

EFFECTIVENESS OF MYOFASCIAL RELEASE FOR BICIPITAL TENDINOPATHY-RELATED PAINFUL SHOULDER: EXPERIENCE IN A TERTIARY CARE SPORTS MEDICINE CLINIC.

De Silva Y.S.H¹, Weeraratne T.P², Samarawickrama M.B³, Wasana P.W.D⁴, Gunawardena S⁵, Thebuwanaarachchi S.T⁶, Paris S⁷, De Silva O.L⁸, Karunanayake A⁹, Ransara H.G.S¹⁰, Mendis W.H.H¹¹, Jayasekara D¹², Dissanayake S.P.¹³, Minhan M.A.M¹⁴

^{1,6,7,10,14}. Sports Medicine Unit, Teaching Hospital Karapitiya, ². Department of Medicine, Faculty of Medicine, University of Ruhuna, ³. Department of Anatomy, Faculty of Medicine, University of Ruhuna, ⁴. Department of Pharmacy, Faculty of Allied Health Science, University of Ruhuna, ^{5,9}. Department of Physiology, Faculty of Medicine, University of Ruhuna, ⁸ Emergency Treatment Unit National Hospital Sri Lanka, ^{11,12} Orthopaedic Unit, Teaching Hospital Karapitiya, ¹³Department of Rheumatology & Rehabilitation, Teaching Hospital Karapitiya

Introduction

Bicipital tendinopathy (BT) is a common cause for shoulder pain with or without reduced range of motion (ROM) and or painful ROM. In sports medicine, managing BT -related shoulder pain is challenging. We aimed to study the effectiveness of myofascial release for BT for pain reduction and enhanced ROM.

Methods

Sixty participants were randomly and equally divided into control and experimental groups. The control group underwent conventional physiotherapy, while the experimental group received myofascial release treatments on days 1, 5, and 10. Pain during movement and ROM were evaluated using a visual-analog scale and digital inclinometer on days 1, 5, and 10, with measurements taken before and after intervention. P values for statistical significance were obtained using RM-ANOVA followed by Bonferroni *post hoc* test.

Results

Pain during movement for the control group on day 1 (pre-intervention), day 1 (post-intervention), day 5 (pre-intervention), day 5 (post-intervention) and day 10 (pre-intervention), day 10 (post-intervention) were as follows: 7.7 ± 0.3 , 6.6 ± 0.3 , 6.4 ± 0.3 , 5.8 ± 0.3 , 5.6 ± 0.3 , and 5.3 ± 0.3 , respectively. The same parameters for the experimental group were: 7.5 ± 0.4 , 5.2 ± 0.3 , 4.5 ± 0.3 , 3.6 ± 0.3 , 3.3 ± 0.3 , and 2.6 ± 0.3 , respectively. In both interventions, pain during movement significantly reduced with each session compared to the baseline ($p < 0.001$).

The baseline pain during movement in the control and treatment groups was comparable ($p > 0.999$). However, patients treated with myofascial release showed significantly greater improvement in pain compared to patients treated with conventional physiotherapy at each session, starting from post-pain day 1 ($p < 0.001$). Moreover, the ROM (°) in the patients treated with conventional physiotherapy showed significant improvement from 169.9 ± 0.3 to 175.1 ± 1.2 ($P < 0.01$), whereas myofascial release treatment improved ROM significantly from 153.1 ± 9.5 to 176.4 ± 2.4 ($P < 0.05$).

Conclusions

Therefore, we conclude that the myofascial release proves superior to conventional physiotherapy in alleviating bicipital tendinopathy-related shoulder pain during movement.

SIMULATION BASED CONTEXTUAL TEACHING AND LEARNING OF ANATOMY: AN APPROACH TOWARDS INTEGRATING EARLY CLINICAL EXPOSURE INTO BASIC SCIENCE CURRICULUM IN A NEWLY ESTABLISHED MEDICAL FACULTY

Wickramarathna EAAM¹, Gunarathna NJD¹, Chandimal KM¹

¹Department of Anatomy, Faculty of Medicine, Wayamba University of Sri Lanka.

Introduction and Objectives

Simulation-based teaching and learning (SBTL) is becoming increasingly popular. Early clinical exposure (ECE) signifies the clinical relevance of the basic science subjects like Anatomy. The aim of this study was to evaluate the impact of SBTL in terms of students' understanding of anatomy, satisfaction, development of soft skills, in Faculty of Medicine (FOM), Wayamba University of Sri Lanka (WUSL); a newly established medical faculty in Sri Lanka.

Methods

Anatomists with clinical expertise created simulation scenarios. A group of students were guided to perform a simulation scenario while the rest of the students were observing. The performers received immediate feedback by academics. All the students were then surveyed regarding their perception on SBTL.

Results

Out of 153 students, 124 students (81.04%) between the ages of 20-24 years responded. Most of the students (81.96%, n=100) were satisfied with SBTL. Additionally, 83.6% (n=102) and 81.96% (n=100) agreed that SBTL is more effective than conventional teaching methods and allows for ECE. Furthermore, 86.88% (n=106), 79.5% (n=97), and 84.42% (n=103) agreed that SBTL enhances problem-solving skills, application of theory, and retention of knowledge. Moreover, 82.78%, (n=101), 81.14% (n=99) and 81.14% (n=99) agreed that SBTL improves teacher-student relationships, helps in learning new skills and attitudes, and aids in understanding group dynamics. The best soft skills developed through SBTL were communication skills (68.85%, n= 84) active listening (68.85%, n=84) teamwork (81.96%, n=100) and creativity (50.81%, n=62).

Conclusion

Students of FOM, WUSL have positive perception towards SBTL in anatomy for ECE. Implementation of this new method would be beneficial for the advancement of Anatomy education.

EVALUATION OF FIVE EMPIRICAL FORMULAE FOR ESTIMATING BODY SURFACE AREA IN A GROUP OF SRI LANKAN ADULTS

Rodrigo PSS¹, Kumara PBASMP¹, Bandara KMNA¹, Nanayakkara BCIJ², Prabodha LBL¹, Nanayakkara BG¹, Ilayperuma I¹

¹Department of Anatomy, Faculty of Medicine, University of Ruhuna

²Department of Surgery, Faculty of Medicine, Kotelawala Defense University

Introduction and objectives

In emergency clinical settings body surface area (BSA) is estimated using formulae that use height and weight of an individual. BSA is vital to assess degree of burn injury, dosing of chemotherapeutic drugs, cardiac index and glomerular filtration rate. Data pertaining to BSA are scarce for adult Sri Lankans. This study evaluates accuracy of five most commonly used formulae for estimating BSA in a group of adult Sri Lankans.

Methods

The study was performed on formalin fixed cadavers (n=65: 34 male & 31 female; age 58–76 years) donated to the Department of Anatomy, Faculty of Medicine, University of Ruhuna, for routine gross anatomy dissections. The personal height was recorded as the straight distance between vertex of the skull and the heel of the foot measured using a flexible steel measuring tape capable of measuring to the nearest 0.1cm. The body weight was recorded to the nearest 0.1kg using a hanging balancer (Avery, USA). All the measurements were recorded within 24-72 hours after death. The BSA was calculated using formulae proposed by Dubois-DuBois, Boyd, Mosteller, Gehan & George and Haycock. The arithmetic mean of BSA derived from five formulae (mean-BSA) was taken as the gold standard. Regression analysis was performed to obtain correlation coefficient between mean-BSA and mean BSA derived from each formula.

Results

Mean weight and height of the subjects were 57.18 ± 13.67 kg and 1.57 ± 0.04 m. Mean BSA values estimated were (m^2): Dubois-DuBois: 1.60 ± 0.21 ; $r = 0.99$, Boyd: 0.58 ± 0.74 : $r = 0.99$, Mosteller: 1.60 ± 0.22 ; $r = 1$, Gehan & George: 1.61 ± 0.23 : $r = 1$, Haycock: 1.60 ± 0.23 : $r = 0.99$ and mean-BSA: $1.39 \pm 0.19 m^2$. BSA estimates from all five formulae showed a significant positive correlation with the mean-BSA ($P < 0.001$).

Conclusion

This study for the first time provides reference data pertaining to BSA in an adult Sri Lankan population. Formulae by Mosteller and Gehan & George are the best BSA estimates for the study group. Precise estimation of BSA will invariably minimize potential errors that may occur in emergency patient care. Limitation of the study: since the study was conducted in formalin fixed cadavers influence of preservatives and postmortem changes on height and weight of the subjects needs to be considered. Similar study on a live population is warranted to rectify this error.

KNOWLEDGE, AWARENESS AND PRACTICES OF CONTROLLING INFECTIOUS AND CHEMICAL HAZARDS AMONG ANATOMY LABORATORY WORKERS DURING CADAVER PRESERVATION

Weerakkody W.M.T.L.¹, Thishakya M.A.¹, Vidarshana K.K.P.¹, Vimukthika R.H.T.¹, Wanigasekara D.P.K.K.¹, Abeykoon A.I.², Kumarasinghe K.M.N.²

¹Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka,

²Department of Anatomy, Faculty of Medicine, General Sir John Kotelawala Defense University

Introduction & objectives: Anatomy laboratory workers who preserve cadavers should have proper awareness of infectious and chemical hazards and should follow safety practices while preserving cadavers. It is important for administrators and policy makers to assess such knowledge in order to change practices. Therefore, we aimed to assess these factors in anatomy laboratory staff who preserve cadavers for medical faculties in Sri Lanka.

Methods: A descriptive cross-sectional study was conducted among cadaver preserving anatomy laboratory staff using a self-completed printed questionnaire. Data analyzed manually to assess knowledge, attitudes, and practices with a scoring system. Scores $\geq 75\%$ were considered good, 50-74% as moderate, and $< 50\%$ considered poor.

Results: Good awareness was observed among cadaver preserving anatomy staff members. All participants were aware of the health risks associated with cadaver preservation. However, only 58.54% have received formal training on handling hazardous chemicals.

Awareness of the health hazards of formaldehyde was good, with carcinogenicity being the most recognized hazard at 97.56%. Awareness of infectious hazards was also good, though knowledge about specific infectious agents varied, with awareness of the transmission of HIV & Hepatitis B being relatively lower at 68.29% and 75.61% respectively.

Most participants practiced safety measures such as wearing disposable gloves (75.61%) and chemical-proof boots (87.80%), but few used goggles (48.78%) or gas masks (39.02%). All participants washed their hands thoroughly after handling cadavers, but only 39.02% washed immediately if skin is contaminated with body fluids.

Conclusion: A high awareness level was observed among Sri Lankan anatomy lab workers regarding chemical and infectious hazards related to cadaver preservation. Enhanced skills training and implementation of stringent safety protocols might be needed to rectify the observed gaps in knowledge and practices.

Keywords: anatomy, cadaver, hazards, infectious, chemical

PERCEIVED IMPACT OF HISTOLOGY CURRICULUM ON ADVANCED STAGES OF UNDERGRADUATE MEDICAL EDUCATION

Paththinige CS, Magamage SD

Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka, Saliyapura, Anuradhapura, AD 50008, Sri Lanka.

Introduction and Objectives: Histology is a subject which not only bolsters clinical relevance but also provides students with numerous potential pathways to move forward in their career in the medical field. Objective of this study is to assess the perceptions of the fourth-year medical undergraduates of Rajarata University of Sri Lanka (RUSL) on histology curriculum.

Methodology: Study was conducted using an online questionnaire, inquiring about the relevance and applications of histology curriculum for the clinical and paraclinical studies.

Results: Sixty-nine students participated in the study. Majority agreed that the curriculum had adequately prepared them for paraclinical subjects (Agreed-75%), and clinical rotations (Agreed-66.2%). Perceived knowledge retention in histology was 47% ($4.67 \pm 1.53/10$). Majority recognised the clinical relevance of histology (58%). Histology was acknowledged as crucial for the understanding of pathology (100%), clinical surgery (71%) and clinical medicine (68%). Histology of esophagus, uterus, intestine, thyroid gland, lungs, stomach, liver, vascular system, tracheobronchial tree, kidney, and heart were found to have higher relevance for paraclinical studies and clinical training. Laboratory practical sessions were found to be the most effective method of delivery (Agreed-86%).

Conclusion: This study provided a glimpse of the students' perceived relevance of different content areas in Histology, that carry more benefits for the students during the latter years of the MBBS program. These findings inform the curriculum revisions in Histology, suggesting the areas that require higher emphasis and the need for pedagogical changes to uphold the utility of histology knowledge in clinical training and practice.

DERMATOGLYPHICS IN TEN DISEASES: A REVIEW OF TEN DISEASES WITH A GENETIC BACKGROUND WITH REGARDS TO EIGHT DERMATOGLYPHIC VARIABLES

Nanayakkara BCIJ¹, Karunarathna L².,

¹ Kotelawala Defense University / Consultant Neurosurgeon

² Kotelawala Defense University / Research Assistant

Introduction and Objectives: Dermatoglyphic patterns or fingerprints patterns which are unique to each individual have a genetic as well as an environmental influence in its formation. However, a more general analysis of multiple fingerprints clustered together looking for a common pattern between multiple genetic diseases has not been performed in detail.

Method: Seventy-six articles about Down, Cri du chat, Turner, Noonan, Marfan, Huntington, Patau, Edward syndromes and about Diabetes Melitus, Schizophrenia that analyze their dermatoglyphic pattern were selected after a systematic search on PubMed and Google Scholar. Conditions with over 25 articles were ranked based on number of cases / citations, while all articles were selected in some, they were further filtered based on relevance. The prevalence of various dermatoglyphic variables mentioned in each article was calculated as a percentage and an overall analysis made at the end.

Results: Simian Crease, Ulnar loops, Radial loops, Axial tri-radius, atd angle, whorls, arches and ridge counts are the significant palm print variables found. Simian crease was seen in Down (52.4%), Cri du chat (55.55%), Edward (71.4%), Marfan syndromes and Ulnar loops were increased in Down, Diabetes, and reduced in Schizophrenia, Cri du chat, Edward and Patau syndromes. Nine out of the ten conditions selected had an alteration in the whorl count (increased or decreased) while seven had an increase in atd angle with a displaced or a missing axial tri-radius.

Conclusions: Some dermatoglyphic patterns are altered in almost all the genetic disorders studied (highly sensitive variables) while others are found only in a selective number of conditions. Thorough analysis of these patterns in a holistic manner could help us understand the interplay of each gene in the formation of various fingerprint patterns.

SURGICAL OUTCOME IN CRANIOSYNOSTOSIS – CALCULATING CHANGES IN SKULL VOLUME USING ANATOMICAL MEASUREMENTS

Nanayakkara BCIJ¹

¹Kotelawala Defense University

Introduction and Objectives: Cephalic index is the basis for the objective classification of the types of deformity in craniosynostosis. Increasing the cranial volume is a main objective when operating in such children. However, there is little understanding on how these two values change relative to preoperative values after standard surgery.

Methods: Patients (n=18) who underwent surgery for craniosynostosis from 2017 to 2024 were reviewed and cranial length, width and height was calculated using CT / MRI scans before and after surgery. The pre and post operative cranial index and intracranial volume was calculated and compared. Intracranial volume was calculated using the following validated equation – for males = $0.000337 (L-11) (B-11) (H-11) + 406.01 \text{ cm}^3$ and for females = $0.000400 (L-11) (B-11) (H-11) + 206.60 \text{ cm}^3$ (L= Maximum Anteroposterior diameter, B = Eurion to Eurion diameter, H= Auricular height)

Results: Pre-operatively 12 (66.67%) had Brachycephaly, 4 (22.22%) Normocephaly and 2 (11.11%) Scaphocephaly while post-operatively 13 (72.22%) had Brachycephaly, 5 (27.78%) Normocephaly and no Scaphocephaly. After surgery 3 (16.67%) transitioned to Normocephaly.

Average calculated intracranial volume before surgery was 803.82 cm^3 and after surgery 914.24 cm^3 (13.73% increase in the average volume). Only 1 (5.56%) patient had a slight reduction in volume (0.89 cm^3) while the rest (n=17, 94.44%) had an increase.

Conclusions: Calculating intracranial volume change is better than cephalic index (categorizing to brachycephaly, scaphocephaly and normocephaly) in assessing surgical outcome in craniosynostosis surgery.

THE EFFECTIVENESS OF FIVE ARTIFICIAL INTELLIGENCE TOOLS IN SUPPORTING THE TEACHING, LEARNING, ASSESSMENT, AND RESEARCH ON VARIATIONS OF ANATOMY

Wickramarathna EAAM¹, Muffasir MMM¹

¹Department of Anatomy, Faculty of Medicine, Wayamba University of Sri Lanka.

Introduction:

The term "artificial intelligence" (AI) encompasses a wide range of technologies that enable robots and computers to mimic human intelligence. It is worth assessing the potential ability of different AIs to help in anatomy education. This study aimed to evaluate the capabilities of five popular chatbots called Google Bard, Bing, ChatGPT 3.5, Chat Sonic, and Perplexity in aiding various aspects of anatomy education.

Methods:

The five chatbots were asked to create theory notes, different types of questions, images, and illustrations on given topics. Describing the anatomical variations in given topics and translating scientific terms into Sinhala and Tamil were also assigned. The accuracy, relevance, and comprehensiveness of the responses from each AI were reviewed and graded subjectively as excellent, average, and below average by one anatomy expert using recommended text books and review articles on anatomical variations as references.

Results:

The accuracy, relevance, and comprehensiveness of the theory-based explanations were best in ChatGPT 3.5, followed by Bing and Bard. These AIs are still unable to provide accurate, relevant, and comprehensive images or illustrations and Sinhala and Tamil translations. Structured essay, VIVA, and true or false type questions created by all AI got average grade for accuracy, relevance, and comprehensiveness. Chat GPT 3.5 showed an additional ability to create acceptable extended matching questions with average accuracy. The majority of the anatomical variations described by AI for the given topics also had average accuracy, relevance, and comprehensiveness, except for the AI perplexity, which showed below-average performance.

Conclusion:

Anatomy education needs to be strengthened with the identified AI, which are evolving in momentum. The identified potentials and deficiencies need to be addressed before implementing them into the anatomy curriculum.

DONOR DIVERSITY OF BODY DONATIONS AND WILLED DONORS REGISTERED AT A NEWLY ESTABLISHED MEDICAL FACULTY IN SRI LANKA

Wickramarathna EAAM¹, Shehara PAD¹, Chandimal KM¹

¹Department of Anatomy, Faculty of Medicine, Wayamba University of Sri Lanka.

Introduction and Objectives:

Body donations play a critical role in medical education and research. The success of body donation programs depends on the diversity of donors. Assessing donor diversity is crucial to meeting the educational needs of students and researchers. The aim of this study was to examine the demographic profile of donors and willed donors registered at a newly established medical faculty in north western province (NWP) Sri Lanka.

Methods:

A retrospective analysis of the body donation registry and willed donor applications received from November 2019 to February 2024 was conducted at the Department of Anatomy, Faculty of Medicine, Wayamba University of Sri Lanka.

Results:

A total of 35 adult body donations, one foetal body donation age ranging from 0-87 years, and 183 complete willed donor applications (age ranging from 20-93 years) were received. The highest number of body donations (38.88%, n=14) and willed donor applications (n=117, 63.93%) have been received in the year 2023. Based on this study, the typical donor was likely to be a 52-year-old, Sinhalese (100%) male (63.88%) living in NWP (61.11%). The typical willing donor was likely to be a 61-year-old, Sinhalese (98.91%), female (61.74%) living in the NWP (95.63%).

Conclusion:

Although a good number of body donations and applications have been received, a lack of ethnic diversity in the donations was observed despite the population based ethnic diversity of the NWP and country. Identifying the demographic characteristics of potential donors could assist in determining the specific audience for body donation awareness campaigns to maximize the diverse cadaveric exposure in anatomy education.

BILIARY TRACT VARIATIONS – CADAVERIC FINDINGS IN A SRI LANKAN COHORT

Jayarathna MJS¹, Rajapakshe HNK¹, Hilma MTF¹, Udupihille J², Amaratunga HA¹

¹Department of Anatomy, Faculty of Medicine, University of Peradeniya, Sri Lanka

²Department of Radiology, Faculty of Medicine, University of Peradeniya, Sri Lanka

Introduction and objectives

The biliary tract consists of a duct system draining hepatic segments. The pattern of the ducts shows variations that may differ in populations. Knowledge of these variations is important in managing disorders in this region. The objective of this study was to describe the intrahepatic biliary tract variations using cadaveric dissections.

Method

This descriptive study was conducted at the Department of Anatomy, Faculty of Medicine, Peradeniya from December 2022 to February 2024. The hepatobiliary system of 20 formalin-preserved cadavers was dissected to observe the right posterior hepatic duct (RPHD) variations and grouped according to the Huang classification.

Results

All donors were above 65 years of age with 12 being female (60%). Variations observed in females included insertion of RPHD to the right anterior hepatic duct (Huang Type A1) seen in 8 cases and confluence/ trifurcation (Huang Type A2) in 4. The only variation seen in males was Huang Type A1. Insertion of RPHD to the left hepatic duct (Type A3), to the common hepatic duct (Type A4) and to the cystic duct (Type A5) were not observed in this population.

There was no statistically significant difference between the genders ($p = 0.117$) in the expression of variations regarding the RPHD insertion site.

Conclusion

This study cohort showed Huang Type A1 which is considered the typical dominant type followed by Type A2. There was no significant difference in variant expression between genders.

EXTERNAL DIAMETER OF THE COMMON BILE DUCT – COMPARISON BETWEEN PRESERVED AND FRESH CADAVERS

Jayarathna MJS¹, Ekanayake EMKB², Rajapakshe HNK¹, Hilma MTF¹, Vadysinghe AV², Udupihille J³, Amaratunga HA¹

¹Department of Anatomy, Faculty of Medicine, University of Peradeniya, Sri Lanka

²Department of Forensic Medicine, Faculty of Medicine, University of Peradeniya, Sri Lanka

³Department of Radiology, Faculty of Medicine, University of Peradeniya, Sri Lanka

Introduction and objectives

Common bile duct (CBD) delivers bile from the liver to duodenum and is formed by the union of cystic duct and common hepatic duct. Reported diameter of adult CBD is 6mm (<8mm). Normal reference range for CBD diameter helps differentiate jaundice into obstructive/non-obstructive causes and whether dilatation is age-related. Objective of this study was to measure the diameter of CBD in preserved (PC) and fresh cadavers (FC) and to compare them.

Method

Common bile ducts of PC and FC (medicolegal autopsies without known hepatobiliary disease) were dissected at Departments of Anatomy/Forensic Medicine, Faculty of Medicine, Peradeniya from December 2022 to February 2024. CBD diameter was measured at its proximal and distal ends with a calibrated digital vernier caliper. Descriptives and independent sample t-tests were used.

Results

Twenty PCs with 12 females (60%) and 20 age-matched FCs with 7 females (35%) (all aged ≥ 65 -years) were studied. For PCs, mean diameters of CBD at proximal end, distal end and overall were 6.54mm (SD=1.56), 4.65mm (SD=1.06) and 5.6mm (SD=1.62). For FCs, mean diameters of CBD at proximal end, distal end and overall were 4.38mm (SD=1.13), 3.48mm (SD=0.922) and 3.93mm (SD=1.11).

Ranges for overall CBD diameter in PCs and FCs were 3.33mm–10.6mm and 1.89mm–6.82mm respectively.

Statistically significant difference in CBD diameters at proximal end ($p < 0.001$), distal end ($p < 0.001$) and overall diameter ($p < 0.001$) was observed.

Conclusion

Mean CBD diameter of PCs is higher than FCs with the difference being statistically significant. Tight adherence of surrounding tissue layers to the CBD when preserving the cadavers may be the cause for the difference in diameter.

Abnormal origin of gonadal vessels from renal vessels -A rare anatomical variation

Kumara PBASMP¹, Samarawickrama MB¹, Rodrigo M¹, Rodrigo PSS¹, Bandara KMNA¹

¹Department of Anatomy, Faculty of Medicine, University of Ruhuna, Sri Lanka

Introduction and Objectives: Anatomical variations of the renal arteries and testicular arteries are not uncommon owing to their embryological origin. Awareness of possible anatomical variations of the renal vessels and testicular vessels are essential for surgeons who perform open and minimally invasive procedures of the kidneys and retroperitoneal region to prevent disastrous hemorrhagic complications during those procedures and for radiologists to prevent misinterpretations of imaging and to prevent vascular complications during interventional procedures.

Methods: We have encountered an anomalous origin of bilateral testicular vessels from corresponding renal vessels during routine educational dissections of the cadavers in the Department of Anatomy, Faculty of Medicine, University of Ruhuna, Sri Lanka. The variation was observed in a 90-year-old male cadaver.

Results: The right testicular artery was observed to originate from the right renal artery 2.5cm from its origin from the abdominal aorta. The right testicular vein drains to the right renal vein 0.5cm lateral to the inferior vena cava. The left testicular artery was observed to originate from the left renal artery 3.5 cm from its origin from the abdominal aorta. Left testicular vein was seen to drain to the left renal vein.

Conclusion: Even though the variations of gonadal vessel formations and its relations to the renal vessels are not uncommon, the case reported here is very rare. Similar findings have been reported elsewhere describing origin of gonadal arteries from accessory renal arteries. However, the knowledge of such variation is paramount important in avoiding accidental vascular injuries especially in emergency retroperitoneal surgeries.

Keywords: Testicular artery, Testicular vein, Renal artery, Renal vein, Abdominal Aorta, Inferior vena cava

ANATOMY OF FACIAL NERVE: A REVIEW OF TEN ANATOMY TEXTBOOKS RECOMMENDED FOR MBBS CURRICULUM IN SRI LANKA

Nanayakkara BCIJ¹, Karunarathna L.¹, Lokuge RD¹, Pitigala PKDTS²

¹ Kotelawala Defense University

² National Hospital Sri Lanka / Medical Officer

Introduction and Objectives: Neurophobia is a well-recognized problem amongst medical students. Less than one third of doctors are reported to be adequately prepared in anatomy when joining residency programs. As the facial nerve anatomy is clinically significant the completeness of its anatomical description in standard text books utilized in Sri Lanka is analyzed.

Methods: Ten recommended text books for Anatomy in medical faculties in Sri Lanka were included. Using a set of pre-defined anatomical facts important to the Facial Nerve (FN), the textbooks were analyzed in the completeness of describing the pathway, clinical points and relationships of the FN.

Results: All books (100%) described the extratemporal pathway and five terminal branches of FN while 40% covered less than 50% of the pre-defined points allocated to the intra-temporal path. Only 10 % mentioned Bell's palsy, Ramsay Hunt syndrome and Frey's syndrome. Stylomastoid foramen, internal acoustic meatus and Pontomedullary junction were mentioned in 80%, 80% and 20% of books respectively. All mentioned the parotid gland as a relationship while 50% mentioned the relationship to abducens nerve. Neurosurgically significant Ponto-cerebellar cistern was mentioned in 10% of books. Only 20 % described clinical testing of all 4 facial muscles. While 80% mentioned the main motor nucleus, 70 % mentioned the sensory nucleus and 50% the parasympathetic nucleus.

Conclusions: Although textbooks like Indirbir Singh's anatomy, Cunningham's anatomy and Grant's anatomy have provided a description covering the study criteria we took into consideration, reviewed textbooks have varying amounts of coverage even in some cardinal points relevant to FN making referencing multiple textbooks necessary.

BILATERAL PRESENCE OF THE AZYGOS VEIN: A CADAVERIC CASE REPORT

Banneheka BMHKS¹, Hettiarachchi SM¹, Bandaranayake BMP¹

¹Department of Basic Sciences, Faculty of Dental Sciences, University of Peradeniya

Introduction & Objectives: Understanding the anatomy and variations of the azygos venous system is essential for cardiothoracic specialists. The term "azygos," originating from Greek, means singular or unpaired anatomical structures. The azygos vein runs vertically along the posterior aspect of the thoracic vertebral column and is crucial for thoracic circulation.

Methods: During routine cadaveric dissection, we observed a rare finding: bilateral azygos veins, an unusual anomaly without hemiazygos or accessory hemiazygos connections.

Results: On the right side, the azygos vein arises from the right ascending lumbar and subcostal veins, draining into the superior vena cava. Conversely, on the left side, the azygos vein originates from the left ascending lumbar and subcostal veins, independently joining the left brachiocephalic vein. There are no reported cases of bilateral azygos vein systems. This discovery reveals a unique variation with significant clinical implications, highlighting the complexity of thoracic anatomy. Our case report aims to clarify this anomaly, providing valuable insights for clinical practice. With this knowledge, healthcare professionals can improve patient care and refine surgical techniques in cardiothoracic practice.

Conclusion: Exploring the mysteries of the azygos venous system offers valuable insights for medical professionals. This rare case report not only enhances our understanding of thoracic anatomy but also emphasizes the importance of comprehensive anatomical knowledge in optimizing patient outcomes.

Congenital isolated unilateral absence of the left pulmonary artery presenting with recurrent respiratory symptoms– a case report

Wijayawardhana KWSM¹, Mathangasinghe Y², Singappuli K³, Weerabaddana P³, Pradeep IHDS⁴

¹ Department of Anatomy, Faculty of Medicine, University of Kelaniya

² Department of Anatomy and Developmental Biology, Monash University, Clayton, Australia

³ Lady Ridgway Hospital for Children, Colombo

⁴ Department of Thoracic surgery, National Hospital For Respiratory Diseases, Welisara

Introduction

Congenital isolated unilateral absence of the left pulmonary artery (UAPA) is a rare cardiovascular malformation. The exact aetiology remains unclear, but it is believed to result from the embryological maldevelopment of the sixth aortic arch. UAPA is often associated with other cardiac anomalies.

Case presentation

A four-year and two-months old boy presented with worsening exertional shortness of breath and cough of 6 months duration despite medical management. The chest X-ray revealed a hyperexpanded right lung with reduced lung markings in the left lung. The CECT chest revealed a single right pulmonary artery and a hyperexpanded right lung field, with the right main bronchus sandwiched between the right aortic arch and the dilated right pulmonary artery. 2D echocardiogram did not reveal any intracardiac structural anomalies.

The child underwent sternotomy and exploration with intraoperative bronchoscopy. Intraoperative bronchoscopy revealed satisfactory luminal opening after sternal closure. No attempts were made to revascularise the left lung with the right pulmonary artery or to proceed with pulmonary arterioplasty. Despite the absence of left pulmonary artery revascularization, the child recovered uneventfully.

Conclusion

Isolated UAPA might show minimal symptoms until early childhood. Chest x-rays might show changes, so clinicians should be aware of this rare presentation of isolated UAPA in medically non-responding respiratory tract infections. Further imaging is needed to confirm the diagnosis and evaluate the anatomic details. Surgical interventions should be tailored to the patient's anatomy and symptom severity.

PREFERRED METHODS OF LEARNING ANATOMY - A STUDENTS' PERSPECTIVE

Dissanayake MM¹, Basnayake O¹, Dissanayake PH², Amasha EADH¹, Lakmani ESD¹,
Dissanayake PG¹

¹Faculty of Medicine, University of Colombo

²Faculty of Medical Sciences, University of Sri Jayewardenepura

Introduction & Objectives: Anatomy forms the foundation for medical education and is taught using varying methods. In the digital era new tools are introduced for this purpose. This study aims to evaluate the preferred methods of learning Anatomy among medical students in Sri Lanka.

Methods: A cross sectional study was conducted among medical undergraduates studying in universities in Sri Lanka. Data were collected using a google form shared online. Results were analysed using SPSS version 20.

Results: Among 192 of respondents majority (58.9%) were female. 145 (75.5%) had completed less than 50% of the basic Anatomy curriculum at the time of the survey. 39.6% of the respondents followed an integrated education system, while 41.1% were unsure of the education system being followed. Out of the teaching/ learning methods, 32.3% selected dissections, prosections and histology practicals as their first preference. There was no significant gender difference ($p=0.273$) in the above preferences. The most preferred study aids/ tools were cadavers (28.1%), atlases /Text books (25.5%) and You tube videos/ anatomy channels (24%). Majority (74.5%) of participants preferred 2 hours or less for small group activities (SGAs) which showed a statistically significant difference with the percentage of completion of Anatomy curriculum ($p=0.007$) and 43.2% preferred groups of less than 5.

Conclusion: Anatomy learning methods among medical students are diverse and the students' preferences need to be considered in future Anatomy curricula.

Keywords: Anatomy, teaching/ learning methods, education systems

Cadaveric study of Rouviere's sulcus: An important surgical landmark in Laparoscopic Cholecystectomy

Vasitha Abeysuriya¹, Savindu Hewawardhane¹

¹ Faculty of Medicine Ragama, University of Kelaniya, Sri Lanka.

Introduction: Identification of the Rouviere's sulcus as an extra biliary landmark during laparoscopic cholecystectomy helps to reduce the iatrogenic injuries of common bile duct (CBD). Therefore, this study was carried out to assess its frequency, morphology, and its relation with the CBD in cadaveric liver specimens.

Methods: An observational study was carried out in the department of Anatomy, during a period of 2021 -2023. Fifty liver specimens without any previously recorded liver or extra hepatic biliary pathology were dissected and observed. During dissections, Rouviere's sulcus was identified, and its morphology of open type, closed, or scar-like shapes was noted, and the CBD and its relation with the Rouviere's sulcus was observed.

Results: Rouviere's sulcus was identified in 35/50 (70%), whereas 15/50 (30%) it could not be seen. Among the 35/50 livers with Rouviere's sulcus, 20 /35 (57%) were of open type, 10/35 (28%) were close type, and scar like shape was seen in 5/35 (15%). Among these 35 liver specimens, in 28/35(80%) the Rouviere's sulcus was above the level of CBD line. In 5/35(14%) the sulcus was at the same level, and in 2/35 (6%) the sulcus was below the line of CBD.

Conclusion: Identification of Rouviere's sulcus can be helpful as an additional landmark as it determines the orientation of the common bile duct. As it lies above the CBD line in majority it becomes a reliable extra-biliary landmark, which can be used to reduce bile duct injuries during hepatobiliary surgery.

Keywords: Rouviere's sulcus, Common Bile Duct, Liver, Cholecystectomy, Injury