. The COL3A1 gene is associated with autosomal dominant vascular Ehlers-Danlos syndrome (EDS, type 4) and autosomal recessive polymicrogyria with or without vascular EDS. This result is consistent with a predisposition to, or diagnosis of, autosomal dominant COL3A1-related conditions. EDS is a connective tissue disorder that can affect blood vessels, muscles, skin, and joints. We recommended screening biological relatives as a preventive measure.

Keywords: *COL3A1 variant; Ehlers-Danlos syndrome; molecular testing; spontaneous pneumothorax*

9026- OP

A FATAL CASE OF MISMANAGED CRITICAL LIMB ISCHAEMIA: IS IT MEDICAL NEGLIGENCE?

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Critical Limb Ischaemia (CLI) is a serious condition resulting from the severe blockage of arteries of the limbs, markedly reducing the distal blood flow. Arterial thromboembolism is one of the major causes of CLI. We report a case of unexpected death following mismanagement of an ischaemic lower extremity. A 57-year-old male, a known hypertensive patient, was admitted to a local hospital following painful left knee swelling and fever for 3 days. He was treated for left lower limb cellulitis with broad-spectrum intravenous antibiotics. His blood investigations revealed normal blood counts and CRP values. Two days after admission his clinical condition deteriorated and was transferred to a tertiary care hospital for further management. On admission, the distal pulses in the left leg were found to be absent and an urgent fasciotomy was done. A large haematoma was noted at the distal end of the thigh

associated with muscle necrosis. During the evacuation of the haematoma, the patient bled profusely and suffered a cardiac arrest on the table. The autopsy revealed an acute on chronic dissecting aneurysm of the left femoral artery with bleeding into the surrounding compartments. A massive haematoma was formed causing vascular compromise and limb ischaemia. Histology confirmed the dissection with ischaemic necrosis of muscles. This case highlights the importance of thorough clinical assessment before surgical interventions. This death could have been prevented if an arterial duplex study had been done before the surgical procedure. Hence, is it medical negligence or just a mishap?

Keywords: *Critical limb ischaemia**;** dissecting aneurysm**;** medical negligence**;** revascularization*

9156- OP

EPIDEMIOLOGICAL INVESTIGATION OF SUICIDAL DEATHS DURING COVID-19 PANDEMIC IN SOUTH AND SOUTH-EAST DISTRICTS OF DELHI, INDIA

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Suicide is a major public health problem worldwide. An estimated 8,00,000 deaths by suicide occur globally per year i.e. double the number of homicides. Out of which, 85% are from lower-middle income countries including India. In 2021 National Crime Records Bureau of India reported 1,64,033 suicides. The situation of COVID-19 pandemic caused an upsurge in suicidal deaths all around the world consequent to its direct and indirect effects. WHO estimated that during 2020, suicidal attempts increased 20 times as compared to the pre-covid period. The present study tried to evaluate the impact of COVID-19 on suicidal deaths using psychological autopsy, suicide notes, treatment records, and covid-19 status of the suicide completers to explore the possible risk factors associated with suicide during the study period conducted in AIIMS, New Delhi, India. Two kinds of data collection were done-retrospective data before covid-19 i.e. during 2015-2019 and prospective data during 2020-2024. We have tried to compare two data sets to understand the suicidal deaths associated with the pandemic. The results obtained to date demonstrate that before covid-19 people were committing suicide for the reasons like unemployment, mental health issues, etc but during the pandemic covid-19 due to the lockdown most of the people lost their jobs and became socially isolated which precipitated mental health issues and caused an increase in the number of suicidal deaths.

Keywords: *Covid-19 pandemic**;** mental health**;** psychological autopsy; suicide*

9250- PP

MATERNAL DEATH DUE TO UNDIAGNOSED DILATED CARDIOMYOPATHY: AN EYE OPENER FOR VIGILANT SYMPTOM SPECIFIC ANTENATAL SCREENING

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Cardiomyopathy is a group of disorders in which the heart muscle is structurally and functionally abnormal. Peripartum cardiomyopathy develops in the month before or after delivery, whereas dilated cardiomyopathy often is known already or develops in the second trimester. A 36-year-old primi was admitted to a tertiary care hospital for confinement. She was diagnosed with hypothyroidism and treated with thyroxine in the second trimester. She had a history of episodic difficulty in breathing from the

first trimester, but proper symptom-specific investigations were not done during the antenatal period. The maternal and foetal parameters were normal throughout the pregnancy. She had mild per vaginal bleeding after normal vaginal delivery and was treated with uterotonics, including intramuscular Ergometrine. Following the administration of Ergometrine, she developed chest pain and sudden onset shortness of breath. She had a sudden drop in blood pressure and collapsed. She died 2 hours following the delivery despite being given prompt resuscitation and optimal treatment. The autopsy examination revealed features of dilated cardiomyopathy including an enlarged, globular heart with dilated chambers. All the heart valves were normal. An atrial septal defect was detected. Histology of the myocardium confirmed the diagnosis. This case highlights the importance of proper symptom-specific antenatal screening of pregnant women who present with a history of difficulty in breathing during the antenatal period. Early clinical diagnosis and timely interventions would have prevented such maternal death.

Keywords: *Dilated cardiomyopathy; maternal death; symptom-specific antenatal screening*

9348- PP

ABDOMINAL PAIN BEFORE TERM IN PREGNANCY: A WARNING SIGN OF A COMPLICATION

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Abdominal pain during pregnancy is a symptom of labour at term, but before term, it could be due to some other pathology. The three maternal deaths in various gestational periods presented here reveal abdominal pain as the main symptom. A 24-year-old female presented with abdominal pain and backache at 30 weeks of pregnancy. She collapsed on the second day after admission to the hospital. The autopsy revealed herniation of abdominal contents into the left chest cavity through a defect in the diaphragm located postero-laterally. The cause of death was concluded after autopsy as complications of diaphragmatic hernia (Bogdalek hernia). A 22-year-old female with a past history of appendectomy has presented with lower abdominal pain and vomiting at 28 weeks of gestation. Investigations revealed multiple fluid levels in the bowel loops. She succumbed to her illness on the third postoperative day. The cause of death was concluded as septicaemia due to intestinal obstruction as a late complication of appendectomy. A 31-year-old female presented with generalized abdominal pain and dysuria at 12 weeks of pregnancy. She was treated for a urinary infection after investigations and discharged. The abdominal pain was persistent and on the eleventh day after the onset of symptoms, she was found collapsed. The autopsy revealed approximately 1600 ml of haemoperitoneum with ruptured abdominal ectopic pregnancy. These case reports highlight the need for careful exclusion of pathologies in the abdomen by performing investigations and early intervention when abdominal pain is the main symptom before term.

Keywords: *Abdominal pain; early diagnosis; early intervention; maternal death*

9510- PP

MASSIVE INTRA CEREBRAL HAEMORRHAGE AS THE SOLE PRESENTATION FOLLOWING RUSSELL'S VIPER BITE: A CASE REPORT

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Russell's viper (Daboia russelii) envenomation leads to significant mortality and morbidity with haematological, neurological, and nephrological complications. Early administration of adequate antivenom arrests the progression of envenoming. A 73-year-old farmer was hospitalized following a snake bite and the snake was identified as Russell's viper. He was a diagnosed patient with chronic liver cell disease and hypertension. On admission, the whole blood clotting test (20WBCT) was prolonged without any bleeding manifestations. The bite site was oedematous, with no signs of neurotoxicity, visual impairment, or ophthalmoplegia. Initially, 10 vials of anti-venom serum were given. Within 4–6 hours his GCS (Glasgow coma scale) gradually dropped to 12/15 and non-contrast computed tomography of the brain revealed left temporoparietal intracerebral haemorrhage (ICH). The prolonged WBCT and prothrombin time were corrected with fresh frozen plasma (FFP) and platelet infusions. Within ten hours of admission, his GCS further dropped to 8/15 due to the expanding cerebral haemorrhage. Immediate left fronto-temporo-parietal craniectomy and evacuation of ICH were performed, and the patient was managed with artificial ventilation at the intensive care unit. The victim died due to the deterioration of his illness despite intensive therapeutic interventions. The present case highlights the development of an intracerebral haemorrhage following a snake bite in the absence of neurological symptoms which is a rare clinical presentation. The dose of anti-venom, species difference, and co-morbidities influence the success of treatments and interventions.

Keywords: *Envenomation; intracranial hemorrhage; Russell's viper*

9611- OP

THE UTILITY OF GLIAL FIBRILLARY ACIDIC PROTEIN (GFAP) AS A POTENTIAL BIOMARKER IN PREDICTING THE SEVERITY AND PROGNOSIS IN CASES OF TRAUMATIC BRAIN INJURY

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Traumatic Brain Injury (TBI) is primarily caused by direct impact to the head, as well as by secondary injuries caused by activation of microglia, astrocytes and immune cells infiltration. GFAP is a class III intermediate filament protein abundant in the astrocytes. In tHIS study, a total of 160 subjects were enrolled, 120 cases of head injury and 40 controls. 40 cases each of mild and severe cases of head injury assessed using Glasgow Coma Scale (GCS) were enrolled from the emergency and their blood samples were collected at 20 hours post injury (the time of peak GFAP levels). 40 cases of death due to head injury, who died within 24 hours of the incident, were enrolled and their blood samples were collected within 6 hours of death. GFAP levels have been measured using sandwich ELISA. The patient outcome was compared between the favourable and unfavourable outcome based on the serum levels of GFAP. The values of GFAP (in pg/ml) were significantly increased in patients with mild TBI (221.55 □ 33.55), severe TBI (223.45 □ 71) and patients who died of TBI (345.85 □ 335.3) when compared to healthy controls (207.70 □ 28.7); (ANOVA = 2.649, p□0.05). The values of GFAP less than 218.09 □ 35.93 shows a favorable outcome and a value above 257.38 □ 126.29, an unfavorable outcome. The current study is an attempt to assess the role of GFAP as a diagnostic and prognostic marker in TBI. The results are in conformation with previous studies that indicate that GFAP can be used as a diagnostic and prognostic marker to determine the outcome in cases of TBI. The current study adds to existing knowledge by comparing three categories of severity of TBI.

Keywords: *Biomarker; GFAP; traumatic Brain Injury*

9656- PP

THE MYSTERY BEHIND THE DEATH OF A PRIMI MOTHER

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SLE in pregnancy is a complication to be dreaded due to its violent flare-ups. It is more so when TTP overlaps SLE during pregnancy leading to rare yet fatal results. A 32-year-old primipara with a POA of 25 weeks presented with cough, vomiting & reduced foetal movements for one day. She was clinically diagnosed with SLE during early pregnancy. Initially, she was treated for atypical pneumonia with SLE flare-up: IUD occurred on the 6th day of admission. However, she developed worsening thrombocytopenia, fragmentation of red cells, and bleeding manifestations which led to a diagnosis of TTP. On day 7 Platelets were transfused due to severe thrombocytopenia following which she soon went into cardiac arrest and died before the report of blood picture is available. Autopsy revealed external features compatible with SLE. There were gross infarctions in the brain and kidneys. Lungs were mildly oedematous and vegetations were noted in the mitral valve. The liver showed areas of necrosis. The umbilicus was knotted with necrosis of the cord proximal to the foetus. Histology confirmed the brain & renal infarcts with microscopic evidence of arterial thrombi. There was myocarditis with thrombi in the intracardiac vessels and the mitral valve vegetations were suggestive of Libman sacs endocarditis. Lungs revealed features of ARDS. TTP overlapping SLE in pregnancy is rare yet fatal. Platelet transfusion is contraindicated in such cases due to the formation and embolization of platelet thrombi, therefore clinicians should be diligent with the multidisciplinary management of such patients.

Keywords: *Platelet thrombi; pregnancy; SLE; TTP*

9692- OP

VARIATIONS IN THE UNPAIRED VISCERAL BRANCHES OF THE ABDOMINAL AORTA: AN AUTOPSY STUDY

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In the classical textbook description, the abdominal aorta (AA) gives three large unpaired visceral branches namely, the celiac trunk (CT), superior mesenteric artery (SMA), and inferior mesenteric artery (IMA). Variations of these arteries are rarely reported in the literature and in the Sri Lankan context, such variations are not recorded as yet. An autopsy study was conducted in a tertiary care center to identify variations in the unpaired visceral branches of the AA. During the internal post-mortem examination of selected subjects, any gross variations in said branches of the AA were noted and photographed. A sample of 100 autopsies was considered which consisted of 74 males (74%) and 26 females (26%) with a mean age of 56 years. Variations of unpaired visceral branches of AA were noted in two (2%) cases. The first case, a 70-year-old male who was deceased due to septicaemia due to acute pancreatitis due to gallstone disease, showed an absence of the IMA. In the second case of a 60-year-old female who died due to complications of meningitis, an extra branch of AA arising between the

SMA and IMA was identified. No other variations were noted in the rest of the sample. The rarely-reported variations in the unpaired visceral branches of AA come into play in gastrointestinal surgery, mainly in the resection of tumours.

Keywords: *Abdominal aorta; autopsy; inferior mesenteric artery; superior mesenteric artery*

9789- PP

THE SUDDEN DEATH OF A PATIENT FOLLOWING SURGICAL EXCISION OF AN EPIDERMOID CYST IN THE CEREBELLUM: A COMPLICATION OF THE DISEASE OR THE SURGERY?

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An epidermoid cyst or tumour is a benign space-occupying lesion that arises from the stratified squamous epithelium of the surface of the brain. Though this is a benign tumour surgical excision is indicated as it can lead to life-threatening conditions. This case illustrates a case of sudden death following the surgical excision of an epidermoid cyst in the cerebellum. A previously well 36-year-old female presented to the emergency department following an episode of dizziness and a sudden fall. Non-contrast computed tomography of the brain revealed a space-occupying lesion identified as an epidermoid cyst in the 4th ventricle of the brain with associated obstructing hydrocephalus. The tumour was surgically removed, and she was discharged after a few days of observation. She was symptom-free for the initial few post-operative days but subsequently developed a fever and headache and was readmitted. On admission, she was febrile and neck stiffness was elicited. Symptomatic treatment and investigations were commenced. However, she succumbed to death despite several attempts at resuscitation. The autopsy revealed cerebral oedema, excess cerebrospinal fluid in the lateral ventricles, and suppurative exudate in the cerebellum and the kidneys. Surgical excision is indicated for large symptomatic epidermoid cysts. Aseptic meningitis is frequent after invasive neurosurgical procedures. Such a condition requires immediate detection and intervention. In this case, complications of the tumour and complications associated with the surgical procedure may have contributed to this patient's death.

Keywords: *Cerebral infection; epidermoid cyst; surgical excision*

9797- OP

STUDY ON THE PATHOLOGY OF COVID-19 DEATHS REPORTED BY THE TEACHING HOSPITAL KARAPITIYA

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2019 novel Corona Virus Disease (COVID-19), which primarily infects the lungs, exhibits a wide spectrum of pulmonary pathologies. Nevertheless, the histomorphology and the mechanism of impact of the virus on lung tissues and other organs are still under evaluation though there are marked similarities to SARS and MERS infections. To understand the pathophysiological behaviour of COVID-

19, and the role of existing co-morbidities in the pathogenesis, the histomorphology of major organs and systems of victims of COVID-19 were analysed. The study sample included 384 autopsies done at the teaching hospital Karapitiya from December 2020 to May 2021. All the cases (241 home deaths and 143 ward/ICU deaths) were positive for COVID-19 either by antemortem or postmortem PCR testing. The main lung pathologies included varying degrees of diffuse alveolar damage, interstitial pneumonia, and micro/macrovascular thrombosis. Secondary bacterial pneumonia was observed in 40% of cases. Opportunistic fungal infection of the lungs was detected in 9 cases. The presence of patchy epicardial inflammation and intramyocardial fibrin thrombi were the prominent cardiac lesions noted in 15% of cases. Various pathological changes including vascular thrombosis and focal tissue necrosis were observed in other organs, especially in the elderly and those with other co-morbidities such as diabetes mellitus, hypertension, and ischemic heart disease. These findings are similar to the available literature regarding the pathophysiology of COVID-19. This understanding of the disease is essential for appropriate clinical management to minimize complications.

Keywords: *Autopsy; COVID-19; diffuse lung damage; histomorphology*

9829- PP

DEATH OF A CHILD FOLLOWING A SUPERSTITIOUS RITUAL OF EXORCISM

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Diseases, especially those related to the psyche produced by demons, are an accepted belief in many communities. A 9-year-old child was taken by her mother to an exorcist to “expel a demon from her body”. The exorcist caned the child for two days while giving her “water” to drink. On the second day, the child lost consciousness and was pronounced dead on admission. On direct questioning, it was revealed that the child had been made to consume some medicinal syrups forcefully by the mother and the exorcist. The autopsy revealed multiple abrasions, tramline contusions, and burns on the body. There was mottling and consolidation in the lungs. Blood-stained secretions were found in the trachea, bronchi, and stomach. Musculoskeletal dissection revealed subcutaneous haemorrhages and muscular contusions over the buttocks and limbs. Histopathology revealed evidence of well-established aspiration pneumonia. There was no other significant pathology, especially no evidence of acute kidney injury due to rhabdomyolysis. Toxicological analysis was negative. The cause of death was concluded as aspiration pneumonia in a child subjected to physical violence. With forceful feeding of the syrup, the child could have aspirated, resulting in aspiration pneumonia. At the same time, it appears that even after the child became symptomatic, she had not been brought for medical treatment but had continued with the same exorcistic therapy. While the caregivers become responsible for the child's death, the lessons to be learned are enormous. Thus, banning such practices against children is a need of the hour.

Keywords: *Aspiration; child mortality; cultural practices; intentional violence*

CLINICAL FORENSIC MEDICINE

214- PP

TRAUMATIC DISLOCATION OF BOTH TESTICLES: A RARE SEQUALE OF PERINEAL INJURY IN A MOTORCYCLIST

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Motorbike accidents are very common worldwide irrespective of the country's economic state, confirming that they are at the summit of vulnerable road users. These are rare injuries and there is a chance of missing them if the examiner is not vigilant enough to detect them. A 24-year-old motorcyclist was knocked down by a vehicle from his right. In addition to a history of loss of consciousness and retrograde amnesia he had soft tissue injuries in the left side of the face, right hand, pubic region, and left ankle joint along with fractured right-sided tibia and fibula. Abdominal examination revealed tenderness over the suprapubic region and empty scrotal sacs. An ultrasound scan confirmed dislocated testicles. Rare injury patterns are also to be expected because of their uniqueness as seen in the above case. Minor degree of testicular contusions may lead to subsequent oedema and ischemia of the testicles due to the available little space with tight testicular capsules. In such situations follow-up assessment to exclude physical castration is needed. Routine testicular examination of deceased motorbike riders at autopsy is encouraged to get exact figures of testicular injuries resulting from the impaction with fuel tanks.

Keywords: *Accidents; motorcyclist; testicular dislocation; traumatic*

276- PP

A RARE CASE OF TIBIAL SPINE AVULSION OF ANTERIOR CRUCIATE LIGAMENT

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Tibial spine avulsion most commonly involves the anterior cruciate ligament (ACL) at the intercondylar eminence. The condition is rare (approximately 3 per 100 000) and exclusively for the pediatric group, but the newest literature shows that it is encountered in the adult group as well. Primary causes of this injury include high-energy trauma such as road traffic accidents and sports-related injuries. Mechanisms of causation involve hyperflexion or hyperextension of the knee joint, low-impact injuries where the knee is flexed, and an internal rotation moment occurs through the tibia or sudden halt of moving joint. A 24-year-old adult while traveling in a three-wheeler as a passenger, met with a head-on collision with a car. The patient's right knee has impacted the front bar of the three-wheeler. The patient complained of severe pain and knee joint swelling. Examination revealed knee joint effusion. The diagnosis of tibial spine avulsion was made radiologically. The patient was managed conservatively with immobilization of the knee joint with a back slab for six weeks. In this case, the category of hurt is grievous under limb 'i' since the patient is unable to follow ordinary pursuits for a period of 20 days, as well as under limb 'e' since the natural course of this condition will cause permanent impairment of the power of the knee joint.

Keywords: *Anterior cruciate ligament injury; category of hurt; tibial spine avulsion*

367- PP

PHYSICAL CHILD ABUSE IN SRI LANKA- A CASE SERIES

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Physical abuse of a child may be the result of a deliberate attempt to hurt the child or to discipline the child. A 12-year-old boy was admitted following an assault with a stick by his teacher at the school due to a wrongful accusation of spilling food on the classroom floor. On examination, he was found to have extensive contusions over both buttocks. The injuries were identified as non-grievous. A 7-year-old girl was produced to the JMO's office following complaints received from neighbors regarding an alleged repeated assault by her mother. On examination, she was found to have multiple types of injuries including tram line contusions, burns, partially healed lacerations, multiple fresh abrasions, and old healed scars over her limbs, chest, back, and face. The injuries were identified as grievous. An eight-year-old girl was admitted by her stepmother claiming she had a fall. On examination, she was found to have fresh, partially healed and old healed injuries over several parts of her body. Multiple fresh contusions were found over her upper arm, and recent fractures were observed over the mid-shaft of the right femur and left superior pubic rami. Partially healed burn injuries were noted over her perineal area. The injuries were identified as grievous. Although prevention of child abuse has been the focus among various professional groups, cases of this magnitude still surface from time to time. Awareness regarding these issues among the general public, as well as the health care providers, needs to be enhanced to minimize these unfortunate incidents in the future.

Keywords: Assault; physical child abuse; tram line contusion

737- OP

HEAD, FACIAL AND NECK INJURY PATTERNS ACCORDING TO HELMET USAGE AND THE TYPE OF HELMET USED, AMONG MOTORBIKE RIDERS AND PILLION RIDERS

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About 1.25 million people die each year due to road traffic crashes, making it the leading cause of death among people aged between 15 and 29 years, with half being "vulnerable road users"; including motorcyclists.The objective of this study is to determine head, facial, and neck injury patterns according to helmet usage and the type of helmet used, among motorbike riders and pillion riders who were admitted to a tertiary care unit following road traffic incidents.This prospective cross-sectional descriptive study used an interviewer-administered questionnaire and the 403 responses were analyzed using the statistical data analysis software; SPSS. Males are predominantly involved (81.9%) with a higher number from the 18-30-year age group. The presence of head and facial injuries were associated with non-full-face helmet usage over full-face helmets(p=0.016), and such injuries including fractures were associated with improper fixation status of the helmet, over the proper fixation status(p=0.27). Neck injuries were uncommon (8.7%), with no association between the usage of a helmet, the type of helmet, or the fixation status(P=0.88). Limitations of the study were, the inability to study the speed of motorbikes and the effects of the use of novelty helmets. Younger males are a vulnerable group for motorcycle-related morbidity. Proper fixation of the helmet and use of full-face helmets can minimize head and facial injuries, and craniofacial fractures among motorcyclists.

Keywords: *Head facial and neck injury patterns; helmet usage; motorcyclists; type of helmet*

802- OP

EVALUATION OF SOCIO-DEMOGRAPHIC AND POSITIVE FORENSIC EVIDENCE IN FEMALE SEXUAL ASSAULT SURVIVORS OF SOUTHERN PROVINCE OF SRI LANKA: A SIX YEAR PERIOD DESCRIPTIVE CROSS-SECTIONAL STUDY (2009 – 2014)

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Child sexual assault and teenage pregnancies are major sociocultural and legal burdensworldwide. We focused this research to assess the prevalence of injuries and positive forensic evidence. Our objectives were statistical analysis of demographics, the prevalence of hymenalinjuries their types and patterns, para-sexual injuries, restraint and resistance injuries, prevalenceand significance of positive sperm tests, pregnancy, and sexually transmitted diseases.A combined retrospective and prospective descriptive cross-sectional study was carried out in victims who presented to the Office of JMOs' Teaching Hospital, Karapitiya using a pre-codeddata collection sheet.Selected 140 case records of female sexual assault victims were analyzed. The maximum percentage of victimization was in the teenage group 11 years – 19 years. The number of cases was 115(82%) which was statistically significant. The prevalence of statutory rapewas 68.5% (96 cases) which was statistically significant. The prevalence of child sexual abuse was89.5% which was statistically significant.81.4 % of the study population represented the rural area, (114 cases). Only 5% had fresh hymenal injuries which were not statistically significant. The prevalence of para-sexual injuries was1.4%. Both were statistically not significant. The prevalence of restraint and resistant injuries was 1.4%. Sperm positivity and STD positivity of the study population was o% which were statistically not significant. The prevalence of pregnancy was 37.1% whereas 94.5% was composed of childhood pregnancies. The authors highlight the extremely low prevalence of fresh hymenal injuries, restraint andresistant injuries, parasexual injuries, negative sperm reports, and DNA evidence of sexual assaultsurvivors of Sri Lanka and the gravity of childhood pregnancies.

Keywords: *Childhood pregnancy; demographics; victimization*

877- OP

DEFENSE INJURIES: ARE THEY ON DOMINANT OR AVAILABLE HAND: A CASE SERIES

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It's common knowledge that victims use their dominant hand to defend themselves in an assault. Most of the time it is a natural reaction against a strike. On this ground, forensic doctors tend to regard injuries in their dominant upper limbs as defense injuries. Defense injuries are significant in forensics because they suggest that the victim was conscious, mobile, and not taken completely by surprise at the time of the incident. In this study, 6 randomly selected victims of assaults were examined in the emergency treatment unit of the Karapitiya Teaching Hospital during the clinical forensic examination. We considered their dominant hand and the injuries they sustained. If injuries were not in their dominant hand they were inquired whether there was a reason not to use the dominant hand. In our study of six victims, five of them used their non-dominant hands to defend themselves. The reason was dominant hands were occupied or not in a usable state at the time of the incident. one person could not use his dominant hand as it was under his body when he was assaulted in a lying down position after a fall. We made the assumption that victims used their available hand rather than their dominant hand while

analyzing the findings of our investigation. Instead of classifying the injuries in the dominant hand as defense injuries, we must underline the effectiveness of history in this regard.

Keywords: Available hand; defensive injuries; dominant hand

917- PP

SELF-INFLICTED ELECTRICAL WIRE INSIDE THE MALE URETHRA

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A wide variety of cases of foreign body in male genito-urinary tract has been reported in literature. Circumstances of such a presentation could be due to assault, torture or self-infliction for sexual gratification or other reasons. A 62-year-old previously healthy male farmhand was transferred from a local hospital to the surgical ward with two plastic wire casings jutting out from his urethral meatus with associated haematuria. He claimed that two unknown individuals had forcefully inserted this wire into his urethra two days before at the farm where he was working. The previous attempt to remove the foreign body under local anaesthesia at the local hospital had failed. X-ray showed a coiled and knotted wire lodged in the anterior urethra. A rigid cystoscopy was performed under general anaesthesia and the genito-urinary surgical team removed a coiled and knotted 1/1.3 mm wire approximately 18 cm in length without the central metal core. The bladder looked normal and the anterior urethra was noted to have a healing mucosal tear with the adjacent area contused. A tortuous fine scar was also noted as suggestive of previous similar episode/s. No other injuries or toxic substances were identified on clinical forensic examination. The subsequent psychiatric follow-up did not reveal any abnormalities. Foreign bodies in the male urethra should be thoroughly investigated to identify the possible circumstance even though patients claim otherwise.

Keywords: *Foreign bodies; haematuria; psychiatric illness; torture; urethra*

1049- PP

DOCILE BEHAVIOUR OF A CHILD - A DELIBERATE POISONING BY THE MOTHER

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A majority of cases of child abuse in Sri Lanka are sexual abuse. We report an unusual case of deliberate poisoning of a child by her mother with substances of abuse where the common presentation is Munchausen syndrome by proxy. A 9-year-old girl was produced with an allegation of abuse and drugging following suspicious docile behaviour. At a medico-legal examination, she revealed a substance was given by her mother to relieve pain from an injury. Clinical examination showed withdrawal symptoms confirmed by a positive urine drug screen for morphine and opiates. Physical and genital examination revealed no injuries suggestive of trauma. The child was living with her mother who had a history of drug abuse. Her father was imprisoned for drug procession and her maternal grandmother was a commercial sex worker. Upon further inquiry, the child had frequent school absenteeism. She denied verbal or physical assault by her parents or grandparents. She was treated for acute drug withdrawal by a paediatrician and was referred to a child psychiatrist. Through an institutional case conference, it was decided to place her at a child development center owing to an unsafe living environment. The case highlights the need for a high index of suspicion for substance use in a child presenting with docile behaviour as a diagnosis is time sensitive. A multi-disciplinary approach is mandatory for the management of similar children with socioeconomic adversity which leads to transgenerational abuse.

Keywords: *Child abuse; deliberate poisoning; docile behaviour*

1132- OP

PATTERNS OF LONG BONE FRACTURES IN ROAD TRAFFIC ACCIDENTS, ASSAULTS AND FALLS AMONG PATIENTS ADMITTED TO TEACHING HOSPITAL KARAPITIYA

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The distribution of long bone fractures is affected by many etiological factors. This study was aimed at determining the incidence and correlation of long bone fractures with road traffic accidents (RTA), assaults, and falls and comparing the prevalence among these three groups. The objective of this study was to determine long bone fracture types, patterns, prevalence, and associated factors in relation to road traffic accidents, falls, and assaults. A descriptive cross-sectional, prospective study was done on patients between 18- 60 years of age. The fractures were diagnosed from clinical features, medical records, and radiological images. A total number of 300 patients were included in the study. The majority 78.6% (236) were due to RTA. Male predominance was noted in all three incidents but the long bone fractures in females were due to RTA (64, 21.33%). There were various types of long bone fractures in victims of RTA. The riders were the commonest victims of long bone fractures 132 (55.9%) followed by the drivers. The fractures in passengers were the lowest 2(0.84%). There were 426 long bone fractures in 300 patients in the study. The tibia was the commonest involved fractured bone 191(44.83%) followed by radius 70(16.42%). The clavicle was the least frequently fractured bone 9(2.1%). Simple fractures were the commonest 417(97.88%) followed by comminuted fractures. In this study, oblique fractures were the most common 235(56.35%) and transverse fractures were 138(33.9%). Spiral fractures were the least common as 02 (0.47%). There were 399(93.66%) closed fractures and 27(6.33%) compound fractures.RTA was the most common determinant of fractures. Personal protective measures, legal act implementation, and improvement of injury surveillance were recommended to reduce preventable long bone fractures.

Keywords: *Assaults; fall; long bone fractures; road traffic accident*

1724- PP

EXPLOSION OF PHONE BATTERY IN MOUTH: A CASE REPORT

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The status of battery charge by using the mouth, especially the tongue is a common but unsafe practice among the public. Reported battery explosions causing intra-oral injuries are mostly due to exploding devices such as e-cigarette batteries. Injuries by the explosion of a mobile phone battery inside the mouth are a rare occurrence. A 28-year-old male presented following an explosion of a mobile phone battery while checking the status. Soon after the admission he was admitted to the intensive care unit and observed for impending laryngeal obstruction due to oedema. The exploded battery was a lithium-ion battery of a Samsung S5 mobile phone of 3.85V and 2800mAh which was used for about 5 years. He had used the wet base of his mouth to touch two terminals of the battery which produces a tingling sensation of electric current and unexpectedly it exploded. Clinical forensic examination revealed a 3x2 cm irregularly–shaped laceration on the base of the mouth involving the frenulum with a central necrotic area and a superficial burn 3cm x 3cm on the adjacent dorsal surface of the tongue and anterior surface of the palate. Image studies didn't reveal any bone or dental injuries. Any of the salivary glands or ducts

was not involved. On the follow-up, his speech and salivary gland function were found to be not affected. Correct technique and professional awareness must be taken when handling electronic devices such as batteries. Although the injuries, in this case, are minor, such mishaps could be potentially lethal.

Keywords: *Burns; cell phone; mouth; palate; tongue*

1875- PP

URETHRAL CARUNCLE: DILEMMA IN FORMULATING AN OPINION IN SEXUAL ABUSE

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The urethral caruncle is a benign tissue growth seen in the most distal end of the urethra. This is a very rare lesion that mostly occurs in postmenopausal women, but it can be seen at any age. It is typically asymptomatic, and it does not require specific medical treatment. The medical diagnosis only requires where treatment is needed. In forensic medicine, a firm diagnosis of such lesions is vital for differentiating from other possibilities like sexual abuse. A 19-year-old girl presented with an alleged history of forceful recent sexual intercourse with two young boys. She claimed that they forcefully gave water mixed with some substance. Following that, she became unconscious. When she woke up, she noticed that she was naked and bleeding from her genitalia. On clinical forensic examination, she didn't have any injury suggestive of restraining or defense. Genital examination revealed attenuation of the hymen and a reddish lesion was noted at the 12 'o'clock position, similar to a healing tear with granulation so it confused the recent alleged incidence. The examination of the introitus was done by a gynecologist with the help of a colposcopy. Finally, the lesion was diagnosed as a urethral caruncle and excluded the recent alleged incidence. The urethral caruncle is a rare benign anatomical lesion mimicking a lesion of sexual abuse. It is highlighted that it is essential to differentiate with sexual abuse through a colposcopic examination by an expert.

Keywords: *Colposcopy; sexual abuse; urethral caruncle*

1891- PP

ILLEGAL ABORTION AND MEDICO LEGAL CHALLENGES – SRI LANKAN PERSPECTIVES

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A 40-year-old multi-gravid patient at 17 weeks of gestation of her third pregnancy presented with severe abdominal pain after taking four tablets said to be misoprostol on the previous day which was forcibly given by her husband to induce abortion. The husband was a drug addict and had frequent intimate partner violence for the last four years. He did not want the child from the beginning of this current pregnancy. From time to time she was living separately from her husband in her ancestral home. During admission, she was hemodynamically stable and spontaneously delivered products of conception vaginally. Subsequently, she became hemodynamically unstable with hemoglobin 6.6 g/dl and had multiple blood transfusions. As an emergency intervention, she underwent Evacuation of Retained Products of Conception but the Gynecologist did not notice any genital tract injuries. She handed over the remaining tablets to the ward staff. Abortion is a criminal offense in Sri Lanka which is only permitted in life-threatening conditions for a mother to save her life. Criminal liability must be proved beyond a reasonable doubt. Quantitative and qualitative drug analysis is mandatory for the sake of

completeness and to prove the case beyond a reasonable doubt. Drug screening facilities for misoprostol are not available in the Government Analyst's Department. This creates doubts in the fair administration of justice.

Keywords: *Abortion; criminal Law; intimate partner violence; toxicological analysis*

2357- PP

ISOLATED OCULOMOTOR NERVE PALSY IN MINOR HEAD TRAUMA

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Cranial nerve injuries are often associated with head trauma. Oculomotor nerve injury is usually caused by severe blunt force and it is associated with orbital injuries, basilar skull fractures, and neurological deficits. However, in rare instances minor head trauma can cause isolated oculomotor nerve palsy without other craniocerebral injuries. A 72-year-old male motorcyclist, having an unlocked helmet, had fallen on the road causing head impact following collision with another motorcycle. He was admitted with a laceration of the scalp over the left temporal area of the head. He had no history of significant illness preceding the incident. During medical examination, his left eye showed complete ptosis, lateral gaze and dilated fixed pupil. He was conscious and no other neurological symptoms and signs were found. Skull x-rays and NCCT brain were unremarkable. 1. In this case isolated oculomotor nerve palsy occurred as a consequence of a minor head injury. 2. The rate of recovery of the traumatic isolated ocular nerve palsy is slow, prolonged and usually 6-12 months is allowed for spontaneous recovery before surgical intervention is considered. 3. As categorization of hurt becomes important in this case, he should be reviewed in 20 days, 6 months and 1 year to conclude the relevant limb of the penal code.

Keywords: *Isolated oculomotor nerve palsy; minor head injury; ptosis*

2432- OP

THE KNOWLEDGE, PERCEPTION, AND PRACTICE REGARDING CORPORAL PUNISHMENT AMONG TEACHERS IN JAFFNA EDUCATIONAL ZONE

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Corporal punishment (CP) includes the use of any physical punishment against a child in response to perceived misbehavior. In Sri Lanka, CP occurs in the domestic and school environment. The knowledge regarding CP among parents and school teachers plays a significant role in the incidence. This study aims to assess the knowledge, perception, and practice regarding CP among teachers in Jaffna educational zone. A prospective descriptive study was done. Among 104 schools in Jaffna educational zone, the study was carried out in 9 schools. Females predominantly participated (75.5%). The commonest age group that participated in this study was between 40–50. Among all, 87.7 % were class teachers. A considerable number of them completed a postgraduate study (39.6%), and 54.2 % were trained regarding discipline on children. The study reveals that 7.5% have good knowledge, 33% have average knowledge, 24% have poor knowledge, and 35.4% have very poor knowledge. 72.2 % of participants had practiced CP in the past. It was high (31.4%) among those who have average knowledge. 45.8% of the participants had correctly perceived CP. There was no significant association between demographic factors and past practice in this study. Even though there is no significant association between demographic factors and past practice, most of the teachers have poor knowledge

regarding CP. We suggest expanding this study in a wider manner and need to start awareness programs for school teachers, parents as well as the community.

Keywords: *Corporal punishment; knowledge; perception; practice; school teachers*

2637- PP

A COMPOUND COMMINUTED FRACTURE OF TIBIA-FIBULA: CAN IT BE CAUSED BY A TEAR GAS CARTRIDGE

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The recent economic crisis in Sri Lanka led to a series of anti-government riots where the law enforcement authorities deployed various techniques to control riots including tear gas. There was a surge of casualty admissions following those riots with various types of injuries. Cases of lethal head injuries caused by tear gas cartridges are documented in the literature though the injury pattern in the extremities of the body is rare. A 25-year-old male who had participated in an anti-government riot was admitted to a tertiary care hospital in Sri Lanka, with an isolated injury of a compound comminuted fracture on his left distal tibia-fibula. There was a vertically placed deep triangular laceration associated with the surrounding first-degree burn. There were no penetrating injuries on the leg and the X-rays did not reveal foreign materials. The patient had sustained the injury while he was standing and there was no evidence of the use of live ammunition except for the Federal riot gun (which was used to fire tear gas rounds) to disperse the rioters. The characteristics of the wound and the circumstantial evidence are not consistent with that of a direct bullet/pellet injury. The possibility of this injury being caused by a tear gas cartridge is more likely than by a direct or ricochet effect of a discharge from a firearm.

Keywords: *Injury; cartridge; fracture; tear gas*

2681- OP

LOWER LIMB INJURIES IN MOTOR BIKE OCCUPANTS

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Road traffic accidents are a major global public health problem associated with significant morbidity and mortality rates. Motorcyclists involved in road traffic accidents tend to receive more injuries due to lack of protective measures. In Sri Lanka, motorcycle related accidents account for nearly 40% of the total road traffic accidents annually. Lower limbs are one of the most vulnerable areas of the body for injuries in motorcycle occupants. A cross-sectional descriptive study was conducted retrospectively on motorcycle occupants admitted to Teaching hospital Karapitiya with a history of a motorcycle accident from 1st January 2010 to 31st December 2014. The total number of motorcycle occupants was 812 and out of that 68% were riders. For both the rider (75%) and the pillion rider (56%), lower extremity was the commonest site of injury. Abrasions (77%) were the commonest type of external injury present over lower limbs followed by lacerations (21%) and contusions (18%). Lower limb fractures were present

in 40% of the population. Fractures of the tibia (11.4%) and fibula (11%) were the commonest type of fractures for the riders whereas fractures of tibia (12.5%) and femur (7.5%) were the commonest for the pillion riders. Lower limbs were the most vulnerable area of injury for both the motorcycle riders and the pillion riders. Both the riders and the pillion riders had similar injury patterns to their lower limbs. A slightly higher risk for more severe injuries was present for the riders. Tibia was the most commonly fractured bone among the whole population. Administration of new protective gear including reinforced footwear and leg wear is highlighted here.

Keywords: *Lower limb injuries; motorbike occupant; road traffic trauma*

2924- PP

ARE WE READY FOR MANAGEMENT OF LESBIAN, GAY BISEXUAL AND TRANSGENDER INDIVIDUALS IN SRI LANKA? A CASE REPORT

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Lesbian, gay, bisexual and transgender (LGBT) prevalence in Sri Lanka is not fully evaluated but recent studies indicate that it is rising. Even though the cultural norms of our country prevented open discussion of the issues associated with LGBT individuals, knowledge gained due to globalization has allowed open expression and discussion of issues related to them. Gender identity and gender expression are complex psychological phenomena which should be addressed in depth in legal issues related to LGBT individuals. A 48-year-old patient presented with an alleged history of assault by an unknown person. Patient alleged that the person who attacked her squeezed her breast during the incident. The build and the external appearance of the patient was suggestive of a male but the patient was dressed as a female. The patient carried a gender recognition certificate indicating her sex as a female but the identity documents indicated the gender as a male. The patient was managed in a female ward till the completion of her medico-legal work. Lack of knowledge and experience in management of LGBT individuals among health care professionals is an additional challenge in their medico-legal management. Empowering health care professionals with knowledge and skills required in management of LGBT individuals is a timely necessity in our country.

Keywords: *Gender identity; LGBT; medico-legal management*

3157- OP

COMPARATIVE ANALYSIS OF THE PATTERN OF INTIMATE PARTNER VIOLENCE AGAINST WOMEN DURING AND AFTER THE PERIODS OF COVID-19 LOCKDOWN

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Lockdown measures during the COVID-19 pandemic resulted in restrictions on people's ability to move, allowing more time for intimate partners. This increased opportunity for intimate partner violence (IPV), especially against women. The study aimed to evaluate the characteristics of IPV against women during and after the lockdown period, and is a retrospective, descriptive study on female victims of IPV presented from March 2020 to February 2022 to a leading teaching hospital in Sri Lanka. Out of the 876 patients who were admitted during the period, details could be obtained from 300 victims. Of them, 94 (31%) were during the lockdown, while 206 (69%) were post-lockdown admissions. The

mean age of the victim in both groups was 33.5 years. Even though physical and verbal abuse were high throughout, the prevalence of sexual abuse was significantly higher ($p<0.0001$) during the lockdown period (31.9%) than during the post-lockdown period (3.4%). Financial problems (46.6%), followed by substance abuse (35%), were the most common risk factors during the post-lockdown period, while morbid jealousy (34%) was the most common risk factor, followed by extramarital relationships (33%) during the lockdown. Psychological consequences due to IPV were observed in 76.5% of victims during the lockdown period, while only 11.2% during the post-lockdown period. The prolonged lockdown has shown a definite influence on mental and sexual health, changing the pattern of IPV against women. The need to have services to ensure the mental and sexual well-being of the community was highlighted.

Keywords*: COVID19-lockdown; intimate partner violence; women; sexual violence*

3447- OP

INJURY PATTERN AND THEIR LEGAL CATEGORIZATION IN PATIENTS ADMITTED TO THE COLOMBO SOUTH TEACHING HOSPITAL FOLLOWING ASSAULTS

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Traumatic injuries are the leading cause of hospital admissions in Sri Lanka which accounts for 18.4% out of all admissions. Injuries sustained due to interpersonal violence are among the major contributors to these admissions. This prospective cross-sectional descriptive study was carried out to study the injury pattern and the prevalence of injuries in relation to legal categorization. A total of 281 patients were included in the study and among them 176 (62.6%) were males. Majority of patients (n – 42) were in the age group of 30 – 39 years and the majority of assaults (n –52, 18.5%) took place in between 20:00 to 21:59. 32 patients (11.3%) had positive findings for use of alcohol prior to the assault. 169 patients (60.1%) were said to be assaulted by a single assailant. 165 patients had sustained abrasion/s following an assault and majority (n-229) had injuries which were caused by blunt force trauma. 182 patients had non-grievous injuries and 56 patients had grievous injuries where 36 of them were grievous under limb “g” of penal code of Sri Lanka. A better knowledge on the dynamics of interpersonal violence and their characteristics is vital in treatment and prevention of injuries following assaults. Studies with larger study samples will contribute to the establishment of existing findings.

Keywords: *Assault; injury pattern, legal categorization*

4003- PP

CRITICAL PERSPECTIVE ON THE FAILURE TO PREVENT VIOLENCE AGAINST WOMEN AND GIRLS IN ASIA-PACIFIC REGION

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This article strives to critically evaluate the background, prevalence, and socio-cultural factors which contribute to the continued failure of preventing violence against women and girls in the context of Asia-Pacific region. According to recent data from WHO, one in three women experienced at least one type of gender-based violence at one point in their lifetime, with a higher prevalence in Asia-Pacific countries. Lack of physical security, poverty, and socioeconomic inequality together with traditionally accepted social norms are significantly bound to the higher prevalence of abuse in our region. In 2019,

a survey conducted by the Department of Census and Statistics of Sri Lanka on women's well-being showed 'controlling behavior' as the most prevalent form of Gender-based violence. However, like any other social acts against women, it is justified and practiced in the context of societal patriarchy and the women also tend to accept that as their fate. Almost all types of violence against women and girls in Sri Lanka are satisfactorily covered under a wide legal and policy framework including ratification of CEDAW in 1981. Nevertheless, the incidents stand to remain throughout with their devastating negative impacts on securing human-centered development goals. Identifying the limitations of preventing gender-based violence in the Asia-Pacific region and addressing the issues in a conceptual manner is a humanitarian emergency. A human rights-based approach to change the social norms like harmful acts against women and girls which are a serious hindrance to the well-being of them is of paramount importance.

Keywords: *Controlling behaviour; gender-based violence in Asia- Pacific region; limitations of prevention*

4012- OP

MEDICO-LEGAL AND COORDINATION CHALLENGES IN IDENTIFICATION AND MANAGEMENT OF BODY PACKERS AT THE INTERNATIONAL PORT OF ENTRY: A CASE SERIES

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Body packing is a mode of smuggling illicit drugs and restricted items across the borders or over the security checkpoints. In this paper we present four different modes of presentations of body packers to the medical attention and how they were managed by medical officers in Sri Lanka. Two suspects were arrested at the borders and produced for medicolegal examination by law enforcement officers on suspicion. In the first case the suspect was detected by the body scanner and found to be having a body pack of gold in the rectum during examination. The second suspect arrested on information had a negative result on the body scanner. He was found to have swallowed heroin body packets, revealed in medicolegal examination. The third case was presented to the emergency department, admitted by immigration officers due to sudden ill health. Cocaine packets were detected in vagina by medicolegal examination. The fourth case was a self-presentation to the airport medical center due to bowel obstruction features while awaiting departure. Surgery was performed on him and the symptoms and signs were found to be due to swallowed packet containing heroin. We discuss the challengers and practical difficulties which encountered during the process of examination, investigation and management of the cases. Our recommendations are focused to embrace border security while ensuring ethical and moral values of managing suspected body packers. They include improvement of checkpoints with modern equipment, training of the officers at different levels in identifying body packers, and development of a SOP for management of a suspected body packing case.

Keywords*:* *Body packing; medio-legal management; border security*

4227- OP

A CASE OF SEVERE FORM OF PHYSICAL CHILD ABUSE: DO WE REQUIRE A NEW HORIZON TO MEET CHILD ABUSE INVESTIGATION AND SOCIAL WELFARE CHALLENGES?

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Prevention of child abuse is recognized as the utmost concern of public health in almost all parts of the world. Abuse may be executed in the form of physical, psychological, sexual abuse, or neglect, and may be encountered in newer and newer varied abusive techniques in modern society. This is a rare type of presentation where tooth extraction and ligature strangulation are employed as methods of abuse. A 9-year-old girl child was abused by her father and stepmother by beating, burning, strangulation with ligature, extraction of teeth, and starvation over the last three months. There were about 250 injuries at different stages of healing, located all over the body, including injuries indicative of ligature strangulation, burns, and pressure ulcers. A rib fracture and fracture of the radius were also identified. There was no history or clinical evidence of sexual abuse. Though responsible authorities are implementing various projects to reduce the incidences of child abuse and neglect, this type of incidents do emerge from society from time to time. This case highlights the necessity of innovative ways to identify cases of child abuse, bring justice, stop re-victimization, support the social welfare of the victims and change the attitude in the community regarding child abuse as well.

Keywords: *Extraction of teeth; ligature strangulation; physical child abuse*

4679

SEXUAL OFFENDING: AN EXPLORATION OF EXPERIENCES AND MEANINGS

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Individuals with a criminal history face several barriers upon reentering society. For individuals with a history of sexual offenses, the challenges are even more aggravated. In many instances, society perceives individuals charged with a sex offense (ICSO) as “evil,” “monsters” and “the highest form of evil.” Additionally, upon reentry, ICSOs are subject to several sanctions that are uniquely directed towards those who have committed sexual crimes, such as civil commitments, housing, and employment limitations, and the Sex Offender Registry Board (SORB). While treatment specializing in sex offending is available and has been associated with reduced sex offending, issues associated with stigma, protracted or inhibited reintegration, and overall recidivism are still common occurrences. This study was guided by Heidegger’s hermeneutic phenomenology philosophical principles, Max van Manen’s approach guided data collection and analysis. Only male adults (>18) were included in the study, and those who had a current “prisoner status” were excluded. An iterative process was used for data analysis. Data was coded and interpreted through a hermeneutic circle. To ensure rigor and trustworthiness, Lincoln and Guba’s criteria were used, which include credibility, confirmability, dependability, and transferability. Audit trails, triangulation, and reflexivity were essential strategies. The study sample consisted of fourteen men, ranging in age from 23 to 68years old ($\bar{x}$ = 51.7 years; table 1). One participant identified his race/ethnicity as Asian American, while all other participants identified their race/ethnicity as white. Five of the participants were assigned a level 3 in the SORB, while four were assigned a level 1, three were assigned a level 2 and two were awaiting a level designation. The major themes identified were: (1) Exposed secret leads to humiliation (2) Being considered a sex offender is living in fear of the unknown, (3) Stigma consumes the identity of the individual charged with a sexual offense (4) Reframing and “leveling” of the crime are coping strategies; and (5) The path towards healing and forgiveness is complex. These themes represent different facets of the phenomenon of interest. Through hermeneutic phenomenology, a more complete understanding of the meaning of being considered a ‘sex offender’ for the person reintegrating into society was formed. The data uncovered allowed for a conceptualization of the phenomenon, the vexed

question of accepting guilt while avoiding shame. Future research should focus on longitudinally exploring the interplay between behavior and the process of shame and guilt over time. Moreover, future studies should test and verify the conceptualization.

Keywords: *Phenomenology; sex offender; sexual offending*

4718- OP

TAILOR-MADE MULTI-DISCIPLINARY MANAGEMENT PLANS FOR CHILD SEXUAL ABUSE- A CASE SERIES FROM A TERTIARY CARE HOSPITAL IN SRI LANKA

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Management of a child subjected to sexual violence is challenging. We present 4 different cases of child sexual abuse where management was tailor-made for each. Case 1: an 11-year-old girl with evidence of penetrative chronic sexual abuse by her grandfather after grooming. Parental neglect and an unsafe environment led to the abuse. She had disturbed behaviour, hypersexual behaviour, and anxiety. She was sent home with supervised modifications. Case 2: a 15-year-old girl with features of chronic penetration and positive toxicology screen of abusive substances. There was parental neglect and she lived in a high-risk neighborhood. She worked as a child sex worker. She also had previously undiagnosed ADHD and marked PTSD. Though she was sent to a Child Developmental Centre (CDC) after a prolonged period of psychological rehabilitation, she absconded and was sent to a different CDC. Case 3: a 10-year-old girl presenting with possible penetrative sexual abuse (fimbriated hymen). She had a disrupted family environment with maternal neglect. She had features of mild autistic spectrum disorder which resulted in hypersexual behaviour. She was placed at her maternal aunt's home with monitoring. Case 4: a 15-year-old girl with evidence of penetrative sexual abuse by her adult boyfriend (24 years). She was addicted to social media in an unsafe environment (parental neglect and drug dealers in the family). She had learning difficulties and PTSD. She was placed in CDC. The major risk factor is the disrupted family environment and lack of a safe environment in all these children who have faced sexual violence.

Keywords: *Child sexual abuse; multi-disciplinary management; unsafe environment*

4746- OP

A STUDY ON THE RELATIONSHIP BETWEEN "DOMESTIC CHILDHOOD ABUSE EXPERIENCES" AND "CRIMINALITY IN ADULTHOOD"

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Individuals with a history of maltreatment are likely to be engaged in significantly more criminal behaviour as adults and are more likely to have a criminal record of violent offenses than non-maltreated individuals. This study examined the relationship between "childhood abuse experiences" of "criminal" convicted prisoners and their criminal behaviour in Sri Lanka. A random sample of 60 male convicts (30 non-violent and 30 violent) from Welikada prison was selected. Data was collected using a structured, interviewer-administered questionnaire with close-ended questions about childhood abuse. The total CTQ score of the violent crime group was significantly higher than that of the nonviolent

crime group (P=0.015, F=6.294, ANOVA). The total CTQ score was subdivided into emotional neglect, emotional abuse, physical neglect, physical abuse, and sexual abuse. Physical (P=0.035) and sexual (P=0.04) abuse CTQ scores were significantly higher in the violent group compared to the non-violent group. The difference between the violent and nonviolent groups' emotional abuse scores was marginally significant (P=0.05). However, the scores for emotional and physical neglect were comparable between the violent and nonviolent groups (P=0.361, 0.44). Instead of attempting to identify the effects of maltreatment separately, most studies on child maltreatment combine maltreatment with other forms of household dysfunction. The government should empower the family and primary social institutions to address issues pertaining to children. It may be important for policymakers and correctional personnel to understand the extent of childhood victimization in order to select the most suitable treatment services.

Keywords: *Child abuse; convicted prisoners; cycle of violence; juvenile delinquency*

4805- OP

CHARACTERISTICS OF VICTIMS OF INTERPERSONAL VIOLENCE PRESENTED TO THE EMERGENCY DEPARTMENT, TEACHING HOSPITAL, KARAPITIYA, SRI LANKA

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We aimed to identify predisposing factors for interpersonal violence (IV), injury characteristics, and outcomes of victims presented to the Emergency Department (ED) of Teaching Hospital, Karapitiya (THK). This cross-sectional study was conducted among 385 victims by using an interviewer-administered questionnaire and medical documents, which were analyzed using SPSS. The mental state was assessed using Mini-Mental State Examination (MMSE).

The majority was male (77.4%), aged 30-49 years (36.1%) and from lower social classes (77.2%). The commonest places of violence were home (27.5%) and community (26%). The majority reported physical/verbal violence (95.6%). Sexual violence was less common (1.8%) and significantly associated with females (p=0.001). The frequent assailant was an acquaintance (64.7%). The most common reasons were property disputes (32.7%) and financial issues (30.9%). The most common weapon was blunt objects (80.8%) and the least common was firearms (1%). Common predisposing factors were peer pressure (48.6%) and alcohol abuse (36.8%), while 27.3% had linked with criminal records.

Contusions (39.5%) were the most prevalent followed by abrasions (33.2%). Head and face (41.3%) and upper limbs (37.7%) were common sites. The commonest category of hurt was non-grievous (61.3%) followed by grievous (23.9%). Approximately, 45% underwent surgeries, 2.3% were admitted to ICU and 1% died. According to MMSE, 10.6% showed mild/moderate cognitive impairment. The category of hurt was significantly associated with the mental state (p<0.001) and smelling of alcohol (p=0.002).

Physical and verbal violence was common in males from lower social classes, whereas sexual violence was strongly associated with females. A considerable proportion had grievous injuries which were significantly associated with mental state.

Keywords: *Category of hurt; interpersonal violence; mini-mental state examination*

5079- OP

THE ILLUSION OF INNOCENCE: RECOGNITION OF FEMALE COUNTERPART IN OFFENDERS OF CHILD SEXUAL ABUSE IN SRI LANKA

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Professionals and the public believed for a long time that women seldom perpetrated acts of sexual assault against children. Due to recently encountered clinical reports, researchers have given more attention to the study of female-perpetrated child sex abuse (CSA). However, there were no studies carried out on female-perpetrated CSA in Sri Lanka. This study is based on 119 CSA incidents that were not reported to the legal system, which were revealed by 351 male participants during direct interviews by the first author with cases and controls from the prisons in Welikada, Mahara, and Galle and a sample from the local community in Galle, during the period from May 2018 to March 2019. Approximately 0.85% of males in the community were abused by female offenders. Most of the victims were aged between 15 and 16 years. Most female offenders were between the ages of 18 and 40 years. The majority of female perpetrators were close relatives of the victim and the abusive event had occurred at the home of the offender. All offenders had an extra-familial relationship with the victim. The most common sexual act was vaginal intercourse. It is not possible to comment on the true prevalence of female-perpetrated CSA in Sri Lanka. Male adolescents are more likely than younger children to become victims of female-perpetrated abuse. The evidence may not be adequate to draw clear conclusions. Therefore, further studies are required to determine the true characteristics of female sex offenders in CSA in Sri Lanka.

Keywords: *Child abuse; female sex offenders; sexual abuse*

5160- PP

POTENTIALLY FATAL INTENTIONAL AIR RIFLE PELLET INJURY TO THE ABDOMEN IN AN ADULT: A CASE REPORT

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The use of air rifles in agricultural and leisure activities in Sri Lanka has increased in recent years due to a lack of regulations for their usage. Due to technical advancement, modern air rifles are capable of delivering projectiles/pellets with muzzle velocities similar to that of conventional handguns. The capabilities of these weapons in inflicting serious and potentially fatal injuries in children and teenagers are well documented in the literature. A 40-year-old male presented with features of acute abdomen to the surgical casualty. An emergency laparotomy revealed faecal peritonitis and 1cm perforation in the descending colon. Subsequent history revealed that he sustained an intentional air rifle pellet injury 10 days before the admission. A healing 0.8 cm circular perforated laceration was present on his left mid-third of the abdomen. Post-surgical CT abdomen revealed a metallic foreign body adjacent to the left sacroiliac joint. The patient recovered fully and was discharged without removing the pellet. Air rifles carry the potential of causing fatal injuries even in adults. The increased use of these weapons carries a significant risk to the public. Imposing new regulations and rules on air rifles is an immediate necessity in Sri Lanka to prevent these types of incidents in the future.

Keywords: *Abdomen; adult; air rifle; injury; pellet*

5416- PP

NEAR-DEATH DUE TO SMUGGLING OF A MOBILE PHONE INSIDE THE RECTUM WHILE IN CUSTODY

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Prisoners often smuggle contraband goods such as mobile phones, into prisons using a variety of methods. The rectum may be used as a vehicle for transportation, ignoring the possible life-threatening consequences. A 31-year-old male prisoner was transferred from the prison hospital to a tertiary care centre following a complaint of severe abdominal pain and fever. Digital rectal examination was negative and imaging studies revealed a foreign body in the upper rectum with perforation and peritonitis. Subsequent emergency exploratory laparotomy revealed severe faecal peritonitis and a feature phone of the model Nokia 1174, measuring 12 x 5 x 1.5 cm was retrieved per abdominally.

The prisoner admitted to inserting the mobile phone by himself 3 days ago, while he was working in a grocery shop run by inmates, located just outside the prison with access to outsiders. He has denied any similar previous attempts at smuggling or episodes of anal intercourse.

Consequences arising from the transportation of banned items in the intestinal tract should be a differential diagnosis in prison inmates presenting with abdominal symptoms. It is advisable to employ metal detectors or body scanners to prevent incidences of this type in prisons. Although body packing is often associated with the transportation of drugs by similar means, its definition can be extended to accommodate cases such as this one.

Keywords: *Body packing; foreign bodies; peritonitis; prisoner; rectum*

5493- PP

UNDIAGNOSED TUBEROUS SCLEROSIS LEADING TO CHILD ABUSE

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Child abuse (CA) is a global pathetic occurrence with undetermined incidence due to the lack of reliable data. It is often difficult to diagnose unless multiple risk factors are systematically and holistically analysed.

An 8-year-old boy of a single parent was presented to the outpatient department by the caregiver with a complaint of accidental hot water burn injury. The child was emotionally stunted, while his general hygiene was unsatisfactory. A deep burn injury involving the left side of the face, anterior neck, buttocks, and back of the thighs was noted. He was admitted to a paediatric casualty ward. It was revealed that the child has been demonstrating impulsive behaviour with severe learning difficulty since early childhood which made his mother institutionalize him in a temple where he was repeatedly abused by companions. The child was further investigated for behavioural abnormality which led to the diagnosis of tuberous sclerosis.

Burn injuries are observed in as many as 10%-20% of all reported cases of CA. It is essential to analyse the type, size, distribution, and compatibility of the history given as in this case. Tuberous sclerosis is a rare multi-systemic genetic disorder associated with profound intellectual disability and behavioural disorders which has made this child vulnerable to getting abused.

CA is not an uncommon phenomenon and burns in children should always raise suspicion of non-accidental injuries. Identification of underlying aetiology must be done with a multidisciplinary team which will positively affect the outcome of the abused child.

Keywords: *Burn; child abuse; non-accidental injuries; tuberous sclerosis*

6229- PP

NON-FATAL METALLIC NAIL INJURY TO THE ARCH OF THE AORTA

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Penetrating injuries to the aorta are not common. These are highly lethal and patients who survive such injuries are extremely rare. This is a rare case of injury to the aorta where the patient survived. A 53-year-old mason worker was brought to the emergency treatment unit with a history of nail injury to the chest. The head of the nail and a thread attached to the shaft were visible externally over the manubrium. He was hemodynamically stable. Contrast and non-contrast computed tomography revealed a 5 cm long metallic nail piercing the anterior chest wall and traversing postero-inferiorly through the mid manubrio-sternum towards the arch of the aorta indenting its superior wall between origins of the right brachiocephalic artery and left common carotid artery. The tip of the nail was within the lumen of the aorta and no contrast leak was detected. The patient had undergone an emergency thoracotomy and the nail was removed without any complications. The injury was categorized as fatal in the ordinary course of nature. Even though accidental penetrating nail injuries to the chest are rare, metallic nails can be potentially lethal in cases where it acts as a projectile with a significant amount of force and velocity. Workers should be advised to wear protective clothing to ensure their safety.

Keywords: Accidental; arch of the aorta; fatal in ordinary course of nature; metallic nail

6322- OP

POLYTHENE BAG USED IN PLACE OF A CONDOM: A CASE OF CHILD SEXUAL ABUSE

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Children may sometimes present with vaginal discharge to the paediatric unit. A 15-and-a-half-year-old, mentally handicapped pubertal girl presented to a teaching hospital with a complaint of vaginal discharge for 3-4 months. History revealed that she had been sexually abused on several occasions by her elder brother, for a significant period of time. Examination revealed a polythene shopping bag inside the vagina. On inquiry, it was revealed that the perpetrator had used a polythene bag in place of a condom while engaging in sexual activity. The bag had been retained inside the vagina and had resulted in vaginal discharge. It was removed subsequently under antibiotic cover. Screening showed no evidence of sexually transmitted infections. The victim was then placed in a home for differently abled children and in-house vocational training was arranged. A levonorgestrel-releasing subdermal contraceptive device was implanted for the prevention of future pregnancies.
A vaginal foreign body is a red flag to identify sexual abuse among children, especially those with intellectual development disorders. Although literature reports a wide variety of vaginal foreign bodies, there had been no reports of polythene bags being used in place of condoms which were retrieved from a vagina of a child sexual abuse victim.

Keywords: Child abuse; foreign bodies; intellectual disability; sexual violence; vaginal discharge

6474- OP

AN ANALYSIS OF INJURY PATTERNS IN INMATES OF A PRISON RIOT IN A SRI LANKAN PRISON

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Examination of inmates involved in prison riots poses many challenges to forensic physicians. Impartial scientific investigation into such violence is essential to control public unrest. The medico-legal reports of 74 inmates involved in a prison riot in November 2020 in a prison in the Western province were analysed to identify the injury patterns regarding the type of force, severity, category of hurt, and compatibility with the history. The injury patterns of 74 males revealed that lacerations were the most common (39.2%, n= 29), followed by firearm injuries (35.1%, n=26). Most injuries were on limbs followed by the torso. Fractures and dislocations were less frequent, being 5 (6.8%) and 2(2.7%), respectively. There was one inmate with blunt force trauma causing a fatal liver laceration. The causative weapon in the majority (51.4%, n=38) was blunt weapons, followed by firearms (35.1%, n=26) and sharp weapons (10.8%, n=8). The category of hurt was non-grievous in the majority (41.9%, n=31) while grievous hurt not endangering life was seen in 14 (18.9%). Only one had injuries that were fatal in the ordinary course of nature. All the injuries were consistent with the history given. The scientific distinction of the circumstances of causation was possible in most victims. The injury patterns were consistent with those typical of riots in prisons where protests lead to interpersonal/group violence and the application of riot-controlling measures by authorities.

Keywords: *Injury patterns; interpersonal violence; prison riot*

6557- OP

MEDICO-LEGAL EXAMINATION OF 63 PRISONERS - ISSUES FACED BY EXPERTS IN GIVING AN OPINION ON VIOLATION OF HUMAN RIGHTS

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Examination and reporting of alleged torture in custody is a challenge in forensic medicine because it is not only the diagnosis of trauma but also the exclusion of other possibilities. Injuries and opinions in the medico-legal reports of inmates presented to a leading teaching hospital in Sri Lanka were analyzed regarding the compatibility of the findings with the historical evidence and allegations. Case records of inmates from January/February 2009 were collected using a proforma. Out of the 63 case records, 100% were males. The mean age was 28 years and had been in remand custody exceeding 6 months. Sixty-two alleged being assaulted by prison officers in uniform and civilian clothing. One was assaulted after attempted escape and another denied assault. More than half (55%) were assaulted by hands and feet while blunt weapons were used on others. A burning wooden pole was used on one inmate. Eleven prisoners were examined within one week of the incident while others were examined two weeks later. Forty-six detainees (73%) had no injuries while 8(13%) and 9(14%) had scars and recent injuries respectively. There was a significant association between early presentation and the presence of injuries. (p=0.001) Analysis of the opinion revealed that the absence of injuries does not exclude the allegation in 46 cases, while four had injuries compatible with the history. Five prisoners had scars that contradicted a history of assault. A delay in producing a detainee for medico-legal examination significantly hinders the detection of injuries leading to a limited opinion regarding compatibility with allegations of violation of human rights.

Keywords: *Human right violation; medico-legal examination; torture in custody*

6805- OP

PATTERNED INJURIES SEEN IN NINE CIVILIANS REPORTED FOR MEDICO-LEGAL EXAMINATION AT A TIME OF SOCIAL UNREST IN SRI LANKA

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Mob violence is legally defined as "the disturbance of the peace by several persons, assembled and acting with a common intent in executing a lawful or unlawful enterprise in a violent and turbulent manner". Impartial forensic investigation into mob violence aims to provide critical evidence that can be used in legal proceedings. After an attack on peaceful protestors by alleged government backers, a severe backlash was triggered, and incidents of mob violence were reported from all over the country. We present the summary of forensic examination findings of 9 individuals who got admitted following that.

The analysis of the case records showed evidence of blunt force trauma to the head, where the majority (07) had left-sided head lacerations measuring 1-3 cm just above the hairline, while three had periorbital haematomas. Almost all had defence injuries on hands and forearms (lacerations/ contusions), while few had abrasions. The category of hurt in most cases was non-grievous except for 3 who had lacerations on the forehead and ear leaving permanent damage/scars. History revealed that they were physically assaulted by a group of unknown people with wooden poles and helmets aiming at the head, face, and chest. Many of them were in buses, and the mobs had questioned their involvement with the government.

Although interpersonal violence during public unrest leading to "mob justice" results in a wide range of injuries from non-grievous to death, our analysis showed that all injuries follow a similar pattern. Thus, it raises doubt whether these can be identified as injuries caused by mob violence or an organized attack by a group.

Keywords: *Forensic investigation; injury patterns; mob violence*

6917- OP

A STUDY ON VICTIMS OF INTIMATE PARTNER VIOLENCE REPORTED TO COLOMBO NORTH TEACHING HOSPITAL, SRI LANKA DURING 2019-2021

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Intimate partner violence (IPV) is a common issue in any society and the reported cases are just the tip of the iceberg as most of the victims are reluctant to come to the criminal justice system. Forensic experts are often encountering victims who chose to seek justice. Evaluation of the nature, consequences and underlying factors is a need in planning preventive measures.

A retrospective descriptive study was conducted to describe the patterns and associated factors of IPV among victims who reported to the office of the judicial medical officer of Colombo North Teaching Hospital and to specifically describe the patterns before and during the COVID-19 pandemic. 471 medico-legal records of the victims who had undergone medico-legal examination following IPV during the last two years (March 2019 to February 2021) were included in the study.

Out of 471, 206 cases were reported during the pre-pandemic and 265 during the post-pandemic periods. Even though the majority was female there were 21 males. Types of abuse were complex and often interrelated. There were 463 who had experienced physical injuries while there were 20 who had been subjected to sexual violence. The face was the commonest target region (63%). Substance

abuse was identified as the commonest predisposing factor (56%). Even though repeated abuse was common, 42.5% of the victims had never made any complaints to the police. Despite multiple complaints 39.7% had experienced repeated violence. Victims of IPV are silently suffering for many long years. Failure in response by authorities was identified. The COVID-19 pandemic has become an additional risk factor for IPV. Strengthening legal and social responsibility is the need of the hour.

Keywords: *Intimate partner; pandemic; sexual violence; substance abuse; violence*

6943- PP

A TEENAGER WITH A RETAINED RECTAL FOREIGN BODY: A CASE REPORT

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Presentations of rectal foreign bodies are not uncommon in the medical literature. A rectal foreign body in a child could have been introduced by a second person in a case of child abuse or self-insertion for sexual satisfaction & curiosity. A 15-year-old boy presented to the emergency department with an entangled piece of plastic handle of a commode toilet brush in the anus. The child gave a history of slipping inside the bathroom and accidentally falling onto the toilet brush a few hours before presenting to the hospital. A lateral pelvic X-Ray film revealed the broken-off upper part of the handle of a toilet brush in the lower rectum. An upright chest X-ray excluded bowel perforation. Removal of the foreign body was done under general anaesthesia. A Proctoscopy examination did not reveal mucosal tears or perforations. Anal examination revealed a superficial laceration of the anal verge. There were no other features of chronic anal abuse. The anal tone was intact. Psychiatry referral did not reveal psychiatric disorders or behavioural changes in the child. After revisiting the history of the child and the parents did not disclose a dubious event of sexuaL abuse. The presence of a rectal foreign body in a child should always elicit concern for possible sexual abuse. Meticulous history taking, examination, and psychiatry referral are mandatory besides prompt paediatric and surgical consultations. However, the self-insertion of rectal foreign bodies by teenagers during the natural exploration of the body or during masturbatory play is quite common.

Keywords: *Foreign body; rectum; sexual abuse*

6950- OP

STUDY ON EVALUATION OF KNOWLEDGE, ATTITUDE AND PRACTICE OF SRI LANKAN TRAFFIC POLICE OFFICERS RELATED TO EXAMINATION OF DRUNK DRIVERS, IN TWO MOST POPULATED DISTRICTS OF SRI LANKA

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Driving under the influence (DUI) of alcohol is one of the substantial predisposing factors for mishaps among road users. A traffic police officer will be the first authoritative personnel a drunk driver encounters in the legal system. The absence of accurate skills and knowledge of these officers impedes the structuring of legal procedures and may lead to a miscarriage of justice. This descriptive cross-

sectional study was carried out on a sample of 384 traffic police officers attached to the districts of Colombo and Gampaha, through a questionnaire. Out of 384, only 75 police officers knew the correct preliminaries to perform before administering a Breathalyzer test. 79.7% knew the correct instructions for using a Breathalyzer, but only 3.4% knew the colour changes of the Breathalyzer. A significantly poor attitude was observed among the police officers, regarding the importance of producing a drunk driver for medico-legal examination ($p = 0.001$). Only 222 (57.8%) answered correctly that a drunk driver needs to be subjected to a medico-legal examination as early as possible. Significantly poor practice and attitude was observed in officers with longer service duration. No significant association was observed between the ranks of officers and attitude and practice ($p = 0.199$). The results of our study demonstrate that the knowledge, attitude, and practice in efficiently handling a case of DUI among traffic police officers are poor, even though all of them engage in DUI duties irrespective of their service duration. The need for continuous professional development programs was highlighted.

Keywords: *Attitude; examination of drunk drivers; knowledge; traffic police officers*

7176- OP

THE PATTERN OF INJURIES AND THE INFLUENCE OF DEMOGRAPHIC AND SOCIO-ECONOMIC FACTORS AMONG SURVIVORS OF WIFE BATTERY REFERRED TO TEACHING HOSPITAL JAFFNA, SRI LANKA

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Wife battery is studied well in some areas of Sri Lanka and other countries. A study by Prof. N. Saravanapavananthan described socio-demographic factors, socio-economic factors, weapons, and injuries related to wife battery, mainly in Jaffna from 1978 – 1981. Our study is done 40 years later in the same geographical area. The study aims to describe the pattern of injuries in wife battery and the influence of demographic and socio-economic factors. A hospital-based descriptive cross-sectional study of 155 survivors was conducted from the year 2021 to 2022 in which 83% (n=129) of survivors and 68% (n=106) of perpetrators were aged less than 26 years; 78% (n=121) of victims and 87% (n=135) of perpetrators had studied no more than grade 11; and while 72% (n=111) victims were housewives, 79% (n=122) perpetrators were blue-collar workers. One hundred twenty-seven families (82%) were nuclear, and 91(59%) families had an income of less than Rs.30,000 per month. Among the perpetrators, 79% (n=123) were alcohol abusers, while 19% (n=29) used illicit drugs. Bare hands were used on 120 (74%) victims while more than half (n=88) were assaulted with weapons, of which broomstick (23%, n=36) was the commonest. Head (n=114) and upper limbs (n=61) were the most involved areas. Contusion (n=102) was the most typical injury, followed by abrasion (n=48) and laceration (n=27). One hundred thirty-nine injuries (90%) were non-grievous. Wife battery is not uncommon in the Jaffna peninsula. Sociodemographic and socioeconomic factors contributing to this crime, type of injuries, distribution of injuries, and weapon used have not changed significantly during the last four decades.

Keywords: *Perpetrators; socio-demographic factors; socio-economic factors; survivors; wife battering*

7850

CHEMICAL BURNS ON TEENAGERS DUE TO CHEMICAL WARFARE

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One of the most important forms of burns is chemical burns. The causative agent of chemical burns may vary. Acids can cause coagulation necrosis and alkali can cause liquefaction necrosis, both of which may cause deep burns. They may cause a large scar with a poor cosmetic outcome, resulting in both psychological and socioeconomic consequences. Based on this understanding, physicians need to treat burn victims properly and adequately, especially for medico-legal purposes. In this article, we present three teenage victims who came to the emergency department of our hospital with skin injuries that were allegedly caused by chemical warfare. The injuries were mainly distributed over the face with mid to deep dermal involvement. There was a dark appearance around the face, especially the eyelids, but there was no sign of visual acuity disturbance. There was a trickle pattern on all victims' faces. Irrigation with isotonic solutions and clean water had been started immediately after chemical exposure and continued until the victims arrived at our hospital. In the hospital, irrigation had been continued until the pH of the ocular surface was close to 7. Massive irrigation made potential effects to get rid of the evidence. Otherwise, easy access to chemicals needed to be curtailed. There was a need for proper legislation and enforcement at the same time.

Keywords: Chemical burns; chemical warfare; forensic medicine

8174- OP

GERIATRIC ABUSE AND FORENSIC NURSES

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Elder abuse is a complex issue that occurs in all environmental settings and requires nurses caring for older people to be able to detect its occurrence and initiate appropriate responses. Elder abuse and neglect exist in every community and every corner of the world. WHO reported after reviewing data from 52 studies from 28 countries that an estimated 1 in every 6 people (15.7%) above the age of 60 yrs have suffered from any type and form of abuse. Elder abuse can take place in their home, nursing home, and old age home. In old age, medical problems occur and the body has age-related changes and problems. Elder abuse sometimes is not recognized in people. Elder abuse and neglect cause early death while controlling all the other factors. Elder abuse can cause a debilitating impact on the elder and it can lead to low self-esteem and which can lead to loss of independence and sometimes serious illness and it can even cause death. Physical, emotional, sexual, financial, and neglect are the types of abuse. Forensic nurses often uncover information about abuse or violence against the elderly. They do a forensic assessment and collect forensic evidence by evaluating the nature of the current assault & history of abuse. For the prevention of elder abuse, every healthcare provider should be able to identify neglect and abuse and timely respond to abuse.

Keywords: *Elder abuse; forensic nurse; geriatric abuse*

8395- OP

INJURIES IN CHILDREN FOLLOWING THE DEPLOYMENT OF AIR-BAGS: A CASE SERIES

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Airbags are termed 'supplementary restraint systems' since they function complementary to seatbelts. To obtain the maximum protection rendered by airbags, the passenger should wear seatbelts. Airbags may lead to injuries, especially when seat belts are not worn or when the person is erroneously positioned in the seat. Children are especially vulnerable to such injuries due to several factors. Such injuries and their causative factors are discussed in this case series. Injuries in children due to the deployment of airbags have been studied together with causative/predisposing factors. Carrying older children in the front-seat unrestrained by the seat belt may lead to airbag injuries. Fractures of the zygomatic arch, unilateral or bilateral black eye, nasal bone fractures, contusions and lacerations of both lips, fractures of front teeth with inner-lip lacerations, atypical burns on cheeks, burns on the scalp with singeing of head hair have been noticed. Fractures of both right forearm bones were noticed in a 4-year-old child seated unrestrained on the lap of his father who was the driver. The child precisely claimed that his right forearm was compressed between the steering wheel, airbag, and his father's forearm. No injuries attributable to the deployment of curtain and knee airbags were noted. Traveling on the lap of an adult front-seat passenger, not wearing the seat belt, standing on the floor-board in front of the front seat, adjusting the front seat too close to the dash-board, positioning the baby seat erroneously on the front seat, etc. are dangerous practices. Airbags could cause injuries to children traveling in the front seat either unrestrained by seat belts or in manners not authorized by the vehicle manufacturer.

Keywords: *Air-bag deployment**;** injuries in children**;** singeing of hair**;** unrestrained passenger*

8430

SELF- INFLICTED VS TORTURE: A DIAGNOSTIC DILEMMA

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Differentiating between injuries due to self-infliction and torture is a common challenge faced by forensic practitioners. We present a case where the subject has sustained injuries while in custody and is alleged to be following torture. A 27-year-old male, who was a software engineer, was produced for clinical forensic examination. He had been held in custody for 72 hours, during which he was interrogated and allegedly tortured by a group of police officers. According to him, multiple cut injuries had been inflicted on his body using a blade. However, there was no history of other forms of abuse including, verbal or psychological. Examination revealed groups of fresh linear abrasions, placed in five anatomical areas including the dominant hand. Injuries were asymmetrical, some placed in non-accessible locations and involving sensitive areas such as the areolar. Furthermore, the psychiatric assessment did not reveal any risk factors for self-harming behaviour. However, meticulous examination of vertically placed injuries on the back of the body showed curving of either end towards the dominant hand creating a strong suspicion of whether the injuries were self-inflicted, prompting further questioning. Ultimately, the patient confessed that the injuries were self-inflicted with a straightened safety pin to mimic torture. Differentiation of self-inflicted injuries from assault is a challenging task for clinical forensic practitioners, especially when done by a person with good knowledge regarding injury patterns. However, careful inspection will help uncover small yet significant features in the injuries that will assist the forensic practitioner to give a more accurate opinion regarding the injury mechanism.

Keywords: *Custody**;** dominant hand**;** self-infliction**;** torture*

8691- PP

EARLY PULMONARY EMBOLISM FOLLOWING BLUNT TRAUMA TO THE CHEST AND A LONG BONE FRACTURE: A CASE REPORT

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After substantial trauma, pulmonary embolism (PE) carries a high risk of morbidity and mortality. Early post-traumatic PE in the absence of deep vein thrombosis (DVT) is a distinct entity that might be connected to rare mechanisms or unidentified biochemical processes. A driver of a car presented with worsening chest pain and shortness of breath following a road traffic accident. During the accident, his chest had impacted against the steering wheel. Radiological investigations revealed a closed fracture of the right femur and a pulmonary embolism in the left posterior segment of the pulmonary artery. There was no evidence of internal chest injuries or DVT within 12 hours of the incident. D-dimer, troponin I, and creatinine kinase were elevated without evidence of myocardial infarction or injury. Other parameters were within the normal range. Possibilities of early PE in the absence of detectable DVT could be due to hyper-coagulability states, clots from the lower extremity completely getting detached and embolizing to the pulmonary circulation, screening errors, and 'de novo' thrombi in the pulmonary circulation. Chest trauma is an identified risk factor for early or late pulmonary embolism. The action of the post-traumatic adrenergic response causing vascular endothelial inflammation and the synthesis of circulating adhesion molecules leading to localized thrombosis have also been suggested as a mechanism for this phenomenon. A greater understanding of rare risk factors for early PE is crucial. Awareness regarding the possibility of rare complications of chest trauma is useful in detecting and treating them in time to reduce morbidity and mortality.

Keywords: *Chest trauma; de novo thrombi; deep vein thrombosis; early pulmonary embolism; long bone fracture*

9175- PP

BATTERED WOMAN SYNDROME: A REALITY THAT VICTIMS CANNOT RUN AWAY FROM

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Battered woman syndrome refers to the psychological effects of domestic violence on women and is known as a subcategory of post-traumatic stress disorder. Women choose to stay in abusive relationships even though it is obvious leaving is the best option. Many psychological theories explain their passivity, yet the spectrum of injuries showcases the brutality they endure physically. A 37-year-old female was admitted following being assaulted by husband. She claimed that she was assaulted with firewood, a broomstick, and with hands. Clinical examination revealed abrasions and tramline contusions all over the body. Furthermore, it was noted that she is carrying several chronic injuries, deformities, and disabilities reflecting chronic physical abuse. These included cauliflower ears, a deformed nose, poor eyesight, disfigured lips, and malunited fractures of the left distal radius and left 4th and 5th metacarpal bones. She appeared depressed and was referred for psychiatric assessment. She was diagnosed with severe depressive disorder and battered woman syndrome. The husband was arrested and remanded. Safe custody was arranged for her children at a children's home during her hospital stay. The management of the children's home agreed to provide shelter for the mother also

following her discharge. Follow-up was arranged for her chronic injuries together with antidepressants and psychotherapy. The psychological effects of intimate partner/ domestic violence forced the victim into survival-focused mode and neglected her injuries and disabilities which led to a poor outcome.

Keywords: *Battered woman syndrome; chronic physical abuse; domestic violence; intimate partner violence*

9293- PP

SIGNIFICANCE OF MEDICAL EVIDENCE IN A ROAD USER: FAIR ADMINISTRATION OF JUSTICE

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Seat belt injuries occur as a result of the interaction between the restrained occupant and the belt. A 40-year-old male, said to be the front seat passenger of a car, presented with multiple blunt trauma following an alleged motor vehicle collision that occurred the previous night. He claimed that he was not the driver at the time of the accident. The clinical notes on admission did not reveal alcohol status; instead, it was stated as “under influence of alcohol”. Multiple injuries were documented in the clinical notes but not specified in any specific injury pattern. A characteristic pattern of an obliquely placed contusion across the right upper chest area towards the left abdomen was noticed. Multiple sparrow foot injuries on the right upper arm and a contusion on the front part of the right sole were noted. The police investigations revealed another occupant of the same vehicle taking treatment for grievous injuries in another hospital. These findings highly suggest that the said victim was the driver. Seat belt sign is the characteristic pattern of contusion across the chest and abdomen seen in the restrained passenger involved in a road traffic collision. Breath-smelling of alcohol is not given any legal value under the Motor Traffic Act of Sri Lanka (MTA). Vital findings, if any, to suggest that the victim was under the influence of alcohol have not been recorded in the clinical examination, which led the driver to mitigate his charges under the MTA and law of Sri Lanka.

Keywords: *Drunken driving; motor Vehicle Collision; seat belt injuries*

9473- PP

NON-FATAL AIR RIFLE INJURY TO THE BRAIN: A CASE REPORT

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The use of air rifles shows an increasing trend in the recent past. These are often used by farmers to protect crops from animals, rather than as potentially lethal weapons. Regulations on the purchase and ownership of air rifles differ from country to country. A license is not needed to possess an air rifle according to the firearm ordinance of Sri Lanka. Although fatal injuries are occasionally reported, air rifle injuries are usually non-fatal. A 7-year-old child accidentally triggered the air rifle injuring his mother. On examination, the pellet had entered her left eye causing a 4mm size skin laceration in the eyelid. There was extensive scleral laceration with choroid and iris prolapse, resulting in a very poor prognosis of vision. The pellet had further penetrated through the left orbit, into the cranial cavity, and travelled across to the right occipital region. There was frontal intracerebral haemorrhage, cerebral laceration, cerebral oedema, and pneumo-cranium. The patient was managed conservatively at the

neuro-trauma unit with mild residual upper and lower limb weakness over the left side of the body. The category of hurt was given as fatal in the ordinary course of nature. Air rifles can be potentially lethal, causing serious injury and even death. The general public, especially the farming community should be educated about the hazardous outcomes of air rifles and how to properly store them, making them inaccessible to children.

Keywords: *Accidental; air rifle; fatal in the ordinary course of nature; intracerebral hemorrhage*

9844- OP

A STUDY ON KNOWLEDGE, ATTITUDES, AND BELIEFS OF SRI LANKAN FORENSIC PRACTITIONERS TOWARDS SEXUAL ASSAULT SURVIVORS

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Sexual assault is a global problem with an impact on physical/ mental health. Sexual assault survivors experience negative social reactions such as stigmatization and blame attribution. Negative social reactions can lead to detrimental effects on mental health. It has been shown that negative reactions exist among the service providers for this group. This study examines the perceptions of forensic practitioners regarding sexual assault survivors. An online questionnaire comprised of 22 questions was sent out to forensic practitioners of Sri Lanka, who are among the primary contacts of sexual assault survivors in the hospital setting. The questions addressed knowledge, attitudes, and beliefs toward sexual assault survivors. Out of more than 100 invitees, only 51 responded to the questionnaire. Only 46% of forensic practitioners reported that they never feel reluctant to examine sexual assault cases. An average of 71% responded positively to all the correct statements regarding knowledge. The average percentage of participants who responded negatively to the negative statements regarding attitudes/beliefs was 57%. A percentage of 39% responded as “agree” or “strongly agree” for the two positive statements regarding attitudes/beliefs. The findings of our study highlight the requirement for training programs and further studies to address the negative beliefs and attitudes among the primary health contacts of sexual assault survivors.

Keywords: *Attitudes; forensic practitioner; sexual violence; survivors of sexual abuse*

6310-OP

SURVIVOR CENTERED CARE IN GENDER BASED VIOLENCE TREATMENT PROTOCOL FOR HEALTHCARE PROVIDER: A MEDICO LEGAL REVIEW

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The Gender-based violence Treatment Protocol for Healthcare Providers is an essential element for building the capacity of healthcare providers to provide better quality care to survivors of Gender-based violence. A Protocol helps to ensure that all survivors of GBV, regardless of their age, background or ethnicity, receive appropriate and effective care when they enter a health facility. Concern for patient

welfare extends to ensuring that patients' dignity is respected after an assault that may leave them feeling humiliated and degraded. Additionally, medical and forensic services should be provided in a manner that minimizes the number of invasive physical examinations and interviews the patient. Rape management is in generally considered a medical emergency and the provision of medico-legal services thus takes secondary importance to general health care services (such as trauma treatment, evaluation and management of pregnancy and sexually transmitted infections (STIs)). Performing a forensic examination may be considered a negligent practice without meeting the primary health care needs of patients. Health facilities are often the first entry points for Gender-based violence survivors – so it is crucial for healthcare providers to be skilled and well-equipped to manage the care to survivors. A Protocol that emphasizes the importance of providing survivor-centered care with an empathetic attitude to people affected by GBV includes identifying GBV, taking medical history, maintaining privacy and confidentiality, and gathering medico-legal evidence.

Keywords: *Gender-based violence, Survivor-centered care, Treatment protocol.*

FORENSIC TOXICOLOGY

1201- OP

VOLTAMMETRIC ANALYSIS OF CADMIUM IN BLOOD AND URINE USING HANGING MERCURY DROP ELECTRODE (HMDE)

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Cadmium (Cd) is a metallic element present everywhere in our environment. It is inflammable, but in its powdered form, it releases toxic fumes which cause Cd poisoning. The disease caused by exposure to Cd is known as Itai -Itai (ouch-ouch) disease. Various sophisticated analytical techniques like ICP-MS, AAS, etc. are usually used to assess levels of Cd in biological samples. An attempt has been made to develop the method for the determination of cadmium in blood and urine with the voltammetric technique using a Hanging Mercury Drop Electrode (HMDE). Aim of this study is to develop a simple and reliable method for voltammetric analysis of Cd in blood and urine using a Hanging Mercury Drop Electrode (HMDE). Blood and urine samples were spiked with cadmium. The samples were processed by a closed digestion method using nitric acid. Voltammetry determination of cadmium in the samples was carried out using Hanging Mercury Drop Electrode (HMDE). Voltammetry determination of Cd in the samples was carried out using Hanging Mercury Drop Electrode (HMDE). Voltammograms of blank, sample and standard were recorded. Extrapolation graph gives the amount of Cd present in the sample. The concentration of Cd was successfully detected in all the spiked blood and urine samples. The method is suitable for the determination of cadmium in blood and urine. The limit of detection of the method is 0.1 µg/L for Cd. The developed voltammetry method is a simple, selective, sensitive, and reproducible technique for the quantitative determination of cadmium in blood and urine using a Hanging Mercury Drop Electrode (HMDE).

Keywords: *Cadmium; HMDE; poisoning; voltammetric technique*

1225- PP

SEARCH FOR HEAT SHOCK PROTEIN IN THE BRAIN OF METHAMPHETAMINE POISONING DEATHS BY NON-TARGETED PROTEOMICS

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Heat shock proteins (HSPs) are proteins that are induced by stress conditions such as heat exposure. In particular, it has been reported that detection of 70-kDa HSP by immunohistochemical examination is useful for diagnosing methamphetamine poisoning. In this study, non-targeted proteomics analysis using liquid chromatography quadrupole time-of-flight mass spectrometry (LC-QTOF/MS) was performed to search for brain 70-kDa HSP in methamphetamine poisoning deaths. Four cases, each of death from methamphetamine poisoning and sudden cardiac death, were included in this study. Proteins were extracted from parietal cerebral cortex tissue, and after digestion with trypsin, the resulting peptides were measured by LC-QTOF/MS. For analysis, an X500R QTOF mass spectrometer (AB Sciex) equipped with an Exion-LC series HPLC was used. Proteins were identified using ProteinPilot (AB Sciex) for analysis of MS acquisition data. Furthermore, a chromatogram was acquired from the detected peptide ion signals, and the peptide abundances were compared. Non-targeted proteomic

analysis using LC-QTOF/MS detected up to 23 70-kDa HSP-derived peptide fragments from brain tissue. Moreover, as a result of comparing the chromatogram acquired from the detected peptide ion signals, peptide abundance was higher in methamphetamine poisoning death than in sudden cardiac death. The results of this study suggest that proteomics analysis may provide important information for forensic diagnosis. In the future, we plan to further investigate detection sensitivity and quantification, as well as analyze other detected proteins.

Keywords: *Forensic pathology; heat shock protein; liquid chromatography; methamphetamine poisoning; non-targeted proteomics*

1293- OP

FORENSIC TOXICOLOGICAL ANALYSIS OF ACCIDENTAL DEATHS DUE TO DRUG OVERDOSE - A DESCRIPTIVE RETROSPECTIVE STUDY

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Drug overdose deaths continue to increase throughout the world. This research to identify the drug trends, combined drug toxicity, and lethal concentrations recovered at autopsies. My specific objectives were to identify the drug trends according to overdose fatalities, socio-demographics, the prevalence of fatalities due to illicit drugs, prescribed drugs, mean lethal concentrations, combined drug pattern, standard minimum lethal concentrations of drugs, mean lethal drug concentrations of fatalities in the County of Cook, USA. A retrospective descriptive case-control study was carried out on all accidental deaths (1 100 deaths) due to drug overdose at the Office of the Medical Examiner, County of Cook. 79% (n=869) of fatalities were of male gender while 21% (n=231) were female. Males between 51-60 years showed the highest fatality. Females between 31-40 years showed the highest fatality rate. 65% (n=717) of fatalities were below the 50-year age group. Heroin was the commonest illicit drug of abuse causing 782 fatalities (71%) followed by fentanyl and designer opioids. 53.1% (n= 585) of fatalities were due to combined drug toxicity. The maximum time since death for 6 MAM positivity was by 167 hours. Mean lethal drug concentrations in these combined drug fatalities were well below the standard minimum lethal drug concentrations. The researcher has found the highest number of drug overdose deaths in the young population below 50 years. Minimum lethal concentrations were very much below the standard lethal concentrations in combined drug toxicity.

Keywords: *Forensic toxicology; minimal lethal concentration; combined drug toxicity*

1376- OP

TISSUE DISTRIBUTION OF LEMBOREXANT IN FOUR FORENSIC AUTOPSY CASES

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Lemborexant is an insomnia medication available in Japan since 2020. It is a dual orexin receptor antagonist that promotes sleep by inhibiting the binding of orexin neurons to the orexin receptors. In this report, we document the quantification and tissue distribution of lemborexant for the first time in four forensic autopsy cases. Four cases that were prescribed lemborexant were autopsied. Postmortem body fluids and tissues were collected and stored at -20°C until analysis. Body fluids and tissue samples (0.1 mL or 0.1 g) were mixed with 0.3 mL acetonitrile, 0.2 mL deionized water, 80 mg magnesium sulfate, and 20 mg sodium acetate in a 2-mL tube. After vortex mixing and centrifugation, 0.2 mL of the supernatant was transferred to a test tube. The extract was mixed with 40 µL of 0.1% trifluoroacetic acid in acetonitrile, and evaporated to dryness at 42°C under nitrogen gas. The residue was reconstituted

in 0.1 mL of methanol and analyzed on the LC-MS/MS. Analysis was performed on a Shimadzu LCMS8045 using a Shim-pack Velox SP-C18 column at 40°C. A linear gradient between 10 mM ammonium formate and 0.1% formic acid in water and 10 mM ammonium formate and 0.1% formic acid in methanol was used. The multiple reaction monitoring (MRM) transitions were optimized using a lemborexant (10 mg, base powder) reference standard. Estazolam-d5 was used as the internal standard. The MRM transitions for lemborexant were m/z 411 > 297 as the quantifying transition and m/z 411 > 125 and m/z 411 > 175 as the qualifying transitions. The retention time was 7.06 minutes. The lemborexant concentrations for all available body fluids and tissues were determined for all four cases. It is possible that the use of lemborexant will expand in the future. Forensic laboratories and emergency department should be aware of lemborexant going forward.

Keywords: *Forensic Autopsy; LC-MS/MS; Lemborexant; tissue distribution*

3623- OP

DEATHS DUE TO SUFFOCATION CAUSED BY EVAPORATED LIQUID NITROGEN IN A FROZEN FOOD PROCESSING FACTORY IN SRI LANKA: A CASE REPORT

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Nitrogen constitutes a major portion of the atmosphere. Its liquid state is inert, extremely cold, and widely used for freezing, filling, or cleaning purposes in laboratories and industries. Humans possess no senses to detect the presence of nitrogen, yet evaporation of liquid nitrogen in a tightly closed space can result in detrimental results. We report two deaths at work in a factory using liquid nitrogen for freezing spices by an “Individual Quick Freezing” (IQF) machine. Two workers were found unconscious in a room of a frozen spice processing factory during the night shift and pronounced dead on admission. Autopsies revealed no evidence of traumatic or toxicological mode of death. Furthermore, there was no evidence of natural illnesses. Examination of the scene of the incident was necessitated as autopsies failed to identify the causation of death. A retrospective scene examination was done with forensic science experts. The IQF machine was started after setting parameters similar to those in operation on the day of the incident. An oxygen level indicator was installed and measurements were taken while the machine was operating. The reduction of oxygen concentrations to critical levels in the work area was noted. Suffocation due to the displacement of oxygen by evaporated liquid nitrogen was prompted as the cause of death. The absence of workman safety instructions, equipment, and training was notable. The value of scene examination in death investigation is emphasized and medico-legal and public health issues of workman safety are discussed

Keywords: *Suffocation; hypoxia; asphyxia; liquid nitrogen; industrial accidents*

4346- OP

CORRELATION OF HEIGHT AND MAXIMUM OVERHEAD REACH: A STUDY AMONG YOUNG ADULT POPULATION IN SRI LANKA

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Hanging is a common scenario in forensic practice. Determination of circumstances is important and could be difficult in a case of hanging. The person should have been able to reach the point where the ligature is attached (point of suspension) by himself/herself in case of suicidal hanging. This study was to find out the association between height and maximum overhead reach of participants among the Sri Lankan population within the age group between 20 to 30 years of age. A simple random sample technique was used to recruit 190 (103 females and 87 males) young adult university students of Peradeniya, between 20-30 years. The standing height was measured in barefoot with heel flat on the ground to the vertex of the head. Wall mounted stadiometer was used for the height measurement. Then their maximum overhead reach was marked and measured. A dual scale inch/cm tape measure was used for maximum overhead reach measurement. Three measurements were obtained and the average of the three was used to obtain a formula to measure maximum overhead reach by regression analysis. The average maximum overhead reach was 223.5cm and 213.6 for the males and females respectively. The formula to estimate maximum overhead reach (MOR) when height is available was MOR= 1.49h-23.27 and MOR=0.93h+67.49 for males and females respectively. The coefficient of determination (R2) was 0.84 and 0.80 for males and females respectively. P values for both genders were < 0.01. There is a positive correlation between height and the maximum overhead reach of a person. Further studies are recommended.

Keywords: *Hanging; height; maximum overhead reach*

4397- PP

POSITIONAL ASPHYXIA BY INTOXICATION WITH MULTIPLE ILLICIT DRUGS

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The death of a young person is almost always subjected to intensive investigation. There could be many circumstances surrounding the death. Death due to the consequences of drug intoxication is rare but still a potential cause of death. A 27-year-old previously healthy male with a history of addiction to cannabis was found dead in his three-wheeler in a high residential area. He was found in a seated position and the upper trunk had bent forward pressing over his thighs. Head and neck were hanging against the handle of the trishaw forcing the face downwards. The autopsy revealed a congested face, petechial hemorrhages in the dependent conjunctivae, and parched, vertically placed abrasion of 1 X 3 cm in size on the area of contact of the dependent right-side neck with the handle. Urine analysis revealed the presence of multiple abusive substances. Though rare, positional asphyxia following drug intoxication would be an important differential cause of death among deaths of young individuals and it could have been much more difficult to establish the cause of death as positional asphyxia unless a proper examination of the scene had been done before the autopsy.

Keywords: *Abusive drugs; intoxication; positional asphyxia*

4436- OP

PHYSIOLOGICAL PHARMACOKINETIC AND PHARMACODYNAMIC MULTI-COMPARTMENTAL MODELLING (PB-PK-PD), PRACTICAL IMPLEMENTATION OF FORENSIC PHARMACOKINETIC

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Drug-related medicolegal situations are becoming more common every day. Physiological base pharmacokinetics-pharmacodynamic multicompartmental model using different software is a new dimension for estimation of drug levels in drug related medicolegal cases. In forensic medicine, it is necessary to estimate the dosage given or consumed by the deceased based on either the postmortem blood level or the drug content in the urine. Creatinine clearance should ideally be assessed before being adjusted for body surface area, sex, and age. The development of ischaemia triggers cellular alterations that lead to post-mortem modifications. Organ and tissue structure and function steadily decline with increasing ischaemia duration, which affects how medications are distributed throughout bodily tissues and fluids. The postmortem redistribution phenomena must be taken into consideration when estimating the deceased's drug concentration. In the deceased, if blood level is not used carefully to replicate the dose versus toxicity relationship, it is possible that the drug concentration does not accurately reflect the concentration at the moment of death. For medico-legal drug-related cases, there are numerous aspects needed to be considered such as how drug levels correlate with mortality as well as various influences on forecasting actual drug concentration. Forensic pharmacology is evolving by encompassing a wide range of areas, including the varying physiological based pharmacokinetics and pharmacodynamics of drug/pharmaceutical products in both live and dead individuals, drug interactions, drug misuse, personal damage or death brought on by drug exposure that raises medico-legal concerns, environmental chemical exposure, doping, and forensic pharmacovigilance.

Keywords: *Pharmacokinetic.; pharmacodynamics; forensic pharmacology*

4736- OP

SMUGGLING HEROIN USING IMPREGNATED RUBBER CARPETS THROUGH AIRPORTS- A CASE REPORT

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Heroin is smuggled into Sri Lanka using various methods through courier service providers, sea cargo as well as personal baggage. A huge array of concealment methods is used, including those that require chemical extraction. Although there has been confiscation of heroin-impregnated fabrics previously, the submission of carpets impregnated with heroin was new to the laboratory. Case I- This case was detected by the officers of the Sri Lanka Police Narcotics Bureau (PNB) where a Pakistani person carrying a traveling bag was arrested based on information at the Katunayake Bandaranaike International Airport. When the bag was examined, carpets with impregnated heroin concealed in the bag were found and handed over to the Government Analyst's Department. Case II- The Officers of PNB arrested a suspect based on information received, at the Wellawatta area with a traveling bag concealing carpets with impregnated heroin in false sides of the bag. Samples were extracted into chloroform and analysed qualitatively and quantitatively using TLC, GCMS, and GC-FID. GC-FID analysis revealed that the carpets contained heroin at a purity of 22 percent in case I and 36 percent in case II. Drug Smugglers use various types of methods in the transportation of illicit drugs to Sri Lanka. But this is the first time the law enforcement authorities found a case with heroin impregnated into rubber carpets. This type of investigation helps in the elimination of significant amounts of heroin from society.

Keywords: *Concealment methods; heroin; smuggling; impregnated rubber carpets*

4884- OP

BENZODIAZEPINES & ANALGESIC OPIOID COMBINATION AS A CAUSE OF DEATH- A CASE REPORT

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Both opioids and benzodiazepines suppress respiration, but the combination of the two substances is much more dangerous and can increase the risk of overdose. This article aims to demonstrate how the results of the toxicological examination can be interpreted when we are faced with a mixture of substances found in the samples taken at the autopsy.
This is a case report of a deceased male nurse, who was found dead in his flat. Several empty containers of fentanyl and mialgin were found near the body. A bag with partially empty containers of medicines (fentanyl, telmisartan, diazepam, enalapril, dormicum, acupan, and mialgin) was found in his car.
During the external examination of the body, chronic stigmata of injectable drug use was noted. Autopsy findings were nonspecific. The thanatochemical examination performed on the pericardial fluid showed a high level of myocardial ischemia markers. The toxicological examination showed, HPLC - blood: pethidine, diazepam, and nordazepam 0.03 µg / ml; GCMS - urine: pethidine and metabolites, temazepam; HPLC - gastric content: pethidine. The histopathological findings could be correlated with the long-term consumption of these drugs. The cause of death was acute intoxication with a mixture of medication (opioid analgesics and benzodiazepines). The medicines were stolen from the workplace.
We consider that in the presented case, the combination of pethidine and benzodiazepines led to the potentiation of the pharmacodynamic effect and inhibition of the bulbar respiratory centre, which is a well-known sequel for each of the drugs detected in the biological samples collected from the body.

Keywords: *Analgesic opioids; benzodiazepines; cause of death*

6026- PP

A NEONATAL DEATH DUE TO NEONATAL ABSTINENCE SYNDROME FOLLOWING ACUTE HEROIN OVERDOSE IN THE MOTHER: A CASE REPORT

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Illicit drug abuse during pregnancy is dramatically increasing in Sri Lankan pregnant mothers. We present a case of neonatal death due to neonatal abstinence syndrome. A 36-year-old pregnant mother with a period of gestation of 35 weeks was admitted to the De Soysa Maternity Hospital in Colombo complaining of sudden onset difficulty in breathing. She underwent a vaginal delivery 16 hours after the onset of symptoms. A floppy baby girl was delivered with a low APGAR score of 5, 7, and 9. The baby was artificially ventilated but died within 6 hours of birth. Post mortem examination of the baby was done with all organ histology, toxicology, and microbiology. A multidrug test panel on urine revealed the presence of morphine, opioids, and phencyclidine. Mother's urine was similarly positive for morphine, opioids, and phencyclidine. The cause of death was given as acute respiratory depression due to neonatal abstinence syndrome. The major limitation of this death investigation was the lack of methods for narcotic drug quantification in the mother and the newborn. To prevent health hazards for both the baby and the mother it is suggested to screen all high-risk pregnant mothers for drug abuse.

Keywords: *Abstinence; depression; quantification*

6260- OP

DEATHS DUE TO ILLICIT DRUG ABUSE AND POISONS IN COLOMBO DISTRICT, SRI LANKA: AN EXPLORATIVE RETROSPECTIVE CASE STUDY

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Research on deaths due to illicit drug abuse and poisons is a national necessity in Sri Lanka. Our objectives were to study the age and sex distribution, correlation of time since death to the identification of drugs and poisons in biological fluids, poisoning trends, the correlation of time since death to the post mortem production of ethanol, and the correlation of lethal concentrations to the time since death.

A total of 43 post-mortem cases were retrospectively analysed in which a drug or poison was included in the cause of death. Another 28 non-alcoholic blood samples were analysed to assess the post-mortem production of ethanol. The highest risk category was males between 51- 60 years. Females between 21–30 years was the high-risk category.

Suicides (53.48%) represented the most prominent manner of death followed by natural diseases related to drugs and poisons. In 39.53 % of cases, drugs and poisons were the immediate cause of death (Ia). Ethanol and lithium were detected up to 120 hours post-mortem while opioids, amphetamine, methamphetamine, methadone, tricyclic antidepressants, benzodiazepines, phencyclidine, morphine, methanol, ethyl glucuronide, and cannabinoids were detected only up to 48 hours post-mortem. The mean level of post-mortem production of ethanol within 72 hours from death was 32.28 mg /dl.

The non-availability of GCMS and LCMS methods to quantify illicit drugs and poisons is a major limitation to interpreting the cause of death in the Sri Lankan setup. This study brings to light the burden of drug and poison-related deaths highlighting the need for multi-centred studies to improve quantification methodologies.

Keywords: *Gas chromatography mass spectrometry; illicit drugs; liquid chromatography*

6564- OP

DIAGNOSTIC MEANING OF URINARY ETHYL GLUCOSIDE CONCENTRATIONS IN RELATIONSHIP TO ALCOHOLIC BEVERAGE CONSUMPTION

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Incidents and accidents often involve the drinking of alcoholic beverages. We investigated compounds that indicate the consumption of alcoholic beverages even after ethanol (EtOH) becomes undetectable in blood and urine. Ethyl glucoside (EG) has been isolated as a possible drinking marker, and a GC–MS/MS method for EG isomers has been developed. EG isomers in several alcoholic beverages were analyzed. In sake, only αEG was observed in high concentrations. In wine and beer, both α and βEG were detected. Whisky, however, did not contain EG. EtOH and EG concentrations were analyzed in urine up to 48 h after ingestion. Maximum EtOH concentrations were reached in 1–2 h and were mostly eliminated in 6 h. Maximum EG concentrations were reached in 3–6 h, gradually decreased, and remained low after 24 h. After drinking sake, the αEG concentrations were much higher than that of other alcoholic beverages. After drinking wine or beer, βEG was detected, but lower than αEG. Also, αEG was detected in urine after drinking whisky that contained no EG. This suggested that αEG may be synthesized in vivo. Disaccharide-degrading enzymes such as α-glucosidase are present in the human small intestine. It was considered that αEG was synthesized when alcohol was consumed with certain foods, such as carbohydrates. In actual forensic autopsy cases, EtOH and EG isomer analysis provided

useful information regarding drinking history. In conclusion, it is considered that urinary EG isomers can be used as drinking markers that complement EtOH analysis.

Keywords: Alcoholic beverages; drinking marker; ethyl glucoside; ethanol; forensic autopsy

6934- OP

DEATH DUE TO DRUG OVERDOSE BEHIND CLOSED DOORS: AN UNUSUAL CASE

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Diphenhydramine hydrochloride (Benadryl) is a first-generation antihistamine mainly used to treat allergies. It also has powerful hypnotic, mild anxiolytic, and antiemetic effects. At high doses, it can cause hallucinations (auditory and visual), delirium, and irritability. It is used recreationally as a deliriant, depressant, and potentiator of alcohol, dextromethorphan (DXM), and some opioids. It is often used as a non-prescription sleep aid. It should not be used after consuming ethyl alcohol. A 55-year-old male of Austrian descent, working as a flight attendant was found dead in the bathroom of his room in a five-star hotel in Bangalore. At autopsy, there were multiple abrasions, contusions, lacerations, and incised wounds of various dimensions, present over the head, face, chest, and both upper and lower limbs. Scene of occurrence photos and videos revealed palm prints all over the walls and floor of the room. The western wall-mounted commode was broken. Four empty strips of tablets of diphenhydramine hydrochloride were found in the room. Also, there was no single fatal wound. Chemical analysis for ethyl alcohol and Diphenhydramine hydrochloride came positive. On perusal of the literature procured, crime scene visits, and meticulous autopsy it was opined as self-inflicted injuries under the influence. The effect of mixing alcohol with diphenhydramine can be severe as they both depress the central nervous system. As a rule, people taking over-the-counter medications should always be careful about possible interactions.

Keywords: *Drug overdose; ethyl alcohol; self-inflicted*

8193- OP

MEPHEDRONE: AN EMERGING NEW PSYCHOACTIVE SUBSTANCE IN SRI LANKA

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Mephedrone is a psychoactive substance belonging to the phenethylamine family. It is used in conjunction with cocaine and methamphetamine as an art of combined drug addiction and has gained popularity among drug abusers as a recreational drug. Common street names for mephedrone among drug abusers are M CAT, Meow Meow, 4MMC, and Drone. It is available in the form of powder, tablets, crystals, and injections. Fatalities have been reported with mean blood concentrations between 412-2663 ng/ml. Due to its adverse side effects and several reported deaths, the European Union banned mephedrone in 2010. Mephedrone is also classified as a highly addictive drug in Schedule 1 in the USA with extreme mental stimulation and euphoria. Two samples with 13 and 36 grams of white powder suspected to contain cocaine were submitted to the narcotics laboratory of the Government Analyst's Department of Sri Lanka for further examination. The powder was extracted with chloroform and diethyl ether and a comprehensive analytical scheme including preliminary tests, TLC, GC-MS, FTIR, and RAMAN spectroscopy was applied for the qualitative analysis. Analytical results confirmed the

presence of Mephedrone in the white powder in both cases. There is a high tendency for "legal highs" to enter the local drug market. Mephedrone is not a controlled substance in Sri Lanka, but it is included as a controlled substance in many other countries. Therefore, it is high time for Sri Lankan legal authorities to pay more attention to controlling Mephedrone.

Keywords: *Controlled substance; GCMS; mephedrone; new psychoactive substance; qualitative analysis*

8888- PP

SUICIDE OF A HEALTHCARE WORKER BY INTRAVENOUS ADMINISTRATION OF POTASSIUM CHLORIDE: A CASE REPORT

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Intravenous Potassium Chloride (KCl) is used for therapeutic purposes as well as for euthanasia and homicide. Healthcare workers in particular have access to lethal doses of KCl, making them vulnerable to suicide in the presence of risk factors. A 54-year-old registered female nurse was found unconscious during the night shift at her duty station by her colleagues. Cardiopulmonary resuscitation was initiated immediately but she was declared dead soon after. Two empty vials of KCl (10ml 14.9%) and acetylcysteine (200mg USP), two 18-gauge cannulas, a used 5 ml syringe with needle, and a burette with flexible tubing was found beside her. The autopsy indicated a 1.5x0.5cm swelling surrounding a puncture mark in the ventral left forearm, suggestive of the injection site, and an extravasation of 7x7cm in size, distal to the injection site. The internal examination was unremarkable, except for pulmonary oedema and splenic congestion. There was no evidence of traumatic injuries. KCl was positive at a toxic level in the toxicological analysis of blood. Collateral history revealed frequent marital disputes between the decedent and her husband in the recent past. She had been on treatment for depression for the previous two years. It was apparent that she had self-administered KCl and the cause of death was ascertained as KCl toxicity. Healthcare workers, especially those who are suffering from psychiatric illnesses, are more prone to utilize easily approachable therapeutic agents to commit suicide. Care must be taken when those individuals are assigned to man such precarious stations.

Keywords: *Depression; healthcare worker; potassium chloride; psychiatric illness; suicide*

9645- PP

IS IT GLUFOSINATE AMMONIUM POISONING? A CASE REPORT

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Glufosinate ammonium is one of the most widely used herbicides, which acts by inhibiting the synthesis of glutamine in plants. Given the differences in biochemical pathways and metabolism between plants and mammals, glufosinate ammonium formulations have been regarded as minimally toxic to humans and as safe products in agronomy. However, according to the literature, ingestion of glufosinate

ammonium herbicide can result in grave clinical outcomes. In severe cases, patients either die or suffer severe toxic reactions, such as shock, respiratory arrest (apnoea), unconsciousness, convulsions, and amnesia. A 67-year-old male farmer was found semiconscious on the ground close to his home. There was an empty arrack bottle and a poison bottle on the ground by the side of his body. He had vomited a red-coloured substance prior to admission. He had a past medical history of bronchial asthma and a suicide attempt 5 years ago. He died about 48 hours after admission while at the ICU-DGH Kegalle. The clinical investigations showed multi-organ failure. The post-mortem revealed red-coloured gastric erosions, fibrosis of the anterior wall of the heart, pulmonary oedema, floppy swollen kidneys, and friable liver. The probable cause of death was given as death due to ingestion of corrosive poison. According to the literature, severe effects of glufosinate poisoning can occur with older age and a larger amount of ingestion. Although there are hardly any reported cases in our country, there were several cases reported from other parts of the world.

Keywords: *Corrosive poison**;** glufosinate ammonium**;** glutamine**;** herbicide*

FORENSIC ANTHROPOLOGY

293- OP

RETROSPECTIVE ANALYSIS OF SKELETONIZED HUMAN REMAINS WITH KNOWN POST-MORTEM INTERVALS IN SELECTED SRI LANKAN FORENSIC INSTITUTIONS

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Skeletonization is the most advanced stage of postmortem decomposition and is affected by multiple factors such as temperature, humidity, and scavenging. The time since death (TSD) can vary widely from days to months. Existing methods for determining TSD such as forensic entomology and analysis of tissue degradation products have limitations in advanced decomposition stages. Several studies have been done to estimate the rate of skeletonization under different environmental conditions, however, no scientific study has been done in Sri Lanka.The aim of this study was to analyze known cases with some degree of skeletonization and reliable evidence of the TSD to provide a guide on determining the rate of skeletonization in bodies found in Sri Lanka for forensic purposes. Cases within the last 10 years were selected from different locations in the country. The degree of skeletonization was objectively determined using the scoring method by Megyesi et al and compared according to regional and temporal conditions. The majority (5/13) were from the Kurunegala district. Six were at a degree of complete skeletonization with disarticulation. The shortest TSD for a completely disarticulated skeleton was 23 days found in the Galle district. Although bodies in outdoor environments showed faster skeletonization rates, one case of death indoors with minimal scavenging showed moderate skeletonization with partial disarticulation as early as 15 days. This study provides an evidence-based reference on the rates of skeletonization using an objective scoring system that can be adopted in the routine forensic investigations of skeletonized remains in Sri Lanka.

Keywords: *Forensic taphonomy; postmortem morphological changes; skeletonization rate*

1258- OP

INTRODUCING THE BASICS OF FORENSIC ANTHROPOLOGY FOR MEDICAL UNDERGRADUATES: SCOPE AND ADVANTAGES

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Anthropology has its vast applications in archaeology, bioanthropology, linguistic anthropology and social-cultural anthropology. Among those bioanthropology has forensically significant implications. Undergraduate students in biology and medicine gather certain knowledge relevant to anthropology without knowing the actual implications of learning. This paper explores the importance of introducing the scope of forensic anthropology in undergraduate teaching. Forensic anthropology is a unique knowledge and skill-based sub discipline of bio-anthropology which has been making rapid progress in the recent years that helps advancement of forensic anthropology. Experts in forensic anthropology deal

with identification and interpretation of human remains in a medicolegal context. The vast scope of forensic anthropology can be introduced to undergraduate students creating interest and better learning outcomes. Those include identification and interpretation of skeletal remains for trauma, pathology, recognizing circumstances of death and addressing other medico legal issues. Further they can provide hands-on experience with research involving developing standards with known biological data. Teaching them on maintaining biological material as comparative samples and data bases will strengthen forensic anthropology. Proper collection of complete skeletal remains in teaching units can be used to document population trends in crime and health and will attract many undergraduate disciplines. There are new roles of anthropology in identifying faces in video surveillance and digital crimes such as paedopornography providing new occupational opportunities for undergraduates. Developing knowledge and skills in forensic anthropology in undergraduate programmes will enhance the professional standards, create interest on the subject with an increasing number of postgraduate experts.

Keywords: *Forensic anthropology; professional standards; scope; undergraduate*

1262- OP

DEVELOPMENT OF LATENT PRINTS USING NOVEL SPR FORMULATIONS AND SUBSEQUENT SEX DETERMINATION FROM FINGERPRINTS RIDGE DENSITY

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Fingerprints play an enormous role in personal identification of human beings. The latents collected from crime scenes often come across as weak, partial or fragmented prints which make its identification more difficult. The present research attempts to develop latent fingerprints using two novel fluorescent small particle reagents based on crystal violet and basic fuchsin dyes to develop weak, chance, fragmented prints immersed under clean and dirty (drainage) water for various time intervals. Both the formulations successfully developed latent prints till 25-30 days of immersion in clean water and till 15 days in drainage water, respectively. Subsequently, sex identification from fingerprint ridge density in the LoC (Left of Centre) and RoC (Right of Centre) areas of right thumb among Delhi population. A total of 1103 individuals (520 males and 583 females) aged between 18 and 60 years were included in the study and fingerprints were collected from each finger of the participants. Thus, a total of 11,030 fingerprints were obtained and epidermal ridges were counted in the LoC and RoC areas of each fingerprint. The fingerprint ridge density between males and females was statistically compared using t-test. The results indicate that the females tend to have a significantly higher ridge density than males in both the areas analyzed in the study. The present study suggests that the fingerprint ridge density can be a relevant and useful morphological parameter in distinguishing sex of a latent fingerprint of unknown origin from the scene of crime. The findings can also be useful in identification of mutilated remains when a dismembered hand is brought for medico-legal examination.

Keywords: *Latent prints; ridge density; SPR formulation*

3389- OP

SEX AND STATURE DETERMINATION BY HANDPRINT MEASUREMENT OF A SRI LANKAN POPULATION

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Fingerprints and palmar prints are commonly used for identification in forensic practice. The distance between the palmar tri-radii to the axial tri-radius is a measurement unique to each individual. The objective of this study was to determine the relationship between sex and height and handprint measurements in a Sri Lankan population. Palmar prints were obtained on paper using fingerprint ink. A magnifying glass was used to identify the palmar and axial tri-radii and a calibrated digital vernier caliper was used for measurements. A stadiometer was used to measure the height of 226 Sri Lankan subjects (100 males and 126 females) aged between 20-30 years, who were selected by convenience sampling. Also, distal phalanx fingerprint measurements were obtained by length from the anterior point of each fingerprint to the distal digital crease of the relevant fingerprint. The sex and handedness of participants were also recorded. Pearson's coefficient (R) between various fingerprint measurements and stature was calculated. Some fingerprint measurements showed a moderate correlation with the stature (right a, left a, left b, right AT, right AR, right AM, right AR, left AI, left AM, left AR, and left AL). Left AL had the highest correlation (r=0.633) and the right AL had a low correlation with the stature (0.494). When the t-test was applied to the determination of correlation between handprint measurements of males and females, there was a statistically significant difference in all handprint measurements and heights. This study showed that there is a correlation between handprint measurements and the stature and sex of Sri Lankan adults.

Keywords: *Fingerprint/ handprint; palmar/ axial tri-radii; sex/ stature*

4628- OP

FORENSIC ANTHROPOLOGICAL ANALYSIS OF UNKNOWN SKELETAL REMAINS: EFFICACY OF LOW-COST ANTEMORTEM X-RAY IN POSITIVE IDENTIFICATION OF THE VICTIM.

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Identification of unknown skeletal remains is a challenging issue in criminal investigations as well as in civil investigations. This case study highlights the value of x-ray comparison in suspected cases. Some unidentified skeletal remains were recovered from the Northern coastal area of Sri Lanka. Subsequent estimation of the biological profile revealed it belonged to middle aged male person with an antemortem fracture with peculiar margins in the right knee joint. In addition, the remains disclosed evidence of multiple perimortem sharp force trauma to the chest, and the time since death was estimated with the accumulated degree days method. Based on the biological profile and time since death information, the potential identification was narrowed down from missing person details obtained from local police records. The ante mortem x-ray of the right knee joint of the suspected victim taken recently before missing was retrieved on further investigation. The skeletal remains were identified positively by comparison of antemortem x-rays with postmortem x-rays taken in the same position and orientation. Subsequently, two perpetrators were arrested and remanded on murder charges on further investigations by police. This case study validates the role of Forensic Anthropologists in the identification of skeletal remains by radiological comparison technique in countries with low resources like Sri Lanka, where antemortem fingerprints, and dental records, are hardly available as well and DNA identification procedure is expensive.

Keywords: *Antemortem x-rays; forensic anthropology; radiological comparison; identification*

4678- OP

RADIOLOGICAL MORPHOMETRIC ANALYSIS OF FRONTAL SINUSES FOR PERSON IDENTIFICATION- A SRI LANKAN EXPERIENCE

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Morphometry of frontal sinuses has been studied extensively in many countries. However, due to genetic and environmental factors affecting the skeletal structure, these findings cannot be generalized. The main aim of this study was to morphometrically analyze the frontal sinuses in patients who underwent non-contrast computed tomography (NCCT) skull imaging at Teaching Hospital Peradeniya to assess its association with age and sex. This cross-sectional study includes 300 NCCT skull images obtained by a multi-slice computed tomography (MSCT) scanner at the Teaching Hospital Peradeniya. This age and the sex-matched sample was selected using consecutive sampling and consists of 7 age groups (20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-89). Right and left frontal sinus values (length, height, width of each sinus, and total width) were measured using RadiaAnt DICOM Viewer 2020.2.3 software, and age and sex were obtained from the CT images. The association among the variables was analyzed using the t-test and binary logistic regression model. In our study sample, 59% (n=177) were male and the mean age was 57.94 years. The means of left-side sinus values were larger than right sinus values, which was statistically significant. A statistically significant association was seen between frontal sinus parameters and sex; those of males were higher than that of females. No significant association between sinus size and age was observed. In the investigation of unidentified skeletal remains, frontal sinus measurements using imaging techniques can be used to estimate the sex of individuals.

Keywords: *Computed tomography; frontal sinus; human identification; imaging*

6174- OP

VARIATION OF THE HUMAN SKULL BONE THICKNESS WITH THE AGE, GENDER, AND BODY STATURE: AN AUTOPSY STUDY IN A SRI LANKAN POPULATION

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Many characteristics of the skull bones used in identification are subjective. Since the human skull thickness (HST) can be used as a more objective criterion, it can be used for more accurate identification in forensic anthropology. Similar studies have not been conducted in Sri Lanka. The aim of this study was to assess the thickness of individual skull bones and the association of the HST with age, gender, and body stature.

This cross-sectional analytical study was carried out among 100 autopsies selected randomly at the National Hospital Kandy, and Teaching Hospital Peradeniya, Sri Lanka. The ages of the study sample wasc18 to 70 years, with a male-to-female ratio of 11:9. Socio-demographic details were collected using an interviewer-administered questionnaire. Bone thickness was measured using a calibrated vernier caliper. Body height was measured using a measuring tape.

The association between bone thickness with age and body stature was assessed using the Pearson linear correlation. The association of bone thickness with gender was calculated with a t-test.
The mean skull bone thicknesses obtained were 4.7mm for temporal (bilateral), 6.1mm for right parietal and 5.8mm for left parietal, 7.2mm for occipital (right) and 6.4mm for occipital (left) and 8.8mm for frontal. The frontal bone was noted to be the thickest in both males and females. Skull bone thickness showed a significant difference with gender in occipital and frontal bones. Only the left temporal bone thickness showed a small positive correlation with age. HST showed no correlation with body stature.
This study shows that there are variations in HST with gender and no correlation with body stature.

Keywords: Autopsy; bone thickness; forensic anthropology; skull bone

6343- OP

AGE ESTIMATION OF SRI LANKAN POPULATION ACCORDING TO THE MEDIAL CLAVICULAR EPIPHYSEAL FUSION ON CHEST RADIOGRAPH: A PRELIMINARY STUDY

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Forensic age estimation in living individuals has many implications for criminal and civil court proceedings. The 16 to 21 age range in Sri Lanka has several legally related significances. Medial clavicular ossification fusion assessment based on the CT scan imaging is preferred to assess the age in this age range in international guidelines. However, it is not freely available in Sri Lanka, so the application of CT scans is not always practical in our setting.
The objective of this study was to assess the medial clavicular ossification stages of 15 to 30-year-old Sri Lankans based on chest radiography for the purpose of age estimation. In this study, the radiologist assessed chest radiographs of 107 patients who came for treatments in two major hospitals based on the five-stage classification of medial clavicular ossification by Schmeling et al. (2004). The majority (94%) were above the age of 17. Stage 3 was always present above age 16, stage 4 was observed in 62 % of the cases, and none of the stages 4 and 5 were under the age of 19. According to the results, age above 18 can be determined by stages 4 and 5. Stage 3 is likely to indicate if the person is above 16 years. From this preliminary finding, it can be concluded that clavicular epiphyseal fusion has the potential to be a good forensic tool for estimating the age of living individuals in Sri Lanka.

Keywords: *Forensic age estimation; legal age limits; medial clavicular epiphysis; Sri Lankan population study*

6394- OP

DEVELOPMENT OF A GUIDELINE FOR QUALITY MEDICO-LEGAL EXAMINATION AND REPORTING OF SKELETAL REMAINS IN AN ESTABLISHED MEDICO-LEGAL SETUP

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Forensic Medical Specialists in Sri Lanka receive human remains of various preservation states from fresh bodies to skeletons for postmortem examination. The Health 42 form, designated for the examination of human remains, is suitable for the documentation of highly preserved bodies but lacks the standard information fields required as part of the examination of skeletal remains. A high-quality national guideline with complementary forms is vital to ensure adequate scientific and standardized reporting to enhance information on skeletal remains for identification and judicial purposes. The development of a standard guideline and forms is a process. The College of Forensic Pathologists of Sri Lanka (CFPSL) established a subcommittee of 10 forensic specialists with an interest in forensic anthropology to undertake this task. The guideline includes sections related to basic human osteology, forensic taphonomy, and methods of estimation of sex, age, ancestry, and stature with relevant references. The draft guidelines and forms were tested on two occasions, with postgraduate forensic medicine trainees and Consultant Judicial Medical Officers (CJMOs) working in different areas of the country. Feedback from the training sessions was incorporated into the draft to ensure its clarity, accuracy, and practicability. The International Committee of the Red Cross (ICRC) Sri Lanka facilitated this process through regular subcommittee meetings and training session support. The use of a national guideline with a standard reporting format will improve the quality of examination and reporting of skeletal remains of varying degrees of preservation to ensure uniformity among forensic professionals and contribute to enhanced identification efforts within the judicial system.

Keywords: *Guideline; medico-legal examination; skeletal remains; uniformity*

6677- OP

MORPHOMETRIC ANALYSIS OF MENTAL FORAMEN IN RETAINED CADAVERIC SPECIMENS REPRESENTING SOUTHERN SRI LANKA

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The mental foramen (MF) is a small foramen situated in the anterolateral aspect of the body of the mandible which transmits the mental nerve, artery, and vein. Studying MF's position will help prevent complications due to injuries to those structures during invasive procedures in the mental region. This study was carried out using 114 dry mandibles from the dry bone collection of the Department of Forensic Medicine and Anatomy of the Faculty of Medicine, University of Ruhuna, and from the personal collections of dry bone specimens of forensic pathologists who served in the southern region of Sri Lanka. As a result, 228 MFs were studied in an adult Sri Lankan population to determine the shape, size, direction, existence of accessory foramina, and location with respect to anatomical landmarks. The MF was predominantly oval on both sides of the mandible and situated on the longitudinal axis of the mandibular 2nd premolar tooth on both sides. The opening of the MF was predominantly directed toward the posterosuperior direction. The presence of accessory MF was found in 3.5% of mandibles and its prevalence was equal on both sides. This study reports significant information on the possible variations in morphological characteristics and the position of mental nerve exit in a population of southern Sri Lanka. Therefore, this knowledge is crucial for the surgeon who is made aware of these differences and the necessity to investigate and determine the MF's precise location before surgery in this region.

Keywords: Mental foramen; morphometric analysis; southern Sri Lanka; variation of position

9635- OP

SEX DETERMINATION BY EVALUATION OF FORAMEN MAGNUM ON COMPUTER TOMOGRAPHY SCANNING AMONG THE SRI LANKAN POPULATION

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The foramen magnum of the human skull is intact for long period after death and is relatively resistant to trauma during life. It reaches its adult size in early childhood and is not subjected to wear and tear. Sex determination using measurements of foremen magnum in fresh or dry bones and using computed tomography (CT) is documented in the literature but has not been assessed in a Sri Lankan population. A retrospective cross-sectional study was carried out at the National Hospital, Sri Lanka using non-contrast computed tomography (NCCT) skull images taken by a General Electric Healthcare USA 128 machine. CT images were viewed and measured using RadiAnt DICOM Viewer 2022.1. Maximum anteroposterior (AP) diameter, lateral diameter (L) at a 90-degree angle to the AP diameter, and circumference (C) were measured, and area (A) of the foramen magnum was calculated. Collected data were analysed using Jamovi v2.3 statistical analysis software. NCCT images of 300 randomly selected individuals aged 20-60 years and consisting of 154 females (51.3 %) were included. Mean values of parameters (AP - 3.38 cm, L - 2.83 cm, C - 9.80 cm, and A - 7.42 cm2) were calculated. It showed a statistically significant difference ($p < .001$) in all these parameters when male and female means were compared using a one-way ANOVA test. Although the use of a single parameter for sex determination is statistically correct, combined measurements of AP, L, C, and A of foramen magnum can be applied to determine sex more accurately in Sri Lankan population

Keywords: *Computed tomography; foramen Magnum; forensic Anthropology; Sri Lanka; Xray*

Forensic Science, Nursing, Education, Law, Ethics and Others

108- OP

THE LEGAL AND ETHICAL BASIS OF CONSENT PRIOR TO SURGICAL INTERVENTION; ADDRESSING THE PATIENT'S RIGHT TO KNOW

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Consent for a surgical procedure is a dynamic process involving the surgeon and patient where patients' rights are given utmost importance. A doctor operating on a patient without consent is equal to battery and is charged under criminal law. Further obtaining consent without adequate information can lead to civil medical negligence and violates medical ethics. Governing bodies offer guidance on professional standards and ethics for doctors on decision-making and consent. The General Medical Council UK and Sri Lanka Medical Council state that a patient should be informed of the diagnosis and prognosis, investigations, and treatment options that include no intervention to multiple interventions. They should know the potential benefits, risks, harm, uncertainties, and likelihood of success and failure of each option. Options should cover services provided by other institutions or doctors more specialized in a particular field. Expectations for high standards of care are greater where patients pay for medical services. Any surgical mishap that results in damage or disability to the patient has serious consequences for the medical team and hospital. The success rate of surgery depends on the skill of the surgical team, available hospital facilities, and patient factors such as illness severity, and compliance. Therefore, it is the right of the patient to know the success and failure rates of a procedure as well as the competence of the surgeon before giving consent. Informed written consent protects surgeons against allegations of medical negligence.

Keywords: *Informed written consent; medical ethics; success rate*

251- OP

WEB BASED INTERACTIVE SIMULATION AS A LEARNING MEDIUM TO STUDY FORENSIC AUTOPSIES

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One of the national competencies that have to be achieved by medical school graduates in Indonesia is to perform a medicolegal autopsy (external examination) independently at level 4. And according to Indonesian regulation," everyone who is asked for their opinion as a medical expert or doctor, or other experts are required to provide expert testimony for justice". To achieve competence, the student must take a clinical rotation in Forensic Medicine for 4 weeks. However, the problem arose, since the number of autopsies decreased significantly in our education-hospital. The police sent the medicolegal autopsy to the hospital belonging to a police institution-owned hospital. This situation affected the education system in the achievement of medicolegal autopsy competencies by a medical student. Making strategies and innovations in achieving medical students' competence in medicolegal autopsy. We designed a web-based interactive simulation on medicolegal autopsy. Several common autopsy cases were provided from the autopsy reports and photographs taken from the Installation of Forensic

Medicine and Medico-Legal, Dr. Sardjito Hospital, Yogyakarta. Using the interactive simulation on autopsy, the student can learn the autopsy independently at any time anywhere without a teacher, such as the determination of the cause of death, wound classification, traumatology, and so on. When necessary, the students may have discussions with the teacher offline or online. This strategy can overcome the existing condition, but it will never reach the highest level of competence where they can perform independently.

Keywords: *Medicolegal autopsy; national competence; UGM Yogyakarta; web based interactive simulation*

560- OP

ATTITUDE ABOUT EUTHANASIA AMONG THE PEOPLE OF THRISSUR

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Euthanasia is inflicting painless death on a person suffering from an incurable or painful illness or on a person in an irreversible coma. There are arguments in favour and against Euthanasia and Physician assisted suicide. Those who are against inducing death are of the view that life is a gift of god, sacred and taking of life is wrong. Euthanasia relieves a person from a miserable life and prevents a lingering death from the view of supporters. In the above context, a study was conducted among the people of Thrissur to know their attitudes toward euthanasia. A descriptive cross-sectional questionnaire-based study was conducted among 711 people in the city of Thrissur. Among the 686 people, 368 were males and 343 were females. Seven questions to assess the attitude of a person toward end-of-life decisions and Euthanasia were included in the questionnaire. Through this study, it was found that there are people who endorsed voluntary active euthanasia, voluntary passive euthanasia, non-voluntary passive euthanasia, pediatric euthanasia, and also a group not in favour of the same. The study discusses the various attitudes with the percentage of people supporting it.

Keywords: *Attitude; end of life care; euthanasia*

605- OP

THE ASSOCIATION BETWEEN RS6311 POLYMORPHISM OF SEROTONIN2A RECEPTOR GENE AND CRIMINAL AGGRESSIVE BEHAVIOR IN YOGYAKARTA PRISONS

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The 5-HT2A receptor gene is selected due to its predominant concentration in the cerebral cortex. Rs6311 polymorphism of this gene associates with numerous psychotic disorders including aggressive behavior. This study aimed to investigate the association of rs6311 polymorphism with aggressive behavior in Yogyakarta prisoner population. Blood samples were collected from 136 healthy male prisoners of two different prisons in D.I. Yogyakarta, Indonesia. PCR-RFLP method was performed to identify the presence of rs6311 polymorphism of the 5-HT2AR gene. Furthermore, the aggression score was measured by self-ratings on Buss-Perry Aggression Questionnaire (BPAQ). The effect of gene factor on aggression was analyzed statistically using the one-way ANOVA.The agarose visualization generated: 1) a single band of 520 bp for the PCR amplicon and AA genotype, 2) two bands of 520 bp

and 443 bp for the AG genotype, and 3) a single band of 443 bp for the GG genotype. The aggression score resulted from summing all subsets of the BPAQ. We suggested the aggression score as the aggressivity level of the subject. No association was apparent for 5-HT2AR rs6311 polymorphism on total aggression score (p=0.573). The most frequent allele in this population was the A allele (0.73), where only 0.27 of the G allele was found. In conclusion, polymorphism on the 5-HT2AR gene is not the single factor matter in modulating aggressive behavior exclusively in the Yogyakarta prisoner population. Our findings are contradictory to the previous studies on the Pakistani prisoner population. However, A-allele carriers in this study were found to be more frequent than the G-allele.

Keywords:*5-HT2AR; aggressive; polymorphism; prisoner; rs6311*

687- OP

MASSIVE OPEN ONLINE COURSE ON FORENSIC MEDICINE AT THE FACULTY OF MEDICINE AND PUBLIC HEALTH AND NURSING, UNIVERSITY OF GADJAH MADA YOGYAKARTA INDONESIA

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Forensic Medicine is a popular and interesting medical discipline, however, in our country, only limited doctors are interested in studying it as a forensic specialist. To provide an opportunity for students, who are interested in studying Forensic pathology courses but have limited time, can take the MOOC program that we offer. To provide online classes that participants can take from anywhere and create a richer learning environment than traditional lectures. We offer a Massive Open Online Course (MOOC) on Forensic Medicine as an elective module from the Department of Forensic Medicine, Public Health and Nursing, University of GadjahMada Yogyakarta. This program was launched so any student from around the country can take this course freely. The study load for this course is 3 credits in 3 weeks. It consists of various learning activities, such as lectures, tutorial discussions, practical works, and video sessions. The final exam can only be done if the student has followed all the activities. Certificates will be awarded to all participants who pass the final examination.

Keywords: *Elective Module; forensic medicine; MOOC; UGM Yogyakarta*

881- OP

PROFESSIONAL NEGLIGENCE IN ORTHOPEDICS - AN INDIAN SCENARIO

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Background: The medical fraternity in India experienced the first assault by the honorable Supreme Court order in 1995, where medical services were included under the Consumer Protection Act.Since then, there has been a slow, but steady rise in the number of such cases. In the last decade, the number has grown exponentially. With tremendous metamorphosis in the healthcare sector, incidents of lawsuits against orthopedic surgeons and hospitals are second to the OBG cases. Every consumer redressal forum is more inclined in protecting the consumers. Aim of this study to evaluate the incidences of Professional negligence, erupting nature of negligence; to enumerate various causes and to study patterns of deficiencies in healthcare services. The honorable Supreme court, High court, and NCDRC judgment of alleged negligence cases were selected for the present study. Various parameters

like Hospital records, patient consent, diagnosis, operative skill, postoperative complications, referral, and advice were discussed. Result of This study highlights drawbacks related to some parameters concerned with patient care, directly or otherwise, necessitating the need of increasing awareness in the improvement of performance on part of the medical profession and health administrators for a bright future for the medical profession. In orthopedics, medicolegal cases are considered a disease and poor results are its chief symptoms. Today's patients insist that medical products and services should be provided without risk.

Keywords: *Medico-legal; national Consumer Forum; professional negligence*

1237- PP

MEDICAL NEGLIGENCE: BREACH OF THE DUTY OF CARE

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Cosmetic for defects reconstruction may not always result as expected, due to complications or consequences and finally end up with allegations of medical negligence as well. This case emphasizes the importance of awareness among the public and medical staff on medical negligence in order to save lives, improve care quality, and provide justice to the victim. Following surgery for protruding mandible, a young boy died from aspiration pneumonia. Though the patient had complained of nausea several times after the procedure, ward staff did not attend it until getting aspirated from vomiting, Relatives of the deceased claimed the death was caused due to delayed medical attention. Mandibular fixation with surgical incisions and features of pneumonia were found during the autopsy. Since the patient was being treated in the ward the duty of care was already established. Nausea and vomiting are well-known side effects of anaesthetic medications used during surgery. Anti-emetic, inter-maxillary fixation wire removal, and aiding clearance of vomits from the oral cavity help to reduce the risk of aspiration and would have saved the patient. If the plaintiff establishes that the medical staff's failure to act on the patient's concerns resulted in the patient's death, the medical staff may be found liable for medical negligence. Well-trained staff, close monitoring, and the required equipment should be available in the ward at the time of such emergencies. It is the duty and responsibility of the forensic pathologist to be impartial and to convey the truth to the next of kin based on autopsy findings.

Keywords: *Cosmetic; impartial; negligence*

1330- PP

REFLECTIONS OF ADULTS' ACTIONS SHAPE THE BEHAVIOURAL PATTERNS OF CHILDREN: IS IT JUSTIFIABLE TO GET INVOLVED CHILDREN IN MASS PROTESTS?

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The year 2022 is disreputable for island-wide mass protests against the ex-government and its mismanagement of the serious economic crisis in Sri Lanka. The crowd in mass protests consisted of all age categories including children. Participation of children raised serious legal and ethical issues though nobody paid adequate emphasis on those. Existing laws especially enacted for children adequately ensure safeguarding and welfare. To name a few, children's charter and other penal laws. The future of children is uncertain because of the ongoing economic crisis. In turn, children are at the highest disadvantage of economic mismanagement by the ruling governments. Even so, how far is it justifiable that children are to be utilized in demonstrations and protests? Whatever said and done, a mass protest is a vulnerable site of danger and cruelty, especially for children both physically and mentally. Human behaviour is partly learned from whatever they see and hear from parents and also

from society. Encouragement to participate in mass protests and demonstrations can convey multiple messages to the minds of children. Parents may not perceive the danger of such actions but responsible stakeholders should not be negligent since the future repercussions are unhealthy. Violence is inculcated within children and it may lead to antisocial behaviours of children. Such consequences will aggravate the already compromised economy of the country unless parents and stakeholders pay adequate attention. Effective guidelines are mandated as early as possible.

Keywords: Children's participation in protests; law related to children; mass protests; primary and secondary socialization

1638- OP

KNOWLEDGE ON INQUEST AND CAUSE OF DEATH: A STUDY AMONG DOCTORS AT TEACHING HOSPITAL, JAFFNA

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The inquest is the procedure for investigating sudden deaths in Sri Lanka, a fact-finding exercise rather than a fault-finding inquiry. Giving the correct Cause of Death (COD) is essential from both legal and statistical points of view. Doctors have an important role in both inquest and COD. This study aims to assess the knowledge of inquest and COD among doctors of various hierarchy levels at the teaching hospital, Jaffna.A descriptive cross-sectional study was conducted through systematic random sampling. The questionnaire was distributed and collected in small groups at convenient times with adequate instructions. The total number of participants was 136, among which 44 were consultants, 45 were medical officers, and 47 were intern house officers; 77 were male, and 59 were female. Sixty-two subjects had experience of more than ten years. Considering the inquest, 36.8% had good, and 61% had average knowledge regarding the procedure; 43.4% had good, and 54.4% had average knowledge regarding indications; More than half of the doctors (51.5%) had good, and 29.4% had average knowledge about the doctor's role in inquest procedure. Regarding COD, 47.1% had good knowledge, while 36.8% had average knowledge. Designation showed a significant association (p-value <0.05) with the overall understanding of inquest, where consultants had more numbers of a good score. Both gender and experience did not significantly correlate with the overall knowledge of inquest and COD.Since a considerable proportion of doctors have average knowledge or below regarding inquest and COD, this is high time to make feasible interventions to upgrade the knowledge among doctors.

Keywords: *Cause of death; doctor's role; inquest; knowledge*

1884- OP

THE EVOLUTION OF COGNITIVE DISSONANCE

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Cognitive dissonance has been one of the most enduring and successful theories in the history of social psychology. This paper examines the origins of the theory as well as the controversies it created. The paper also examines the evolution of cognitive dissonance as it emerged as a theory focused on the perception of dissonance and changed over time to accommodate decades of research. It expands upon what I refer to as the "Roadway to Dissonance," which is an analysis of the processes that lead to an unpleasant arousal state of dissonance, and ways to engage in behavioral changes to regulate that arousal. The paper then considers the transition that occurred within dissonance research, from its focus on the individual to one that envisions the individual in the context of a social group. This perspective allows us to consider how people can empathically feel dissonance with their fellow group members. The paper concludes with an appeal for the approach of dissonance research in the coming decades, in

which we continue to make progress in the laboratory while also working on ways to alleviate problems dissonance may cause in everyday life.

Keywords: *Cognitive dissonance; health; hypocrisy; motivation; vicarious dissonance*

2184- PP

MEASURING VIOLENCE: APPLICATION OF DNA IN SEXUAL AND GENDER-BASED VIOLENCE IN SRI LANKA

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Forensic Evidence (FE) is vital in cases of sexual and gender-based violence (GBV). Despite being an effective tool, its accuracy could be minimized, due to its time-sensitive nature and the delayed or underreporting (only 54%) which is commonly found with victims of sexual assault (SA) and GBV. Compared to witness statements and circumstantial evidence, FE, especially DNA evidence is a more reliable and accurate form of evidence. FE could clarify any inconsistencies and act as corroborating evidence assisting the criminal justice system in sexual and gender-based violence, including domestic abuse and marital rape. There is no nationally authenticated and accepted National DNA database. A National DNA database, could provide quick identification of the alleged offenders, exonerate innocent suspects, and could even be used to identify victims. Consequently, this could contribute to preventing future SA and cases of GBV.This article is a literature review that aims to identify the role and probative value of FE with a special focus on DNA evidence, and legal services in cases of SA and GBV primarily in Sri Lanka with some references to parallel case law from foreign jurisdictions. Additionally, there is an urgent need to reform death and clinical case investigations and decisions of inquiries under a comprehensive piece of the legislature about FE in instances of GBV and SA. Thus, an accurate understanding of FE and medicine in the legal sphere may better guarantee justice for the survivors of GBV and SA through a successful prosecution.

Keywords: Forensic Evidence; gender-based violence; human rights; Sri Lanka

2240- OP

EVOLUTION OF FORENSIC NURSING SCIENCE IN INDIA: A LEAD FOR OTHER COUNTRIES

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Work on forensic nursing science was initiated two decades ago in 2002. All the stakeholders in India and some other countries were made aware of this new upcoming branch in the world. Educationists, nurses, doctors, investigators, administrators, advocates, judges, politicians, and common people were made aware of the importance of forensic nursing for society. Services of educationists from the developed world with established forensic nursing science curricula were also involved in this process. After this, a plan was developed to get it introduced in the syllabus of the undergraduate course for nurses in India. Though it took a long time ultimately success was achieved when it was introduced as a 25 hours module in the fifth semester of the course when the students have already been exposed sufficiently to the patients. The postgraduate diploma was also started at the National Forensic Science University opening the way to learn the knowledge and skills required by the nurses to expand this discipline in a big way. Now the final step of making the postgraduate degree course successful is on the way. After this specialist, forensic nurse courses will be started to make available a large number of

forensic nurses for specialized jobs. How this success can be replicated in other countries will be discussed so that falling into pitfalls learned by experience can be avoided. In addition, further planning for the specialist courses will also be discussed to make forensic nursing science a robust discipline in India and other countries.

Keywords: *Evolution of forensic nursing science; forensic nursing science in India*

2474- OP

A CROSS-SECTIONAL QUESTIONNAIRE-BASED STUDY TO ASSESS AWARENESS AND KNOWLEDGE OF "GOOD SAMARITAN LAW" IN A POPULATION OF TELANGANA, INDIA

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Road traffic injuries are the 9th leading cause of premature death in India. Every 10-minute delay in pre-hospital time caused a 6% increase in a poor functional outcome. Good Samaritans hesitate for various reasons to help road accident victims. To protect the good samaritans, Good Samaritan Law (GSL) was enacted in India. This study was done to assess the awareness and knowledge about Good Samaritan Law among the population. Demographic details and responses for questions to assess the knowledge and awareness of the GSL were collected in pre-awareness and post awareness sessions using Google forms with an intervening session of video awareness. The knowledge and awareness of GSL was assessed from pre-awareness and post-awareness responses and compared. Total responses for pre-awareness session and post awareness session were 232 & 196 respectively. 24.7% were from the 18 to 24 age group. 39.6% assisted accident victims, 8.3% faced legal issues for assisting accident victims.19.8% hesitated to assist. Awareness regarding GSL increased from 38.5% in pre-awareness session to 94.5% in post-awareness session. The awareness related to GSL was modest in the study population, which increased phenomenally after the awareness session. There is a need to create awareness in the general population regarding GSL to increase the by-stander response to help the road accident victims.

Keywords: *Good samaritan law; awareness; knowledge; road accidents; victims*

2689- OP

DIGITAL FORENSICS TOOLS: A BOON FOR TODAY'S FORENSICS WORLD

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In today's more contemporary and technologically evolved society, new cybercrimes are emerging alongside the creation of new technology. New technologies are used to perpetrate technically complex crimes. It is also crucial to identify these crimes using the same cutting-edge technology. All illegal actions require the use of electronic gadgets as communication tools. The detection, preservation, analysis, and documentation of digital evidence is the most important goal of the use of digital forensics techniques. Computer forensics, memory forensics, mobile device forensics, software forensics, network forensics, forensic data analysis, database forensics, disc forensics, wireless forensics, malware forensics, email forensics, and IoT forensics are the subfields of digital forensics. Each branch in the field of digital forensics has a special application of its own. These tools enable professionals to present digital evidence in court. Digital forensics software is necessary for both criminal law and private

investigations. These tools make it simple and quick to retrieve crucial evidence. Additionally, utilizing these technologies, a comprehensive report on the evidence can be downloaded. They are offered as both free and for-profit software. Cases such as intellectual property theft, industrial espionage, fraud investigations, and bankruptcy investigations can make use of these methods. The use of cutting-edge digital technologies in forensics would aid in data retrieval and lead to justice for victims. This presentation will present an overview of modern technologies used in digital forensics, their benefits, and their limitations.

Keywords: *Digital forensics; data retrieval; digital evidence; justice; software*

2807- OP

PLACENTAL WEIGHT AND ITS RELATIONSHIP WITH THE BIRTH WEIGHT OF INFANTS AND BODY MASS INDEX OF THE MOTHERS

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Placental pathology is a well-known cause of perinatal and neonatal mortality and morbidity with increased adverse maternal outcomes. The foetal growth and its ability to thrive in utero depend upon the placenta's growth and physiological function. It can be assessed indirectly by anthropometric measurements of the placenta. The study was a cross-sectional descriptive prospective study conducted in a Professorial unit, Teaching Hospital, Jaffna, Sri Lanka. The aim was to investigate average placental weight and its relationship with fetal weight and BMI of mothers. The fresh formalin unfixed placentas of the term newborn (37 to 42 weeks) were included in this study from March 2022 to August 2022. 211 placentas were included in this study among 390 samples after the exclusion of diseased placenta. The mean placental weight was 494.45g (SD 110.39), ranging from 260g to 870g. The mean fetal weight/ placental weight of the term fetus was 6.21(SD 1.21), with a range of 3.35 to 11.62. The association of placental weight with foetal weight, foetal sex, and BMI of the mother were 0.0001, 0.61, and 0.001. The estimated foetal weight was 1.4553X + 2246.7, where X is the weight of the placenta in grams. There is a significant relationship demonstrated between placental weight with fetal weight and the BMI of the mothers. These figures could have been utilized to investigate the mortality and morbidity of term infants in clinical settings and a medico-legal investigation. We recommend multi-centered research in Sri Lanka to evaluate placental weight with the BMI of mothers in the ongoing economic and food crisis.

Keywords: *BMI of mothers; foetal weight; placental weight*

3037- OP

QUALITY ASSURANCE IN FORENSIC PATHOLOGY - THE ONTARIO EXPERIENCE

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In Ontario, the Office of the Chief Coroner (OCC) and the Ontario Forensic Pathology Service (OFPS) jointly provide the death investigation. There are 6 Regional Forensic Pathology Units in Ontario. OFPS performed 10,176 autopsies in 2021. The Provincial Forensic Pathology Unit of Toronto (PFPU) performed 6,256 autopsies last year. The PFPU is affiliated with the University of Toronto and is the central referral facility for many complex autopsies across the province, including homicides, skeletal remains, and suspicious infant and child deaths. The medico-legal autopsies are performed only by pathologists who are appropriately credentialed and registered by the OFPS. Our quality assurance system (QA) in regional forensic pathology units (RFPU) involves a case record completion check with

100 % technical audit, 1 in 10 random quality review, peer review of all criminally suspicious cases, and once-a-year testimony transcript review of each pathologist. Death review Committees such as the Complex Case Expert Committee (CCEC) and Child Injury Interpretation Committee (CIIC) will serve as additional support. Technical audits of community hospitals include a 100 % admin audit, a 100 % technical audit if performed in less than 20 cases, 100 % unascertained cases, 100% natural deaths under 40 years, and a 10% random audit. We recommend 90% case completion within 90 days. The errors are monitored, and feedback is given to the pathologist. The matter may be referred to the medical director of the unit and the credentialing committee for follow-up and action.

Keywords: *Quality assurance; Ontario forensic pathology service; technical audit; peer review; quality audit*

3269- PP

CRITICAL ANALYSIS OF DEATH INVESTIGATIONS IN SRI LANKA

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Objective of the authors is to critically analyse the present system of death investigations in Sri Lanka and identify its shortcomings and make recommendations for necessary reforms. The presentation hopes to exhibit firstly, a concise overview of death investigation system in the Ancient days in Ceylon to the history of coroner's system in Sri Lanka. Secondly, to lay down the statutory provisions and relevant judgements regards to inquest procedure, function and duties of inquirer and regulations in relation to appointment and payment of inquirer. Lastly, to highlight the recent developments of the coroner's system in England while providing necessary reforms from various approaches and references that could be taken in to account. This presentation will further include the legislative framework, key role players and their inter relations.

Keywords: *Death investigations; reforms; coroner's system, Sri Lanka*

4018- OP

VIOLATION OF DOCTOR-PATIENT RELATIONSHIP RESULTING IN CRIMINAL INVESTIGATION, PROSECUTION AND CONVICTION- A DISCUSSION ON FINDINGS OF HIGH COURT AND COURT OF APPEAL OF SRI LANKA

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The Doctor-Patient relationship prohibits sexual interactions in a concept dating to the Hippocratic Oath. Such conduct leads to criminal sanctions. In 2007, Sri Lanka reported the suspicious death of a 22-year-old female garment factory worker after a fall from the 6th floor of a health care unit. There was a significant public outcry as the accused linked to the crime was a doctor treating her. The accused was charged with rape and murder. The prosecution was entirely based on circumstantial evidence. The forensic evidence on ante mortem and postmortem injuries and evidence of forceful vaginal penetration were accepted by the court and the accused was found guilty of both charges beyond a reasonable doubt. He was sentenced to death under section 296 and 15 years of rigorous imprisonment for committing murder and rape respectively. Consequently, his name was struck off from the medical register. The accused appealed against the conviction and sentence stating he did not have a fair trial as there was no fingerprint and DNA evidence. In 2022, the Court of Appeal upheld the conviction and sentences. Although ethics are moral principles, medical ethics that govern the doctor-patient relationship hold

greater weight and are given protection by law. Rape and murder go beyond the more commonly discussed concerns of violation of medical ethics. Scrutinizing a doctor harshly with more rigid sentencing for the crime under common law is essential to maintain professional standards.

Keywords: *Doctor-patient relationship; forensic evidence; medical ethics; murder; rape*

4296- OP

RIGHTS AND RESPONSIBILITIES OF PATIENTS IN INDIA

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Until recently the laws governing the rights of patients who approach the health care system were not specifically coded in the Indian legal system. The laws are included in the constitution of India- 1950, Indian Medical council regulations 2002, Drugs and cosmetics act 1940, Clinical establishment act 2010, Indian Penal code and Criminal procedure code. Since there was a deficiency of a uniform or specific legislation, the Ministry of health and family welfare and National human rights commission released a charter of patient rights which draws upon all relevant provisions inspired by international charters and national level provisions. Aim of the document is to promote and protect the rights of ordinary patients and citizens approaching the health care system in India. To promote the rights, the document enlists five responsibilities that patients and caretakers have to follow, so that health care workers can perform their work satisfactorily. The charter also insists on implementing the charter of patient's rights and grievance redressal. This is to educate and make the public aware what they should expect from the government and health care providers.

Keywords: *Charter; NHRC; patient Rights*

4573- PP

REFORMS NEEDED IN THE PRACTICE OF DEATH CERTIFICATION BY GRAMA NILADARI UNDER BIRTH AND DEATH REGISTRATION ACT - A FORENSIC MEDICINE POINT OF VIEW

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It is a legal requirement to enter the death in the death register in Sri Lanka. When a person dies under different circumstances there are different institutions and processes involved in getting a death certificate for disposal of a dead body in Sri Lanka. It varies from the medical practitioner who has treated the deceased during the last illness to the inquirer into sudden deaths, magistrate, Grama niladari, police officer, or estate superintendent. In 1954 when the birth and death act was enacted with the available infrastructure at that time, the system of death certification by Grama niladari was an assert for the people of this country. The system of death certification by Grama niladari and the birth and death registration act in our country has many inherent weaknesses. While improvements that require legislative amendments and formulation of policy decisions may take a considerable time period for implementation, there are other short-term solutions which could be adopted to achieve a significant level of accuracy and efficiency from the existing system. It is recommended that the present system of releasing dead bodies by GN should be modified to suit our country's specific requirements within the capacity of its limited resources rather than introducing a totally alien system. In conclusion, it can be

said that the need to bring reforms to the present system in Sri Lanka, that had remained static since its introduction, is a matter of great importance.

Keywords: *Birth and death registration act of Sri Lanka; death certification; Grama niladari*

4722- OP

INTERNATIONAL DEVELOPMENTS IN MILITARY FORENSIC MEDICINE AND SCIENCE

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In some of the developed nations in the world, Forensic Medicine and Science are employed beyond their traditional roles of law enforcement investigations and criminal justice objectives to provide the capability for the Armed Forces to fulfill their military objectives and to strengthen national security. The objective of the paper is to examine the new vistas in the global development of Military Forensic Medicine and Science with their positive contributions towards societies and the specialty. An Armed Forces Forensic Investigation Unit can be charged with investigating criminal activities by personnel, as well as by outside individuals, whose actions threaten the service's equipment, personnel, activities, or security and also to assist civilian law enforcement authorities. The Department of Defence of the USA has multiple forensic organizations and several nationally accredited forensic laboratories. The medicolegal services to the US service members are provided by Armed Forces Medical Examiner System. Service Police Investigators of the Australian Defence Force and respective military police branches in the United Kingdom are also provided with training on forensic theory, investigation of traffic accidents, murder/manslaughter, arson, ballistics, fingerprints, crime scene and crime scene laboratories, surveillance and computer crime. Those systems had evolved and expanded to involve medicolegal support to and from the civilian sphere as well. The importance of promoting greater partnerships between military forensic services, law enforcement, intelligence, and criminal justice system and developing forensic capacity and research to serve as part of a broader system to attain justice and national security objectives, are evident in international practices

Keywords: *Military; forensic medicine and science; medicolegal services*

5141- OP

SUPERVISED PRACTICAL TRAINING IN MEDICOLEGAL WORK TO IMPROVE THE QUALITY OF WORK AND CONFIDENCE OF REGISTERED MEDICAL PRACTITIONERS IN INDIA

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The goal of teaching undergraduate students in Forensic Medicine and Toxicology is to produce a basic registered medical practitioner who is aware of medical and legal responsibilities in the practice. A graduate should be capable of making observations and deducing opinions using logical thinking in medicolegal problems. The expert evidence given by doctors based on certificates/reports issued to courts plays a vital role in deciding criminal cases. The Courts usually take the doctors' opinions/evidence seriously.

Forensic medical experts are available mostly in medical college hospitals as they are required to teach Forensic Medicine to medical students. In theory teaching at the undergraduate level, there is a

limited assessment of the skill independently like writing a certificate or report or performing medico-legal autopsies. Many undergraduates and practicing doctors are not very confident about performing routine medico-legal work. Due to a shortfall of qualified staff, the quality of medicolegal work suffers, and, in some places, medical officers simply sign the post-mortem reports without even coming near the autopsy table. Therefore, it becomes more necessary to train medical graduates in a more integrated manner so that they can perform optimal medico-legal duties, which would help in the proper administration of justice. As a response to these the compulsory rotatory internship has been implemented in new compulsory rotatory internship regulations by the National Medical Commission.

Keywords: *Compulsory rotatory internship; mandatory; National Medical Commission*

5359- OP

NURSES' AWARENESS OF LEGAL ASPECTS RELATED TO NURSING PRACTICE IN A SELECTED TEACHING HOSPITAL IN SRI LANKA

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Nurses render a wide range of services and are responsible for caring for patients who are sick, disabled, or dying, as well as to their families. They need to be aware of both legal requirements that govern their practice as well as the regulations that control the provision of effective nursing care. The objective of this study was to describe nurses' awareness of legal aspects related to nursing practice in a selected teaching hospital in Sri Lanka. A convenience sample of 381 nurses from the Colombo South Teaching Hospital, Sri Lanka participated in this cross-sectional descriptive study. A pre-tested, self-administered, structured questionnaire developed by the investigators with input from experts was used. The data were analysed with SPSS version 26. The overall mean score was considered the cut-off value for awareness. The response rate was 90.3%. There were 357 (93.7%) female and 24 (6.3%) male participants and 200 (52.5%) of them had less than five years of experience. The majority 235(62%) had a good level of overall awareness of legal aspects related to nursing practice. Poor awareness was evident in the areas of assault, battery, patient rights, privacy and confidentiality, and false imprisonment. Awareness of legal aspects related to nursing practice showed a significant association with prior learning about legal aspects ($p<0.001$) and having faced a legal problem in their practice ($p=0.03$). Continuing education programs for nurses should include content on legal aspects related to nursing practice, paying particular attention to the knowledge gaps to ensure safe and effective nursing care for the public.

Keywords: *Legal aspects; nurses' awareness; nursing practice*

5705- OP

DIFFICULTIES ENCOUNTERED BY MEDICAL STUDENTS UNDERGOING CLINICAL ROTATIONS IN COLOMBO NORTH TEACHING HOSPITAL DURING THE COVID-19 PANDEMIC: AN ANALYSIS FROM A GENDERED PERSPECTIVE

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With the spread of COVID-19 infection, quarantine policies mandating the closure of universities had a significant impact on undergraduate medical education, especially on clinical rotations.

A descriptive cross-sectional study was carried out using a self-administered questionnaire and The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) to assess the difficulties encountered by students undergoing clinical rotations in Colombo North Teaching Hospital during the COVID-19 pandemic(2020-2021). Out of 409 students who participated (male: female 1: 1.3), the majority (79.7%) perceived adaptation to the 'new normal' was a real challenge with a statistically significant difference between genders ($p<0.0001$). Living according to the 'Bio Bubble Concept' limiting movements was the most perceived stressor by both males and females (83.3%) with a statistical significance between genders ($p<0.0001$). Further, most females (74.1%) were of the view that 1-2 years of extension of the medical degree program will affect their lives while only 44.6 % of male students agreed with the statement resulting in a significant difference ($p<0.0001$). Analysis of the DASS-21 Scale revealed that 24.7% had mild depression while 16.4% and 2% had moderate and severe depression respectively. Depression and anxiety scales between males and females showed a statistically significant difference ($p<0.0001$ and $p=0.0001$).
Though clinical rotations during the pandemic were a challenge to all medical students, there was an incongruent gendered difference related to reproductive aging and family attachment. Although depression and anxiety are expected to increase during the pandemic, almost half of the student population having features of depression and anxiety needs immediate attention and policy changes.

Keywords: *Clinical rotation; COVID-19; gender; medical education*

5858- PP

STUDY ON THE CAUSE OF DEATH IN THE B 24 FORMS FILLED BY GRAMA NILADHARI ON HOME DEATHS IN MATALE AND UKUWELA DIVISIONAL SECRETARIAT AREAS OF SRI LANKA.

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In Sri Lanka, almost half of deaths occur outside hospitals and are handled by Grama Niladhari in issuing death certificates. It is an accepted legal method in Sri Lanka. The cause of death is decided by the Grama Niladari based on the diagnosis card issued by the hospital or the clinic record. This process has a significant impact on the cause of death statistics of Sri Lanka. The objective of this study was to ascertain the quality of cause of death data for home deaths in Sri Lanka.
This study was conducted using the data from B 24 forms collected from Matale and Ukuwela Divisional secretariat's areas in Matale district, Sri Lanka. Around 230 B 24 forms were analyzed. The resulting distribution of cause of death was compared to data from the Registrar General's Department for out-of-hospital deaths for the same areas.
The majority (54 %, n=125) of causes of death were stated as aging or long-term illness or not taking food, or body weakness or its combinations. It was concluded that most of the causes of death given by Grama Nildhari are incomplete. Training of Grama Niladhari on writing the proper cause of death by the Ministry of Health in collaboration with the Ministry of Home Affairs is recommended.

Keywords: *B 24 forms; Birth and Death Registration Act; cause of death; Grama Niladhari*

5933- PP

USE OF FORCE IN LAW ENFORCEMENT IN CURTAILING PROTESTS IN SRI LANKA IN THE CONTEXT OF INTERNATIONAL HUMAN RIGHTS LAW

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The history of political protests and riots stemming from protests in Sri Lanka dating back from the 19th century to the present day has brought about numerous clashes between the protesters and law enforcement authorities. Social protest is considered one of the core elements needed for the existence of democracy and is protected by international human rights law. This article intends to analyse the obligations of the Sri Lankan state in guaranteeing, protecting, and facilitating public protests and demonstrations, as well as the standards that should be applied when force is used as the last resort when the protesters resort to violence. With acceding to International Covenant on Civil & Political Rights (ICCPR) in 1980 and after introducing the ICCPR Act No: 56 of 2007, Sri Lanka has an obligation not only to respect dissent but to facilitate its exercise.
The international law permits certain lawful force during emergencies, by restricting human rights. Though fundamental rights should never be violated, force is permitted as the last option for saving life, public and private property. Nevertheless, there were some reported incidents of application of excessive force against the civilian population in controlling protests in the recent past in Sri Lanka. The role of the police and the security forces should only be directed to managing the crowd rather than control and should be in accordance with the Chapter 3 of the Constitution of Sri Lanka. It was witnessed that in certain instances the police have obtained court orders to seek refuge under the law to stifle protests. The necessity of setting up mechanisms for fair classification and application of force to control civil unrest and adherence to protect human rights which establish 'right to life' is emphasized.

Keywords: *Human rights; law enforcement; riot control*

5964- OP

GRADUATING AS A SPECIALIST FORENSIC NURSE FROM A GENERAL FORENSIC NURSE IN INDIA

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In India, forensic nursing science has been introduced as a module of 25 hours in the undergraduate course of nursing science after two decades of marathon work by Indo Pacific Academy of Forensic Nursing Science on making the stakeholders aware of the utility of this discipline to the investigating agencies and society. When these forensic nurses graduate in the coming years with a basic knowledge of forensic nursing science a need will arise to specialize in the different subspecialties of forensic nursing science. There is a need to plan and demarcate the roles of the general forensic nurse and the specialist forensic nurse so that the progress of forensic nursing science is not hindered in India and forensic nurses know how they must progress depending upon their choices and utilizing these choices. In this way, forensic nurses and society will get the maximum benefit.

Keywords: *Forensic nursing science; general forensic nurse; specialist forensic nurse*

6407- OP

ONLINE SURVEY ON CYBERSECURITY AND DATA SAFETY PRACTICES AMONG MEDICO-LEGAL PROFESSIONALS IN SRI LANKA

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With the growing dependency on information technology (IT) and digital devices in forensic practice, there is concern regarding the safety and security of sensitive information generated and shared through these devices. An online survey was conducted among doctors engaging in medico-legal work in Sri Lanka to identify their usage of electronic devices and data safety practices within their practice.
37 participants (18 specialists, 16 registrars, and 3 medical officers) consented to the survey. The majority (n=28) were males and 40.5% had >15 years of service. Laptops were used by all, and smartphones were used by 95% (n=35), all of whom used them for photographing clinical and autopsy cases. 60% used the phone for audio recording histories and witness statements and for storing medicolegal data. Interestingly, more than 1/3 (34.5%) used the phone for developing their medicolegal reports and 85% used it for sharing and discussing medicolegal case information including images with colleagues and peers. 5 participants (13.5%) reported having experienced cyberattacks from ransomware, phishing, and viruses. Most were fairly or somewhat confident that their medicolegal data was protected.
The study also revealed several areas for improvement in data safety practices including the need for safer web browsing, frequent changing of the device and personal account passwords, and the use of a two-factor authentication protocol when sharing sensitive information. Knowledge gaps were also noted in the different types of cyber-attacks and the response mechanisms which highlighted the need for implementing awareness and training programs on data safety and cybersecurity among medicolegal professionals.

Keywords: *Best practice guidelines; data theft; digital readiness; quality assurance in forensics*

6703- OP

PROJECT SHANAKHT - IDENTIFICATION OF UNIDENTIFIED DEAD BODIES

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The objective of this project is to develop a project having the government cover which works with NGOs and other concerned government departments who start the identification using biometrics & DNA of dead/unconscious/road traffic accident patients and dementia patients and reunite with their families.
In this project, deputed teams take the fingerprints at the designated workplace and then Citizens-Police Liaison Committee (CPLC) uploads the fingerprints at the Nadra portal, after having the result CPLC contacts the intelligence data centre, and after having family information CPLC reunites the families.
In the case of DNA, extracted DNA proceeds through police and medico-legal teams, and the results are saved in the forensic lab database which is cross-matched whenever a missing family approaches. Shanakht Project started in October 2015 and up to now under this project, 6673 dead bodies were handled so far, out of which 4227 dead bodies have been identified. In addition, 457 unconscious/road traffic accidents and dementia patients also were reunited with their families. The claimants of the bodies belonged to different parts of the country.
Before this project, almost 79000 dead bodies were buried without any identification but now every unidentified body has the right to be identified, and if any unidentified body is not identified, DNA/other antemortem data are preserved in a designated website, DNA is cross-matched, and photo identified by the family.

Keywords: *Biomatrices; DNA; Pakistan*

6711- OP

DEVELOPING FORENSIC CAPACITIES IN THE ARMED FORCES OF SRI LANKA: A LOOK TO THE FUTURE

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Military forensic science is often left out, not understood, or not considered alongside traditional forensic science in Sri Lanka, though it is increasingly utilized by security agencies in the West for national defence purposes. This paper explores the possibility of empowering the military medical officers and investigators of Sri Lanka with knowledge of forensic medicine and science to handle current and future national security challenges.

Since the use of firearms, explosives, and other weapons are more prevalent in military operations than in civilian life, adopting military forensic investigations similar to international practices takes added importance with the central focus on rooting out threats against the nation. Sri Lanka had to grapple with a 30-year separatist terrorist war, two left-wing insurgencies, and a terror attack by religious extremists, in recent history with great human and material sacrifices. With the prospect of terrorist networks becoming increasingly transnational in nature and foreign fighters crossing national borders to relocate to new conflict zones, widening their theatres of operation, and using criminal trafficking networks to raise funds, acquire skills and armaments, it is of paramount importance for the armed forces of the country to acquire advanced knowledge in techniques such as forensic biometrics, forensic anthropology, swabbing for explosives, testing for chemical and biological deployments, etc.

In the current context, the importance of establishing a centrally managed, 'Joint Defence Forensic Service' in Sri Lanka with a special focus on identifying and countering security threats against the nation can be highlighted.

Keywords: *Armed forces; national security; terrorist networks*

6807- OP

DETECTION AND RECOVERY OF UNDERWATER HUMAN REMAINS USING REMOTELY OPERATED VEHICLES

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Diving carries certain risks including decompression sickness, arterial air embolism, and of course,

drowning. There are also effects of diving, such as nitrogen narcosis, that can contribute to the cause of these problems. Therefore, it is more of a practical approach to rely upon Remotely Operated Vehicles (ROVs) for the detection and recovery of underwater human remains. A Remotely Operated Underwater Vehicle (technically ROUV or just ROV) is a tethered underwater mobile device, commonly called an underwater robot, with robotic arms and many scientific instruments for underwater expeditions.

To date, ROVs have been used for offshore constructions, tracking, and detection functions. However, due to the presence of their robotic arms, they could also be used for the recovery of human remains from underwater. The main advantage of ROVs for human remains recovery is that they can be operated at extreme depths as divers could only dive up to a maximum depth of 100 meters. ROVs can remain underwater for long periods of time. ROVs can accurately perform repetitive tasks and can be operated in harsh conditions that would impede general diving. Using ROVs for recovery missions can be cheaper compared to diving, as hiring experienced divers can be much more expensive. This presentation will review the current uses and capacities of ROVs and will explain their potential for locating and aiding the recovery of submerged human remains.

Keywords: *Recovery of human remains; remotely operated vehicle; underwater expedition*

6894- OP

NON-INVASIVE TOOL FOR HUMAN IDENTIFICATION: CONTEMPLATION OF FINGERPRINTS AS PROSPECTIVE GEOGRAPHICAL AND OCCUPATIONAL MARKERS

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Fingerprints are always considered reliable biometrics for human identification. Even after a century, these are indomitable features that are relied upon for absolute identification. Though it is more authentic for the identification process, it is too time-consuming to examine/compare the data which are actually in huge volumes. Even the data which is acquired would have to be examined without any distraction and destruction. This would be very much cumbersome and time-consuming when a large quantum of data is involved. An effort has been made to develop the fingerprints without any destruction and analyze the same with the residual contents. A set of two hundred samples have been collected and studied. The microscopic and biochemical study was done. This has rendered promising results with data of specific elemental contents which were reliable and dependable of the specific geographical area and occupational markers. This was achieved based on microscopic, molecular, and biochemical analysis. This study is contemplating the reliance on geographical and occupational data about the individual under question. With this study, the results obtained were more prospective, reliable, and significant for the effective identification of individuals with a focus on the correlation of elemental content in fingerprint residues of population groups in different areas of the Indian subcontinent.

Keywords: *Artifacts; fingerprints residues; microscopic analysis; molecular fingerprints*

7081- OP

ABORTION LAW IN SOUTH ASIA: A COMPARISON

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The WHO defines abortion as ‘an operation or procedure to terminate the pregnancy of a non-viable foetus’. Varying legal restrictions are placed on abortions, and these may range from being readily available to be entirely illegal. A review of the literature was carried out on abortion legislation in countries of South Asia, i.e., Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka between the years 2000 and 2022. In Afghanistan, Bangladesh, and Sri Lanka, abortions are only permitted to save the life of the mother. In the Maldives, in addition to abortion being legal to save the mother’s life, pregnant mothers may also seek abortion where the pregnancy is a result of rape or incest. Abortion is legal in Bhutan to save the mother’s life, where pregnancy is a result of rape and incest, and where the mother is of unsound mind. Abortion is permitted for any reason up to 12 weeks of gestation in Nepal and up to 28 weeks gestation in cases of rape or incest. Abortions are further permitted where there is a danger to the mother’s life and in the presence of foetal abnormalities. Only abortions done in ‘good faith' and to save the mother’s life through ‘necessary treatment’ are permitted in Pakistan. In India, abortion is available for all women, regardless of marital status, for various circumstances under the Medical Termination of Pregnancy Act 1971 (as amended).It was observed that abortion is recognized, yet limited. Narrowing the law on abortion inevitably leads women to seek illegal avenues.

Keywords: *Abortion law; abortions; illegal abortions; South Asia*

7294- OP

LINEAGE DETERMINATION VIA MITOCHONDRIAL DNA FROM HYPERVARIABLE REGION 1 AND 2

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Human mitochondrial DNA (MtDNA) has been used in forensic identification areas due to its maternal inheritance, high mutation rate, and high number of copies. Among humans, genetic variation occurs from single nucleotide to multiple nucleotide variants (SNVs). These SNVs are useful for studying the relationships among individuals for identification. MtDNA has three hypervariable regions (1,212bps): HV1, 2 & 3. Additionally, mtDNA is only maternally inherited, therefore, maternally related individuals will have identical mtDNA sequences. This study aimed to comprehend the maternal lineage pattern. Blood/ saliva samples from 49 healthy mother-child pairs were collected. MtDNA was extracted using the PCI method. Sanger sequencing was performed with specific primers for HV1 and HV2 of mtDNA. Analysis was done using MITOMAP software. In this study, all sequencing data from the HV1 and HV2 regions were compared with rCRS to identify haplotypes and SNVs in each pair. We identified 34 different haplotypes in both regions viz. M66(7%), M54(4.5%), M3d(4.5%), R5a2(4.5%), and W6(7%). Of the 44 individuals, 32 haplotypes matched in the HV1 area alone and 20 in the HV2 region alone. Comparison of HV1 and HV2 collectively successfully yielded 95.4% determination of maternal lineage in 44 cases. HV1 alone was able to establish 89% of relationships in these pairs. Additionally, SNVs of the control region (mtDNA) were diversified enough for individual identification and the maternal lineage. This study concludes that among HV1 and HV2 regions, the former is higher discriminatory in our subjects. However, establishing maternal lineage sequences of both regions should be considered.

Keywords: *Haplotypes; hyper variable regions; maternal lineage; mitochondrial DNA; sequencing*

8160- PP

ABORTION LAW IN SRI LANKA AND ITS MEDICO-LEGAL AND SOCIO-CULTURAL IMPACT

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In Sri Lanka, abortion is only permitted in circumstances where the mother's life needs to be saved, and in all other circumstances, it is a criminal act punishable under the penal code. Sri Lankan law about abortion has not seen revision since it was first introduced, even though there have been many attempts to amend the same. Denial of access to safe abortion comes with numerous medico-legal and social issues as the availability of illicit clinics and pills cannot be easily curtailed. We aim to review the existing law on abortion in Sri Lanka and its medical, legal, and social impact. A review of the existing abortion law and related literature was carried out, from its enactment to date. Sri Lanka has one of the world's strictest abortion laws, existing in rudimentary form since its enactment to date. Attempts at revising the law have been unsuccessful to date. A maternal mortality review conducted in 2005 by the Family Health Bureau attributed 11.7% of maternal deaths to unsafe abortions, making it the third-largest cause of maternal deaths. The existing literature suggests that unintended pregnancies are one of the major causes of illegal abortions and lack of knowledge and awareness about reproductive and sexual health, myths and beliefs in contraception, issues in access to health services, and lack of

negotiation skills and bargaining power are contributing to it. The need for revision of the existing abortion law in the country is apparent, at least in extreme circumstances such as rape and incest.

Keywords: *Abortion law; criminal abortion; maternal mortality rate*

8674- PP

DO WE NEED LEGAL REFORMATIONS TO REHABILITATE TORTURERS? ARE THEY TO BE PENALIZED, REHABILITATED, OR BOTH?

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A wide spectrum of physical and psychological events come under the term 'torture'. Circumstantially, they may be practiced during near-total anarchy or established good governance. The first includes genocide and extra-judicial executions. The latter includes occasional battering in custody, ragging in universities, etc. The victims may be financially compensated and the perpetrators may be fined, compelled to pay damages, and imprisoned. The objectives of a penalty include retribution, deterrence, prevention, social protection, rehabilitation, and so on. An effective punitive approach should fulfill almost all of these goals at different levels. Fining and imprisonment of torturers do not seem to fulfill these outcomes effectively. There may be several background factors to indulge in torture. In addition to criminal punishment, mandatory rehabilitation, counseling, etc. too would be effective approaches to achieving a torture-free society. The authors suggest that the legislature should take appropriate actions to reform the punitive aspects of the torture law in Sri Lanka to incorporate a rehabilitative approach for the perpetrators (as victims are already subject to rehabilitation and psychiatric help) in addition to the existing penalties.

Keywords: *Criminal justice system; fundamental rights; legal reformations; torture*

8714- OP

POSTMORTEM INTERVAL ESTIMATION USING RNA DEGRADATION PATTERN AND GENE EXPRESSION (MESSENGER RNA: HIF1A, GAPDH, B- ACTIN) IN HUMAN DENTAL PULP UNDER VARIED TIME INTERVALS

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Post-mortem interval (PMI) or time elapsed since death is a decisive factor that helps in extracting information from a crime scene to serve a court of law. Various methods have been developed so far in estimating PMI such as pathological, entomological, biochemical, and anthropological. Either these are subjective or time-dependent, although these are of limited approach, yet to deliver an effective method. Advancement in molecular technique has focused on PMI estimation through a molecular approach. RNA, being more susceptible, is thus used to determine the death interval. Several authors evaluated the mathematical model to correlate RNA degradation with the PMI using the RNA approach. The study of gene expression proved to be a promising tool in forensic genetics and contributed to finding the cause of death as well. Also, the pattern of gene expression and their correlation with biological markers may raise hope in the field of PMI estimation. In the present study, we will analyze the RNA

degradation pattern and gene expression (messenger RNA: HIF1α, GAPDH, B-actin) under various time intervals to estimate the PMI from the dental pulp tissue. The initial results after 10 days showed that RNA degradation was found with the passage of time (assessed at 1, 3, 5, and 10-day intervals) and gene expressions of HIF1α, GAPDH, β- Actin decreased with time. According to the initial results of the study, we can conclude that there is a degradation pattern of mRNA and gene expression with time, and these patterns when correlated will give us a more accurate/precise PMI estimate.

Keywords*: HIF1α; molecular approach; PMI estimation; RNA degradation*

8943- PP

MEDICAL NEGLIGENCE: ISSUES ENCOUNTERED BY LAWYERS

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It is a settled principle that the law should be definite, coherent and unambiguous and it should address similar situations in an analogous manner. However, when considering the law relating to medical negligence, there is a lack of very clear and definite yardstick to prove and decide a medical negligence case. It is difficult to identify when and how the duty owed by the medical practitioner was breached. Furthermore, there is no clear approach to understand what reasonable or unreasonable practice is. Accordingly, this study discusses the issues faced by both prosecution and defense lawyers in Sri Lanka in establishing their medical negligence cases. This study is based on data from law reports, journals and judgments in Sri Lankan and global context. The aim of this study is to critically evaluate the four limbs necessary to establish a medical negligence case and practical issues of those four limbs ascertain by the judiciary system which affect a fair trial. The findings of the study indicate that there is no proper method to identify when or how the duty of care infringed. Furthermore, ample evidence suggests that there is no objective approach to determine what is reasonable or unreasonable practice. Lack of independent evidence against an accused medical practitioner led to the standard of care that is not acceptable. Moreover, it demonstrates the difficulty in establishing the causal relationship between negligence and damages.

Keywords: *Establishing medical negligence; issues encountered by lawyers; medical negligence*

5905-OP

LEGAL ASPECTS OF ORGAN AND TISSUE DONATIONS IN INDIA

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Since times immemorial, dead body has always played a pivotal role in the advancement of medical sciences. Since the first successful kidney transplant operation in 1954 carried out by Dr Joseph Murray in Boston, Massachusetts, the technique has saved over 400,000 lives worldwide. It is no doubt that technology has made great advancement in all fields but still there is nothing to suggest that we could manufacture organs the way we are manufacturing the best instruments. But the best part is that medical advancement has led to organ harvesting and their transplant from cadavers. Brainstem death which is now legally valid death paves way for harvesting of such organs and their

transplantation. To streamline the process, globally there are legislations in place e.g. Organ Donation (Deemed Consent) Act, 2020 in England. In India, first such act came into force in 1994, which was further amended in 2011 as there were certain lacunae which were creating hurdles in smooth donation. Initially 1994 legislation was called Transplantation of Human Organs Act (THOA) which later changed to Transplantation of Human Organs and Tissues Act (THOTA), and now the 2014 rules have further streamlined many of the procedures to be adopted in medico-legal cases (MLC). It is pertinent to mention here; medico-legal cases are the best chunk of retrieving healthy organs from an individual dying due to unnatural rather than natural causes. Here we discuss the legal issues in such donations and remedial measures in the form of standard protocols so that such altruistic donations are promoted without legal concerns.

Keywords: *organs; cadavers; transplant; brainstem; THOA; THOTA; medico-legal.*

0115-OP

MEDICO-LEGAL ASPECTS OF SRI LANKAN FORENSIC NURSING PRACTICE

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Healthcare service in Sri Lanka has an illustrious history of forensic medical practice which continues to play a major role in the nation's criminal justice system. It is a well-structured system, with Consultant Judicial Medical Officers spearheading each unit. However, until recent times there was no involvement of nursing officers in this important area of medicine. Nursing officers of Sri Lanka are well recognized even internationally, and are provided three years of undergraduate training in reputed Colleges of Nursing Care in which basics of medico-legal aspects are included in the curriculum.

Currently, several forensic medical units of the country have hired nursing officers to be a part of their staff to assist Judicial Medical Officers in clinical management of patients for legal purposes, among which the Colombo East Medico-legal Unit is a pioneer.

The main role of a nursing officer in these units is to assist Judicial Medical Officers to obtain history from patients and to assist examinations by adhering to basic medical ethics, particularly in cases of sexual assaults and child abuse, which are challenging tasks in the field of medico-legal practice. The contribution of a nursing officer is indispensable in examination of psychiatric patients for medico-legal purpose as such procedures invariably require higher training and experienced even as a chaperone.

Preparation of patients for examinations, preparation of examination rooms and examination beds, obtaining toxicological samples, organizing case conferences, maintenance of inventories and registers of the unit are some of the other duties performed by nursing officers.

Keywords: *Forensic nursing practice.*

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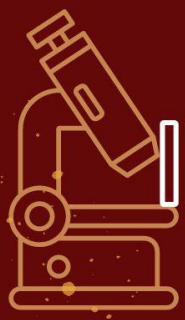

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