DOI: http://doi.org/10.4038/mljsl.v10i4.7463

20th Annual Academic Sessions of The College of Forensic Pathologists of Sri Lanka 2021/2022

Oral Presentations
01: Forensic Pathology

OP-01
The Sudden Death of a Man Found by The Roadside with Multiple Organ Pathologies

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Abstract
The role of forensic pathologists is vital in solving medico-legal issues in cases such as bodies found on the roadside where no eyewitness accounts are available. This is a case of a 61-year-old man who was found unconscious along the roadside close to his residence. He had passed away on the way to the hospital. There was no first-hand eyewitness account in the incident, and there was no dying declaration by the deceased. He had a past history of epilepsy for which he had defaulted treatment, and he was diagnosed with pulmonary aspergilloma as well. There was a large mass lesion over the left lung with surrounding cavitation and red hepatisation. There were features suggestive of fungal pneumonia in histology. There was patchy fibrosis of the cardiac muscle. There was soft tissue contusion of the scalp over the right occipital region with an underlying linear fracture extending towards the temporal region and base of the skull. There was left-side acute subdural haemorrhage and extensive diffuse subarachnoid haemorrhage with frontal lobe countercoup contusion confirmed by histology. There were no other injuries. The urine for the multidrug screening test was negative. Samples were sent to the government analyst department for toxicology for which the report is not yet available. The cause of death was given as craniocerebral injuries due to blunt force trauma with pneumonia and ischemic heart disease contributing. Gravity and the overall injury pattern were suggestive of a fall. In cases of this nature, where reliable eyewitness accounts are not available, careful consideration of the injury pattern plays a vital role in the reconstruction of the events and in formulating the cause and manner of death.

Keywords: Sudden death, countercoup contusion, injury pattern

OP-02
Disseminated Tuberculosis in A Patient with Heroin Addiction: A Case Report

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Abstract
Tuberculosis is a chronic airborne bacterial infection that primarily affects the lungs. It may disseminate to other organs, especially in immune-compromised individuals with malignancy, infections and substance abuse. This case shows an atypical presentation of disseminated tuberculosis diagnosed with histology and ancillary investigations. A 26-year-old ticket seller was admitted to the hospital with sudden onset focal epilepsy and altered behaviour. He had been fully vaccinated for COVID-19 infection, and there were no respiratory symptoms. Primary care was given, and he developed irritability and slurring of speech. A computer tomographic scan revealed ventriculomegaly and cerebral oedema with some opacities. External ventricular drainage was inserted, and after two hours, he was pronounced dead. The postmortem examination was performed on a thin, emaciated body with tattoo marks. Numerous whitish lesions were noted over most of the major organs, including the pericardium, lungs, liver, mesentery and intestines. The bilateral basal cerebral surface was covered with pus, and irregular nodular areas were observed in the white matter. Histology of the lungs showed multiple granulomas with foreign body giant cells around the bronchioles, and caseating granulomas with Langhans giant cells were discovered in many tissue sections. Pinkish tubercles were detected by Ziehl Neelson staining, and TB PCR was positive. The urine multidrug test was positive for heroin, and blood HIV analysis was negative. Disease notification and family screening for tuberculosis were performed. This case exemplifies an atypical presentation of tuberculosis with heroin addiction that leads to clinicopathological challenges in the diagnosis, which demands higher clinical vigilance.

Keywords: Disseminated tuberculosis, heroin, acid-fast bacilli

OP-03
Fatal Blunt Cardiac Injury Following Fallen from Height: A Case Report

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Abstract
Blunt cardiac injuries are clinically underdiagnosed traumatic injuries ranging from an asymptomatic myocardial contusion to cardiac rupture and death. They commonly occur after motor vehicle crashes, falls from height and crush injuries involving the thorax and upper abdomen. This case showed a rare case of fatal cardiac rupture without external injuries following a fall from height. A 46-year-old woodcutter was admitted to the hospital following a fall from a tree. On arrival, he was unconscious, blood pressure was not recordable, and pulses were weak. Despite emergency primary care, he pronounced death a few minutes after admission. Eyewitnesses revealed that he had lost his grip with the rope attached to the tree and fell approximately 40 feet to the ground, which was flat. He was occasionally alcoholic and had no history of substance abuse. The autopsy showed no external injuries or fractured limbs. Internal dissection revealed multiple lung contusions without haemopneumothorax or aortic lacerations. A massive haemopericardium was noted with a rupture of the left auricle of the heart. Papillary muscles, chordae tendinae and valves were free of injuries. Haemoperitonium with multiple superficial tears was observed over the left lobe of the liver and left kidney. Mesentery and intestines were free of injuries. Histology showed contusions with bleeding surrounding the myocytes at the ruptured site. Craniocerebral and spinal dissections were unremarkable. This case highlights the importance of the clinical suspicion of fatal blunt cardiac injuries following trauma, which may easily be missed during medical management.

Keywords: Blunt cardiac injuries, cardiac rupture, haemopericardium

OP-04
Colloid Cyst of the 3rd Ventricle as a Contributory Cause of Motor Vehicle Collision

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Abstract
Most motor vehicle collisions are multifactorial, and some occur as a result of natural factors, such as when an illness suddenly affects the driver of a vehicle. The underlying medical conditions mainly comprise cardiovascular and cerebrovascular diseases. However, determining the impact of a potentially incapacitating natural condition on a motor vehicle accident can be challenging. We present a case of a colloid cyst (CC) of the 3rd ventricle as a contributory cause of motor vehicle collision. While driving, a previously healthy 31-year-old male was involved in an accident. He suffered minor head and right elbow injuries. He did not go to the hospital for treatment because he did not have any significant injuries and felt well after the accident. Family members, on the other hand, discovered that he was in a state of altered consciousness and rushed him to the nearest hospital. The CT scan of the patient's head revealed obstructive hydrocephalus as well as a CC in the root of the third ventricle. CC of the 3rd ventricle is a rare and commonly fatal condition. Colloid cysts may be asymptomatic, but symptoms can arise from raised intracranial pressure secondary to obstructive hydrocephalus. Sudden neurological events such as seizures and collapse are known to occur with cases of the CC of the third ventricle. The literature revealed that approximately 1 in 1000 motor vehicle accidents is caused by the acute illness of a driver. Our case also highlights the contribution of natural disease to a motor vehicle collision.

Keywords: Colloid cyst of 3rd ventricle, trauma

OP-05
A Rare Case of Sudden Death Following Cardiac Tamponade due to a Mixed Germ Cell Tumour

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Abstract
Cardiac tamponade is a life-threatening emergency that can be overlooked by clinicians when clinical symptoms and signs are misleading. Here, we describe a rare case of cardiac tamponade due to pericardial haemorrhage as a complication of a mediastinal germ cell tumour. A 21-year-old healthy young male was admitted to the emergency treatment unit following dyspnoea and upper abdominal discomfort for 3 days with no history of fever or cough. Chest X-ray revealed diffuse opacities on both lungs and solid round hyperdense lesions within the mediastinum. Investigations revealed severe anaemia, thrombocytopenia, normal leucocyte count, high CRP, elevated SGOT and SGPT, and acute kidney injury. He was treated with the differential diagnosis of lung abscess or leptospirosis. The condition deteriorated, and the patient died within twelve hours of admission. The autopsy revealed a friable tumour in the middle mediastinum (11x10x11 cm) with haemorrhage and necrosis that infiltrated the upper lobe of the right lung and parietal pericardium to cause extensive haemopericardium (1000 ml) with multiple solid nodular lesions (secondary deposits) of both lungs. Histology of the mediastinal lesion revealed a malignant mixed germ cell tumour composed of embryonal carcinoma, yolk sac tumour, and teratoma elements with multiple metastases to the lung. The cause of death was given as haemopericardium following a mixed germ cell tumour of

the mediastinum. This case highlights the uncommon presentation of haemopericardium caused by a mixed germ cell tumour of the mediastinum. High suspicion with early diagnosis by echocardiogram and therapeutic relief of cardiac tamponade by surgical intervention may be lifesaving even though the tumour has a different prognosis.

Keywords: Cardiac tamponade, haemorrhagic pericardium, life-threatening emergency, mixed germ cell tumour

OP-06
Acute Subdural Haematoma in a Sudden Infant Death: A Nonaccidental Head Injury, a Postmortem or Resuscitation Artefact?

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Abstract
It is the wisdom of forensic pathologists to differentiate the original injury from those introduced by treatment, resuscitation or postmortem phenomena, especially in sudden infant deaths, as they might be complicated with nonaccidental 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, the father found him floppy and rushed to a hospital where he was managed for milk aspiration but was pronounced dead following unsuccessful resuscitation. The autopsy revealed injuries suggestive of resuscitation and bilateral acute subdural haematomas (SDHs) without features of cerebral oedema, midline shift, cerebellar herniation or retinal haemorrhages. Histology was unremarkable except for acute subarachnoid haemorrhage (SAH). Toxicology was negative. SDH is typically associated with trauma and is usually a widespread, bilateral, thin-film following rupture of bridging veins. Death is due to the complications of increased intracranial pressure (ICP), which we could not observe here, making it unlikely to be 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 few reported cases of SAH following CPR. It is postulated that elevation of ICP due to chest compressions leads to oozing of blood from dural and arachnoid vessels when there is hypoxic endothelial damage. Therefore, the authors are of the opinion that SDH, in this case, is unlikely due to trauma or SBS and could be a postmortem or resuscitation artefact.

Keywords: Subdural haematoma, artefacts, shaken baby syndrome

OP-07
Three Unique Fatal Cases of Aortic Dissection: A Case Series

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Abstract
Aortic dissection (AD) is a devastating condition with very high mortality. The estimated incidence is approximately 5-30/million/year, but the true incidence remains unknown. A 71-year-old British lady with hypertension presented with acute severe chest pain and suffered a cardiac arrest on admission. Resuscitation was unsuccessful. Autopsy revealed acute chronic thoracic AD up to the bifurcation of the abdominal aorta (Stanford B) complicated with fusiform aortic aneurism with evidence of severe atheromatous disease. Histology demonstrated significant medial degeneration with dissection at the outer one-third of the media. Toxicology was negative. A 38-year-old previously healthy woman presented with acute chest pain radiating to the back. CT Aortic

angiogram showed acute AD (Stanford A). She suffered on table cardiac arrest during surgery. The autopsy revealed evidence of marfanoid habitus, mild atherosclerosis in the aorta and surgical interventions for dissection. Histology demonstrated dissection in the middle of the media. A 71-year-old lady with hypertension died in bed in the morning. 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 individuals had major risk factor hypertension and evidence of severe atherosclerosis, unlike young females, 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 on the middle could be due to immaturity of media attributable to genetic mutations.

Keywords: Aortic dissection, hypertension, medial degeneration

Op-08
Undiagnosed Haemothorax – Does It Amount to Medical Negligence? A Case Report

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Abstract
Haemothorax is a well-known cause of mortality following trauma to the chest. An adult female with rheumatoid arthritis, osteoporosis, and systemic hypertension with ischemic heart disease was admitted to the hospital three days after a fall. Initially, she had left chest pain, and a chest X-ray revealed multiple Rib fractures on the left side without haemopneumothorax. She complained of frequent chest pain and was investigated with a subsequent chest X-ray and electrocardiogram. The autopsy did not reveal any external injuries. Chest dissection revealed multiple rib fractures on both sides, including a few anterior fractures with haemorrhages. Anterior chest wall contusions, pericardial damage, myocardial contusion, and diaphragmatic contusions were consistent with resuscitation artefacts. The left lung was collapsed with haemothorax measuring 1000 ml with clots. The left anterior descending artery had 75% atherosclerotic narrowing but no gross ischemic patches over the myocardium. Kidneys were granular and contracted with cortical cysts, and other organs did not reveal any gross pathologies. The histological investigations confirmed the clotted haemothorax to be of antemortem origin with the presence of lines of Zahn and areas of neutrophil infiltrations. Myocardial histology from multiple sections did not reveal evidence of old infarction with fibrosis or any acute infarction with hypereosinophilia, cellular oedema or nuclear changes. Although she had several diseases that could have caused death, the thorough autopsy investigation concluded the cause of death as haemothorax due to multiple Rib fractures following blunt force trauma to the chest.

Keywords: Haemothorax, medical negligence

OP-09
Death Following Rapidly Progressive Demyelinating Disease in a Young Female: A Case Report

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Abstract
Multiple sclerosis (MS) is a debilitating, demyelinating disease of the central nervous system, with manifestations ranging from numbness and blindness to paralysis. Although it is a chronic disease causing significant morbidity spanning many years, a rare rapidly progressing and fatal variant has been discussed in the literature. "Marburg's disease" is a rare variant of MS that demonstrates malignant monophasic disease progression leading to death within weeks to months. We present a rapidly fatal demyelinating disease with clinicopathological findings in par with the handful of reported cases of "Marburg's disease" in the literature. A previously healthy 30-year-old mother of two was extensively investigated for right-sided body weakness, slurring of speech, headache and vomiting. Following gradual clinical deterioration, she succumbed to death five weeks after the onset of symptoms. Antemortem investigations for tuberculosis, autoimmune diseases and viral studies were negative. Brain MRI showed hyperintense lesions with contrast enhancement compatible with MS. Autopsy revealed an oedematous brain with areas of discolouration and tissue softening in the white matter. In addition, widespread haemorrhages involving the cerebrum and brainstem were observed. There was no involvement of the meninges observed. The rest of the organs were unremarkable. Postmortem microbiology was unable to isolate any organisms. Histology of the brain with haematoxylin and eosin and immunostaining demonstrated features compatible with inflammatory demyelination. There is a wide spectrum of acute, rapidly fatal, demyelinating conditions, making the diagnosis challenging. This highlights the importance of clinical-radiological and histopathological correlations to arrive at an accurate final diagnosis.

Keywords: Multiple sclerosis, demyelinating disease

OP-10
Page Kidney; A Reversible Condition Leading to Death: A Case Report

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Abstract
Page kidney is a condition where there is external compression of the renal artery and renal parenchyma with subsequent ischemia and activation of the renin-angiotensin-aldosterone axis. A 42-year-old lady with hirsutism, hypertension and diabetes was diagnosed with a right adrenal mass and underwent laparoscopic right adrenalectomy. Her hypertension worsened postoperatively and was managed medically. She developed right flank pain on the fifth postoperative day and died suddenly on the following day. The autopsy revealed a pale body with a cushinoid appearance. Surgical scars were healthy. Internal examination of the abdomen revealed a haemoperitoneum of 500 cc together with a large subcapsular hematoma measuring 1000 cc surrounding the right kidney, which was compressing the right renal artery. Kidneys were pale, and the right kidney was soft and friable. The cortical surface of the right kidney demonstrated a possible surgical puncture site with an overlying thrombus together with a damaged right renal vein. The brain appeared normal, and the rest of the organs were pale. Histology revealed acute tubular necrosis of the right kidney and features of adult respiratory distress syndrome in the lungs. Acute kidney injury due to right-sided Page kidney following laparoscopic right adrenalectomy was declared as the cause of death. The trauma of several aetiologies, including laparoscopic abdominal surgery, may contribute to Page kidney. It presents with flank pain, hypertension and renal mass. Since postoperative blood loss usually manifests as hypotension, resulting hypertension may mislead attending clinicians. Once diagnosed, it can be managed with surgical drainage.

Keywords: Page kidney, laparoscopic adrenalectomy, secondary hypertension

OP-11
Death of a Woman Following an Unsuccessful Endoscopic Retrograde Cholangiopancreatography (ERCP) Procedure for Common Bile Duct Calculi

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Abstract
The gold standard procedure for the diagnosis and management of common bile duct stones is Endoscopic Retrograde Cholangiopancreatography (ERCP). Complications of ERCP include cholangitis and post-ERCP pancreatitis and rare but preventable complications such as bile leakage due to guidewire perforation and peri-ampullary perforation. This paper discusses the death of a 68-year-old woman with preexisting comorbidities and common bile duct obstruction in whom ERCP was attempted and abandoned due to difficult cannulation. Eventually, she died a few days following the attempted procedure. The autopsy revealed evidence of sepsis, shock and multiorgan failure, inflamed pancreas, evidence of bile leak, gall bladder containing multiple black-pigmented gall stones, and two gallstones completely obstructing the hepatopancreatic ampulla. Histology revealed Acute Respiratory Distress Syndrome, bridging hepatic fibrosis, acute tubular necrosis of the kidneys, pancreatitis with necrosis and peritonitis and necrotic tissue imbibed with bile stains. Death following a surgical procedure is often associated with allegations of medical negligence. Bile leakage is not a common occurrence following such a procedure but can have serious adverse effects. Toxic effects of bile salts, causing cholaemia, lead to death from bile peritonitis. The necrotizing effects of bile on the peritoneum and viscera can make an individual susceptible to infections. The shock from fluid loss in the extravascular space can lead to rapid death. The cause of death was concluded as sepsis due to peritonitis in a patient in whom ERCP was attempted for common bile duct calculi, contributed by her existing comorbidities. To conclude, or exclude any allegations of medical negligence, 'Bolam' or 'Bolitho' tests should be applied to confirm or exclude such acts of negligence.

Keywords: Common bile duct stones, peri-ampullary perforation, bile leakage, bile peritonitis, sepsis

OP-12
A Case of Fatal Iatrogenic Foreign Body Embolism

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Abstract
The majority of reported cases of foreign body embolism are iatrogenic, involving fragmented catheter material and other intravascular devices. Depending on the nature of the embolised material and anatomical location, it lodges, and it may lead to serious complications such as arrhythmia, endocarditis, tamponade, and pulmonary haemorrhage. This is a case of iatrogenic foreign body embolism during renal transplant surgery causing fatal arrhythmia. A 41-year-old male with chronic kidney disease underwent a live donor renal transplant. He developed tachyarrhythmia during the surgery followed by persistent hypotension. Pre- and immediate postoperative biochemical studies revealed no abnormalities. However, at the end of postoperative day one, he developed multiorgan failure and died on the following day despite intensive care management. The autopsy revealed a 1x0.4x0.4 cm piece of an infusion tube, which was used as a boot covering the jaws of forceps, at the origin of a segmental branch of the left pulmonary vasculature without causing vascular injury. Macroscopic and microscopic examination of the myocardium and coronary arteries did not reveal significant pathology. By clinicopathological correlation, foreign body embolism was concluded to be the underlying cause for arrhythmia, which was

responsible for persistent hypotension and subsequent multiorgan failure after excluding other possibilities. Pre-autopsy suspicion of foreign body pulmonary emboli is difficult due to their varied clinical presentation and dubious radiological features. However, identification of such foreign bodies at autopsy is extremely important, not only to arrive at the cause of death but also to indicate doctors' failure to give the standard duty of care.

Keywords: Foreign body embolism, arrhythmia, duty of care

OP-13
Homicidal Burn Injury: A Case Report

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Abstract
The causes of burn injuries are hot liquids, flames, radiation, electricity and vapour. This is a case of a fatal burn due to homicidal circumstances, which are rare in routine forensic practice. A 45-year-old mother of 6 children was admitted with extensive burn injuries accounting for 54% of the total body surface. After approximately one month, she died despite treatment. At the time of admission and in clinical forensic examination, she stated that her husband put kerosene oil into her body and ignited near the toilet. Following the crime scene investigation, police found witnesses for the homicide circumstance, which gave many contradictions to the history given by the husband. The history revealed that she had marital disputes with her husband for so many years. The autopsy revealed infected full-thickness burn injuries in the area of the middle part of the body up to the knee level to the face, sparing areas covered by underwear. No drip or flash marks were seen. Internal organs showed multiorgan failure with evidence of sepsis. It was confirmed with histopathology. The cause of death was concluded to be multiorgan failure in a patient with sepsis who sustained burn injuries. She stated that homicidal burn injury at the time of admission arranging a dying declaration is vital and will establish strong evidence in future legal proceedings, which did not occur in this case scenario. Not only postmortem evidence but also antemortem evidence collection is important in revealing a crime.

Keywords: Burn injury, homicide, dying declaration

OP-14
Adolescent Suicide; Contribution of Adult Behaviours: A Case Report

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Abstract
In Sri Lanka, adolescent suicide is the fourth leading cause of death in adolescence. Adolescent is in a critical age period for the maturation of neurobiological processes that underlie higher cognitive functions and social and emotional behaviour, and the incidence of adolescent suicides is more complicated with substance misuse and social, cultural and economic revolutions. A 14-year-old male victim and his sister were living with aunt and uncle as their parents were separated. The day before the incident, the boy was caught by the school principal due to possession of an addictive substance called Thul. According to the aunt, the child was physically and mentally

harassed by the principal and a teacher for many hours. The victim revealed suicidal ideation following this incident to his friends, but he did not have any suicidal ideation or event before. The following day, he refused to go to school and was found suspended with a ligature in his room, which was accessed by a chair. The autopsy revealed a ligature mark around his neck. A single, parched appearing, imprint abrasion, partially encircling the neck, in anterior midline immediately above the laryngeal prominence; on the left side of the neck, it is 5 cm in length, extending backwards 6 cm bellow the left auditory meatus; on the right side of the neck, it is 6 cm in length, extending backwards and upward, ending up in lateral margins of the neck 7 cm below the right auditory meatus. There were no other associated injuries to the skin of the neck, deep soft tissues, hyoid bone, laryngeal cartilage or cervical vertebrae. Toxicological analysis was negative, the cause of death was concluded to be hanging, and the manner was concluded to be suicidal. This case highlights that dealing with adolescents is a challenge to teachers, the community and family members. Understanding their behaviour pattern and mentality will help in satisfactory outcomes in their issues. To prevent adolescent suicide, help them with mental and substance abuse problems, listen, try not to offer undue criticism, and stay connected.

Keywords: Children, self- harm, adolescent suicides

OP-15
An Autopsy Case of Neonatal Gastric Perforation

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Abstract
Neonatal gastric perforation is a rare condition that has a life-threatening outcome. The incidence is reported as 1 in 5000 live births. Traumatic gastric perforation, ischemic perforation and spontaneous perforation are three identified main causes, and some mechanisms have not been completely identified. Prematurity, low birth weight, mechanical stress, and male sex have been described as risk factors in most of the studies. A 38-year-old previously healthy primi mother delivered a baby boy by a normal vaginal delivery following abdominal pain and dribbling at POA 26 weeks. The birth weight was 1.140 kg. On day 3, the baby developed acute respiratory distress due to septicemia positive for staphylococcus. The baby was attached to the ventilator, and nasogastric tube feeding was continued. Umbilicus venous catheterization was performed on day 23. On day 24, there was some distension of the abdomen, and it was progressively increased. Initial ultrasound scans were unremarkable, and peritoneal fluid was detected on day 32. X-ray was not done. The baby died on day 34. At autopsy, the baby was very pale with a grossly distended abdomen, and an umbilical catheter was observed. The nasogastric tube was removed prior to death. Internal examination revealed that there were approximately 250 ml clotted and fluid blood inside the peritoneum, and there was a perforation in the greater curvature of the body of the stomach. The umbilical catheter was correctly placed, and there was no related trauma. Histology revealed an acute perforation in the stomach and viral pneumonia in the lungs. Acute gastric perforation in this neonate can be traumatic or spontaneous. Traumatic perforation cannot be reliably excluded with the absence of nasogastric tubes in situ. Sepsis, prematurity, low birth weight, mechanical stress and male sex can be contributory.

Keywords: Neonatal gastric perforation, traumatic gastric perforation

OP-16
Suicide by Electrocution: A Case Report

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Abstract
In Sri Lanka, although the annual rate of suicide is high, electrocution is one of the rarest suicidal methods. To date, in Sri Lanka, only two cases have been reported in the scientific literature. Unlike in most common suicidal methods, this needs some knowledge about electric devices. A 43-year-old civil engineer, a father of two children, suffered depressive symptoms for the last 6 months following the loss of his own business. The incident occurred while his family members were away from home. He used a copper electric wire that was used at his home and wrapped the two ends around both upper arms as a circuit was completed through his body. He also used an extension wire cord connected to 230v and 5A switches. When his wife returned home, she had found him dead sitting on a plastic chair in a small, partitioned room near the garage. The room was not disturbed. There had been previous suicidal attempts by the victim by hanging. The autopsy showed electric burn injuries encircling both the upper arm and some burn injuries over the chest. Histology revealed a streaming appearance of the epidermal nuclei. There were no other injuries over the body, and toxicology was negative. The current could have passed through the chest, causing ventricular fibrillation. He has had depressive symptoms and previous suicidal attempts. Being an engineer, he was familiar with electric devices. Therefore, the cause of death is electrocution, and circumstances could be suicidal.

Keywords: Electrocution, suicide

OP-17
Fatal Cut Injuries by Broken Glasses of Three-Wheelers; Unless Steps Are Taken, Will It Be a Common Presentation in the Future?

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Abstract
Three-wheelers are a popular method of transport among Sri Lankans, and fatalities and injuries following road traffic accidents are also very frequent. A case series of fatalities due to improper replacement of windscreen and rear window of three-wheeler is presented. Case 01: A 30-year-old healthy male under the influence of alcohol attacked the rear glass panel of his own three-wheeler, and sustained cut injury to his right forearm resulting in cut injury to his radial artery was hospitalized and died despite massive transfusion. Case 02: A 32-year-old healthy three-wheeler driver died on the site of the road traffic accident following toppling of three-wheelers and cut injuries most likely from the broken windscreen. Case 03: A 42-year-old healthy male three-wheeler driver died following a road traffic accident and received cut injuries to the neck from the broken windscreen. In all three cases, it was found that instead of the laminated glass or tempered glass used in the motor industry, plane glass was used. Non-laminated plain glass windscreen and rear windows are much cheaper and are used in three-wheelers. In the motor traffic act of Sri Lanka, the type of glass used for windscreens and shutters of motor vehicles is not stated, and the use of laminated glass is not mandatory. Due to the current shortage of motor spare parts and increasing prices, if people begin to use plain glass instead of laminated for other vehicles, it would also be a disaster. Therefore, banning the use of plain glass on motor vehicles is a timely need.

Keywords: Windscreen, glass, three-wheeler, cut injury

OP-18
Death of a Child Following a Superstitious Ritual of Exorcism

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Abstract
Diseases, especially those related to the psyche produced by demons, are an accepted belief in many communities. This paper elaborates on a death of child, a victim of an exorcism ritual, and calls for adequate awareness and preventive measures. The deceased, 9-year-old child was taken by her mother to an exorcist to 'expel a demon' from her body. The child was caned by an exorcist for 2 days while giving 'water' to drink. On the 2nd 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, tram-line 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. Histology 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 for common poisons, therapeutic drugs and heavy metals. The cause of death was concluded as aspiration pneumonia in a child who had been subjected to physical violence. With forceful feeding of syrup, it is possible for the child to have aspiration, 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. However, intentional violence against a child as a treatment option (expel a devil) is child abuse; children are not mature enough to decide treatment options. The caning of children as a method of corporal punishment is seen in many societies. While caregivers become responsible for the death of the child, the lessons to be learned are enormous. Thus, banning such practices against children is a need of the hour.

Keywords: Cultural practices, child mortality, intentional violence, aspiration

OP-19
Death due to Blunt Cardiac Rupture

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Abstract
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 became stuck and had struck him back on the chest. He complained of severe pain and difficulty in breathing and had sat on the floor, following which he was brought to the hospital. His autopsy examination revealed a roughly rectangular shaped contusion associated with an abrasion on the centre of the chest with contusions over the underlying tissue structures and a haemopericardium with a ruptured right ventricular wall. The cause of death was concluded to be 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

OP-20
Unexpected Death of a Young Male: A Case of an Intramyocardial Bridge

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Abstract
Coronary arteries run within the epicardial fat layer. Sometimes it dips down to the myocardium and then back out again, and it is a known congenital coronary circulation anomaly; coronary artery bridging (Myocardial bridging). A 29-year-old apparently healthy male who was a non-smoker and non-alcoholic was admitted to a tertiary care hospital following the sudden onset of loss of consciousness and found to be dead on admission. The autopsy revealed that the heart was 310 g in weight and no fibrosis or acute ischemic changes. All the coronaries were patent and devoid of atheroma. A 3 cm segment of the left anterior descending artery was deeply seated 2 mm from the surface just after its origin. The lungs were congested, and the liver was enlarged and showed fatty changes. All the other major organs were devoid of any gross pathologies. Toxicology and microbiology were negative. Even though deaths are very rare, coronary artery bridging could cause sudden deaths in previously healthy individuals. Meticulous autopsy examination with ancillary laboratory investigation is warranted before arriving at the cause of death as intramyocardial bridging.

Keywords: Coronary bridging, sudden deaths

OP-21
Malignant Inferior Vena Cava Syndrome: A Rare Clinical Entity

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Abstract
Inferior vena cava syndrome (IVCS) is a series of symptoms and signs that refers to obstruction or compression of the inferior vena cava (IVC) due to an underlying benign or malignant pathology. A 48-year-old female was investigated for right-sided abdominal pain, epigastric discomfort and swelling of both legs. She had a tender palpable epigastric mass and bilateral pitting ankle oedema with normal vital parameters. Upper GI endoscopic and colonoscopic studies were normal. US scan of the abdomen revealed a heterogeneous lesion in segment III of the liver. An elongated mass occupying the IVC and extending into the right atrium was detected by CT scan. Those findings were confirmed by echocardiography. She was admitted three months after the onset of symptoms with deranged liver functions and ascites, and an exploratory laparotomy was performed. The procedure was aborted after aspiration of the IVC with a needle. The patient died on the third postoperative day in the ICU. The findings of the autopsy were compatible with those of medical imaging, and the cause of death was given as multiorgan dysfunction due to complete obstruction of the IVC with a thrombus. Histopathology of the IVC thrombus showed poorly differentiated malignancy with extensive anaplastic changes. The site of primary growth was not identified during autopsy or by histopathology. Although it is debatable whether the optimum available surgical care was provided to the patient, in this case, it highlights the importance of medical imaging in guiding clinical decisions and the key role of autopsy in determining the underlying cause of IVCS.

Keywords: Inferior vena cava syndrome (IVCS), pitting oedema, thrombus, medical imaging

OP-22
Fatal Brush Cutter Injury of a Plantation Worker

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Abstract
Brush cutters are widely used in the fields of agriculture, landscaping and road maintenance. Nonfatal disabling injuries are common due to not using safer cutters and personal protective equipment and unsafe handling of equipment. This is a case of accidental injury to the lower limb where workers died due to haemorrhage. A 32-year-old female plantation worker died on admission following an injury to the left leg in the field. She and three other workers were clearing land with tall grass and thick bushes using portable hand-held brush cutters. Suddenly, her left leg was injured by a broken piece of a blade of a brush cutter of a nearby worker. There was a delay in transporting her, as it was a remote area and there was no proper first aid. She had 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 haemorrhage 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 safe usage of brush cutters, proper personal protective equipment and adherence to safety protocols during work.

Keywords: Fatal, haemorrhage, portable hand held brush cutter, safety

OP-23
A Young Male Strangled to Death by A Female

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Abstract
Strangulation is a type of mechanical asphyxia produced by constriction of the neck by a force other than the weight of the body. Most of the attempted or completed homicides by strangulation involve ligature strangulation, manual strangulation or a combination of both. In most instances of homicidal strangulations, the physical size and strength of the assailant exceeds that of the victim. When a female is the offender of the crime, the victim is usually a debilitated person or is a child. Following a confession made by a 41-year-old female, the body of a 24-year-old apparently healthy male recovered, and an autopsy was conducted. During the autopsy, two folds of a charging cable of a mobile phone with two tight knots on the anterior aspect was situated on the middle third of the neck encircling the entire circumference. Sings of asphyxia were present on the face and on the neck above the ligature. A minimum number of additional injuries were present on the neck apart from the ligature mark. No injuries suggestive of violence on the genitalia and extremities of the body were detected. The toxicological analysis revealed a blood alcohol concentration of 27 mg/100 ml and was negative for common poisons and for other addict forming drugs. The cause of death was concluded to be ligature strangulation. This case highlights that committing homicide by ligature strangulation by a female on a healthy male is possible in contrast to the usual.

Keywords: Strangulation, ligature strangulation, homicidal

OP-24
Acute On Chronic Subdural Hematoma in a Young Woman; Was It Overlooked?

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Abstract

Subdural hematoma (SDH) is an accumulation of blood in the subdural space caused by the rapid complex movement of the brain during trauma. It can occur at any age but is common at both extremes of life. It can be divided into acute, subacute, and chronic according to the duration between the occurrence of the injury and the onset of clinical features. The clinical presentation of chronic SDH is often insidious. Headaches and confusion appear to be the most common presenting features. A 32-year-old apparently healthy female developed headache on and off for ten days, which was associated with nausea and vomiting. She had taken symptomatic treatment. The symptoms were aggravated, and she died at home. Further inquiry revealed that she had experienced trauma to her head one and a half months ago due to an accidental fall, which was not significant enough for her to seek medical advice. The autopsy revealed an encapsulated, semiliquid, brown hematoma over bilateral temporoparietal regions. Hematoma contained redder foci suggestive of recent bleeding. There were features of mass effect. Histological dating of SDH was in keeping with a history of head trauma. The macroscopic and microscopic findings did not reveal features of other natural illnesses. The cause of death was determined as acute on chronic SDH. Postmortem findings were compatible with a past history of head trauma. It is a rare presentation of SDH, as it occurs in a young person without any comorbidities following minor trauma. It is always mandatory to keep in mind that even minor trauma can cause SDH.

Keywords: Subdural hematoma, trauma

OP-25
Arterio-Venous Malformation of the Brain – A Rare Cause of Sudden Death

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Abstract

Vascular malformations of the brain are a spectrum of structural abnormalities that are responsible for sudden deaths by means of spontaneous haemorrhages and epilepsy. The majority of the patients diagnosed with arteriovenous malformation (AVM) present with haemorrhage, whereas seizures are the second most common clinical manifestation. We herein report a case of a brain AVM in a young adult who died following an episode of a seizure. A 37-year-old man was found to be 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 MRI showed a brain AVM. He had several episodes of seizures for the last few years. At autopsy, the brain was oedematous, and an engorged vascular lesion of 3x3.5 cm was seen in the left frontal lobe involving the inferior frontal gyrus and superior temporal gyrus. Microscopy of the lesion showed cross-sections of dilated vessels placed close to each other. Some areas showed micro haemorrhages in the immediate surroundings. There was perivascular inflammation around some vessels, which consisted of mononuclear lymphocytes. Considering the above postmortem findings, the cause of death was concluded as epilepsy, which is a complication of brain AVM. Although vascular malformations represent a very small fraction of the general population, they have a huge impact on the patient's quality of life. This exercise highlights the importance of performing a meticulous autopsy

including histopathology and special staining techniques to diagnose those pathologies and arrive at a cause of death.

Keywords: AV malformation, sudden deaths, seizure

OP-26
A Rare Complication of Influenza B: Autopsy Diagnosis Meningitis in a Paediatric Death

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Abstract
Few studies have shown that the mortality associated with paediatric influenza B infection was equivalent or sometimes greater among children than among those with influenza type A. Complications from influenza A or B virus infection include pneumonia, myositis, myocarditis, and encephalitis. Influenza-associated encephalitis/encephalopathy (IAE) is a rare complication of influenza infection where it is more common with influenza type A. A previously well 3-year-old boy presented to the emergency care unit with a seizure attack following fever and vomiting for one day. He had altered behaviour before the seizure attack. He had no history of febrile convulsions before. The seizure attack subsided soon after admission. However, the child was persistently drowsy and had a high fever with persistent tachycardia. Basic investigations showed lymphocytosis and increased liver enzymes. Despite intensive care given to the child, he died within 12 hours of admission to the hospital. Gross cerebral oedema was observed during the autopsy, and microscopic studies revealed lymphocytic inflammation of the leptomeninges and early interstitial inflammation of the lungs. The nasopharyngeal swab showed molecular evidence of influenza type B-specific RNA on reverse transcription polymerase chain reaction (RT–PCR) testing. This case highlights the importance of considering influenza B infection as a serious condition in children, especially when presented with neurological features, as it can rapidly cause death. Ancillary laboratory investigations play a huge role in the diagnosis of exact causes of paediatric deaths.

Keywords: Influenza B, meningitis, histopathology, virological studies

OP-27
Postmortem Diagnosis of Herpes Simplex Virus Type 2 (HSV-2) Infection in a Foetus; Not Impossible in Sri Lanka

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Abstract
We report a case of foetal demise in a 19-year-old primi-gravid presented at 30 2/7 weeks gestation caused by fulminant herpes simplex virus type 2 (HSV-2) infection. This mother reported a history of symptoms of an HSV infection during 18 weeks of gestation with genital ulcers. This condition was serologically confirmed for HSV-2 and treated with acyclovir. Ante-natal 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 scant amounts of autolyzed brain tissue were observed. 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 intrauterine HSV-2 infection, which was probably following primary maternal infection in early pregnancy.
Keywords: HSV-2, transplacental transmission, intrauterine infection, congenital anomalies

OP-28
Homicidal Drowning – A Case of an Adult Victim

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Abstract
In the forensic literature, cases of adult homicidal downing are rare. In most of these cases, injuries due to violence are usually present unless the victim is incapacitated by alcohol or toxins and in instances where the victim is unexpectedly pushed into the water. When a body recovers from water, a thorough postmortem investigation should be carried out to determine the cause and manner of death. A body of a 42-year-old male was recovered from a polluted water canal by police. According to the only eye witness of the incident, two drunken males had a fight on a bridge, and one had pushed the other to the canal below through a broken parapet. The body recovered within half an hour after the incident, but the body was in a state of putrefaction due to delays in transportation and jurisdiction procedures. The autopsy revealed multiple blunt force injuries that were not severe enough to cause death. No natural pathologies that could have resulted in death or contributed to death were detected, and toxicological analysis was positive for blood alcohol. Diatom studies carried on bone marrow were negative. The autopsy diagnosis of drowning is performed via exclusion of other possibilities, as no specific signs or investigations are available to confirm drowning. Delays in recovery and increased postmortem intervals will create an additional burden on the confirmation or exclusion of drowning to the judicial medical officer.

Keywords: Homicidal drowning, adult

02: Clinical Forensic Medicine

OP-29
Intimate Partner Homicide: A Case Report

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Abstract
Intimate partner violence (IPV) is defined as physical violence, sexual violence, stalking, or psychological harm by a current or former partner or spouse. Intimate partner homicide (IPH) or fatal intimate partner violence is an extreme form of IPV. The term “Uxoricide” describes the killing of the wife or the girlfriend by her intimate partner. The common modes of intimate partner homicides include firearms, sharp trauma and, to a lesser degree, mechanical asphyxia (ligature and manual strangulation) according to several quantitative analyses conducted in several parts of the world. This case describes the investigation of the death of a young female who was killed by

her lawfully married husband who is a drug addict. She was found dead in a storage area adjacent to the house. They had an argument a few hours before the homicide, as witnessed by the mother of the victim. The postmortem examination revealed an irregular abraded contusion sized 10x6 cm placed over the anterior aspect of the root of the neck and injuries related to dragging of the body. There were petechial haemorrhages on the conjunctivae of both eyes, nasal bleeding and congestion above the neck of the body. There were no defined ligature marks or fingernail abrasions on the neck. However, there were extensive skeletal injuries to the neck and face, including the body of the mandible, greater horns of hyoid bones and bilateral superior horn thyroid cartilage fractures, which is suggestive of greater force than the force of manual compression of the neck. There was bilateral haemothorax of approximately 300 ml blood with bilateral first rib fractures. The cause of death was decided to be pressure over the neck, which was supported by the features of venous congestion, yet components of extensive neck injuries due to blunt force were also observed. Furthermore, this case signifies the importance of addressing IPV as a serious issue in view of preventing future IPH.

Keywords: Intimate partner violence, neck trauma, traumatic asphyxia

OP-30
A Case of Fatal Decompression Sickness

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Abstract
In diving, decompression sickness ("the bends") occurs when a gas (usually nitrogen) accumulates in body tissues in a positive-pressure environment and, after subsequent reduction of ambient pressure, escapes into body fluids and forms bubbles. It is a rare cause of death in experienced divers. A 30-year-old man went on fishing with 3 others near the Kalpitiya Sea area. He started diving at approximately 1.30 pm and reached approximately 150 feet depth. At approximately 2 pm, he suddenly resurfaced and started to complain of difficulty breathing. Since he developed severe respiratory distress, he was transferred to DGH Trincomalee for further management. On admission, he was dyspnoeic and anxious. His pulse rate was 140/min with a blood pressure of 72/42 mmHg and cold peripheries. His respiratory rate was 44/min, and the bilateral lungs were clear. Saturation was 93% with high flow oxygen. Although he received cardiopulmonary resuscitation and acute medical treatment, he was confirmed death without compression chamber therapy. An autopsy was performed after 8 hours of death. A few petechiae were observed in palpebral conjunctivae, whereas no petechiae were observed in the bulbar conjunctiva or mucosa of the oral cavity. Subcutaneous emphysema or pneumothorax was not observed. There was a bubbling appearance over the soft tissue in the mediastinum behind the sternum. Histology of the lung revealed alveolar pneumonitis and intravascular air bubbles. Small air bubbles appeared between the arrays of myocytes of the myocardium with tissue damage. The liver and brain parenchyma also contained small air bubbles.

Keywords: Decompression sickness, histology, air bubbles

OP-31
Metallic Nail Injury to Aorta: A Case Report

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Abstract
Penetrating aortic injuries are rare. Such aortic injuries are commonly fatal, and recovery is extremely rare. This is a case of accidental penetrating injury to the aorta where the patient recovered. A 53-year-old mason 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 over the manubrium. The patient was hemodynamically stable. Contrast and noncontrast computed tomography revealed a metallic nail piercing the anterior chest wall. It was seen traversing postero-inferiorly through the manubrium towards the arch of the aorta penetrating its superior wall between the origins of the right brachio cephalic artery and left common carotid artery. The tip of the nail was within the lumen of the aorta, but no contrast leakage was seen. The patient underwent an emergency thoracotomy, and the nail was removed. The recovery was uncomplicated. The category of hurt was determined as fatal in the ordinary course of nature. Accidental penetrating nail injuries to the aorta are rare. These injuries are commonly fatal, and recovery is extremely rare. This is a rare case of a metallic nail injury to the aorta where the patient recovered without any complications. Therefore, workers should be advised to wear protective clothing to ensure their safety.

Keywords: Metallic nail injury, aorta, accidental

OP-32
A Study on the Knowledge, Attitudes, and Beliefs of Sri Lankan Forensic Practitioners Towards Sexual Assault Survivors

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Abstract
Introduction: Sexual assault is a global problem that impacts 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 perception of forensic practitioners regarding sexual assault survivors.

Methodology: An online questionnaire comprising 22 questions was sent out to forensic practitioners of Sri Lanka, who are the primary contacts of sexual assault survivors in the hospital setting. The questions addressed knowledge, attitudes and beliefs towards sexual assault survivors.

Results: A sample of 51 respondents responded to the questionnaire out of more than 100 invitees. Only 46% of the forensic practitioners reported that they never felt 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.

Conclusion: The findings of our study highlight the requirement of 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

OP-34

Blast Injury from Locally Manufactured "Hakka Patas": A Case Report

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Abstract
Explosives are potentially harmful devices that can create an explosion by the rapid release of a pressurized gas consequent to a chemical reaction within the device. They can inflict a variety of injuries due to blast waves, fires and shrapnel. The pattern and severity of injuries will be determined by various factors, including the explosive potential, constituents such as shrapnel and certain other factors. Homemade explosive devices pose a further threat due to their volatile, unpredictable nature, which can lead to accidental explosions. "Hakka patas" is a homemade explosive device endemic to Sri Lanka that is used by farmers in rural villages to protect their crops from wild animals. However, injury to humans from "Hakka patas" explosions is scarce in the literature. We present the case of a 28-year-old farmer who presented with extensive blast injury to the left hand following an alleged liquid petroleum gas cylinder explosion. The injuries to his hand consisted of extensive soft tissue and muscle loss, fractures of carpal and metacarpal bones with amputation of the 1st distal phalanx. Clinical forensic examination along with police investigation managed to disprove the history given by the patient due to incompatible injury patterns and information gathered at the scene. This report aims to increase awareness of injury patterns due to low-grade explosives such as "Hakka patas", which have the potential to cause injury greater than expected due to their volatile and unpredictable nature. This can cause accidental explosions and injure unintended targets, with grave consequences.

Keywords: Blast injury, explosive devices, hand injury

OP-35
Osteofibrous Dysplasia Mimicking Non-Accidental Injury in a Child – Too Soon to Judge? Case Report and Literature Review

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Abstract
Nonaccidental injury (NAI) is a leading cause of mortality in children, particularly those less than one year of age. While fractures are the most common finding secondary to soft tissue injuries in NAI, the list of medical conditions mimicking NAI in children is vast, and bone pathologies constitute a small but important part of the spectrum. We present a case of a 10-month-old boy who presented to the orthopaedic clinic of our hospital with the complaint of limp on the right leg while walking. On examination, no swelling, tenderness, deformity or ulceration were present. X-rays revealed callus formation on right leg bones, and upon denial of recent trauma history by parents, the forensic pathologist was alerted on suspicion of child abuse. Digital X-ray and CT revealed multiple expansive lytic lesions of the tibia with cortical erosions and sclerotic lesions on adjacent bone. Subsequently, the diagnosis of osteofibrous dysplasia was confirmed based on radiologic and histological findings of bone biopsy. The child was initially managed with serial casting, although with non-union and pseudoarthrosis of the right tibia, later opted for surgical correction. In conclusion, knowledge on mimics of child abuse is vital to establish the correct diagnosis and to lay a holistic plan of care for the patient. Fractures resulting from NAI are more common than those resulting from underlying bone pathologies. According to our experience, if the fracture pattern differs from

the purported mechanism, a detailed history in conjunction with biochemical, radiological, histological and genetic studies should be devised properly and judiciously before declaring the primary diagnosis of NAI beyond reasonable doubt.

Keywords: Child abuse, nonaccidental injury (NAI), osteofibrous dysplasia (OFD), bone disease (developmental), pathological fracture, forensic pathology

OP-36
Diagnosis of Concussion in a Victim of Road Traffic Accident

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Abstract
Concussion and sequelae are well-known controversial medico-legal issues often associated with over- or under-diagnosis. Cerebral concussion is a minor and reversible functional abnormality, and due to its relatively minor nature, it usually goes undetected and underreported. Despite increased knowledge and awareness of concussion and its long-term sequelae, effective measures of diagnosis, prognosis and treatment still appear to be deficient. A 38-year-old three-wheel driver was brought in following a fatal road traffic accident, with extensive chest injuries and no significant head injury. He was well oriented of time, place and person with an episode of loss of consciousness but significant and extensive retrograde amnesia. He complained of mild intermittent dizziness and headache but was otherwise clinically well. He was not under the influence of alcohol or any substances at the time of the accident. His loss of consciousness denotes that he has experienced well beyond mild concussion, but since the duration of loss of consciousness is within 6 hours, he falls into the category of cerebral concussion. A non-contrast CT-Brain ruled out any form of brain injury. Concussion and its sequelae are still contestable, not only due to the lack of specificity, availability of studies and gold-standard biomarkers but also due to its subjective nature in diagnosis and its significant overlap with other physical, neurological and psychiatric conditions.

Keywords: Concussion, loss of consciousness, retrograde amnesia, post-concussion symptoms, biomarkers

OP-37
Rhabdomyolysis-Associated Acute Kidney Injury Following Physical Violence

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Abstract
Physical violence can lead to serious and, rarely, fatal injuries. In addition to head injury, which is the leading cause of death and long-term disability, injuries to the musculoskeletal system and internal organs are important causes of assault-related morbidity. This paper discusses such rare complications of interpersonal violence – rhabdomyolysis associated with acute kidney injury (AKI). A 37-year-old man who claims to be assaulted by a group of people presented with focal contusions and extensive grazed abrasions over the trunk and limbs. Injuries to the brain and other visceral organs were excluded. Serum creatinine and urea were elevated significantly, along with an increase in C-reactive protein and liver enzymes. Urinalysis contained red cells and leukocyte esterase, following which rhabdomyolysis was diagnosed. He developed oliguric AKI, and haemodialysis was initiated. He

was discharged after eleven days of hospitalization, following improvement in renal functions. Rhabdomyolysis is a common cause of oliguric renal failure and can be traumatic or non-traumatic. Rhabdomyolysis has specific clinical and laboratory parameters but still requires a high level of suspicion for timely diagnosis. Highly elevated levels of creatinine phosphokinase (CPK) are the most specific parameter for the diagnosis of rhabdomyolysis. Myoglobinuria and elevated levels of lactase dehydrogenase and transaminases are also considered valuable markers of rhabdomyolysis. AKI is the most common systemic complication of rhabdomyolysis, and various causative mechanisms have been explained. Rhabdomyolysis requires a high index of suspicion when acute kidney injury and altered metabolite levels are suspected in a patient with major or minor muscle injuries to prevent complications or death.

Keywords: Rhabdomyolysis, acute kidney injury, creatinine phosphokinase, muscle injuries

OP-38
Neck Injuries by Nuchal Cord or Deliberate Ligature Strangulation: A Case Report

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Abstract
Umbilical cord wrapped around the baby's neck (nuchal cord) is a common condition that occurs in 15 to 35% of pregnancies. Most babies with nuchal cords are delivered normally without complications. In unassisted unwitnessed deliveries, the differentiation of the nuchal cord injury and deliberate ligature strangulation may be difficult. A 37-year-old married mother of 3 children brought her newborn baby to the emergency unit of Teaching Hospital after 3 hours of vaginal delivery at home. Her husband was a manual labourer, and the last child was 18 months old. She claimed that she was not aware of her pregnancy until she got severe abdominal pain in the morning and delivered her baby while squatting in the toilet. Then, she was fainted and cannot recall the events. On admission, the baby was well and active. There was no evidence of respiratory distress. Weight was 2.1Kg. There was a ligature mark on the anterior and right sides of the neck that was 0.5 cm wide and had an erythematous margin. There were 0.3 cm size 4 linear abrasions in the right lateral abdominal wall and small abrasions in the right forehead. ENT referral revealed no internal injuries but suggested follow-up. Psychological assessment of the mother revealed that she had been stressed following the incident and had some social and financial problems. Although the findings favour nuchal cord strangulation, the possibility of deliberate ligature strangulation cannot be completely excluded. This highlights the need for clinical forensic examination in abnormal injuries of newborns. Therefore, close surveillance is needed after discharge.
Keywords: Nuchal cord, ligature strangulation

OP-39
Lateral Compression Injury of the Pelvis: A Case Report

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Abstract
Lateral compression injuries are the most common form of pelvic fracture. Occasionally, it may result in major haemorrhage if one of the fracture fragments directly tears any of the larger vessels of the pelvis. Urethral injury is another common complication of pelvic trauma. A 55-year-old street sweeper presented at the Accident Service Unit of a Tertiary Care Teaching Hospital with a history of lower abdominal pain and was unable to pass urine after being hit by a lorry while working on the roadside. A lorry pinned him sideways against a wall at the time of impact. On the primary survey, his airway was patent, had a Glasgow Coma Score of 15 out of 15 and was hemodynamically stable. There were no external injuries. There was fullness in the suprapubic region with blood on the meatus. The pelvic radiograph showed left side superior pubic ramus fracture. CT revealed a comminuted fracture on the left side of the superior ramus, a large pelvic hematoma and transection of the membranous urethra with superior displacement of the prostate. Haemoglobin level has been dropped by 4 g/dL. He has been transfused with two pints of blood. Pelvis fracture was managed conservatively, and an ascending urethrogram was planned one month later. After 10 days of ward stay, he was discharged with a suprapubic catheter. Even though there were no significant external injuries, the victim internally had pelvic fracture with a significant drop in haemoglobin levels, which necessitated a blood transfusion. Thus, it was endangering his life. This emphasizes the assessment of internal injury and the categorization of hurt, especially in this type of case.

Keywords: Lateral compression injury, pelvis fracture

OP-40
Injury Pattern of Victims Admitted to a Tertiary Care Hospital Following Assault

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Abstract
Introduction: Violence with physical assault is a common cause of morbidity and mortality prevalent but is not limited to underdeveloped countries. The opinion of the forensic expert is often indispensable in such cases to determine the penalties. This study was planned to describe the pattern of presentation of the victims and evaluate the strengths and limitations in formulating a scientific medico-legal opinion based on the findings of the victim.

Methods: A retrospective descriptive study based on the case records of victims of assault admitted to Colombo North Teaching Hospital, Ragama, Sri Lanka, was conducted for four years.

Results: Out of the 400 victims, the majority (72% n=290) were males and of the age group of 21 to 40 (n=216). The reason for assault in the majority was sudden provocation (N=99, 25%), followed by previous long-duration enmity (N=89, 22%). The majority (83%) had isolated blunt force trauma, and the injuries were non-grievous (74%). Defense injuries were significantly associated with attempted defense (P=0.000) and sharp force trauma (p=0.002). The underlying reason for the assault was not significantly associated with the causative weapon (P=0.228) or body region injured (P=0.195).

Conclusions: Even though the presentation and the pattern of injuries are definitely of value in formulating a scientific opinion, the study identified the limitations of forensic experts, and the need for a holistic approach at the investigations was highlighted.

OP-41
Pneumothorax Following an Alleged Police Assault; Traumatic Vs Spontaneous

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Abstract
Pneumothorax is the collection of air inside the pleural cavity. It can be classified according to its causative mechanism as spontaneous, traumatic and iatrogenic. Therapeutic management will have a similar course regardless of the causative mechanism. In contrast, the causative mechanism of this case is of utmost importance in the view of medico-legal management. A 54-year-old male drug addict was produced by the police for the medico-legal examination of drug abuse. After the medico-legal examination, he was produced to court and bailed out. On the same day evening, he was admitted to the hospital with complaints of chest pain and difficulty breathing. On admission, he has given a history of assault by 4 policemen during the arrest, where one police officer has sat on his chest and pricked him with a needle. Clinical examination and chest X-ray revealed a left side pneumothorax that was managed by inserting an intercostal tube. The external examination did not reveal any visible injuries. Chest X-ray reporting further revealed bilateral emphysematous lungs with apical bullae, and there were no rib fractures. The alleged act of prick injury is unlikely to cause traumatic pneumothorax due to the complex tissue arrangement of the chest wall. However, a person with bilateral emphysematous lungs with bullae carries a high possibility of developing spontaneous pneumothorax due to rupture of bullae. Blunt force trauma to the chest wall can also cause or contribute to the above mechanism. This case shows the difficulties of concluding the spontaneous Vs traumatic origin of the pneumothorax and categorization of hurt.

Keywords: Pneumothorax, traumatic, spontaneous

OP-42
Femicides by Intimate Partners: Medico-Legal Aspects: A Descriptive Study from Five Provinces of Sri Lanka

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Abstract
Introduction: 'Femicide' is intentional killing of a woman where the victim's gender is of primary importance to the perpetrator. Although research on femicide started to appear during the last two decades, research from Asia lagged behind, and Sri Lanka was no exception. Objectives are to identify the femicide patterns related to intimate partner violence (IPV) in Sri Lanka compared to other countries emphasizing medico-legal aspects.

Methodology: A retrospective descriptive study on female homicides in five selected provinces (Western, Eastern, Southern, North Central and Sabaragamuwa) was conducted using crime files at police stations related to femicides from 2013 to 2015.

Results: Out of 246 female alleged homicides in these provinces, 99 femicides were identified as due to IPV. The mean age of victims was 36.52 years. The majority of femicides were housewives in the 21-40-year age group from rural areas who were killed at their own house. Out of 71 married women, 57 were killed by the husband, while 8 were by co-habitant, whereas the rest (34) were killed by either present lover or ex-lover. Five out of 8 femicides in the 'living together' group were killed by the cohabitant, while almost a similar percentage was killed by lovers in the group of women who were separately living without getting a divorce. The majority were married

(72%) and had children (71%), while four women were pregnant at the time of death. The type of killing involved crimes of passion 46%, followed by escalating family violence (33.3%) and antisocial activities (19.1%). The majority died due to sharp force trauma (46.6%), followed by blunt force trauma (18%) and burns and strangulations (14% each).

Conclusion: The majority of IPV-related femicides were due to multifaceted relationship issues and perpetrated by the husband where death had occurred in a domestic setting, indicating that strengthening the response systems for betterment is the need of the hour.

Keywords: Intimate partner, femicide, violence, Sri Lanka

OP-43
The pattern of Injuries in Pedestrians Referred for Medico-Legal Examination at a Tertiary Hospital

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Abstract

Introduction: It has been reported that 32% of emergency surgical admissions follow road accidents in Sri Lanka. Furthermore, pedestrian injuries account for more than 1/3rd of road accident-related fatalities, indicating their seriousness. Medico-legal examination of injured pedestrians is an important process in the administration of justice. The objectives are to describe the associated risk factors, injury patterns and related medico-legal issues.

Methodology: A descriptive cross-sectional study on injured pedestrians referred for medico-legal examination at Teaching Hospital, Kurunegala during a period of 1 year from 2019 to 2020. Data were collected by a questionnaire completed by the investigator and analysed by SPSS version 23.

Results: There were 127 victims referred during the period, and the majority (31%) were of the age group of 31 to 40. Thirty-five percent of the incidents had taken place between 6 a.m. and 12 noon. The majority (97%) were walking at the time of the incident, but 75% denied crossing the road, and the alleged vehicle was a motorbike in a majority (65%). The primary impact was not evident in a majority (40%), and 75% stated that they had fallen to the ground after impact. 44% had only abrasions externally. Twenty-two percent had bony fractures, while 68% had no internal injuries. The duration of hospital stay was 2 days (35%) and 3 days (21%). Injuries were nongrievous among 70.9% while 10.2% were grievous, 7.1% were FIOCN and 11.8% had terminated in death.

Conclusion: The young productive working population was most at risk, and the motorcycle was the most common offending vehicle. Although a majority had a nonspecific nature and pattern of injuries, highlighting the limitations in medico-legal conclusions, there was a significant proportion resulting in a fatality.

Keywords: Injured pedestrians, medico-legal examination, pattern and nature, risk factors

03: Forensic Toxicology, Anthropology, Science, Education, Law & Ethics

OP-44
Panoramic Reconstruction of Crime Scenes - A Novel Tool in Forensic Investigation

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Abstract
Crime scene reconstruction is the process of determining or eliminating events and actions at crime scenes through analysis of crime scene patterns. In this activity, photography plays a significant role. In addition, forensic photography is essential to document the physical evidence and handle it correctly. Therefore, the development of this new tool, 'panoramic reconstruction,' was done to provide a better view of the crime scene cost-effectively. The objectives are to provide a low-cost easy-to-use method for photographic reconstruction of crime scenes. The program for auto stitching was developed using Python computer language and open computer vision (Open CV). The document containing this programme will be shared among users. Anyone having access to this auto stitching programme can use the link https://research.google.com/colaboratory/ and run the programme. Programme developed is included in the file shared as an. ipynb notebook, which should be uploaded to the Colab platform. Afterwards, the user has to simply follow the steps given in the Colab platform and run the programme. We have used the Colab platform to avoid the difficulties of installing Python software to the user computer and to allow anyone with minimal computer skills to run the programme easily. Crime scene reconstruction software is expensive. This method does not need any specific software. It also allows a photographer to use a standard inexpensive lens to produce a wide-angle view of the scene without purchasing new equipment.

Keywords: Crime scene, photography, panoramic reconstruction

OP-45
Frontal Sinus Pattern Analysis for Human Identification- A Digital Radiographic Study

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Abstract
Introduction: Morphometric patterns of frontal sinuses have been researched and are accepted by the legal systems of some counties as evidence. However, due to genetic and environmental factors affecting the skeletal structure of individuals, these findings cannot be generalized to all ethnic and racial communities. In our study, we analysed the morphometry of the frontal sinuses using noncontrast computed tomography (NCCT) skull images of patients at Teaching Hospital Peradeniya to assess its association with sex.

Methodology: This retrospective cross-sectional study included 300 NCCT skull images of patients presenting to teaching hospital Peradeniya during the past year, obtained using a multislice CT scanner. Age- and sex-matched

samples were selected by consecutive sampling and consisted 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. The association among the variables was analysed using the t test and binary logistic regression model.

Results: In our study, 59% were male, and the mean age was 57.937 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 those of females. No significant association between sinus size and age was observed.

Conclusion: In the investigation of unidentified/putrefied bodies and skeletal remains, frontal sinus measurements using imaging techniques can be used to estimate the sex of the individual.

Keywords: Frontal sinus, imaging, computed tomography

OP-46
Two Cases of Fatal Abamectin Poisoning - A Single Centre Experience

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Abstract
Suicide by ingestion of agrochemicals has been prevalent for many decades. In Sri Lanka, unlike its neighbouring countries, poisoning is the method of choice. Abamectin (ABA), commonly used as an anthelmintic and insecticide, has a wide margin of safety. Reports of fatal ABA intoxication in humans are rare in the literature. Case 01- A 51-year-old manual worker self-ingested 50 ml (18 g/L) of ABA at home after consuming 2 bottles of alcohol. Death on admission to teaching hospital Peradeniya was confirmed within 4 hours of ABA ingestion. Postmortem examination revealed congested heavy lungs, and other organs were unremarkable. Case 02- A 20-year-old unmarried garment worker was admitted to the local hospital with excessive vomiting following self-ingestion of 100 ml of ABA (18 g/L). He was intubated and mechanically ventilated in the intensive care unit for four days, during which he developed hepatic failure and cerebral edema with tonsillar herniation. RT–PCR for SARS-CoV-2 was detected to be positive. Death was confirmed 4 days after ABA ingestion. Postmortem examination revealed features of acute respiratory distress syndrome in the lungs and cerebral edema with necrosis of the bilateral thalami, basal ganglia and cerebellar tonsils. Focal areas of liver necrosis were noted, and other organs were unremarkable. Death following ABA ingestion is an unusual occurrence due to its low toxicity to humans. However, in circumstances where other factors such as infection/comorbidities and concomitant toxic substance ingestion can lead to a fatal outcome.

Keywords: Abamectin, poisoning, agrochemicals, suicide

OP-47
An Undiagnosed Case of Pneumothorax: Is It Medical Negligence?

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Abstract
Pneumothorax is caused by the entry of air into the pleural space, leading to a sudden increase in intrathoracic pressure. In patients with chronic obstructive pulmonary disease (COPD), the diagnosis of tension pneumothorax can be especially subtle. Suspicion of a pneumothorax in such patients at the level of the emergency department will be crucial. A 53-year-old male, a known patient with COPD, presented with sudden onset shortness of breathing. On admission, he was tachypnoeic, dyspnoeic and restless at 100/70 mmHg, and his PR was 118 bpm. The medical team had taken a chest X-ray, and it was normal. according to the BHT. The patient experienced cardiorespiratory arrest 12 hours after admission. Autopsy demonstrated a left-sided pneumothorax. The left lung partially collapsed, and there was a hyperinflated lung on the right side with bullae formation involving the upper lobe. The cause of death was pneumothorax in a patient with COPD, and a possibility of medical negligence was considered, as the antemortem chest X-ray was compatible with the evidence of left-sided pneumothorax, which could be demonstrated at autopsy. Suspicion of a pneumothorax in such patients at the level of the emergency department and performing necessary investigations, such as chest X-ray or CT scan, will be crucial, as it would lead to the identification and necessary urgent treatments saving the life of the patient. Otherwise, treating doctors might be facing charges against medical negligence. This case reemphasizes the importance of autopsy for alleged cases of medical malpractice.

Keywords: Medical negligence; mishaps; pneumothorax

OP-48
Variation in Skull Bone Thickness with Age, Sex and Body Stature – An Autopsy Study at National Hospital, Kandy and Teaching Hospital, Peradeniya

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Abstract
Introduction: The skull is a bony structure that protects the brain. Skull bone thickness is one factor that directly affects the severity of intracranial injuries, as skull deformation occurs due to the force of trauma. Anthropological identification is important in the practice of forensic medicine. More characteristics of the skull bones used in anthropological identification are subjective. The thickness of the bone can be used as a more objective criterion. The objectives are to assess the thickness of individual skull bones and the association of skull bone thickness with age, sex, and body stature.

Methodology: A cross-sectional analytical study was carried out among 100 autopsies selected randomly at the Forensic Pathology Division of the Office of the Judicial Medical Officer in National Hospital, Kandy, and Teaching Hospital Peradeniya. Sociodemographic data were collected using a questioner, and bone thickness was measured using a calibrated Vernier calliper. The 95% confidence level was calculated for the bone thickness. The relationship of bone thickness with age and body stature was assessed using the Spearman correlation. The association of bone thickness with sex was calculated with the chi-square test. A P value of 0.05 was taken as a cut-off to determine statistical significance.

Results: The mean skull bone thicknesses in the temporal, parietal, occipital, and frontal bones were 4.50 mm, 5.95 mm, 6.80 mm, and 8.80 mm, respectively. Mean thicknesses in the temporal, parietal, occipital, and temporal bone in males are 4.70 mm, 5.85 mm, 6.48 mm, 8.25 mm (95% confidence intervals are 4.70±1.24,5.86±1.55,6.48±1.71,8.25±2.18), respectively. In females in temporal, parietal, occipital, and frontal bones mean thicknesses are 4.80 mm,6.16 mm,7.26 mm, and 9.48 mm (95% confidence intervals are 4.83±1.43,6.17±1.82,7.26±2.15,9.48±2.80), respectively.

Conclusion: There was no association of the bone thickness of individual skull bones with age, sex or body stature.

Keywords: Skull bone thickness, autopsy study

OP-49
Correlation between Height and Maximum Overhead Reach: A Preliminary Study Among Young Adult Population in Sri Lanka

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Abstract

Introduction: Death following hanging is not an uncommon presentation to routine forensic practice in Sri Lanka. Most hangings are due to self-suspension. The height of a person and the height to the point of suspension from the ground level are important factors since the person needs to reach the point where the ligature is suspended by the individual himself/herself in case of suicidal hanging. Objectives of this study was to find out a correlation between height and maximum overhead reach of participants among the Sri Lankan population within the age group between 21 and 30 years of age.

Methodology: A simple random sample technique was used to recruit 190 (103 females and 87 males) young adult university students of Peradeniya between 21-30 years of age. The standing height was scaled from the barefoot and heel flat on the ground to the vertex of the head. A wall-mounted stadiometer was used for the height measurement. Then, the measurement of the point that was attained after their maximum overhead reach was marked and measured. The maximum overhead reach is obtained when a person stands on his/her tiptoes on one foot, bends the hip slightly towards that side and extends the opposite upper limb 180 degrees above his/her head. 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 for the analysis. A regression equation was formulated to assess the relationship between the height and maximum overhead reach.

Results: The average maximum overhead reach was 223.5 cm and 213.6 cm for males and females, respectively. The regression equation to estimate maximum overhead reach when height was available was h= 1.49x-23.27 and h=0.93x+67.49 for males and females, respectively. The correlation coefficients were 0.84 and 0.80 for males and females, respectively. P values for both genders were < 0.05.

Conclusion: There is a positive correlation between height and the maximum overhead reach of a person. Further studies are recommended.

Keywords: Height, maximum overhead reach, hanging

OP-50
Trends of Digitalization of Postmortem Practices Among Sri Lankan Medico-Legal Practitioners: A Quantitative and Qualitative Analysis

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Abstract
Introduction: Integration of digital methods of documentation, illustrations, and data storage to medico-legal work will improve the quality and cost-effectiveness of work. In addition to classical methods such as simple word processing, cutting-edge technologies such as real-time hands-free data recording, 3D reconstruction with photogammetry, and virtual autopsy methods can be used appropriately to illustrate scientific data, making them more understandable. Objectives are to evaluate the uses and factors affecting digitalization, including digital documentation methods, real-time autopsy data entry or documentation, and digital storage of reports among medico-legal practitioners in Sri Lanka.

Methodology: A descriptive cross-sectional study was performed on all consenting medico-legal practitioners working in consultant JMO stations based on a Google form together with a quantitative component conducted among selected convenient samples of doctors through virtual interviews. (Completed up to 50% currently)

Results: Regarding postmortem data recording, 47.8% used digital methods and 52.2% used digital methods as archiving methods, while 91.7% were typing the report using word processing software. Except for digital photography, digital methods of recording injuries are rarely used (4.3%). Real-time postmortem data recording was used by only 4.7%, and 72.7% stated that they were not using real-time data entry because of a lack of resources. A total of 87.5% stated that they were using digital methods to formulate reports, and 45.8% used digitally created injury diagrams and other annexures. Experience in digitalization, strengths, failures and causes for limitations were identified during the qualitative component of the study.

Conclusions: The use of digital technologies for medico-legal purposes is minimal compared to typing reports. Doctors believe that lack of resources is the main factor inhibiting such use. Awareness programs would improve the use of digital technology and hence the quality of work even with the existing facilities.

Keywords: Medico-legal work, digital technology, data storage, Sri Lankan medico-legal practitioners

OP-51
A Concept Note on System Improvement in Cadaveric Eye Retrieval Based on a Study Conducted in District General Hospital, Matale, Sri Lanka

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Abstract
According to the World Health Organization, the global prevalence of blindness in 2010 was 39 million, among which 4% were due to corneal opacities. Often, the sole remedy for the visual restoration of patients with damaged corneas is corneal transplantation. Cadaveric eye retrieval plays a major role in this regard. It was observed that eye retrieval has been done in many hospitals without having proper permission extraction of eyes from legal cases. Knowledge and involvement of JMOs and ISDs in this process were limited. In the wards, awareness of MOs and NOs regarding eye donation was poor. The quality of the eye retrieval process and number of eye retrievals can be increased if staff are informed. The quality control of grafts in Sri Lanka, such as infected donor corneas, was discovered to be an essential issue. In developed countries, medical officers need to inform eye technicians

regarding possible eye donors, without contraindications, for eye retrieval. SOP was introduced to steam line this process. If this is adopted, all the steps in the process starting from consent taking can be improved.

Keywords: Cadaveric eye retrieval, contraindications, stranded operation procedure

04: Miscellaneous (COVID – related)

OP-52
Forensic Undergraduate Teaching in the COVID-19 Pandemic: Strategies and Its Educational Values

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Abstract
COVID-19 has globally affected all fields, including education. The continuity of medical education is vital considering the necessity of doctors in future years. Since forensic medicine is a compulsory subject in medical education, teaching and conducting practical has warranted novel approaches. The aim of this paper is to discuss the alternative methods practiced while delivering the curriculum and its educational values. Conducting online lectures has reduced the risk of gathering a large number of students while delivering the content. However, practical sessions with hands-on experience cannot be replaced completely with virtual material. Considering the situation, a blended teaching method was introduced. A virtual tour of the proposed practical at a slow pace was held with verbal interactions, sharing presentations and photographs before the session. It has efficiently transferred the gathered knowledge into practice over a short time. The availability of a synchronized pre-recorded videos and learning materials was used to set up a flipped classroom, strengthening the learning and developing cognitive skills. Using simulations allowed students to practice acquired knowledge independently. Those who were quarantined accessed online resources and participated in hybrid teaching sessions with video conferencing. Real-time tests were introduced to assess the gathered knowledge. Since the theoretical aspects have mostly been covered virtually, students had more time to attend to the patients and autopsies. New approaches to delivering traditional curricula are required to continue medical education in this pandemic. Blended teaching in a flipped classroom and hybrid teaching have provided a new paradigm, especially subjects, with practical aspects providing added educational values.

Keywords: Blended teaching, flipped classroom, educational value

OP-53
Prevalence, Sociodemographic Patterns, and Impact of the COVID-19 Pandemic On Cyberbullying Among Advanced Level Students in Kandy Municipal Area: A Descriptive Study

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Abstract

Introduction: Cyberbullying is an inevitable global issue in the current era of technology. The young population is well known as the main group involved in both perpetrating and victimization of cyberbullying. Negative consequences of cyberbully victimization lead to a vicious cycle of bully perpetration and victimization. The main purpose of this study was to identify the prevalence and determinants of cyberbullying among Sri Lankan children. Furthermore, we analysed the impact of the COVID-19 pandemic on trends of cyberbullying.

Methodology: This descriptive cross-sectional study was conducted among students undergoing their secondary education who had access to electronic devices by administering a self-reported questionnaire.

Results: The prevalence of cyberbullying in our cohort was 4.3%. Females slightly overrated males in cyber victimization. Most were perpetrated by males. Victims experienced bullying mainly through photos and videos sent via social media platforms. Exclusion and impersonation were the most prevalent types of cyberbullying. The majority were cyberbullied outside school hours. Even if the majority were in the opinion that incidents of cyberbullying should be reported to adults, most of them never did so. Sleep disturbances were the main consequence experienced by victims. There was an increase in the internet surfing pattern during the COVID-19 pandemic, and a significant number of participants were victimized mainly at night.

Conclusion: Cyberbullying is a worldwide problem that mainly affects children and adolescents. It is further aggravated by social distancing strategies and online education during the COVID-19 pandemic. However, programs enhancing awareness, strict policies against perpetrators, and controlled access to electronic devices might help dilute this issue.

Keywords: social media, screen time, internet use, cell phone, COVID-19

OP-54
Medical Ethics During the COVID-19 Pandemic: An Experience with Death Investigation

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Abstract

Introduction: Medical ethics is a key element in the practice of medicine. This study highlights the application and conceptualization of those principles in the process of death investigation during the COVID-19 pandemic.
Objective: To identify different ethical principles and their application in deaths during the COVID-19 pandemic.

Methodology: Autopsy information on 41 deaths arrived for inquests from December 2020-October 2021 with positive rapid antigen or polymerase chain reaction (PCR) tests for COVID-19 was analysed. The death investigation process was conceptualized against the ethical principles of justice, autonomy, beneficence, and non-maleficence.

Results: The majority of deaths (36.59%) were aged between 71-80 years, with less gender disproportion (M:F - 48:51). Deaths at home (63.41%) and in non-vaccinated people (80.49%) were predominant. Comorbidities were present in 78.05%. PCR tests were performed <24 hours after death in 36.59%and within 24-48 hours in 58.54% of cases. The cycle threshold (Ct) value <30 group was 75.61%, with 68.42% of deaths directly due to COVID-19 pneumonia, while the illness duration was >3 weeks in 13.12% and 2-3 weeks in 2.63%. The Ct value >30 group was 17.07%, with COVID-19 infection being a contributory cause of death in 57.14%, while all had an illness duration of <2 weeks.

Conclusion: Justice has prevailed in this cohort. The PCR report influences the autonomy in claiming and releasing bodies to relatives. A higher Ct value may suggest less infectivity, which may be considered when releasing a body after excluding lung consolidation in an autopsy. Right decisions with regard to the release of PCR-positive bodies will maintain beneficence and non-maleficence in the death investigation process. Therefore, more research is needed with regard to Ct values and infectivity of dead bodies.

Keywords: Medical ethics, death investigation, ethical dilemmas

OP-56
A Study on Victims of Intimate Partner Violence Reported to Colombo North Teaching Hospital, Sri Lanka During 2019-2021 (Pre- and During the COVID-19 Pandemic)

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Abstract
Introduction: Intimate partner violence (IPV) is a common issue in any society, and the reported cases are just the tip of an iceberg, as most victims are reluctant to come to the criminal justice system. Forensic experts often encounter victims who choose to seek justice. Evaluation of the nature, consequences and underlying factors is a need in planning preventive measures. Objectives are to describe the patterns and associated factors of intimate partner violence among victims who reported to the Office of the Judicial Medical Officer of Colombo North Teaching Hospital and to specifically describe the patterns prior to and during the COVID-19 pandemic.

Methods: This was a retrospective descriptive study based on 471 medico-legal records of victims who had undergone medico-legal examination following intimate partner violence during the last two years (March 2019 to February 2021).

Results: Out of 471 cases, 206 cases were reported prepandemic, and 265 were reported postpandemic. Even though the majority were females 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 of assault (63%). Substance abuse was identified as the most common 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.

Conclusion: Victims of IPV have been silently suffering for many years. Failure in the response from authorities was identified. The COVID-19 pandemic has become an additional risk factor for IPV. Strengthening legal and social responses is the need of the hour.

Keywords: Intimate partner violence, substance abuse, facial injuries, pandemic, sexual violence

OP-57
Comparison of Mortality Trends Between Vaccinated and Nonvaccinated Individuals During the COVID-19 Pandemic

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Abstract

Introduction: The SARS COV-2 outbreak has drastically altered mortality rates globally, and much attention is now being given to the impact of vaccination on COVID-19-related deaths. Vaccination programs began in Sri Lanka in March 2021, and this study aims to compare the mortality trends in an urban Sri Lankan community between vaccinated and non-vaccinated individuals.

Methodology: A retrospective analysis was performed on autopsies conducted between May-July at the Department of Forensic Medicine and Toxicology, Colombo (DFMT), where a definite cause of death could be found and where the vaccination status was known. Obtaining at least one dose of a COVID-19 vaccine was considered vaccinated.

Results: A total of 220 cases were analysed (M: F=~1.5:1). The mean (SD) and median (IQR) ages were 65.43 (18.95) years and 67.0 (54.25-79.0), respectively. Forty-nine (22.3%) were within the vaccinated group, of which only 7 were confirmed to have taken both doses. Commonest vaccines were Sinopharm (n=22) and Covishield (n=20). There were 78(35.5%) COVID–19 positive cases. Majority (n=34,43.6%) occurred in June. COVID-19 positivity was higher in the non-vaccinated group than in the vaccinated group (p=0.069); however, 3 of the 7 individuals who received both doses were also COVID-19 positive. The majority of deaths were natural (88.6%). The most common cause of death was cardiovascular disease (40.9%, n=90), followed by infections (31.4%, n=69). Cardiovascular and cerebrovascular causes of death were slightly higher among vaccinated than non-vaccinated groups, which was not significant (p>0.05).

Conclusion: Apart from a nonsignificant decrease in COVID-19-related deaths in the non-vaccinated group, there was no significant difference in mortality trends between the two groups.

Keywords: Forensic autopsies, mortality data, death pattern analysis

OP-58
A Case of Homicidal Smothering: Importance of Comprehensive Autopsy During the COVID-19 Pandemic

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Abstract

Homicidal smothering is the deliberate occlusion of the external airways. Occasionally, the examination will reveal intraoral injury and subcutaneous bruising around the mouth and nose or be impossible to diagnose at postmortem examination. A 46-year-old female found unresponsive in bed at home was pronounced dead on admission. The deceased was on home treatment after being diagnosed with a COVID-19 infection. Apart from the above, her past medical history was unremarkable. A postmortem examination was conducted due to suspicious circumstances that revealed moderate facial congestion with pallor of the tip of the nose and chin, circumoral superficial blunt force trauma of inner and outer aspects, broken nails, and soft foreign bodies under few nails. Extensive autopsy dissections did not reveal any other injuries. In-depth studies did not reveal any pathologies or chemicals sufficient

to cause or contribute to death. The investigating authorities were advised to conduct a thorough investigation following the autopsy. Consequently, the husband was produced for a medico-legal examination that revealed fresh scratch abrasions on his face, neck, and upper chest with an incompatible explanation given by the examinee. Consensually obtained samples were sent for DNA cross-matching with the preserved nail clippings and foreign substances obtained during the autopsy. The cause of death was given as smothering with a comment that the injuries are compatible with those caused by other/s. This case highlights the importance of comprehensive autopsies during the COVID-19 pandemic, as homicides could go unnoticed.

Keywords: Smothering, COVID-19, medico-legal death investigation

OP-59
Risk Factors, Nature, and Effects of Domestic Violence Among Victims Who Presented to Three Teaching Hospitals in Sri Lanka During the COVID-19 Pandemic

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Abstract

Introduction: Violence in intimate relationships is a global public health issue. Unique social and economic issues associated with the COVID-19 pandemic have a probable influence on violence, especially domestic violence, due to the longer duration of contact. The objectives are to identify the underlying causes, nature and effects of IPV in women and child victims who were admitted to three tertiary care hospitals in Sri Lanka during the COVID-19 pandemic.

Methods: A prospective descriptive study based on a pro forma on female and child victims of domestic violence presented to three tertiary care hospitals in Sri Lanka was conducted from October 2020 to October 2021.

Results: Out of the total of 655 victims who were admitted during the period, details could be obtained from 205 victims. There were 15.6% children and 83.9% adults. The youngest child was 7 months old, while the oldest was 87 years of age. A total of 88.3% of them had been subjected to physical abuse either alone or in combination. Abusers were unemployed in the majority (n=71), followed by manual laborer (n=63). Alcohol abuse was identified among 80 patients, while 61 had substance abuse. Financial problems 43.9% (n=90) and extramarital relationships 23.4% (n=48) were commonly identified as the reasons.

Conclusion: The nature of domestic violence in the current study remains the same as that reported in studies in Sri Lanka before the pandemic. There is a slight variation in the frequency of affected age groups and underlying risk factors during the pandemic, with frequent involvement of children and a larger percent being due to financial problems.

Keywords: Domestic violence, COVID-19, women, children, risk factors

OP-60
Mortality Trends from 2010 to 2021 in a Tertiary Care Hospital from Western Province in Sri Lanka

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Abstract

Introduction: National mortality and morbidity statistics are essential in developing health policies. They are also used for comparisons of health care systems across the globe. Forensic experts play a pivotal role in the provision of death statistics to a country. The COVID-19 pandemic has reformed the landscape of mortality statistics worldwide. This study aims to identify changes in mortality trends in a tertiary care hospital in Sri Lanka over the past decade.

Methodology: All autopsies referred to the Department of Forensic Medicine, Faculty of Medicine, the University of Kelaniya between January 2010 and October 2021 were analysed regarding types and causes of death.

Results: Out of 4004 deaths (mean age- 65.1, M:F ratio- 2:1), an increased number was reported in 2021 (n=467 1st January-31 October) compared with the previous 11 years (mean=322). The mean percentage of natural deaths between 2010-2020 was 59.4%, with 18.4% accidentals, 7.4% suicides and 1.9% homicides. This pattern has changed in 2021, with a significant increase in natural deaths to 79.4% and reductions in accidental (7.7%), suicide (3.4%) and homicide (0.9%) rates. During 2010-2020, 55.3% of deaths were caused by cardiovascular diseases, with 16% being respiratory diseases, which changed to 33.5% and 41.9%, respectively, in 2021. Out of 203 COVID-19-positive deaths, COVID-19 infection was a direct or contributory cause of death in 72.9%, showing a peak in August 2021.

Conclusion: COVID-19 illness has significantly contributed to the change in mortality trend in 2021. However, regardless of the increase in the total number of deaths investigated by forensic experts in 2021, interpreting it to national trends should be cautiously done.

Keywords: Mortality trend, forensic autopsies, types of death, causes of death, COVID-19 infection

OP-63
Challenges Faced During the Medico-Legal Examination of Prisoners Following a Prison Riot at the Peak of the COVID-19 Pandemic

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Abstract

A prison riot occurring during the peak of a pandemic poses many challenges for examining doctors and prisoners. A prison riot broke out during the late evening of 29.11.2020 at the Mahara prison premises, and riots continued for a few days with many casualties. A scene visit was made the following day in full PPE. Allegations were made by the prisoners about shooting and killing fellow inmates by the prison authorities. Many prisoners were aggressive. None wore face masks, and many were already COVID-19 infected. After assuring an impartial investigation, the JMO team established a temporary examination site and triaged the inmates to send them to the hospital for treatment. 45 medico-legal examinations were carried out on site. Prisoners with firearm injuries as well as blunt force injuries due to assaults requiring urgent medical attention and those with less severe injuries were attended to during the on-site medico-legal examination. Many prisoners were aggressive due to issues related to the incident and intoxication. The medico-legal examinations of hospitalized prisoners were carried out in the PCU; however, the BHTs of these patients had been destroyed by the cleaning staff a few days later during the disinfection process. The medico-legal challenges arising from this incident include establishing a trustworthy

relationship, using the best approach to retrieve maximum evidence while taking health precautions, lack of solid scientific evidence due to destroyed documents, etc. Standard operational procedures are an absolute necessity for patients in custody with infectious diseases with regard to future medico-legal proceedings.

Keywords: Prison riot, COVID-19, medico-legal examination

OP-64
Impact of 100 Days of COVID-19 Lockdown on Medico-Legal Autopsies Performed in the Northern Province of Sri Lanka

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Abstract

Introduction: The effect of the COVID-19 pandemic on main sectors, including the judicial and medico-legal systems, has been notable in Sri Lanka. While a few local studies have attempted to study such effects on the economy, population and health care epidemiology, studies on the medico-legal system are lacking.

Methodology: The aim of this study was to determine the impact of lockdowns during COVID-19 on medico-legal autopsies conducted in the Northern Province of Sri Lanka during the first wave of COVID-19 (between 20th March and 28th June 2020) (Group C). The data were compared with the same period in 2019, the pre-COVID period (Group PC). A total of 315 autopsies were selected for this study following the exclusion of unclaimed bodies, reports with inadequate details, undetermined cause, and manner of death.

Results: The numbers of autopsies conducted in C and PC were 126 and 189, respectively. The majority of the deceased were males in both groups (73% and 67% in C and PC). The proportion of natural deaths was similar in both groups (39.7 vs 38.9). The proportion of suicidal deaths was higher in C (32.5% vs 24%). Percentage-wise more home deaths were reported during the lockdown period (34.1% vs 25%). Fractions of collective homicidal and accidental deaths were higher in PC (36.5% vs 28.6%). No statistical significance was observed for any of the given parameters between the two groups.

Conclusions: Despite the absence of statistical significance, the increased percentage of home deaths and suicidal deaths could be attributed to the effects of lockdowns, such as reduced access to routine health care services and financial and psychological strain on individuals and families. Sri Lanka is a nation with a high suicidal rate, which should be considered during further lockdowns. More extensive studies are required locally in this aspect, which might be statistically more revealing.

Keywords: Autopsies, cause of death, COVID-19 infection, lockdown, Sri Lanka

OP-65
A Rare Case of Suicide - Plastic Bag Suffocation

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Abstract

Deaths due to asphyxia by plastic bag suffocation are extremely rare in Sri Lanka, and a limited number of cases have been reported in the west. This can be broadly categorized into the pure intention of suicide and as a part of sexual/autoerotic activity. It may also be homicidal or accidental as well. Most suicide cases were reported in elderly males who were chronically and terminally ill. We herein report a rare cause of death by plastic bag suffocation, which turned to be a complex suicide. A 63-year-old diagnosed patient with depression who was a chronic alcoholic was found to be deceased in his bedroom in an unusual manner. His head was covered with two plastic bags, and his hands and legs were tied with cable ties. The room was locked inside and windows were also locked. The scene was not disturbed, and the body was lying supine on the floor. At the autopsy, the head and face were covered with two transparent plastic bags in which the inner bag was adhered to the face. There were some beads moist inside the bag, and the open ends of both bags were tied around the neck with tape. Interestingly, his hands and legs were tied with cable ties at the level of wrist and ankle joints, respectively. The body was in an early state of putrefaction, and no evidence of injuries suggestive of offence or defense was detected. Other than visceral congestion, the internal examination was unremarkable. Blood alcohol analysis revealed a level of 110 mg/dl, and screening tests for recreational drugs were negative. (Toxicology analysis report is pending). Based on the circumstantial evidence and in the absence of injuries, the cause of death was concluded to be plastic bag suffocation. The fact of an unremarkable internal autopsy examination highlights the importance of performing early scene visit examinations of such bizarre cases of death.