



Sri Devaraj Urs Medical College
Sri Devaraj Urs Academy of Higher Education and Research
Tamaka, Kolar

KCACON 26

26th Conference of the Karnataka Chapter of Anatomists

“From Blueprint to
Scalpel - Integrating
Anatomy, Genetics and AI
for Precision Surgery”

Organised by
Department of Anatomy



SOUVENIR



OUR FOUNDER



Late Sri R. L. Jalappa was a towering figure in Karnataka's political and educational landscape — a statesman, visionary educationist, and a champion of the co-operative movement. His dynamic leadership gave rise to the Sri Devaraj Urs Educational Trust, which today stands as a beacon of knowledge and service. Under his stewardship, the Trust has grown to encompass eight institutions, with over 500 dedicated faculty members and more than 4,500 students enrolled across disciplines — from kindergarten to post-doctoral programs in traditional, technical, and medical fields.

A man of deep conviction and social commitment, Sri R. L. Jalappa dedicated his life to the empowerment of rural communities through education, agriculture, horticulture, dairy farming, and co-operative initiatives.

His legacy as the Chairman of Sri Devaraj Urs Medical College in Kolar reflects his unwavering commitment to accessible and quality healthcare education.

KCA FOUNDER PRESIDENT & CHIEF GUEST



Dr. S. Kantha Jadhav is a distinguished physician, academician and administrator whose vision helped shape the landscape of medical education in Karnataka. As the founding Vice-Chancellor of Rajiv Gandhi University of Health Sciences (RGUHS), Bengaluru, appointed in 1996, she became the first woman to lead a specialized health sciences university in the state.

With exceptional leadership, she brought medical, dental, nursing and pharmacy institutions under a unified academic framework, laying strong foundations for health sciences education. Her contributions extended nationally through her association with the Supreme Court of India's Adhoc Committee overseeing the Medical Council of India, as well as through her advisory roles and efforts to advance academic collaboration, research and modern educational systems.

Her distinguished service has been recognised with the Dr. B. C. Roy National Award and the Doctor of Science (D.Sc.) Honoris Causa from RGUHS.

Her vision, leadership and enduring commitment to medical education remain an inspiration to generations of healthcare professionals.



**LATE SRI RATHAN KUMAR
WITH HIS BELOVED SISTER
DR S KANTHA
lovable brother/sister K.G.F**

CHIEF PATRON



*In Reverential Memory and Seeking Blessings of Late Shri. R. L. Jalappa,
Founder Chairman, Sri Devaraj Urs Educational Trust (SDUET)*

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SILVER JUBILEE FUNCTION



PRE-CONFERENCE WORKSHOPS



SCIENTIFIC SESSIONS



VALEDICTORY FUNCTION

The background is a dark, deep blue or black. On the left side, there is a large, glowing DNA double helix structure in shades of pink and purple. In the top right corner, there is a complex molecular structure with many small circles and connecting lines. In the bottom left corner, there are several interconnected hexagonal shapes, resembling a honeycomb or molecular lattice. On the right side, there are thin, flowing lines and a network of dots connected by lines, suggesting a neural network or data flow. The word "MESSAGES" is centered in the middle of the image, enclosed within a thin white rectangular border.

MESSAGES



Sri G H Nagaraja

Hon'ble Chancellor,
SDUAHER & President, SDUET

It gives me immense pride to welcome distinguished delegates, esteemed faculty, researchers, and students to 26th KCACON 2026, hosted by the Department of Anatomy at Sri Devaraj Urs Medical College, Sri Devaraj Urs Academy of Higher Education and Research, Tamaka, Kolar.

The theme for this year, "From Blueprint to Scalpel - Integrating Anatomy, Genetics and AI for Precision Surgery," embodies our institution's steadfast dedication to furthering medical research and education. This conference provides a crucial forum to influence the future of surgical accuracy and contemporary healthcare delivery by connecting classic anatomical sciences with cutting-edge topics like genetics and artificial intelligence. I would like to express my sincere gratitude to the Department of Anatomy, the Karnataka Chapter of Anatomists, and the organizing committee for putting together such a comprehensive event lineup. I urge everyone to participate fully in the interactive sessions, share creative ideas, and establish significant academic partnerships. I hope this meeting stimulates new research and advances our common objective of high-quality education, innovation, and global health.

I wish the event grand success and wish all attendees an intellectually enriching experience.



Sri J Rajendra

Vice President
SDUET

It gives me immense pleasure to extend my warm greetings to all the distinguished anatomists, academicians, clinicians, researchers, delegates, and students attending the 26th KCACON 2026, the Conference of the Karnataka Chapter of Anatomists, being held at Sri Devaraj Urs Medical College, Tamaka. Anatomy forms the foundation of medical education and continues to remain an essential link between basic sciences and clinical practice. Conferences such as KCACON provide a valuable platform for anatomists and professionals from different fields to come together, share their knowledge and experiences, and discuss the changing dimensions of anatomy in modern medicine.

The theme of KCACON 2026, “From Blueprint to Scalpel – Integrating Anatomy, Genetics and AI for Precision Surgery,” is both relevant and forward-looking. The rapid developments in genetics, artificial intelligence, imaging, and surgical technology are opening new possibilities in healthcare. Integrating these advances with a strong understanding of human anatomy can contribute significantly to more precise, personalised, and effective patient care.

It is a matter of great pride that Sri Devaraj Urs Medical College, Tamaka, is hosting this important academic gathering. The institution has always valued excellence in medical education, research, and patient care, and provides an appropriate setting for meaningful academic discussions and professional interactions.

I sincerely appreciate the efforts of the Karnataka Chapter of Anatomists, the organising committee, and the Department of Anatomy, Sri Devaraj Urs Medical College, for bringing together this conference and creating an opportunity for learning, interaction, and collaboration.

I am confident that the scientific sessions, workshops, presentations, and discussions during KCACON 2026 will provide new insights, encourage young minds, and strengthen the role of anatomy in the evolving landscape of medicine and surgery.

I extend my best wishes to the organisers, delegates, faculty members, students, and all participants for a successful, enriching, and memorable KCACON 2026.



Sri K G Hanumantha Raju

Secretary
SDUET

It is with immense pride that I extend a cordial welcome to the esteemed academicians, practitioners, and delegates gathering for the 26th KCACON 2026 at Sri Devaraj Urs Medical College.

The prescient theme of this year's conference, which harmonizes foundational anatomical sciences with the vanguard of genetics and artificial intelligence, heralds a transformative epoch in precision healthcare. Translating the theoretical blueprint into surgical mastery necessitates precisely this caliber of interdisciplinary dialogue.

I offer my highest commendations to the Department of Anatomy for orchestrating an intellectually rigorous and visionary scientific program. May this commemorative souvenir stand as an enduring testament to our collective pursuit of pioneering medical education and clinical excellence.



Dr B Vengamma

Hon'ble Vice Chancellor
SDUAHER

It gives me great pleasure to extend my warm greetings on the occasion of the 26th KCACON 2026, hosted by the Department of Anatomy, Sri Devaraj Urs Medical College.

The theme, "From Blueprint to Scalpel – Integrating Anatomy, Genetics and AI for Precision Surgery," beautifully captures the journey of anatomy from the foundations of medical learning to its expanding role in modern surgical practice. As medicine advances, a strong understanding of anatomy remains the cornerstone of safe, precise and meaningful patient care.

I congratulate the organising committee for bringing together this academic gathering and commend their efforts in creating a platform for learning, discussion and collaboration.

I wish all the delegates and participants a stimulating and memorable conference. May this souvenir preserve the spirit and memories of KCACON 2026 for years to come.



Dr D V L N Prasad
Chief Administrative Officer
SDUAHER

KCACON 2026 represents a coming together of knowledge, innovation, and collaboration. The 26th Karnataka Conference of Anatomists, centred on “From Blueprint to Scalpel: Integrating Anatomy, Genetics, and AI for Precision Surgery,” provides a valuable platform to explore how emerging technologies are transforming anatomical sciences and precision surgery.

The conference’s alignment with SDGs 3, 4, 9, and 17 further reflects the importance of responsible innovation, quality education, sustainable development, and meaningful partnerships in healthcare.

My best wishes to the Karnataka Chapter of Anatomists, the organisers, delegates, and participants for a successful and enriching KCACON 2026.



Dr G V Manjunatha

Chief Procurement Officer &
Consultant, SDUAHER

The progress of healthcare is shaped by the continuous exchange of knowledge, innovation, and ideas. KCACON 2026, the 26th Karnataka Conference of Anatomists, brings together these elements through its thought-provoking theme, “From Blueprint to Scalpel: Integrating Anatomy, Genetics, and AI for Precision Surgery.”

The convergence of anatomy with genetics and artificial intelligence reflects the rapidly evolving nature of modern medicine and opens new possibilities in education, research, surgical planning, and patient care. The conference’s alignment with Sustainable Development Goals 3, 4, 9, and 17 further highlights the importance of innovation, sustainability, quality education, and collaborative partnerships in building a stronger healthcare ecosystem.

I commend the Karnataka Chapter of Anatomists and the organising team for creating this platform for academic exchange and professional interaction. I wish all delegates and participants an enriching and successful KCACON 2026, with meaningful discussions and new avenues for collaboration.



Dr Muninarayana C

Registrar
SDUAHER

I am delighted to extend my warm greetings on the occasion of the 26th KCACON 2026, hosted by the Department of Anatomy, Sri Devaraj Urs Medical College.

The theme, “From Blueprint to Scalpel – Integrating Anatomy, Genetics and AI for Precision Surgery,” reflects the exciting advances in medical science and the growing role of technology in shaping modern surgical practice.

I congratulate the organising committee for their sincere efforts in bringing together academicians, clinicians and students on a common platform for learning and sharing knowledge. I am confident that KCACON 2026 will be a rewarding academic experience for all participants.

My best wishes to all the delegates and participants for a successful and memorable conference.



Dr Prabhakar K

Principal
SDUMC

It is a privilege to extend my warm greetings on the occasion of the 26th KCACON 2026, hosted by the Department of Anatomy, Sri Devaraj Urs Medical College.

The theme, “From Blueprint to Scalpel – Integrating Anatomy, Genetics and AI for Precision Surgery,” reflects the evolving landscape of medical science, where the foundations of anatomy continue to play a vital role in advancing diagnosis, research and patient care.

I congratulate the organising committee for their dedicated efforts in bringing together academicians, clinicians and students on a common platform for learning and exchange of ideas. I am confident that this conference will provide an enriching academic experience and encourage meaningful collaboration.

I extend my best wishes to all the delegates and participants for a successful and memorable KCACON 2026.



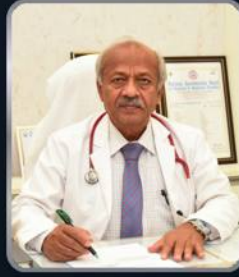
Dr Vinutha Shankar M S

Vice-Principal
SDUMC

Anatomy is where the blueprint of the human body meets the precision of modern medicine. KCACON 2026, the 26th Karnataka Conference of Anatomists, brings this idea to life through its theme, “From Blueprint to Scalpel: Integrating Anatomy, Genetics, and AI for Precision Surgery.”

The integration of anatomical sciences with genetics and artificial intelligence marks an exciting chapter in medical education, research, and surgical practice. The conference also reflects our shared commitment to SDGs 3, 4, 9, and 17, promoting health, education, innovation, sustainability, and collaboration.

I congratulate the Karnataka Chapter of Anatomists and the organising team and extend my best wishes for three days of meaningful academic exchange, new ideas, and lasting collaborations.



Dr J Krishnappa

Medical Superintendent
RLJH & RC

It is a matter of great pleasure to extend my warm greetings and best wishes to all the delegates, faculty members, students, researchers, and organisers of KCACON 2026, the 26th Conference of the Karnataka Chapter of Anatomists. The theme, “From Blueprint to Scalpel – Integrating Anatomy, Genetics and AI for Precision Surgery,” beautifully reflects the evolving landscape of modern medicine, where a strong foundation in anatomical knowledge is complemented by advances in genetics, technology, and artificial intelligence. Such integration has the potential to transform surgical planning, improve precision, and contribute to better patient outcomes.

Conferences such as KCACON provide an excellent opportunity for academic exchange, dissemination of knowledge, and meaningful interaction among professionals and students from diverse backgrounds. I am confident that the deliberations, scientific presentations, and academic activities of this conference will encourage new ideas and foster collaboration in the field of anatomy and its applications in contemporary healthcare.

I congratulate the Department of Anatomy and the organising committee for their efforts in bringing together this academic gathering and wish KCACON 2026 every success. May the conference be enriching, inspiring, and memorable for all its participants.



Dr S Kantha Jadhav

KCA Founder President

Every meaningful academic journey begins with a vision, and grows through the people who carry it forward.

It is heartening to see the Karnataka Chapter of Anatomists reach its 26th conference, KCACON 2026, centred on the inspiring theme, “From Blueprint to Scalpel: Integrating Anatomy, Genetics, and AI for Precision Surgery.”

The coming together of anatomy, genetics, and artificial intelligence reflects the changing horizons of our discipline and the possibilities that lie ahead in medical education, research, and precision surgery. The conference’s commitment to SDGs 3, 4, 9, and 17 further reinforces the importance of education, innovation, sustainability, and collaboration.

I extend my warm wishes to the organisers, delegates, faculty, and students and hope that KCACON 2026 becomes another meaningful chapter in the continuing journey of anatomical sciences in Karnataka.



Dr Veena Kulkarni

KCA President

It gives me immense pleasure to extend my warm greetings to all the distinguished academicians, practitioners, delegates, and participants attending the 26th Annual Conference of the Karnataka Chapter of Anatomists, KCACON 2026, at Sri Devaraj Urs Medical College, Tamaka.

KCA has played a significant role in bringing together professionals dedicated to the advancement of anatomical education, research, and clinical practice in Karnataka. Over the years, the association has provided a meaningful platform for academic exchange, professional collaboration, and the sharing of experiences and ideas that contribute to strengthening healthcare delivery and improving the health of communities.

The theme of KCACON 2026 provides an important opportunity to reflect upon the evolving landscape of community health and the challenges that lie ahead. In an era of rapid social, technological, and healthcare transformations, sustainable and equitable health systems require collaboration, innovation, and a continued commitment to the principles of public health.

It is particularly heartening to see Sri Devaraj Urs Medical College, Tamaka, serve as the venue for this distinguished academic gathering. The institution's commitment to medical education, research, and service provides an ideal setting for meaningful deliberations and the exchange of knowledge among professionals from diverse backgrounds.

I commend the Karnataka Chapter of Anatomists, the Organising Committee, and the Department of Anatomy, Sri Devaraj Urs Medical College, for their dedicated efforts in bringing KCACON 2026 to fruition. Conferences such as these not only enrich our academic understanding but also strengthen professional networks and inspire us to translate knowledge into meaningful action.

May the scientific deliberations, discussions, and interactions at KCACON 2026 foster new perspectives, encourage collaboration, and contribute to the continued advancement of anatomical education, research, and clinical practice.

I extend my sincere best wishes to KCA, Sri Devaraj Urs Medical College, the organising committee, and all the delegates for a successful, enriching, and memorable conference.



Dr Bhusaraddi

KCA Secretary

It is a privilege to welcome all eminent academicians, clinicians, delegates, and participants to the 26th KCACON 2026 at Sri Devaraj Urs Medical College, Tamaka.

The theme of this year's conference beautifully brings together the timeless significance of anatomy with the emerging possibilities of genetics and artificial intelligence. This convergence represents the changing landscape of medicine and highlights the importance of collaboration, innovation, and continuous learning.

I commend the Department of Anatomy for its sincere efforts in curating this academic gathering. I am confident that KCACON 2026 will provide a stimulating platform for knowledge sharing, meaningful discussions, and new ideas that contribute to the advancement of medical education and healthcare.

My best wishes for a successful conference and a truly enriching experience for everyone.



Dr Ashwini N S

Organising Secretary

On behalf of the Organizing Committee, it gives me immense joy to present this souvenir on the occasion of the 26th KCACON 2026.

Our vision for this conference was to go beyond traditional anatomical boundaries and explore how modern tools are reshaping the operating room. The journey "From Blueprint to Scalpel" signifies our discipline's evolution—moving from static structural understanding to a dynamic, AI-assisted, and genetically guided approach to precision surgery.

This souvenir reflects the hard work, academic contributions, and shared passion of anatomists and clinicians across the region. I extend my deepest gratitude to our Management, Leadership, the Executive Committee of KCA, and every delegate who contributed to making this event a grand success.

I hope you find the scientific sessions enriching and this souvenir a memorable keepsake of our shared journey forward.

The background is a dark, deep blue or black. On the left side, there is a large, glowing pink and purple DNA double helix structure. In the top right corner, there is a complex molecular structure with blue and white nodes and lines. In the bottom left corner, there are several interconnected hexagonal shapes, resembling a honeycomb or molecular lattice, with some nodes highlighted in pink. Faint, glowing circuitry lines and dots are scattered throughout the background, particularly on the left and bottom edges. The text 'PRE-CONFERENCE WORKSHOPS' is centered in the middle of the image, enclosed in a thin white rectangular border. The word 'PRE-CONFERENCE' is in a pink color, and 'WORKSHOPS' is in a light blue/white color.

PRE-CONFERENCE WORKSHOPS

Karyotyping & Beyond

Speakers



Dr Preetha Tilak

Consultant and Head of the Division of Human Genetics, St John's Medical College, Bangalore



Dr Amudha S

Assistant Professor, Division of Molecular Biology and Genetics, St. John's Medical College, Bangalore



Dr Maheshwari Myageri

Associate Professor of Anatomy, KLE JGMM Medical College, Hubballi

Faculty Coordinator: Dr Sameer

Student Coordinators/Tutors: Dr Elangovan J, Dr Jashwanth, Dr Vadhu Chethana, Dr Dipak Raj, Dr Likitha, Ms Ananya, Mr Bhaskar, Ms Chhalana, Mr Somshekhar

Karyotyping & Beyond

Learning Objectives:

At the end of the workshop, participants will be able to:

- Explain the principles of human cytogenetics and chromosome analysis.
- Perform basic chromosome identification and karyogram preparation.
- Interpret common chromosomal abnormalities using conventional cytogenetic techniques.
- Describe the applications of FISH, chromosomal microarray and next-generation sequencing.
- Apply genomic techniques in prenatal diagnosis and precision medicine.

Teaching-Learning Methods:

- Interactive lectures
- Demonstration
- Hands-on practical sessions
- Case-based discussions
- Quiz

Assessment:

- Pre-test
- Hands-on assessment
- Post-test
- Feedback

Expected Outcome:

Participants will acquire basics in integrating conventional cytogenetics with modern genomic technologies for interpretation and diagnosis.

AI-Enhanced Medical Imaging

Speakers



Dr Sanjay P

Associate Professor, Department of Radio-Diagnosis, Mysore Medical College & Research Institute, Mysore



Dr Praveen Shastry

Head of Technical and Clinical Academics, Manipal HealthMap (Corporate Radiology Vertical of the Manipal Group)

Faculty Coordinator: Dr Suresh T

Student Coordinators/Tutors: Dr Abhilash, Dr Sujith Gowda, Mr Anvesh Kumar Gupta, Ms Rayma, Ms Miraclyn, Mr Aryan, Mr Shambhu

AI-Enhanced Medical Imaging

Learning Objectives:

At the end of the workshop, participants will be able to:

- Describe the principles of artificial intelligence in radiological imaging.
- Perform AI-assisted image segmentation and anatomical reconstruction.
- Apply AI tools in precision diagnosis and surgical planning.

Teaching-Learning Methods:

- Lectures
- Live software demonstration
- Hands-on image segmentation
- Clinical case discussions

Assessment:

- Image interpretation exercise
- Pre/Post test
- Practical evaluation

Expected Outcome:

Participants will develop competency in AI-assisted image analysis and clinical anatomical interpretation.

Generative AI in Anatomy Education

Speakers



Dr Ashwini NS

Professor & HoD of Anatomy, SDUMC



Dr Tejaswi H L

Vice - Principal, Professor and Head,
Department of Anatomy, Adichunchanagiri
Institute of Medical Sciences (AIMS)



Dr Vidhya CS

Professor of Anatomy, JSS, Mysore



Dr Viveka S

Professor, Department of Anatomy in
Shridevi Medical College

Faculty Coordinator: Dr Nagabhushanam

Student Coordinators/Tutors: Dr Sanketh, Dr Nikhil Gowda, Ms Kalyani Nair, Ms Pushpitha, Mr Rishi, Mr Jayachandra

Generative AI in Anatomy Education

Learning Objectives:

At the end of the workshop, participants will be able to:

- Understand principles of Generative AI.
- Utilize AI platforms for educational content development.
- Create anatomy illustrations using AI tools.
- Design assessments using AI.
- Recognize ethical issues associated with AI in medical education.

Teaching-Learning Methods:

- Demonstration
- Hands-on exercises
- Prompt engineering practice
- Group discussion

Assessment:

- AI-generated lesson creation
- Quiz
- Feedback

Expected Outcome:

Participants will effectively integrate Generative AI into anatomy teaching while adhering to ethical standards.

Cost-Effective 3D Printing for Anatomy Educational Resource Development

Speakers



Dr Yogesh Ashok Sontakke

Professor of Anatomy, JIPMER,
Pondicherry



Dr Ujwala Bhanarkar

Associate Professor, Department of
Anatomy, All India Institute of Medical
Sciences (AIIMS) Kalyani, West Bengal

Faculty Coordinator: Dr Chandra

Student Coordinators: Ms Anjali, Ms Krithika, Mr Darshan,
Ms Malavika

Cost-Effective 3D Printing for Anatomy Educational Resource Development

Learning Objectives:

At the end of the workshop, participants will be able to:

- Understand principles of medical 3D printing.
- Perform segmentation using 3D Slicer software.
- Prepare files for printing.
- Discuss clinical applications in surgery and anatomy education.

Teaching-Learning Methods:

- Demonstration
- Computer-based practical
- 3D printing demonstration
- Interactive discussion

Assessment:

- Practical assignment
- Model generation
- Post-test

Expected Outcome:

Participants will independently generate anatomical models for education and surgical planning.

Applied Dissection & Procedural Skills

Speakers



Dr KC Prasad

Professor of ENT, Dayanand Sagar
Medical College, Bangalore



Dr Sanjeev Kolagi

Professor & Head, Chief Academic
Officer(CAO), SN Medical College, Bagalkot



Dr Ravikiran HR

Professor & HOD of Surgery, SDUMC, Kolar



Dr Shashidhar

Professor, Department of Anatomy,
SDUMC, Kolar

Faculty Coordinator: Dr Venkateshu KV

Student Coordinators: Ms Kushmitaa G B, Ms Sharanya, Ms
Raizel, Ms Medha A

Applied Dissection & Procedural Skills

Learning Objectives:

At the end of the workshop, participants will be able to:

- Review clinically relevant regional anatomy.
- Demonstrate safe cadaveric procedural skills.
- Identify important anatomical landmarks during surgical approaches.
- Improve surgical orientation through cadaveric simulation.

Teaching-Learning Methods:

- Cadaveric dissection
- Faculty demonstration
- Station-based skill training

Assessment:

- Direct observation
- Procedural checklist
- Practical assessment

Expected Outcome:

Participants will be able to apply clinically relevant anatomical knowledge and identify key anatomical landmarks during surgical approaches.

AI in Anatomy Research from Concept to Practice

Speakers



Dr Ashwini Appaji

Professor of Anatomy, MSRMC, Bangalore



Dr Manjula Patil

Professor of Anatomy, S Nijalingappa Medical
College, Bagalkote



Dr Komala

Professor of Anatomy, MSRMC, Bangalore



Dr Seema Deepak

Professor of Anatomy, Mysore Medical College
& Research Institute, Mysuru

Faculty Coordinator: Dr Poulomi

Student Coordinators: Ms Nidhi Ann Varghese, Ms Pranitha C,
Mr Shaadab, Mr Srujan

AI in Anatomy Research from Concept to Practice

Learning Objectives:

At the end of the workshop, participants will be able to:

- Identify AI applications in biomedical research.
- Conduct literature searches using AI platforms.
- Develop research protocols with AI assistance.
- Perform AI-assisted statistical analysis.
- Prepare scientific manuscripts using responsible AI practices.

Teaching-Learning Methods:

- Interactive lectures
- Live demonstrations
- Hands-on practical sessions
- Research exercises

Assessment:

- Research proposal exercise
- Pre/Post test
- Feedback

Expected Outcome:

Participants will acquire practical skills to integrate AI into research planning, data analysis, scientific writing, and publication while following research ethics.



PANEL DISCUSSIONS

Digital Anatomy & Future of Medical Education

Speakers



Dr Vinutha Shankar

Vice Principal & Professor of Physiology,
SDUMC, Kolar

Dr V Balasubramanyam

Domain Consultant: Medical E Learning
President: Bangalore Chapter of Indian
Association of Medical Informatics (IAMI)
Professor of Anatomy, St. John's Medical
College, Bangalore



Dr Yogesh Sontakke

Professor, Department of Anatomy,
JIPMER, Pondicherry

Dr Ujwala Bhanarkar

Associate Professor, Department of
Anatomy, AIIMS Kalyani, West
Bengal



Dr Partha Sarathi

Associate Professor, Department of Community
Medicine, K.A.P. Viswanatham Government
Medical College, Trichy, Tamil Nadu

Clinical Anatomy in the Era of Artificial Intelligence

Speakers



Dr Roshni Bajpe

Professor of Anatomy, KIMS, Bangalore



Dr Seema S R

Director, Professor & HOD, Anatomy,
FAIMER Fellow (PSG-FRI 2009)
ESIC Medical College, Asansol, West
Bengal



Dr Sangeetha

Professor & HOD of Anatomy,
MVJMC&RH



Dr Nachiket Shankar

Professor of Anatomy, St. John's Medical
College, Bangalore

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SPOTLIGHT LECTURES

25/09/2026

Speakers



The High-Stakes Oncosurgeon's Compass: Navigating Critical Neurovascular Planes from the Floor of Mouth and Infratemporal Fossa to the Tracheoesophageal Groove

Dr S M Azeem Mohiyuddin,
MS, FICS, FACS, MNAMS,

Professor and Head of Otorhinolaryngology,
Head and Neck Oncosurgeon, SDUMC , Kolar



Next Generation Surgical Anatomy: Robotics, Vision, and Intelligence

Dr TSR Anjana

Professor & Head of Anatomy,
Chengalpattu Medical College, Tamil Nadu



A New Classification of Craniofacialcervical Clefts (Anterior and Posterior)

The Normal and Abnormal Embryological Development of Foetus from 3rd to 10th weeks of Intrauterine Period

Dr S A Subramani

Professor Emeritus, Rajiv Gandhi University of
Health Sciences, Karnataka|Chairman, Ethics
Committee, Vydehi Institute of Medical Sciences
and Research Centre, Bengaluru|Senior Consultant,
Plastic, Cosmetic and Craniofacial Reconstructive
Surgeon

26/09/2026

Speakers



Image-guided and AI-assisted Surgical Innovations

Dr Narayana Subramaniam

Lead Consultant, Head and Neck Surgery
& Oncology, Aster Hospitals, Bangalore



EVERY DONOR MATTERS: “Making the most of Sparsely Available Cadavers”

Dr Mutyalapati Venkata Ramulu

Associate Professor of Anatomy, All
India Institute of Medical Sciences,
Kalyani



ORATION LECTURES

**Dr N Thakar Naik Oration Lecture
Instituted by Dr Mrs S Kantha to**



Dr Chinmay Nagesh
Consultant, Neuro & Vascular
Interventional Radiology,
Apollo Speciality Hospital,
Jayanagar, Bangalore

**Dr Y Appaji Oration Lecture
Instituted by Dr B S Prakash to**



Dr Rema Devi
Professor & HOD, Pondicherry Institute
of Medical Sciences, Pondicherry

**Shri G Dayanand Oration Lecture
Sponsored by SSIMS & RI, Hesargatta to**



Dr Prasanna L C
Professor & HOD of Anatomy, Kasturba
Medical College, Manipal Academy of
Higher Education, Manipal

**Dr R Viswanath Oration Lecture
Instituted by his Students, Hubli 1984 batch to**



Dr Roshni Bajpe
Professor of Anatomy,
KIMS, Bangalore

The background is a dark, deep blue gradient. On the left side, a large, glowing DNA double helix is visible, rendered in a light blue/purple hue. In the top right corner, there is a complex molecular structure with interconnected nodes and lines. The bottom left features a series of hexagonal shapes, resembling a honeycomb or molecular lattice. Faint, glowing circuitry lines and dots are scattered throughout the background, particularly on the left and bottom edges. A large, white, L-shaped line frame is positioned around the central text.

ABSTRACTS

TITLE: CROSS-SECTIONAL STUDY OF NEAR-PEER ENGAGEMENT AND INTERACTION IN RELATION TO ACADEMIC ADJUSTMENT AND WELL-BEING AMONG FIRST-YEAR MBBS STUDENTS

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INTRODUCTION

Transition into medical school is often associated with academic stress, emotional vulnerability, and difficulty adapting to demanding learning environments among first-year MBBS students. Informal near-peer mentoring may provide academic guidance, emotional reassurance, and psychosocial support through approachable senior students. This study evaluated the influence of an informal near-peer mentoring programme on academic adjustment, stress reduction, and psychological well-being among undergraduate medical students.

METHODS

A longitudinal mixed-methods pilot study was conducted at Tertiary care Medical College and Research Hospital during 2025–2026. A total of 139 participants, including 100 first-year mentees and 39 second-year mentors, participated in flexible mentoring interactions over 10 months. Quantitative assessment included structured mentor and mentee questionnaires and the WHO-5 Well-Being Index. Qualitative data were obtained through focus group discussions, in-depth interviews, and reflective logs. Quantitative data were analysed using SPSS version 22.0, while qualitative findings underwent thematic analysis.

RESULTS AND INTERPRETATION

Most mentees reported improved academic confidence, better subject understanding, increased motivation, and reduced stress following mentoring interactions. Mentors described enhanced leadership abilities, communication skills, professionalism, and interpersonal confidence. Both mentor and mentee questionnaires demonstrated excellent reliability (Cronbach's alpha >0.95). Qualitative analysis identified four major themes: supported academic transition, emotional safety and stress reduction, professional identity formation, and the importance of programme continuity.

CONCLUSION

Informal near-peer mentoring created a psychologically safe and academically supportive environment that positively influenced academic adaptation, emotional well-being, and professional growth among both mentors and mentees.

TRANSFORMING CLINICAL ANATOMY EDUCATION THROUGH VIRTUAL REALITY: APPLICATIONS IN EMERGENCY PROCEDURES

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INTRODUCTION

A thorough understanding of clinical anatomy is fundamental to safe emergency procedures. Virtual Reality (VR) offers immersive three-dimensional learning that complements traditional anatomy teaching. This study evaluated the impact of VR-assisted clinical anatomy education on knowledge, procedural confidence, and learner satisfaction among undergraduate medical students.

AIM

To assess the effectiveness of Virtual Reality-based clinical anatomy education in enhancing knowledge, spatial understanding, and procedural competency required for emergency medicine.

OBJECTIVES

- 1. Evaluate improvement in clinical anatomy knowledge.**
- 2. Assess understanding of anatomical landmarks.**
- 3. Determine effect on procedural confidence.**
- 4. Compare pre- and post-training outcomes.**
- 5. Evaluate student satisfaction.**

METHODOLOGY

Prospective educational interventional study involving 120 MBBS Phase I students. Participants completed a pre-test, conventional teaching, cadaveric demonstration, and a 2-hour immersive VR session covering airway anatomy, RSI, cricothyrotomy, central venous catheterization, needle thoracostomy, chest tube insertion, FAST, and vascular access. Outcomes included post-test, OSPE, confidence, and satisfaction. Data analyzed using paired t-test; $p < 0.05$.

RESULTS

Mean pre-test score: $12.9 \pm 2.8/25$; post-test: $21.6 \pm 2.1/25$ (67.4% improvement; $p < 0.001$). Mean OSPE: $90.8 \pm 5.4\%$. Confidence improved from 2.4 ± 0.8 to 4.6 ± 0.4 . Student satisfaction: 97%; improved 3D understanding: 95%; enhanced confidence: 94%; recommended VR curriculum: 96%.

CONCLUSION

VR significantly enhances clinical anatomy learning, spatial orientation, procedural confidence, and emergency skills preparedness. It is an effective adjunct to cadaveric teaching within competency-based medical education.

KEYWORDS

Virtual Reality; Clinical Anatomy; Emergency Medicine; Anatomy Education; Medical Simulation; Procedural Skills; Competency-Based Medical Education

THE RIPPLE EFFECT: POSTGRADUATES FUELLING UNDERGRADUATE ENGAGEMENT

BACKGROUND

A persistent challenge in medical education is the limited vertical integration between preclinical and clinical phases of training. First-year undergraduate (UG) medical students often struggle to engage with subjects like Anatomy due to traditional didactic methods, heavy content load, and a perceived lack of clinical relevance. Conversely, postgraduate (PG) students entering clinical specialties such as Pathology frequently begin their programs without recent reinforcement of foundational sciences, particularly Anatomy. This disconnect can hinder both clinical reasoning and teaching ability. These gaps contribute to passive learning, reduced motivation, and poor long-term retention. Near-peer teaching, where learners are taught by slightly more experienced peers, has emerged as a promising strategy to address such challenges by promoting engagement and collaborative learning.

AIM OF THIS STUDY

To enhance undergraduate learning and engagement in Anatomy by involving first-year postgraduate students from Pathology in structured small group discussions (SGDs), and to compare the educational impact of PG-led versus faculty-led sessions.

OBJECTIVES

To evaluate the impact of PG-led small group discussions (SGDs) on UG student engagement and understanding of key Anatomy concepts.

To compare the perceived effectiveness and outcomes of PG-led SGDs versus faculty-led SGDs using undergraduate performance data and learner feedback.

To compare the learning outcomes of Postgraduates before and after Small group Discussion and explore the perceptions and experiences of postgraduate students regarding their role as facilitators in small group discussions.

MATERIAL & METHODS

First-year Pathology postgraduates underwent a structured one-day training program covering small group facilitation, adult learning principles, effective communication, and clinical relevance of basic sciences, including Histology. Eight validated and structured SGD modules in topics of General Histology were developed with input from external Anatomy faculty to ensure consistency. Eighty first-year MBBS students were divided into two groups of 40 each. One group participated in PG-facilitated SGDs under faculty supervision, while the other attended faculty-led sessions using identical modules and facilitator guides. Each group was further subdivided into smaller groups of 10 to promote active learning and collaboration. The intervention was conducted over three months. Undergraduate learning outcomes were assessed using structured evaluations at the end of each session and one month following conduct of all SGDs. Postgraduates were assessed using pre- and post-intervention multiple-choice tests. Feedback from both UGs was collected to assess perceptions, engagement, and learning experiences. Thematic analysis was done based on Post graduate reflections following all eight SGDs

RESULTS

The mean academic scores of UG students in PG-led sessions were comparable to those in faculty-led sessions, indicating that if SGDs are structured, trained postgraduates were equally effective in achieving learning outcomes. PG participants showed a statistically significant improvement in post-test scores, demonstrating that teaching reinforced their own understanding of foundational concepts. Feedback from undergraduates was overwhelmingly positive, highlighting greater comfort, relatability, and approachability with PG facilitators. Students appreciated the integration of clinical perspectives into basic science discussions, which improved their interest and comprehension. Postgraduates reported enhanced confidence, communication, facilitation, and time-management skills, along with renewed understanding of relevant basic sciences. Thematic analysis of PG feedback supported these findings.

CONCLUSION

Structured small group discussions facilitated by trained postgraduate students are an effective and feasible strategy for undergraduate medical education. PG-led sessions yield learning outcomes comparable to faculty-led teaching while fostering active engagement and vertical integration. This model simultaneously strengthens postgraduate teaching skills and reinforces foundational knowledge relevant to clinical practice. Near-peer facilitation thus serves as a scalable, resource-efficient approach to improving the quality of medical education, particularly in institutions with faculty limitations.

DERMATOGLYPHICS IN SICKLE CELL ANEMIA IN SOUTHERN KARNATAKA

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INTRODUCTION

Dermatoglyphics is the study of finger and palm print patterns, once used mainly for palmistry and now recognised as a simple, non-invasive tool for identifying genetic and haematological disorders. Sickle cell anaemia, a common inherited haemoglobinopathy in India, results from a point mutation in the beta-globin gene. This study aimed to analyse dermatoglyphic patterns in sickle cell disease patients and trait carriers, compared with healthy controls.

METHODS

This cross-sectional study included 20 sickle cell disease patients, 20 sickle cell trait carriers, and 20 healthy controls from Southern Karnataka, recruited from JSS Hospital, Mysuru, and a genetic counselling clinic. Bilateral fingertip and palmar dermatoglyphic prints were obtained by the ink method and analysed for fingerprint pattern, palmar crease, triradius position, and Δ angle. Categorical variables were compared using chi-square test, continuous variables using Kruskal-Wallis ANOVA; $p < 0.05$ was significant.

RESULTS

Whorls were the most frequent fingerprint pattern in sickle cell disease (49%) and trait carriers (55%), unlike controls, where loops predominated (47%). The Δ angle showed the lowest mean value in sickle cell disease patients versus trait carriers and controls, with a significant difference on the right hand ($p = 0.016$).

CONCLUSION

We can consider dermatoglyphics as a diagnostic tool. Dermatoglyphic patterns, particularly whorl predominance, tented arch and Suwon crease frequency, and reduced Δ angle, may serve as inexpensive markers associated with sickle cell anaemia, useful for screening in high-prevalence regions. Quote "Palmistry is not only for future telling or future predictions; it can be a useful and powerful aid for the diagnosis and prevention of illness."

LIVE VIDEO DEMONSTRATION AS A FACILITATOR OF NEUROANATOMY DISSECTION TEACHING: A QUESTIONNAIRE-BASED ANALYSIS

INTRODUCTION

Neuroanatomy is widely regarded as a challenging discipline due to the intricate organization and spatial relationships of its structures, complex nomenclature, and functional correlations. These factors often present significant obstacles to effective learning and knowledge retention. While traditional neuroanatomy teaching methods remain valuable, they may not address the diverse learning styles and cognitive preferences of all students. Consequently, there is a need to investigate innovative pedagogical strategies that leverage technological advancements to improve the learning experience and foster a deeper understanding of neuroanatomical concepts. The present study aims to evaluate the implementation of live video demonstrations as a novel teaching and learning approach in neuroanatomy.

MATERIALS AND METHODOLOGY

The study involved 150 MBBS students. Students attended classes where live videos were projected and monitored by four teachers who ensured proper projection of the video, interacted with the class, and addressed questions. In the dissection hall, an audio-visual setup was installed, and an additional teacher demonstrated brain specimens, which were projected live in the big screen to the class. Neuroanatomy content was divided into eleven topics, with eleven corresponding teaching sessions. Following the demonstrations, students completed a structured feedback questionnaire via Google Forms, and the results were analyzed.

RESULTS

Analysis showed that 74.3% of students found the video demonstrations helpful for learning neuroanatomy. After watching, 67.9% felt more confident in recalling and identifying structures. About 77.8% said live video helped them connect theory with visual representations, and 70% thought it made neuroanatomy easier to understand. 61.6 % percent believed learning through live video was better than using only traditional dissection. Additionally, 74.3% said the demonstrations helped them understand how different structures relate to each other. After viewing, 68.5% felt confident and knew what to focus on during revision. Around 72.1% agreed that live video demonstrations increased their interest and understanding of neuroanatomy. However, 48.2% found it difficult to orient the projected part on screen, and 46.8% missed having more interaction during the demonstration. Overall, most students responded positively, saying the video demonstrations were useful and made neuroanatomy easier to learn.

CONCLUSION

The introduction of live video demonstrations for teaching neuroanatomy was found to be highly effective. The majority of students reported that this teaching method enhanced their confidence in revising anatomical structures and made learning neuroanatomy easier. Students also perceived video demonstrations as a valuable supplement to conventional teaching methods. Therefore, the regular inclusion of live video demonstration sessions, particularly for complex and challenging topics in anatomy, may improve student understanding, engagement, and learning outcomes.

"KNOWLEDGE, ATTITUDE AND PRACTICES OF THE MEDICAL FACULTY ABOUT THE UNDERGRADUATE MENTORSHIP PROGRAM"

BACKGROUND

Mentorship has become a routine part of medical education. Mentoring is a process of informal transmission of knowledge and the psychosocial support from more experience person (mentor) to the recipient (mentee) as relevant to work, career, or professional development. Mentoring programs for medical students in medical institutions are essential for the benefit of both mentors and mentees.

AIMS AND OBJECTIVES

The present study aimed to explore the perceptions and experiences of medical faculty on undergraduate mentorship program. To know the views of faculty on effectiveness and areas for potential improvement in mentorship program.

MATERIALS AND METHODS

A descriptive cross-sectional questionnaire-based study was conducted among 140 medical faculty members from various medical colleges. Data were collected using a structured questionnaire consisting of 32 questions via Google Forms. The collected data were expressed as frequencies and proportions.

RESULTS

Among 140 respondents, the percentage of female and male faculty members was 62% and 38%, respectively. The majority of respondents (65%) did not received formal training for mentoring. 93% of faculties communicated in person and 43% messaging, only 26% through mail. Most respondents (53%) felt comfortable when addressing personal issues, indicating a positive environment for personal discussions. Of the medical faculty, 53% felt that the mentorship program contributes to personal development, while 92% faculty members discussed academic development and 65% discussed personal development, health issues along with academics. Most of the faculty faced time constraints 82% and mentees absenteeism on scheduled time 76%.

CONCLUSION

Most of the faculty demonstrated a positive attitude to participate in mentoring. By acknowledging and addressing the challenges identified in this study, medical colleges can create a more effective mentoring framework which helps the professional journey of medical students.

KEYWORDS

Medical faculty, Medical students, Mentoring program, Mentorship in medical education, Perception.

EFFECTIVENESS OF SIMULATION-BASED LEARNING AMONG THE MBBS STUDENTS.

BACKGROUND

Simulation-based learning (SBL) is an experiential educational approach that allows medical students to develop clinical knowledge, practical skills, communication abilities, and decision-making competence in a controlled and safe environment. It may help bridge the gap between theoretical instruction and clinical practice while reducing risks to patients during early training.

OBJECTIVE

To assess the effectiveness of simulation-based learning among MBBS students and to explore students' perceptions of its usefulness in improving clinical competence and confidence.

METHODS

A quasi-experimental study was conducted among final year MBBS students at The Oxford Medical College, Hospital and RC during 2020 to 2022 for different batches. 200 Participants were exposed to the simulation-based learning for ECLS where we taught them by simulation based teaching. Knowledge and performance were assessed using pre-test and post-test scores. Students' perception and acceptance of SBL were evaluated using a validated questionnaire. Data was analyzed using descriptive and inferential statistics.

RESULTS

A total of 200 students with complete pre-test and post-test data were included in the analysis. The mean pre-test score was 60.75 ± 9.47 , which increased to 87.98 ± 6.25 in the post-test. The mean improvement was 27.23 ± 10.05 percentage points, with a 95% confidence interval of 25.82–28.63. A paired-samples t-test demonstrated a statistically significant improvement in post-test scores compared with pre-test scores ($t(199) = 38.32$, $p < 0.001$). 95% of the students expressed a positive perception of the simulation-based learning approach.

CONCLUSION

There was "a significant improvement following the intervention" so Simulation-based learning may be an effective adjunct to conventional MBBS teaching. By providing repeated, standardized, and feedback-oriented practice, SBL can support the development of clinical competence before students manage patients independently.

KEYWORDS

simulation-based learning; MBBS students; medical education; clinical competence; clinical skills; student confidence; OSCE.

GAMIFICATION TOWARD PROFICIENCY IN ANATOMY EDUCATION AND SKILL DEVELOPMENT: A MIXED METHODS APPROACH

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BACKGROUND

Anatomy forms the foundation of medical education, yet students often perceive it as extensive and difficult to retain. Traditional teaching methods, including lectures, dissections, and demonstrations, may not sufficiently engage modern learners. Gamification has emerged as an innovative educational strategy to improve engagement, motivation, and knowledge retention.

Aim:To evaluate the effectiveness of Dumb Charades as a gamification tool in enhancing anatomy knowledge retention, engagement, and skill development among first-year MBBS students.

METHODS

An educational interventional crossover study was conducted among 150 first-year MBBS students in the Department of Anatomy, PIMS. Students were divided into two groups (A and B) of 75 each. Group A received gamified teaching using Dumb Charades for Abdomen & Pelvis, while Group B received traditional teaching. The groups will cross over for Head & Neck anatomy. Pre-tests were conducted before intervention, and post-tests were administered after four weeks to assess retention of knowledge. Student engagement, participation, communication, collaboration, and enthusiasm were evaluated using rubric criteria and the Surface marking used for skill assessment and analysed by check list.

RESULTS

The gamification group demonstrated superior retention of anatomical knowledge, with 98% of students showing improvement and sustained recall compared with 85% in the traditional teaching group. The traditional group exhibited a decline in knowledge retention among approximately 15% of students. Students participating in Dumb Charades reported greater engagement, active participation, teamwork, and enjoyment of the learning process. Faculty observations also revealed increased enthusiasm and collaborative learning during gamified sessions.

CONCLUSION

Dumb Charades is an effective, low-cost, and sustainable gamification strategy that enhances engagement, improves retention of anatomical knowledge, and promotes skill development among first-year MBBS students. Incorporating such learner-centered approaches into anatomy education may strengthen Competency-Based Medical Education and improve long-term learning outcomes.

KEYWORDS

Anatomy Education, Gamification, Dumb Charades, Knowledge Retention, Medical Education, Competency-Based Medical Education, MBBS Students.

EVALUATION OF CADAVIDZ DICOM-DERIVED 3D VOLUMETRIC ANATOMICAL MODELS AS AN EDUCATIONAL RESOURCE

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INTRODUCTION

Conventional 2D DICOM images may limit students' understanding of complex anatomical relationships. CADAVIDZ converts DICOM data into interactive, patient-specific 3D models, enabling student-centered anatomical learning. This study evaluated a CADAVIDZ DICOM-derived 3D volumetric anatomical model of left breast malignancy with axillary lymphadenopathy as a resource for anatomical education.

METHODS

The CADAVIDZ DICOM-derived 3D model of carcinoma of left breast with axillary lymphadenopathy was evaluated by anatomy faculty across nine criteria using a five-point Likert scale. Faculty responses (N=60) from 49 medical institutions were treated as independent observations given minimal clustering. Differences between Senior and Junior faculty were analyzed using the Mann-Whitney U test. Internal consistency was assessed using Cronbach's alpha.

RESULTS

Agreement was consistently high across items. CADAVIDZ models were rated favourably for depicting tumour-structure relationships (81.4%), and particularly for axillary lymph node anatomy and understanding of combined tumour, vascular, muscular, and nodal relationships (88.4% each). Most respondents felt CADAVIDZ offered a better understanding of pathological anatomy than 2D DICOM images (74.6%), supported its incorporation into routine education (76.7%), and endorsed it as a valuable resource for education, research, and clinically relevant learning materials (76.3%); disagreement remained minimal ($\leq 12\%$). Faculties showed no significant differences on most items, though Senior faculty gave significantly higher ratings for incorporation into education ($p=0.009$, $r=0.40$). Cronbach's alpha was 0.90, indicating good internal consistency.

CONCLUSION

CADAVIDZ DICOM-derived 3D volumetric anatomical models were positively received as a realistic, patient-specific tool enhancing visualization of complex pathological anatomy, supporting their value in medical education.

'DOUGHNUT ROUNDS' TO PROMOTE SELF-DIRECTED LEARNING IN UNDERGRADUATE ANATOMY EDUCATION

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PRIMARY THEME: Innovative Teaching Learning Methods

PROPOSE: In today's constantly evolving landscape, self-directed learning (SDL) is being implemented into medical curricula to foster independent thinking, self-reliance and lifelong learning among undergraduate medical students.

Methods: In our cohort, we implemented the 'doughnut rounds' method as an SDL strategy in preclinical anatomy teaching. A total of 129 first-year medical students participated in a structured doughnut rounds session for revision of skull osteology ("All Normas"). A mixed-method design was implemented, utilizing a 5-point Likert scale questionnaire and an open-ended question to assess student perceptions.

RESULTS: The majority of the students (86.4%) found the method enjoyable and engaging, reporting improvement in anatomical knowledge, enhanced peer learning (81.1%), and improved confidence in explaining concepts. Thematic analysis revealed four overarching themes: positive experience and learning outcomes, collaborative learning, self-directed skill development, and structural and logistical challenges. Our findings highlight the method's effectiveness in knowledge consolidation, metacognitive awareness, and identification of learning gaps. Commonly reported challenges included insufficient rotation time and limited learning resources.

CONCLUSION: The doughnut rounds method proved to be a feasible, engaging, and student-centered pedagogical tool that promotes SDL, peer interaction, and metacognitive reflection in undergraduate medical education, warranting broader adoption across diverse anatomical and clinical teaching contexts.

KEYWORDS: Self- directed learning, Doughnut Rounds, Anatomy education

THREE-DIMENSIONAL MORPHOMETRIC ANALYSIS OF THE EXTERNAL AUDITORY CANAL USING SILICONE LUMINAL CASTS: ANATOMICAL INSIGHTS FOR OTOLOGIC SURGERY

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INTRODUCTION

The architecture of the external auditory canal (EAC), a complicated anatomical structure, is crucial for otologic evaluation, endoscopic ear surgery, the design of hearing aids, and the creation of ear moulds. Despite the widespread use of computed tomography (CT) for morphometric assessment of the EAC, there are still few three-dimensional cadaveric investigations utilizing silicone luminal casts. In this investigation, silicone plastinated luminal casts of the EAC were subjected to a thorough three-dimensional morphometric examination. The results were compared with previously published CT-based morphometric data.

MATERIALS AND METHODS

Forty embalmed adult cadavers (17 females and 23 male) were used in a prospective observational study. Industrial-grade silicone sealant was used to create silicone luminal castings from both external auditory canals. A digital Vernier calliper was used to measure the lengths of the anterior, posterior, superior, and inferior canal walls as well as the vertical and horizontal diameters at the lateral end, bony-cartilaginous junction, isthmus, and medial end of the EAC. The mean value was utilized for analysis after each parameter was measured three times. IBM SPSS Statistics was used for statistical analysis. The independent samples Student's t-test was used to compare male and female cadavers, and continuous variables were reported as mean $\pm$ standard deviation. Statistical significance was defined as a P value of less than 0.05.

RESULTS

The results will be presented during the presentation.

CONCLUSION

Accurate three-dimensional anatomical models of the external auditory canal and thorough morphometric evaluation are made possible by silicone plastinated luminal casts. The results of this study provide therapeutically significant anatomical information that could help otologic surgeons with preoperative planning, aid in the creation of ear moulds and hearing aids, and be useful teaching tools for anatomy and surgery.

SPINAL CORD EXPLORER: PROGRAMMATIC SVG AND CSS-BASED ANIMATING OF NEUROANATOMICAL TRACTS FOR MEDICAL VISUALIZATION

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INTRODUCTION

Introduction: Traditional neuroanatomy instruction relies heavily on static, two-dimensional diagrams that fail to convey the dynamic, directional nature of neural impulses. This spatial abstraction often leads to clinical localization difficulties. This study details the technical architecture and pipeline of "Spinal Cord Explorer," a lightweight web-based system designed to visualize real-time directional signal flow in spinal cord pathways using vector graphics and animated CSS strokes.

METHODS

Grounded in the ADDIE framework, the system was developed using React, Vite, Zustand, and Tailwind CSS. Major ascending and descending tract pathways were mapped as interactive SVG vector overlays. To represent physiological impulse directionality without heavy video assets, we engineered keyframe-driven CSS animations that modulate the stroke-dasharray and stroke-dashoffset properties of the path vectors. Smooth viewport transitions and simulated camera movements between localized spinal cross-sections and comprehensive central nervous system pathways were implemented using Framer Motion. The visual layers and quiz pathways are driven entirely by a static, client-side JSON model.

RESULTS

The pipeline successfully rendered key pathways, including the dorsal column-medial lemniscus, spinothalamic, and corticospinal tracts. By utilizing native web vector graphics and CSS-driven animations, the application achieved smooth performance across mobile and desktop viewports with a negligible rendering payload. The backend-free architecture requires no server-side computation or active database connections.

CONCLUSION

This design demonstrates that highly interactive, dynamic anatomical pathways can be programmatically rendered on standard browsers. Lightweight CSS vector animations represent a performant, scalable, and serverless alternative to static media and heavy 3D rendering engines in medical visualization.

IMPACT OF IMAGE-BASED PEER LEARNING WITH “JEOPARDY” QUIZ GAMIFICATION ON TEACHING AND LEARNING OSTEOLOGY FOR FIRST YEAR MEDICAL STUDENTS

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INTRODUCTION

Osteology is a fundamental component of anatomy education but can be challenging for first-year medical students due to the extensive anatomical details and terminology. Image-based peer learning and gamification may provide an engaging, student-centred approach to improve learning and participation.

AIM & OBJECTIVES

To compare osteology learning outcomes between traditional teaching and image-based peer learning integrated with “Jeopardy” quiz gamification, and to assess students’ perceptions of the intervention.

METHODS

A prospective interventional study was conducted among 150 first-year MBBS students (2025–26 batch). Students were divided into three batches, each further divided into two groups of 25. One group received traditional osteology teaching, while the other underwent image-based peer-assisted self-learning followed by an image-based “Jeopardy” quiz. Learning outcomes were assessed using an OSPE. Students’ perceptions were evaluated using a five-point Likert-scale questionnaire and open-ended questions. Quantitative data were analysed using descriptive statistics and an independent t-test, while qualitative responses underwent thematic content analysis.

RESULTS

Feedback from 141 students was highly positive. Students reported that the image bank facilitated understanding and revision, while peer learning with “Jeopardy” gamification enhanced engagement, motivation, and participation.

CONCLUSION

Image-based peer learning integrated with “Jeopardy” quiz gamification is a promising and engaging student-centred strategy for undergraduate osteology education and may be extended to other anatomy topics.

KEYWORDS

Osteology; Anatomy education; Gamification; Peer learning; Image-based learning; Jeopardy quiz; Medical students.

EXPLORING INTERNAL AUDITORY CANAL ANATOMY VIA ENDOSCOPIC TRANSCANAL APPROACHES: A SYSTEMATIC REVIEW

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BACKGROUND

The internal auditory canal (IAC) is a narrow neurovascular passage within the petrous temporal bone, but lacks standardization for its surgical accessibility. Transcanalendoscopic ear surgery (TEES) provides minimally invasive access, but the underlying anatomical evidence is dispersed across small cadaveric and clinical series. The study aims to systematically review the anatomical aspects and evidence on IAC morphometry, surgical landmarks, and canal specific exposure via TEES. Thus, a standardized framework shall be proposed for patient selection and safe navigation.

METHODS

This review was conducted using Boolean search strategy (IAC, endoscopy, transcanal approach, anatomy), identifying 15 records. In total, 8 articles met eligibility criteria and 7 were retained for data extraction. The findings were synthesized.

RESULTS

Included studies comprised 92 cadaveric temporal bones and 29 clinical patients (2012–2022). Three approaches namely, suprageniculate, transpromontorial, and infracochlear were reproducible. Combined access exposed 51–75% of IAC length and 22–40% of circumference, with working margins of ~4 mm from the carotid artery and ~6 mm from the jugular bulb. Only 43% of dissected specimens met anatomical criteria for hearing-preservation approaches.

DISCUSSION

These findings redefine "transcanal IAC access" as a selectable set of approaches rather than one technique, with candidacy dictated by tumour characteristics and residual hearing. Decade-spanning landmark consistency confirms anatomical reproducibility, supporting direct translation into surgical training and preoperative planning.

CONCLUSION

Endoscopic transcanal passage offer reproducible, landmark-guided IAC access, but requires preoperative CT-based selection. A prospective multicentric studies are needed.

KEYWORDS

Ear surgery, Schwannoma, Surgical anatomy, Skull base surgery, Endoscopy.

SUCCESSFUL ONGOING PREGNANCY FOLLOWING DONOR OOCYTE-DONOR SPERM IVF IN A CONSANGUINEOUS COUPLE WITH AN AUTOSOMAL RECESSIVE SINGLE-GENE DISORDER (GL1S3) AND RECURRENT NEONATAL DEATHS.

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BACKGROUND

Autosomal recessive single-gene disorders present a major reproductive challenge in consanguineous marriages, where both partners carry the same pathogenic variant, resulting in a 25% recurrence risk of an affected child in every pregnancy. First-degree consanguineous unions further increase the likelihood of shared deleterious genetic variants across the genome.

CASE SUMMARY

We report the case of a couple in a first-degree consanguineous marriage, both identified as carriers/affected with an autosomal recessive single-gene disorder (GL1S3). Their obstetric history included two neonatal deaths, each occurring within four weeks after birth due to the underlying genetic disorder, representing a severe bad obstetric history (BOH). Whole-genome exome sequencing was done for both neonates. Both neonates were found to be carriers for a single-gene disorder (GL1S3).

MANAGEMENT

The couple attended Fertility Centre, where detailed genetic counselling was provided regarding recurrence risk and available reproductive options. Following counselling, they opted for gamete donation using donor oocytes and donor sperm to avoid transmission of the autosomal recessive disorder completely. In vitro fertilisation with embryo transfer (IVF-ET) was subsequently performed using donor gametes.

OUTCOME

The treatment resulted in successful conception with an ongoing pregnancy unaffected by the parental genetic disorder, restoring hope after experiencing two previous neonatal losses.

CONCLUSION

This case emphasises the pivotal role of genetic counselling and assisted reproductive technology, particularly donor oocyte–donor sperm IVF, in preventing recurrence of autosomal recessive disorders among high-risk consanguineous couples with severe BOH. A multidisciplinary strategy combining clinical genetics and reproductive medicine can transform recurrent genetic loss into a healthy, disorder-free ongoing pregnancy, demonstrating the team's collaborative achievement.

KEYWORDS

Consanguinity, Autosomal recessive disorder, Single gene disorder, Genetic counselling, Donor oocyte, Donor sperm, IVF-ET, Bad obstetric history

CONGENITAL DIAPHRAGMATIC HERNIA AT 20 WEEKS: CORRELATING DEVELOPMENTAL ANATOMY, EMBRYOLOGICAL BASIS AND CLINICAL IMPLICATIONS.

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INTRODUCTION

Congenital diaphragmatic hernia (CDH) is a developmental anomaly resulting from defective formation of the diaphragm, commonly involving the posterolateral region. Failure of pleuroperitoneal canal closure permits abdominal viscera to herniate into the thoracic cavity, affecting pulmonary and mediastinal development. This study correlates the embryological basis of CDH with its anatomical manifestations and clinical relevance in a 20-week foetus.

METHODS

An evaluation was performed on a 20-week foetal specimen received in the Department of Anatomy following termination of pregnancy after antenatal detection of left-sided CDH. Ultrasonographic findings were reviewed, and the specimen was examined for the diaphragmatic defect, herniated viscera, pulmonary development and mediastinal relationships. Right lung area, observed/expected lung-to-head ratio (O/E LHR) and quantitative lung index-right (QLI-R) were documented.

RESULTS

Ultrasonography demonstrated left-sided diaphragmatic hernia with stomach and small bowel herniation into the left hemi thorax, producing mass effect on the developing lungs and rightward mediastinal shift. Right lung area was 189 mm²; observed LHR was 1.12 versus expected LHR of 1.6, with O/E LHR of 70%. QLI-R was 0.66. Both lungs showed normal echogenicity. The heart was displaced rightward, with the apex directed leftward. No pleural or pericardial effusion was observed. Anatomical examination demonstrated the diaphragmatic defect and corresponding visceral herniation.

CONCLUSION

Abnormal diaphragmatic development resulted in visceral herniation, thoracic crowding, mediastinal displacement and impaired pulmonary development. Correlation of prenatal findings with anatomical examination provides an opportunity to integrate embryology, gross anatomy and clinical relevance. The embryological basis, anatomical relationships and relevance of these findings to pulmonary development and foetal outcome will be elaborated during the presentation.

INCIDENTAL FINDING OF ABSENCE OF DORSAL PANCREATIC BUD WITH ASSOCIATED VASCULAR VARIATIONS: A CADAVERIC CASE REPORT

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INTRODUCTION

Partial or complete agenesis of pancreas is a rare congenital anomaly. There have been less than hundred reported cases in the existing literature. Most of the reported cases are incidental findings of radiological investigations.

METHODS

During the routine dissection of the abdomen, in a 70 year old male cadaver we noticed a variation in the morphology of pancreas, and coeliac trunk. We explored the associated relations of the same.

RESULTS

The head of the pancreas was enlarged, with absence of neck, body and tail. The main pancreatic duct was traced to termination at the major duodenal papilla with absence of minor pancreatic duct. Coeliac trunk presented with splenic, gastroduodenal and common hepatic as its main branches. Additionally there was an elongated process from the hilum of the liver.

CONCLUSION

Reported variation in the agenesis of pancreas is limited. Our findings include complete absence of the neck, body and tail of the pancreas along with the variation in the coeliac trunk. This anomaly could be explained due to the absence of the dorsal pancreatic bud. This variation is of clinical significance to endocrinologists, radiologists, gastroenterologists and transplant surgeons.

MORPHOLOGICAL SPECTRUM AND EMBRYOLOGICAL BASIS OF SIRENOMELIA(MERMAID SYNDROME): A RARE CASE REPORT

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BACKGROUND

Sirenomelia, colloquially known as Mermaid Syndrome, is an extremely rare and severe congenital anomaly characterized by complete or partial fusion of the lower extremities, sacrococcygeal agenesis, genitourinary and anorectal malformations. With an estimated incidence of 0.8 to 1 per 100,000 live births, it is typically fatal shortly after birth due to associated renal agenesis and pulmonary hypoplasia.

CASE REPORT

A 34-week-old stillborn fetus was found to have mermaid syndrome. The mother was 29 years old, and the stillborn fetus weighed 1900 grams. The mother had a history of diabetes and a non-consanguineous marriage. It displayed Potter's facies, which includes large infraorbital folds, a narrow slit-like mouth, a receding chin, a downward-curved nose, low-set dysplastic ears, and the absence of a thumb in the left hand, as well as a fusion of lower limbs with a single femur and a single tibia. There was only one vein and one artery in the umbilical cord.

The pathogenesis of sirenomelia is traced back to an aberration during early embryogenesis (around 3 to 4 weeks of gestation), disrupting the caudal segment of the primitive streak. Two primary theories explain its developmental mechanics: the Vascular Steal Hypothesis and Defective Blastogenesis.

CONCLUSION

Sirenomelia represents the lethal end of the caudal regression spectrum. Detailed anatomical dissection and reporting of such rare anomalies are vital for correlating structural malformations with early developmental milestones, thereby expanding our understanding of human teratology and embryogenesis.

KEYWORDS

Sirenomelia, Mermaid Syndrome, Caudal Regression, Vascular Steal Hypothesis, Renal Agenesis.

GENETIC COUNSELING OUTCOMES AMONG PARENTS OF CHILDREN WITH GLOBAL DEVELOPMENTAL DELAY: A RETROSPECTIVE OBSERVATIONAL STUDY

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INTRODUCTION

Global Developmental Delay (GDD) has various causes, with a genetic factor found in up to 50% of cases. While new genomic sequencing methods have speed up diagnoses, they also add complexity and confusion for families. This study aimed to assess the clinical and behavioral outcomes of genetic counseling for parents of pediatric patients diagnosed with GDD. We specifically looked at diagnostic yields, testing uptake, and parental decision-making.

METHODS

We conducted a retrospective observational analysis of forty (N=40) consecutive genetic counseling sessions at a referral center. We classified the sessions by clinical reason into: Post-Test (n=22), Preconceptional (n=11), and Pre-Test (n=7) counseling. We tracked primary outcomes such as genetic testing recommendations, parental uptake, the types of methods used, and the diagnostic results of completed genetic tests.

RESULTS

Of the 40 counseling sessions, post-test counseling made up the largest portion at 55.0%, followed by preconceptional at 27.5% and pre-test at 17.5%. We found a significant difference in parental uptake based on pre-analytical testing recommendations. For families advised to undergo preconceptional couple carrier screening, the uptake rate was 63.6% (7/11). In contrast, the uptake rate for index pediatric patients after pre-test counseling was only 28.6% (2/7). Among the post-test group with completed reports (n=22), the diagnostic results were 11 cases (50.0%) had a clear pathogenic or positive molecular diagnosis and 11 cases (50.0%) revealed complex Variants of Uncertain Significance (VUS), leading to intensive post-test psychological support and parental counselling.

CONCLUSION

Our findings show that while parents are ready for reproductive carrier screening, there are still major clinical and economic hurdles to take up testing for affected index patients. Additionally, the 50% VUS rate indicates a significant ongoing issue of genomic uncertainty. This highlights that as genomic sequencing for GDD becomes more common, genetic counseling needs to extend beyond single consultations. It should evolve into ongoing support to help in reduce parental anxiety, manage uncertain data, and facilitate the reinterpretation of variants over time.

KEYWORDS

Global Developmental Delay (GDD), Genetic Counseling, Variants of Uncertain Significance (VUS), Carrier Screening, Diagnostic Yield.

EXPLORING INTERNAL AUDITORY CANAL ANATOMY VIA ENDOSCOPIC TRANSCANAL APPROACHES: A SYSTEMATIC REVIEW

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BACKGROUND

The internal auditory canal (IAC) is a narrow neurovascular passage within the petrous temporal bone, but lacks standardization for its surgical accessibility. Transcanalendoscopic ear surgery (TEES) provides minimally invasive access, but the underlying anatomical evidence is dispersed across small cadaveric and clinical series. The study aims to systematically review the anatomical aspects and evidence on IAC morphometry, surgical landmarks, and canal specific exposure via TEES. Thus, a standardized framework shall be proposed for patient selection and safe navigation.

METHODS

This review was conducted using Boolean search strategy (IAC, endoscopy, transcanal approach, anatomy), identifying 15 records. In total, 8 articles met eligibility criteria and 7 were retained for data extraction. The findings were synthesized.

RESULTS

Included studies comprised 92 cadaveric temporal bones and 29 clinical patients (2012–2022). Three approaches namely, suprageniculate, transpromontorial, and infracochlear were reproducible. Combined access exposed 51–75% of IAC length and 22–40% of circumference, with working margins of ~4 mm from the carotid artery and ~6 mm from the jugular bulb. Only 43% of dissected specimens met anatomical criteria for hearing-preservation approaches.

DISCUSSION

These findings redefine "transcanal IAC access" as a selectable set of approaches rather than one technique, with candidacy dictated by tumour characteristics and residual hearing. Decade-spanning landmark consistency confirms anatomical reproducibility, supporting direct translation into surgical training and preoperative planning.

CONCLUSION

Endoscopic transcanal passage offer reproducible, landmark-guided IAC access, but requires preoperative CT-based selection. A prospective multicentric studies are needed.

KEYWORDS

Ear surgery, Schwannoma, Surgical anatomy, Skull base surgery, Endoscopy.

MORPHOMETRIC ANALYSIS OF ARTICULAR SURFACES OF TALUS

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INTRODUCTION

The talus is a key bone of the longitudinal arches of the foot and transmits body weight to the pillars of the arches. It forms the talocrural, subtalar and talocalcaneonavicular joints. Variations in its calcaneal articular facets are anatomically and clinically important.

METHODS

The study was conducted on 100 dry adult human tali of unknown age and sex in the Department of Anatomy, Nandi Medical College and Research Institute, Chikkaballapur. Each talus was examined for patterns of calcaneal articular facets. Length and width of the talus and length and width of the sulcus tali were measured using a digital vernier caliper. Calcaneal articular facets were classified into five morphological types.

RESULTS

Five types of calcaneal articular facets were observed. Type I had a single calcaneal facet; Type II had a single facet divided by a ridge into two parts; Type III had two facets separated partly by a ridge and partly by a groove; Type IV had two facets separated by a non-articular groove; and Type V had a single facet continuous with the posterior calcaneal facet. Talus and sulcus tali measurements were documented.

CONCLUSION

The study demonstrates variation in the morphometry and calcaneal articular facets of the talus. Knowledge of these variations is useful for understanding the anatomy of the ankle and subtalar joints and may assist in management of talar trauma, reconstructive procedures and talar implant planning.

KEYWORDS

Talus; Calcaneal articular facets; Sulcus tali; Morphometry; Dry bone; Ankle joint; Subtalar joint.

FLIPPED CLASSROOM IN LEARNING ANATOMY: PERCEPTION AND LEARNING OUTCOME OF FIRST YEAR MEDICAL STUDENTS

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INTRODUCTION

Flipped classroom comprises self-study, group discussions and watching videos to understand concepts, promoting active learning among undergraduate medical students. With increasing use of social media by tech-savvy learners, flipped classroom has been implemented to reinforce teaching and learning. This study assessed the perception and learning outcome of first year medical students regarding flipped classroom in Anatomy.

METHODS

This cross-sectional study was conducted in the Department of Anatomy, Nandi Medical College and Research Institute, Chikkaballapur, among first year MBBS students (n=150). Perception and challenges regarding the flipped classroom module were collected using a structured questionnaire administered through Google Forms. Formative assessment using multiple-choice questions was conducted before and after implementation of the module to assess learning outcome. Responses were analysed using appropriate statistical methods.

RESULTS

The study assessed students' perception of the flipped classroom, its challenges, and its effectiveness in improving understanding and retention of anatomical concepts. Pre- and post-module formative assessments were used to evaluate learning outcome. The findings were intended to determine the usefulness of flipped classroom as an active learning method and its role in complementing traditional didactic teaching.

CONCLUSION

Flipped classroom provides an active learning approach for first year medical students and may complement traditional didactic teaching. Assessment of students' perception and learning outcomes can help determine its usefulness in Anatomy education.

Keywords: Flipped classroom; Medical education; Anatomy; Active learning; Undergraduate medical students; Pre-class video.

ESTIMATION OF HEIGHT FROM PERCUTANEOUS TIBIAL LENGTH AMONG SOUTH INDIAN POPULATION

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INTRODUCTION

The origins of anthropometry are very ancient. As long ago as old Egypt and Greece. The word 'Anthropometry' was first used in the seventeenth century by a German physician J. Sigismund Elsholtz (1623-88).

METHODS

This present study was conducted on 300 medical and paramedical male students of Nandi medical college and research institute, Chikkaballapura, Karnataka. The age of the students ranged from 20-23 years who belonged to South Indian region. The length of the tibia is defined as the direct distance between the medial most superficial point on upper border of medial condyle and tip of the medial malleolus. The study subject was asked to sit with knee placed in the semi flexed position and the foot partly inverted to relax the soft tissues and facilitate bony landmarks prominent. Then ,the bony landmarks are measured with the help of spreading calipers. Further, the measurement is confirmed by using measuring tape. Height was measured by measuring crown to heel standing erect posture with anthropometer. Measurements of length of right and left tibia were taken separately for calculation. Statistical analysis was done using SPSS software.

RESULTS

Linear regression formula was derived for estimation of height from percutaneous length of right and left tibia.

$$Y1=94.5+1.8X1$$

$$Y2=88.55+1.95X2$$

Where, y1 and y2 are estimated heights from length of right and left tibia.

X1 and X2 represent the length of right and left tibia respectively.

CONCLUSION

Regression formula obtained can be used for the estimation of height from the tibia bone in South Indian population.

Keywords: Tibia, Stature, Forensic, Anthropology

ANATOMY OF MAXILLARY SINUS: CLINICAL AND FORENSIC PERSPECTIVES

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INTRODUCTION

The maxillary sinus is the largest paranasal sinus and occupies most of the body of the maxilla. Its close relationships with the orbit, nasal cavity, teeth, and neurovascular structures make it important in dental, otorhinolaryngological, radiological, surgical, and forensic practice. This review highlights its anatomy, development, variations, and clinical and forensic significance.

METHODS

A narrative anatomical review was undertaken using standard anatomy texts and clinically oriented literature. The location, dimensions, walls, relations, opening, blood and nerve supply, development, variations, and relevant clinical and forensic applications of the maxillary sinus were synthesized.

RESULTS

The maxillary sinus is pyramidal and lies within the body of the maxilla. Its roof is related to the orbit, floor to the alveolar process and roots of maxillary teeth, medial wall to the nasal cavity, and posterior wall to the pterygopalatine region. It opens into the middle meatus through the hiatus semilunaris. The sinus develops as an outgrowth of the lateral wall of the primitive nasal cavity and undergoes progressive pneumatization. Variations include differences in size and shape, septations, accessory ostia, hypoplasia, and asymmetry. These features are relevant to sinusitis, odontogenic infection, dental extraction, implant procedures, endoscopic sinus surgery, trauma, and radiological interpretation. Pneumatization and sinus morphology may also provide supportive information for age estimation, sex assessment, identification, and medico-legal evaluation of facial trauma.

CONCLUSION

Detailed knowledge of maxillary sinus anatomy and its variations is essential for safe clinical intervention and accurate imaging interpretation. Its anatomical relationships and morphological characteristics also make it valuable in selected forensic and medico-legal applications.

ANATOMICAL MAPPING OF THE TIBIAL NERVE BRANCHES AT ANKLE: MORPHOMETRIC AND TOPOGRAPHICAL STUDY

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BACKGROUND

Heel is often the source of pain complaints. In order to comprehend the clinical anatomy of heel pain, awareness of morphometry and topographical anatomy of the terminal branches of tibial nerve that includes -Medial plantar nerve, Lateral plantar nerve, Baxter's nerve & Medial calcaneal nerve is essential. Hence tracing and mapping these nerves in relation to the bony landmarks of the tarsal tunnel is necessary.

AIM & OBJECTIVES

To determine the morphometric characteristics & topographical anatomy of the terminal branches of tibial nerve at ankle with respect to tarsal tunnel.

METHOD

A descriptive observational study was conducted in the Department of Anatomy, Nandi Medical College and Research Institute; Chikkaballapura. 30 adult human cadaveric lower limbs were selected. The pattern of branches of tibial nerve was noted & measurements were performed according to the Dellon-McKinnon malleolar-calcaneal line (DML) & the Heimkes Triangle (HT). Mean and standard deviation were calculated for all the measurements. Pearson's correlation coefficient was used to determine the correlation between the parameters measured.

RESULTS

Length of DML line, distance between medial malleolus and the branches of tibial nerve along DML, distance from the tip of the medial process of the calcaneal tuberosity to the branches of tibial nerve, where they cross the Abductor hallucis was also measured & tabulated.

CONCLUSION

Being able to diagnose & treat entrapment neuropathy, one of the causes of tarsal tunnel syndrome & its clinical implications in sensory distribution, demands to conduct the above study.

KEYWORDS

Calcaneus, Medial malleolus, Tibial nerve, Tarsal tunnel

DEHA DĀNA IN AYURVEDIC CLASSICS: A CONCEPTUAL REVIEW AND ITS CORRELATION WITH MODERN BODY DONATION

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BACKGROUND

Deha Dāna (body donation) is an altruistic act that contributes to medical education and research. Although the term is not explicitly mentioned in classical Ayurvedic texts, the Sushruta Samhita advocates cadaveric dissection for anatomical and surgical training, reflecting the principles of selfless service and societal welfare. This study aimed to explore the concept of Deha Dāna in Ayurvedic classics and correlate it with the contemporary practice of body donation.

METHODS

A narrative review was conducted by examining classical Ayurvedic texts for concepts related to cadaveric dissection, selfless service, and the use of the human body for medical education. Contemporary legal provisions, ethical principles, and practices related to body donation were also reviewed to establish their conceptual correlation with classical Ayurvedic literature.

RESULTS

The review identified a clear conceptual relationship between the principles described in classical Ayurvedic literature and the modern practice of voluntary body donation. The analysis highlighted the importance of cadaveric dissection in medical education, the ethical values of selfless service and social responsibility, and the continued relevance of these principles in promoting awareness and acceptance of body donation among healthcare professionals and the general public.

CONCLUSION

Classical Ayurvedic literature provides a philosophical foundation for the concept of body donation through its emphasis on knowledge, service, and societal welfare. Correlating these traditional concepts with contemporary body donation practices can strengthen public awareness, encourage voluntary body donation, and reinforce ethical values in medical education.

KEYWORDS

Deha Dāna, Ayurveda, Sushruta Samhita, Body Donation, Cadaveric Dissection, Medical Ethics

A MORPHOMETRIC STUDY OF GRACILIS AND SEMITENDINOSUS MUSCLES AND ITS VASCULAR PEDICLES: A CADAVERIC STUDY

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INTRODUCTION

Gracilis and semitendinosus are widely used in reconstructive surgery because of their accessibility and minimal donor-site morbidity. Their tendons are commonly used as autografts for anterior cruciate ligament reconstruction, while their well-developed vascular and nerve supply makes the muscle bellies useful in reconstructive procedures.

AIM & OBJECTIVES

- 1. To study the morphometry of gracilis and semitendinosus muscle bellies, tendons, and vascular pedicles.**
- 2. To assess the correlation between tendon length and cross-sectional area, and between muscle belly length and width.**

MATERIALS & METHODS

A cross-sectional cadaveric study was conducted on 32 lower-limb specimens preserved in the Department of Anatomy, Ramaiah Medical College. The length and maximum width of the muscle bellies, tendon length and maximum cross-sectional area, vascular pedicle length, and number of vascular pedicles were measured using a measuring tape and vernier caliper. The data were statistically analysed.

RESULTS

Gracilis showed a mean total muscle length of 46.20 ± 3.36 cm, distal tendon length of 11.30 ± 2.70 cm, and primary vascular pedicle distance of 10.85 ± 2.10 cm. Semitendinosus showed corresponding values of 45.24 ± 3.38 cm, 12.00 ± 2.60 cm, and 8.39 ± 2.99 cm. The tendon cross-sectional area was greater in semitendinosus (12.75 ± 3.52 mm²) than gracilis (5.90 ± 2.05 mm²). Significant correlations were observed among muscle dimensions and vascular pedicle parameters.

IMPLICATIONS

Knowledge of morphometric variations and vascular anatomy may assist surgeons in graft selection and reconstructive planning, potentially reducing intraoperative and postoperative complications.

RARE VARIANT OF ARCUS AXILLARIS, A REMNANT OF PANNICULUS CARNEUS OBSERVED IN AN EMBALMED ADULT CADAVER

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INTRODUCTION

We report an uncommon case of 'axillary arch muscle', which was observed during the routine dissection of right upper extremity of a female cadaver.

METHODS

A musculotendinous slip, which originated from the longer head of the triceps brachii muscle blended to the tendon of the latissimus dorsi muscle. The morphological variant of axillary arch muscle inserting to the triceps brachii is extremely rare in the scientific literature, though it is common to observe it attaching to the other muscles of arm.

RESULTS

The arcus axillaris of the present case measured 90 mm in length and 44 mm, 35 mm, 40 mm in width at the attachment to the latissimus dorsi muscle, midpoint and triceps brachii respectively.

CONCLUSION

Reporting this muscular variation will add into the scientific literature in understanding the conditions like nerve entrapment of branches of brachial plexus and thoracic outlet syndrome. It is also of help to the orthopaedic and plastic surgeons, while performing the procedures like tendon transfer procedures by using the latissimus dorsi muscle flap. The morphological detail of this muscular variation is also essential to the physiotherapist as this variant muscle could restrict the movements of shoulder joint.

OSSIFICATION OF THE ANTERIOR LONGITUDINAL LIGAMENT OF THE THORACIC VERTEBRAE AND ITS ASSOCIATION WITH FORESTIER'S DISEASE: A CASE REPORT

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BACKGROUND

The thoracic vertebral column consists of 12 vertebrae; the vertebral bodies are connected by the strong anterior and posterior longitudinal ligaments, which attach to the anterior and posterior surfaces of the vertebral bodies. The anterior longitudinal ligament is a strong flat band extending from the anterior surface of the body of the second cervical vertebra (axis) to the anterior surface of the sacrum. It is thickest in the thoracic region. The ossification of the anterior longitudinal ligament in the thoracic vertebral bodies is highly indicative of Forestier's disease, also known as DISH. Meyer et al coined DISH as "Moniliform Hyperostosis" of the thoracic spine: hyperostosis and calcification.

AIM

To report a rare fusion of the thoracic vertebrae due to ossification of the anterior longitudinal ligament and to highlight the anatomical & clinical insight.

CASE PRESENTATION/OBSERVATION

During a routine osteology class for undergraduate medical students on the thoracic cage, it was observed that the bodies of the thoracic vertebrae were fused, and the anterior longitudinal ligament was fused and completely ossified. This ossified thick band extended from the anterior surface of the bodies of T1 to T8. The ossified band of anterior longitudinal ligament had a characteristic appearance of "candle wax dripping down from the spine".

CONCLUSION

The incidental detection of the ossification of the longitudinal ligaments of the thoracic vertebrae plays a very important role in radiographic and metabolic evaluation. It should be diagnosed early to preserve spine flexibility and to prevent any neurological deficits.

KEYWORDS

Ossification of thoracic vertebrae; hyperostosis of vertebrae; DISH; Forestier's disease.

MORPHOMETRY OF THE MENISCI OF KNEE JOINT AND THEIR RELATIONS WITH THE CRUCIATE LIGAMENTS IN ADULT HUMAN CADAVER

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INTRODUCTION

The knee joint is a large synovial joint of condylar variety that is supported by medial and lateral menisci lying adjacent to anterior and posterior cruciate ligaments. Knowledge about precise anatomical attachments of menisci and inter-meniscal ligaments is crucial for preventing iatrogenic injury during knee surgery. This study aims to describe the morphometry of medial and lateral menisci of knee joint and their proximity with the cruciate ligaments in left and right knees.

METHODS

An observational, cross-sectional descriptive study was conducted on 40 unpaired adult cadaveric knees (20 right and 20 left). The outer circumference, width, thickness, and surface areas of the menisci along with distance between the attachments of cruciate ligaments and meniscal roots were measured. Results were analysed using Samples t-test to assess the significance of difference between left and right knees.

RESULTS

The medial meniscus was found to have a greater length and surface area in both knees. A gradual anteroposterior increase in width and thickness was observed in the menisci. The anterior root of the lateral meniscus was observed to be the closest to ACL, and was noted to have a statistically significant difference when comparing between left and right knees.

CONCLUSIONS

The relations between meniscal roots and cruciate ligaments were confirmed, with minimal variation between the right and left knees. These observations offer crucial information that can aid surgeons in arthroscopic procedures and in refining surgical techniques for meniscal and ligament repair or reconstruction.

KEYWORDS

Meniscus; Morphometry; Knee joint; Cruciate ligaments; Arthroscopy.

STUDY ON ESTIMATION OF LENGTH OF FEMUR FROM ITS DISTAL SEGMENTS .

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INTRODUCTION

Stature is an important parameter for the identification of individual which can be determined by measurements of long bones like tibia and femur of which Femur has highest correlation with the stature.Studies have shown that total length of bone can be estimated from the fragments of the bone by population specific regression equation.

AIM AND OBJECTIVES

To estimate the total length of the femur from Dimensions distalsegment by regression equation

MATERIAL AND METHODS

The study was conducted on 200 adult Femur bones -100 right and 100 left, in Department of Anatomy ,ssmc.the total length , width between two epi condyles, anterior posterior length of Medial condyle and lateral condyle, and width of intercondylar notch were mrasured

RESULTS

The length of the femur is correlated significantly with the dimensions of distal segment of femur.

CONCLUSION

This study will be useful for anthropolologists ,archaeologists,and forensic investigators for determining the length of Femur and thereby stature and individual

MORPHOLOGICAL AND MORPHOMETRIC STUDY ON SUPRAORBITAL FORAMEN IN HUMAN DRY SKULL

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INTRODUCTION

Supraorbital foramen (SOF) or notch is present at the junction of lateral two-third and medial one third of supraorbital margin. In some cases, supraorbital notch is converted into foramen by ossification of periosteal ligament bridging it. The aim of the present study was to analyze the morphological and morphometry of supra orbital notch and foramen in south Indian skulls.

MATERIALS AND METHODS

The study was done in 40 dry skulls. The occurrence of supraorbital foramen/notch is examined in those skulls. The distance between the supraorbital foramen/notch from nasal midline and frontozygomatic suture and its horizontal and vertical diameter is measured using a Vernier Caliper. Also, any accessory foramina present noted and if present, its location in relation with the main foramen/notch was noted.

RESULTS

The distance of SOF/SON from nasal midline on the right was ranging from 18.57 to 37.1 mm and on the left the range was 19.3 to 36.6mm. The vertical and horizontal diameter of SOF on both the sides of the skull was tabulated and analyzed. Around 38% of skulls showed accessory foramina.

CONCLUSION

The study helps to determine the precise location, morphometry of supraorbital foramen or notch, also variation of accessory foramina in relation to various anatomical structures which is essential for performing invasive surgical procedures involving anesthetic and therapeutic procedures.

MORPHOMETRIC DETERMINATION OF SEX OF THE HYOID BONE

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INTRODUCTION

Sex determination from skeletal remains is important in forensic identification. The hyoid bone exhibits sexual dimorphism and may assist sex estimation from isolated skeletal remains. This study aimed to evaluate morphometric differences of the hyoid bone between males and females in a South Indian population

MATERIALS & METHODS

Sixty hyoid bones (30 male and 30 female) from cadavers aged 19–80 years were studied. Damaged specimens from hanging and strangulation cases were excluded. After dissection and drying, nine parameters were measured using a digital Vernier calliper: breadth, length, major transverse axis, body length, left and right greater cornua lengths, total left and right hyoid lengths, and maximum body height. Hyoid weight was also recorded. Measurements were compared between sexes

RESULTS

All ten parameters were higher in males than females. Mean breadth was 39.08 ± 7.74 mm in males and 36.10 ± 7.21 mm in females. Mean hyoid length was 35.15 ± 3.15 mm versus 33.35 ± 5.85 mm, and major transverse axis was 37.41 ± 6.79 mm versus 35.69 ± 6.70 mm, respectively. Mean body length was 21.09 ± 3.21 mm in males and 19.18 ± 2.52 mm in females. Body height was 10.09 ± 1.40 mm versus 9.55 ± 1.03 mm. Weight was 1.53 ± 0.50 g in males and 0.90 ± 0.19 g in females. Most parameters showed statistically significant sex differences.

CONCLUSION

The hyoid demonstrates sexual dimorphism, with males having greater dimensions and weight. A combination of morphometric parameters may assist forensic sex estimation from isolated hyoid bones; reliance on a single parameter is less satisfactory.

SEXUAL DIMORPHISM WITH THE SHAPE OF THE HYOID BONE

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INTRODUCTION

The hyoid bone is of forensic importance because its shape may influence susceptibility to fracture during neck compression, strangulation, hanging, and other trauma. Distinguishing normal anatomical variation from fracture is important in forensic examination. This study aimed to assess the relationship between sex and hyoid bone shape and determine whether shape can assist forensic sex differentiation

MATERIALS & METHODS

The study included 60 hyoid bones obtained from medico-legal postmortems conducted in the Department of Forensic Medicine, Government Medical College, Mysore. The bones were carefully dissected, preserving the lesser cornua, completely dried, numbered, and examined. Each specimen was classified according to its overall shape. Shape patterns were tabulated and compared between males and females to evaluate sexual dimorphism.

RESULTS

Among the 60 hyoid bones examined, the U-shaped type was most common in males, whereas the deviated type was most common in females. The V-shaped configuration was least common among males, while the boat-shaped configuration was least common among females. These findings demonstrate differences in the distribution of hyoid bone shapes between the sexes.

CONCLUSION

The study demonstrates sexual dimorphism in hyoid bone shape, with U-shaped bones predominating in males and deviated-shaped bones predominating in females. Assessment of hyoid shape may provide supportive information for forensic sex differentiation, particularly when skeletal remains are decomposed and soft-tissue evidence is unavailable. Hyoid morphology should be interpreted alongside other forensic findings rather than as an isolated criterion

MORPHOMETRY AND VARIABILITY OF SULCO- GYRAL PATTERN OF ORBITOFRONTAL CORTEX IN HUMAN CADAVER

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INTRODUCTION

Basal surface of the frontal lobe is called as orbitofrontal cortex which is essential for decision making, reward process & emotional processing. It consist of various sulci like olfactory sulcus, orbital medial, lateral and transverse sulci forming four types of sulcal patterns. These patterns are associated with various psychiatric disorders, autism and emotion-related impulsivity.

MATERIAL AND METHODS

A cross sectional study was performed on 30 cadaveric cerebral hemispheres. Shape, length and different patterns of sulci were noted & measured using vernier calliper, thread and scale.

RESULTS

Type I pattern was seen in 8(31%) specimens, type II in 12(46%) specimens, Type III in 2 (8)specimens and type IV in1(4%)specimen. The intermediate orbital sulcus was seen in half of the cases and most common shape was seen as straight type.

CONCLUSION

Type II pattern was found predominant in the present study which is observed in patients with increased risk of developing pathological gambling, addictive behaviour and schizophrenia.Knowledge of different types of orbitofrontal sulcal patterns and their association with various psychiatric disorders will be helpful for clinicians.

KEYWORDS

Orbitofrontal cortex, Medial orbital sulcus, Lateral orbital sulcus, Types

THORACIC TARLOV CYST AT T11-T12 PRESENTING AS CHRONIC BACK PAIN WITH RADICULOPATHY IN A YOUNG ADULT: A RARE CASE REPORT

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INTRODUCTION

Tarlov cysts, also known as perineural cysts, are cerebrospinal fluid-filled dilatations of nerve root sheaths, most located in the sacral region. Symptomatic thoracic Tarlov cysts are exceedingly rare and often present a diagnostic challenge due to nonspecific clinical features. Symptomatic cysts are relatively uncommon and are typically associated with sacral nerve roots. Thoracic perineural cysts are exceedingly rare, with only a limited number of cases described in the literature

CASE PRESENTATION

We report the case of a 26-year-old male presenting with chronic mid-back pain and intermittent radicular symptoms radiating to the left thigh for six months. There was no history of trauma, systemic illness, or neurological deficit. Clinical examination revealed localized paraspinal tenderness at the T12 level. Plain radiographs were unremarkable. Magnetic resonance imaging (MRI) demonstrated a well-defined cerebrospinal fluid-intensity lesion arising from the left neural foramina at the T11-T12 level, consistent with a perineural (Tarlov) cyst. The patient was managed conservatively with analgesics and activity modification, with a plan for surgical intervention if symptoms persisted. A short-term follow-up, symptoms were controlled with conservative management, and the patient remained neurologically intact.

CONCLUSION

Thoracic Tarlov cysts, although rare, should be considered in patients presenting with unexplained back pain and radiculopathy. MRI plays a crucial role in diagnosis, and management should be individualized based on symptom severity. This case highlights the importance of recognizing atypical thoracic presentations of Tarlov cysts and adopting a structured diagnostic and management approach.

KEYWORDS

Tarlov cyst; Perineural cyst; Thoracic spine; Radiculopathy; MRI

ABDOMINAL ADIPOSE TISSUE AS A METABOLIC NEXUS: MORPHOMETRIC AND MOLECULAR INSIGHTS INTO TYPE 2 DIABETES MELLITUS

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Type-2 diabetes mellitus (T2DM) is a complex metabolic disease characterized by insulin resistance (IR) and hyperglycaemia. IR is marked by diminished tissue response to the circulating insulin. Skeletal muscle, liver and abdominal adipose tissue are the principal target organs where insulin resistance develops. Abdominal adipose tissue (AAT) is a metabolically active endocrine organ that undergoes remodelling and secretes numerous adipokines during calorie excess state and sedentary life style. These changes are attributed to IR, T2DM and metabolic syndrome. A substantial portion of Indians exhibit IR, and with adverse metabolic profile with optimum BMI. Consequently, individuals of Indian ethnicity possess a higher proportion of AAT than their Western counterparts with comparable to age, gender and blood glucose concentrations. This distinctive body composition contributes to an increased susceptibility to IR and T2DM.

The current hospital-based comparative study was intended to investigate the relationship between AAT morphology, metabolic parameters, and extracellular matrix alterations in individuals with and without T2DM. The study was approved by Institutional Ethics committee of SDM Medical college and Hospital, Dharwad India. Adult patients undergoing elective abdominal surgical procedures were recruited and categorized into diabetic and non-diabetic groups. During the surgery abdominal adipose tissue was collected from the region deep to abdominal skin (Subcutaneous fat) and Omental fat (Visceral fat) which was subjected for histomorphometric evaluation. Clinical and anthropometric parameters such as body mass index (BMI), waist, hip diameters and neck circumference were recorded. Fasting Blood samples were collected to estimate the fasting insulin and resistin levels. Total collagen and Collagen VI alpha (COL6A), were also measured in the AAT by appropriate laboratory methods.

Clinical and anthropometric data were recorded. Through the integrated approach of anthropometric, cellular and biochemical parameters we aimed to collectively understand the role of structural changes in AAT and their implications in glucose homeostasis among the T2DM patients.

BILATERAL EXTENSOR DIGITORUM BREVIS MANUS TYPE III: ACADAVERIC CASE REPORT

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INTRODUCTION

The extensor digitorum brevis manus (EDBM) is a rare accessory extensor muscle of the dorsum of the hand with a reported prevalence of approximately 2–3%. Located within the fourth extensor compartment beneath the extensor retinaculum, it represents a developmental remnant of the primitive extensor muscle mass. Although usually asymptomatic, EDBM may present as a dorsal wrist swelling or chronic wrist pain and may be mistaken for ganglion cysts or other soft tissue lesions. This case report documents this rare anatomical variation and highlights its clinical importance.

METHODS

During routine cadaveric dissection of an embalmed adult male cadaver in the Department of Anatomy St. Johns medical college, an accessory extensor muscle was identified on the dorsum of both hands. The muscle was carefully dissected, and its morphology, origin, insertion and relation to adjacent extensor tendons were documented and compared with available literature.

RESULTS

An accessory muscle consistent with EDBM was identified on the dorsum of both hands. The muscles were located in the 4th compartment and inserted into the side of the middle tendon of extensor digitorum in both hands. Recognition of this variation is important because of its potential association with dorsal wrist swelling, and implications for radiological interpretation, tendon transfer procedures, and hand surgery.

CONCLUSION

Cadaveric identification of EDBM contributes to the understanding of anatomical variations of the extensor compartment. Awareness of this rare muscle is essential for anatomists, radiologists, and hand surgeons to avoid diagnostic errors and facilitate safe surgical planning.

Campomelic dysplasia: a case report

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INTRODUCTION

Campomelic/Camptomelic dysplasia is a very rare, severe osteochondrodysplasia characterised by severe skeletal and Nonskeletal malformations and lethal outcome mainly in neonatal period. Campomelic dysplasia is a rare, sporadic, autosomal dominant syndrome with variable penetrance and expressivity. Patients present with dwarfism and severe skeletal dysplasia and this syndrome is associated with poor survival, primarily due to respiratory insufficiency. Patients suffer from craniocervical instability, hypoplastic thoracic pedicles, and progressive cervico-thoracic and lumbar kyphoscoliosis.

We report the case of a male abortus. 26-year-old woman (G3P2L1) with no significant medical history, carried the pregnancy upto 23 weeks of gestation with a variable fetal presentation. Delivery performed by foleys induction, resulted in expulsion of male abortus of 420 gms. Objectives: To study a rare Campomelic dysplasia: a case report.

MATERIALS AND METHODS

During routine foetal autopsies conducted in the department of Anatomy, Mysore Medical College and Research Institute, Mysuru, a rare interesting case of 23 weeks male fetus weighing 420 gms with multiple congenital anomalies was observed.

OBSERVATION AND RESULT

Clinical examination revealed Kypho-scoliotic defects of spine, Micrognathia, Hypoplastic chest.

CONCLUSION

Campomelic dysplasia is a rare, sporadic, autosomal dominant syndrome that presents with potentially severe skeletal deformities and respiratory insufficiency. These birth defects are associated with substantial morbidity & economic burden. It is important to distinguish lethal skeletal dysplasias. The prognosis is generally poor, with most infants being stillborn or dying soon after birth. To prevent the disorder genetic counselling is necessary prior to starting a family.

MORPHOMETRIC EVALUATION OF THE FORAMEN ROTUNDUM AND ITS SPATIAL RELATIONSHIP TO THE HYPOPHYSEAL FOSSA AND MIDDLE CLINOID PROCESS: A DRY SKULL STUDY WITH CLINICAL IMPLICATIONS

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OBJECTIVE

The foramen rotundum and hypophyseal fossa are anatomically adjacent structures within the sphenoid bone with significant clinical relevance for skull base pathology and neurosurgery. This study aims to provide comprehensive morphometric data and elucidate the anatomical relationships between these structures.

MATERIAL AND METHODS

Thirty-five well-preserved dry human skulls of unknown sex were examined. The foramen rotundum was measured bilaterally using digital Vernier calipers in two dimensions: antero-posterior and transverse diameters. The distance from the middle clinoid process to the foramen rotundum was also measured to establish spatial relationships.

RESULTS

The foramen rotundum demonstrated predominantly circular to oval morphology. Mean transverse diameter (right: 4.07 ± 0.79 mm; left: 4.62 ± 0.81 mm) and antero-posterior diameter (right: 3.26 ± 0.75 mm; left: 3.33 ± 0.74 mm) showed significant asymmetry, with the right foramen being consistently smaller. Distance from middle clinoid process to foramen rotundum measured 12.44 ± 1.8 mm (right) and 13.47 ± 1.94 mm (left). Anatomical variations included accessory foramina (5.7%) and foramen duplication (2.85%).

CONCLUSION

These morphometric data establish clinically relevant reference standards for skull base procedures and interventional pain management. Documenting right-sided foramen narrowing provides a potential anatomical explanation for the higher observed incidence of right-sided trigeminal neuralgia. Additionally, measuring the middle clinoid process to foramen rotundum distance (right: 12.44 ± 1.8 mm; left: 13.47 ± 1.94 mm) fills a key literature gap previously recorded by only Dr. Purohit et al. (2024). These findings directly aid neurosurgeons, otolaryngologists, radiologists, and pain specialists.

MICROSURGICAL ANATOMY & MORPHOMETRIC EVALUATION OF THE POSTEROLATERAL (GLASSCOCK'S) MIDDLE CRANIAL FOSSA TRIANGLE

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INTRODUCTION

The posterolateral (Glasscock's) triangle is a crucial middle cranial fossa surgical corridor used to access the horizontal intrapetrous segment of the internal carotid artery (ICA) and deep-seated petroclival lesions like meningiomas and schwannomas. Quantitative anatomical parameters of this space are critical to optimize surgical outcomes, safely drill bone, and minimize iatrogenic neurovascular injuries.

METHODOLOGY

In this cross-sectional study, 12 adult cadaveric specimens were dissected. Posterolateral triangle was photographed and boundaries were measured using a ImageJ. The medial border was measured from the greater superficial petrosal nerve (GSPN) crossing point under the mandibular nerve (V3) to the foramen spinosum. The lateral border extended from the foramen spinosum to the arcuate eminence, and the base was the GSPN from the arcuate eminence to its V3 crossing point. Areas were subsequently calculated.

RESULTS

Combined mean measurements were: medial border 5.74 ± 0.92 mm, lateral border 15.58 ± 2.74 mm, base 16.12 ± 2.81 mm, and area 36.54 ± 12.8 mm². Right-side values were 5.80 ± 1.12 mm (medial), 15.88 ± 2.82 mm (lateral), 16.77 ± 3.27 mm (base), and 33.02 ± 13.2 mm² (area). Left-side parameters were 5.68 ± 0.72 mm, 15.28 ± 2.66 mm, 16.36 ± 2.8 mm, and 40.1 ± 12.4 mm², respectively. No significant differences were observed between right and left sides ($p > 0.05$).

CONCLUSION

The posterolateral triangle displays high morphometric symmetry. Precise baseline data of this space is essential for planning skull base surgeries, ensuring safe petrous bone drilling, and avoiding catastrophic vascular and neural complications.

MORPHOLOGICAL ANALYSIS OF SUPRASCAPULAR NOTCH WITH SAFE ZONE MEASUREMENTS IN DRY SCAPULAE: SURGICAL IMPLICATIONS FOR SHOULDER PROCEDURES

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INTRODUCTION

The suprascapular notch is located on the lateral part of the superior border of the scapula. It is bridged by the superior transverse scapular ligament, above which the suprascapular artery passes and below which the suprascapular nerve travels to reach the supraspinous fossa. The suprascapular nerve supplies the supraspinatus and continues through the spinoglenoid notch to reach the posterior shoulder region and supplies the infraspinatus muscle. Due to this close anatomical relationship, morphological variation of the notch predisposes to suprascapular nerve entrapment neuropathy. Additionally, the nerve is at risk of iatrogenic injury during shoulder procedures, potentially causing shoulder pain and muscle paralysis.

METHODS

A cross-sectional observational study was conducted on 99 dry scapulae obtained from the Departments of Anatomy, GIMS and ESIC Medical College, Kalaburagi. Notch morphology was classified using Rengachary's six-type classification system. Notch dimensions including superior transverse diameter (STD), middle transverse diameter (MTD) and maximum depth (MD) were measured using a digital Vernier calliper, except in Type I and Type IV where these dimensions are not measurable. Safe zone distances M1 (posterior limit) and M2 (posterosuperior limit) were recorded for surgical reference. No selection criteria based on age, sex or sidedness were applied.

RESULTS

Of 99 scapulae examined, Type III (U-shaped) was the most common (n=53, 53.5%), followed by Type I (n=23, 23.2%), Type IV (n=9, 9.1%), Type II (n=7, 7.1%), Type VI (n=6, 6.1%) and Type V (n=1, 1.0%). Complete ossification of the STSL was found in 7 specimens (7.1%) and partial ossification in 1 specimen (1.0%). The mean posterior safe zone distance M1 was 20.17 ± 6.89 mm and mean posterosuperior safe zone M2 was 27.99 ± 5.81 mm. Notch dimensions differed significantly across measurable Rengachary types. No significant correlation was found between scapular width and safe zone distance ($r = 0.15$)

CONCLUSION

Type III (U-shaped) notch was the most common morphology (53.5%) with STSL ossification identified in 8 specimens (8.1%). No significant differences were observed between right and left sided scapulae. Scapular width showed weak correlation with safe zone distance ($r = 0.15$), indicating these are structurally independent — surgeons cannot assume a wider scapula guarantees a safer operative field during shoulder procedures.

MORPHOLOGICAL VARIATIONS AND VERTEBRAL RELATIONS OF THE LUMBAR SYMPATHETIC CHAIN: A CADAVERIC STUDY

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INTRODUCTION

Standard textbooks depict a symmetrical, predictable lumbar sympathetic chain, but clinical reality shows extreme anatomical variability, often leading to incomplete sympathetic blocks, genitofemoral neuritis, or inadvertent avulsion of the L1 ganglion. We aimed to study the detailed anatomy of lumbar sympathetic ganglia—their number, vertebral level, and the entry/exit points of the trunk—to improve procedural safety.

METHODS

This cadaveric cross-sectional study was conducted in the Department of Anatomy, SSIMSRC, and affiliated institutions across Tumkur and Bengaluru, using 63 formalin-embalmed adult cadavers with intact retroperitoneal structures. Cadavers with prior surgeries or lumbar deformities were excluded. Following detailed retroperitoneal dissection, the lumbar sympathetic chain was traced from its entry to its sacral exit, with ganglion number and vertebral-level positions recorded. Data were summarized as mean $\pm$ SD (ganglion number) and frequencies/percentages (entry, exit, and positional variables).

RESULTS

The modal ganglion count was 4 on the right in both males (65%) and females (68%); on the left, 4 was most common in males (60.5%), while females showed near-equal distribution between 3 (48%) and 4 (47.6%). The trunk consistently entered lateral to the diaphragmatic crus (right 95%, left 90.5%) and exited via the sacral ala (57.1%) or sacral promontory (42.9%). The first ganglion most commonly lay at the L1/L2 or L2/L3 disc level; subsequent ganglia were localized to L3 (lower), L4 (upper), and L5 (upper) levels.

CONCLUSION

With an average of 4 ganglia, the L1/L2 and L2/L3 disc levels represent the most reliable approach for sympathetic ganglion localization. Awareness of these variations is essential to avoid complications during multi-level ganglion blocks, including L1 ganglion avulsion and genitofemoral neuritis.

TITLE- MORPHOLOGY OF THE ANATOMICAL SNUFF BOX AND ITS CONTENTS: A CADAVERIC STUDY WITH CLINICAL IMPLICATIONS FOR DISTAL TRANSRADIAL ACCESS

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INTRODUCTION

The anatomical snuff box is an important anatomical region and has gained increasing clinical relevance with the use of distal transradial access for coronary angiography and intervention. Variations in the distal radial artery, superficial radial nerve, surrounding tendons, and first dorsal interosseous interval may influence vascular access and the risk of neurovascular injury. This study aims to document the morphology and anatomical variations of these structures in the anatomical snuff box.

METHODS

A descriptive cadaveric study will be conducted on adult upper limbs. Dissection will be restricted to the anatomical snuff box and adjacent first dorsal interosseous interval. The distal radial artery will be assessed for external diameter, course, and branching pattern. The superficial radial nerve will be evaluated for the number and pattern of branches, distance from the radial styloid to its first bifurcation, and relationship with the cephalic vein. Variations in the abductor pollicis longus and extensor pollicis brevis and extensor pollicis longus tendons will be documented, including accessory slips and fusion patterns. The first dorsal interosseous interval will be examined for its morphology, dimensions, and muscular or fibrous variations.

RESULTS

The study will document the frequency and patterns of vascular, neural, tendinous, and muscular variations and their relationships within the anatomical snuff box. Side-wise comparison of morphometric parameters will also be performed.

CONCLUSION

The study is expected to provide clinically relevant anatomical data regarding the distal radial artery and its surrounding structures, contributing to improved understanding of anatomical variations relevant to distal transradial access and procedures involving the wrist and hand.

COMPARATIVE ANALYSIS OF HISTOMORPHOMETRY OF SA NODE & AV NODE - IN HEALTH & DISEASE

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INTRODUCTION

Conducting system of heart is a group of specialized cardiac myocytes that can initiate, transmit and co-ordinate contraction of the heart muscle. Disorders of the heart are the leading cause of death globally, killing an estimated 17.9 million people each year with disorders of the conducting system forming nearly 12.6% of it. Sinoatrial (SA) node is the pace maker of the heart generating impulses at a rate of 60–100 beats per minute. These are transmitted to the AV node. AV node transmits these impulses to the ventricles. Nodal dysfunction can lead to heart failure. This study aims to quantify the cardiac myocytes in SA node & AV node and compare the histomorphometry of cardiac myocytes of the conducting system in health & disease.

MATERIALS & METHODS

Heart tissue samples collected from two autopsied hearts of a healthy and an unhealthy patient were used for this study. The tissues were processed using H&E staining. 160 optical fields were used for comparison and stereological image analysis methods were used. The morphometry of the slides was compared and analyzed.

RESULTS

The morphometric parameters such as shape of cells, staining and distribution in the tissue samples of two regions of heart were compared and reported.

CONCLUSION

Histological and cytological studies of the heart are necessary for diagnostic purposes, assessment of allograft rejection after a cardiac transplant, or evaluation of the effect of drug toxicity on the heart.

ANATOMICAL STUDIES OF LUMBAR SYMPATHETIC TRUNK IN GLOBAL RESEARCH: A BIBLIOMETRIC ANALYSIS (1984-2026) using R & VOSviewer

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BACKGROUND

The lumbar sympathetic trunk (LST) is an important component of the sympathetic nervous system and has both anatomical and clinical significance. It is involved in autonomic regulation and is an important target in procedures such as lumbar sympathetic blocks and minimally invasive sympathetic interventions.

Despite its clinical relevance, research on the LST spans multiple disciplines, including anatomy, neurophysiology, pain medicine, and spine surgery. However, the overall evolution of research, major contributing authors and institutions, dominant research themes, and emerging areas of interest have not been clearly visualized as a unified research landscape. Bibliometric analysis provides a quantitative approach to map the development of a research field, identify influential research centres, analyse collaboration patterns, and reveal changes in research themes over time.

METHOD

We searched PubMed, dimensions using the term 'Lumbar Sympathetic Trunk' in the title and abstract, covering the period from 1984 to 2026. The initial search identified 592 records, of which 516 English-language documents were included. The bibliographic data were analysed using R and VOSviewer to assess publication trends, authorship, journals, keywords, thematic evolution and collaboration networks

RESULTS

Our analysis identified 516 publications from 260 sources involving 1,931 authors, with a reported annual growth rate of 3.36%. publication activity showed an early peak around 1995, followed by a period of consolidation. Bradford's analysis demonstrated that a relatively small core of 15 journals accounts for a major proportion of the literature. At the author level, Takahashi K was the most prolific contributor with 22 publications, while more than 80% of authors contributed only a single paper. The most interesting finding was the evolution of research themes. Earlier research was strongly associated with animal experimentation and basic neurophysiology, whereas more recent research increasingly emphasizes human clinical applications, treatment outcomes, sympathetic blocks and minimally invasive spinal procedures.

CONCLUSION

The literature on the lumbar sympathetic trunk has progressed from predominantly basic experimental research toward increasingly human-centred and clinically translational research. The bibliometric landscape also reveals concentrated authorship, core journals and geographically clustered research networks. These findings highlight the need for future multicentric studies integrating detailed anatomy with contemporary clinical and minimally invasive applications of the lumbar sympathetic trunk.

ASSOCIATION OF 3D-ASSISTED ANATOMY LEARNING AND CLINICAL EXPOSURE WITH ANATOMY KNOWLEDGE AMONG UNDERGRADUATE MEDICAL STUDENTS: A CROSS SECTIONAL STUDY.

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Introduction

The integration of 3D anatomical models / virtual technology has emerged as valuable educational tools that may improve spatial understanding and learning outcomes among undergraduate and postgraduate medical students. Understanding anatomy mainly depends on cadaveric dissection and lectures with pictorial representation. Learning outcome and visualisation of anatomical structure especially Gross anatomy, neuroanatomy and embryology, is a considerable task for the students. Despite the increasing use of 3D-assisted learning, there is limited evidence that exists regarding its association with objective anatomy knowledge at different levels of clinical exposure.

Aim –To determine whether exposure to 3D-assisted anatomy learning and clinical training is associated with differences in anatomy knowledge among undergraduate medical students, and to compare these effects between preclinical and clinical phase students.

MATERIALS AND METHODS

A cross-sectional study will be conducted among first- and second-year MBBS students around 300 (150 each at SIMS, Shimoga. After taking consent, the students will be assessed using 40 validated questionnaires, on three sections (Gross Anatomy, Embryology and neuroanatomy). Participants will be categorised according to their academic year, clinical exposure, and previous exposure to 3D-assisted anatomy learning. First-year students will represent students without clinical exposure, while second-year students will represent students with clinical exposure. Within these two groups, they will be categorised into whether they have studied using these 3D assisted tools. All participants will complete the same standardised 40 questionnaire. Descriptive statistics will be used to summarise participant characteristics and scores. A two-way analysis of variance (ANOVA) will be used to evaluate the main effects of 3D exposure and clinical exposure and their interaction on anatomy scores.

RESULTS

The study will determine whether 3D-assisted anatomy learning and clinical exposure are associated with differences in overall anatomy performance. Final results awaited. To be discussed at the time of presentation.

CONCLUSION

Three-dimensional anatomical models significantly enhance anatomy learning and student satisfaction. Incorporating these tools alongside traditional teaching methods may improve anatomy education in undergraduate medical curriculum. The study may provide evidence regarding the educational relevance of 3D-assisted anatomy learning and its relationship with anatomical knowledge at different stages of undergraduate medical education.

KEYWORDS

3D-assisted learning; anatomy education; clinical exposure;

TWO-MINUTE ANATOMY: EFFECT OF DAILY MCQ-BASED MICROLEARNING ON LEARNING AND RETENTION AMONG UNDERGRADUATE MEDICAL STUDENTS

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INTRODUCTION

Anatomy is a content-intensive subject requiring continuous revision and retention of a large volume of information. Conventional learning often involves prolonged revision, particularly before examinations. Spaced retrieval through brief, repeated learning activities may provide an efficient approach to reinforce anatomical knowledge. This study evaluated the effectiveness of daily MCQ-based microlearning on anatomy learning, retention and clinical application among undergraduate medical students.

METHODS

A prospective, two-group educational intervention cross over study was conducted involving first MBBS students (n = 250) at a medical college in Mangalore, India. Students were randomly divided into two groups, intervention and control group. Students in the intervention group received two curriculum-based MCQs daily on a given topic for 15 consecutive learning days through an online platform. Questions incorporated spaced retrieval, image-based anatomy and clinical application, followed by immediate feedback. The control group continued with routine teaching and standard revision practices. The groups were then reversed for second topic. Following the activity, post-test comprising multiple-choice-questions and case-based questions was conducted, while retention was evaluated using a delayed assessment. The scores from both groups were compared by paired-t test. Students perceptions were collected through validated questionnaire.

RESULTS

This study showed that the knowledge gained in post-test were higher with intervention group than control group. Delayed assessment demonstrated better retention in the intervention group. Qualitative data revealed that most students reported that the intervention was feasible and useful for regular anatomy revision.

CONCLUSION

Daily spaced retrieval microlearning was an effective, simple and feasible strategy for improving anatomy learning, retention and clinical application among undergraduate medical students.

THE INFLUENCE OF ATTITUDE, ETHICS, COMMUNICATION MODULES ON EMOTIONAL INTELLIGENCE AMONG UNDERGRADUATE STUDENTS

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INTRODUCTION

Emotional Intelligence (EI) has emerged as a key determinant of success influencing a range of critical professional outcomes, from empathetic patient care to effective team collaboration and strong leadership in various disciplines. Contemporary research suggests that EI is a malleable skillset that can be cultivated through tailored educational interventions. One of the pressing problems in the Indian Higher Educationecosystem is the insufficiency of emotional and social growth of students and the introduction of AETCOM into the medical curriculum is to address this well-documented gap.

OBJECTIVES

To assess the Emotional Intelligence (EI) of the undergraduate medical and engineering students who were and were not exposed to AETCOM modules

METHODS

This is a cross-sectional quantitative study with a sample size of 250 done on 2ndyear Medical & Engineering students of Ramaiah campus in the age range of 18 – 25 years. Trait Emotional Intelligence Questionnaire – Short Form was administered using Google forms. Data were analyzed using SPSS online tool. Descriptive statistics with mean and standard deviation for demographic details, T – test and Independent two-sample t-tests for EI scores was employed.

RESULTS

Medical students had a higher mean EI score compared to engineering students. The overall mean EI score across both groups was 135.16 ± 24.08 .

CONCLUSION

The EI scores of medical students was higher and statistically significant when compared to the engineering students and hence AETCOM module can be used for students of all disciplines to improve their EI levels. There was no association between gender and EI scores.

IRON, INK & INSIGHT: A NOVEL NEUROANATOMY TEACHING TOOL

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INTRODUCTION

Visualizing the three-dimensional relationship between grey and white matter of the cerebrum remains a persistent challenge in neuroanatomy education. Conventional formalin-fixed cadaveric specimens provide only limited, short-lived grey-white contrast that fades with prolonged storage. Macroscopic iron-alum based staining techniques, though described in anatomical literature since the early twentieth century remain largely forgotten and rarely practiced in routine teaching. This study explores combining such staining with plastination to develop a durable and low-cost neuroanatomy teaching aid.

METHODS

Formalin-fixed adult human cadaveric brain specimens were used. Coronal sections were obtained at levels demonstrating the basal nuclei and internal capsule and stained using Alston's iron-alum based technique. Stained sections were dehydrated in graded acetone at low temperature and plastinated using epoxy resin.

RESULTS

Based on Alston's staining protocol, the grey matter of the coronal sections is expected to exhibit a distinct brick-red colouration clearly contrasting against the retained colour of the white matter, thereby sharply demarcating the fibre tracts from the neuronal components. Minimal shrinkage (under 1%) is anticipated following the staining step, with an estimated 8–10% shrinkage following plastination, more pronounced in the grey matter than the white matter. Plastinated specimens are expected to be durable, odourless and to clearly demonstrate cortical and subcortical grey-white architecture.

CONCLUSIONS

This combined macrostaining-plastination technique offers a reproducible, durable and cost-effective method for demonstrating cerebral grey-white matter architecture with potential value as an innovative neuroanatomy teaching aid.

PHOTOGRAMMETRIC EVALUATION OF FACIAL ANTHROPOMETRIC CHANGES IN HYPOTHYROID PATIENTS AND THEIR ASSOCIATION WITH THYROID HORMONE LEVELS

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INTRODUCTION

Hypothyroidism is a common endocrine disorder and a major public health concern in India. Besides systemic features, it causes distinctive facial changes such as puffiness, periorbital oedema, and altered facial contour due to mucopolysaccharide and interstitial fluid accumulation, usually assessed only subjectively. Photogrammetric facial anthropometry offers a simple, non-invasive, reproducible method for objective measurement, but few Indian studies have quantified such changes or correlated them with thyroid hormone levels. This study aims to evaluate facial anthropometric changes in adult hypothyroid patients using photogrammetry and correlate them with serum thyroid hormone levels.

METHODS

This analytical cross-sectional study in Mysuru evaluated adult hypothyroid patients and matched euthyroid controls. Following informed consent, serum TSH, fT3, and fT4 levels were recorded. Standardised facial photographs were analysed using ImageJ software to map anthropometric parameters. Data were processed in SPSS v25 using t-tests and correlation coefficients ($p < 0.05$).

RESULTS

ImageJ analysis revealed distinct variations in facial width and intercanthal distance between hypothyroid patients and controls. These parameters were statistically evaluated against serum TSH, fT3, and fT4 levels. The exact measurements, correlation coefficients, and significance levels will be presented and discussed during the presentation.

CONCLUSION

Photogrammetric facial anthropometry provides a reliable, non-invasive digital screening modality that quantifies subjective clinical signs like myxoedema into reproducible metric data. By detecting micro-structural alterations early, this objective method serves as an accessible triaging tool in primary care or tele-endocrinology. It bridges the gap between physical observation and biochemical deficiency, allowing early clinical recognition, timely diagnostic testing, and objective monitoring of tissue regression during hormone replacement therapy.

A RARE VARIATION OF THYROID GLAND WITH ABSENCE OF ISTHMUS AND BILATERAL GLANDULAR HYPOPLASIA.

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Thyroid is an endocrine gland consisting of two lateral lobes and an isthmus extending across the midline anterior to trachea. Thyroid is responsible for secreting iodothyronines and maintaining the body's basal metabolic rate. Decreased or increased secretion of T_3/T_4 will result in hypothyroidism or hyperthyroidism (congenital/acquired) which accounts for all thyroid variations accounting for 48–61%. Other studied variations of the thyroid are: Presence of pyramidal lobe(20–50%), Levator glandulae thyroideae (15–41%), Absence of isthmus(5–12%), Accessory thyroid tissue(2%), Ectopic thyroid - 1 in 100,000 normal individuals and (0.0125–0.025%)among people with thyroid diseases, where lingual thyroid (90%) is more common. Thyroid hypoplasia in the general population accounts for (0.02–0.05%).

During routine dissection for 1st-year students in the Department of Anatomy Hassan Institute of Medical Sciences a variation of the thyroid gland was observed in a female cadaver aged 66–68 years where the isthmus was absent and two small lateral lobes measuring approximately 2×2 cm, extending along the lower lamina of the thyroid cartilage with bilateral hypoplasia/partial development of the gland.

Thyroid hypoplasia accounts for 0.02%-0.05% (bilateral9.5-78.2%, unilateral 0.01-0.2.5%). The clinical, surgical and embryological significance of these findings will be discussed later.

AUTOIMMUNE POLYGLANDULAR SYNDROME TYPE II WITH FAHRS SYNDROME PRESENTING AS SECONDARY PARKINSONISM IN A 47-YEAR-OLD MALE: A RARE CASE REPORT

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INTRODUCTION

Autoimmune polyglandular syndrome type II (APS-2) is the coexistence of two or more autoimmune endocrinopathies in the same individual. Fahrs syndrome, secondary bilateral basal ganglia calcification due to hypoparathyroidism, is a rare and often overlooked cause of secondary parkinsonism. We report an unusual case of APS-2 (autoimmune hypothyroidism with primary hypoparathyroidism) presenting with parkinsonian features.

METHODS

A 47-year-old male, a known case of hypothyroidism on levothyroxine, presented with progressive difficulty in walking for five months, recurrent falls for one month, and slowness of daily activities for one month. Clinical evaluation, complete haemogram, renal and liver function tests, calcium–parathyroid hormone profile, 8 AM cortisol, ACTH, autoimmune workup (ANA profile, dsDNA, ANCA), anti-tissue transglutaminase antibody, MRI brain, and upper GI endoscopy with duodenal biopsy were performed.

RESULTS

Examination revealed pallor, bradyphonia, festinating gait with freezing and reduced arm swing, and cogwheel rigidity with preserved power and intact sensation. Investigations showed severe hypocalcemia (4.2 mg/dl) with inappropriately low parathyroid hormone (6.8), microcytic anemia, positive anti-TTG (39.09), normal ACTH and 8 AM cortisol, and negative vasculitis markers. MRI brain demonstrated symmetrical T1 hyperintensities with SWI blooming in the bilateral basal ganglia and thalami, consistent with mineral deposition of Fahrs syndrome, along with acute lacunar infarcts. He improved with intravenous calcium gluconate, calcitriol, and oral calcium supplementation.

CONCLUSION

This case highlights that hypoparathyroidism-related Fahrs syndrome can underlie atypical parkinsonism and may be a component of APS-2. Screening for associated autoimmune endocrinopathies is essential, as timely calcium and calcitriol therapy can reverse neurological morbidity.

MORPHOMETRIC STUDY OF CERVICAL PEDICLE USING COMPUTED TOMOGRAPHY IN INDIAN POPULATION.

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INTRODUCTION

Morphometry of pedicles is required in preoperative evaluation for surgical interventions and designing pedicle screws and has implications in transpedicular screw insertion. It aids to decide on appropriate pedicle size as mismatched size of pedicle screw may result in fracture of the pedicle, tearing of duramater, leakage of CSF and nerve-root injuries. The purpose of this study is to evaluate the morphometry of cervical pedicle vertebrae for the transpedicular screw insertion in Indian population.

MATERIALS AND METHODS

62 cervical spine CT scans procured from Department of Radiology, Ramaiah Medical College & Hospitals, Bengaluru were studied from C3-C7.

Pedicle length, height, breadth, Pedicle axis length (PAL), Pedicle transverse angulation, superior pedicle distance, pedicle sagittal angulation, D-distance between midline and midpoint of lateral mass of C3-C7 vertebrae was measured and summarized using descriptive statistics in terms of mean $\pm$ SD .

RESULTS

Pedicle length, height, Pedicle width, pedicle axis length, and D-distance showed a progressive increase from C3 to C7, while transverse and sagittal angulations and superior pedicle distance showed a decreasing trend. Significant sex-related differences of parameters were observed at specific cervical levels, with generally greater measurements in males. Significant side-to-side differences were observed mainly in pedicle length, whereas most other parameters showed no significant bilateral differences.

IMPLICATIONS OF THE STUDY

Lack of knowledge on pedicle inclination leads to breach in medial or inferior cortex and subsequent damage to duramater or root. A deep understanding of the morphometry of cervical pedicle is crucial for spinal surgeons, neurosurgeons, and radiologists when planning cervical surgical interventions like spinal fixation, decompression procedures, foraminotomy, and instrumentation procedures.

THE HAIR SHAFT AS A DIAGNOSTIC WINDOW: AN ANATOMIST'S PERSPECTIVE ON TWO CASES OF MENKES KINKY HAIR DISEASE WITH DIVERGENT RECURRENCE RISK COUNSELLING

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Menkes disease, an X-linked recessive disorder affecting copper metabolism, arises from mutations in the ATP7A gene and is typically identified by the distinctive cutaneous appendage anomaly known as pili torti, or "kinky hair." Beyond its clinical intrigue, the microanatomy of the hair shaft provides a swift, non-invasive insight into this complex multisystem disorder. We describe two male infants who exhibited hypotonia and developmental regression, along with sparse, brittle, and twisted scalp hair, diagnosed at four and ten months of age, respectively. Examination of plucked hair shafts under a light microscope in both cases revealed the characteristic pili torti, leading to biochemical tests that showed low levels of serum copper and ceruloplasmin. Subsequent molecular testing confirmed pathogenic variants in ATP7A, thus confirming the diagnosis. In the carrier assessment, maternal hair microscopy revealed similar pili torti changes in the mother of the ten-month-old, suggesting probable carrier status, while the mother of the four-month-old had normal hair shaft architecture, indicating a possible de novo mutation or germline mosaicism. This anatomical difference resulted in varied genetic counseling: the carrier mother was informed of a significantly increased recurrence risk, up to fifty percent for future male children, whereas the non-carrier mother was advised of a low, yet not insignificant, empirical recurrence risk. This report demonstrates how a simple anatomical feature, the hair shaft, can evolve from a clinical clue at the bedside into a diagnostic and counseling tool, linking morphology, biochemistry, and molecular genetics, and highlights the enduring importance of anatomical observation in translational and reproductive medicine.

MORPHOMETRIC ANALYSIS OF PARAPETROSAL TRIANGLE IN ADULT DRY HUMAN SKULLS: AN ANATOMICAL STUDY WITH IMPLICATIONS FOR SKULL BASE SURGICAL NAVIGATION

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INTRODUCTION

The parapetrosal triangle is an important anatomical region situated at the skull base, closely related to vital neurovascular structures. It is bounded by spinopterygoid line laterally, bispinal line(base) and midsagittal line medially. It provides valuable guidance to skull base structures namely petrosal part of Internal carotid artery, jugular bulb, greater and lesser petrosal nerves and IX,X,XI cranial nerves.

MATERIALS AND METHODS

Hundred dry preserved skull bones matched for gender were studied bilaterally. Measurements of each border were taken using a digital vernier caliper with 150mm precision.

RESULTS

The length of mid sagittal line ranged from 33.3 mm to 61.2 mm with a mean of $42.4 \pm 4.2SD$. The length of Spino pterygoid line ranged from 63 mm to 92.7 mm with a mean of $76.3 \pm 3.9SD$ on the right side and 60.4mm to 93.1mm with a mean of $75.8 \pm 4SD$ on the left side. The length of bispinal line ranged from 55.2 mm to 65.5 mm with a mean of 59 ± 3.6 on the right side and 52.5mm to 71.2mm with a mean of $58.9 \pm 3.2SD$ on left side.

CONCLUSION

The morphometric analysis revealed variable degrees of correlation among the measured parameters, suggesting both consistent anatomical relationships and natural morphological variability. These findings contribute valuable baseline data for infratemporal, anterior and posterior approaches to middle cranial fossa. The pearson's coefficient for midsagittal, spinopterygoid, bispinal lines are 0.9,0.8,0.7 respectively. Paired t-test evaluated bilateral differences, and linear regression confirmed a positive association between corresponding measurements.

FEMORAL ARTERY TRIFURCATION -A CASE REPORT

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The femoral artery is a continuation of the external iliac artery at midinguinal point behind the inguinal ligament. Artery descends below in the femoral triangle lateral to femoral vein where it's initial 4-5 cm is covered by femoral sheath. In the femoral triangle it gives superficial circumflex iliac, superficial epigastric, superficial external pudendal, deep external pudendal, profunda femoris artery. Profunda femoris artery takes origin from femoral artery around 3- 4 cm below the inguinal ligament it gives medial and lateral circumflex femoral artery. Lateral circumflex femoral artery passes behind the rectus femoris, sartorius then between anterior and posterior division of femoral nerve then divides into ascending, transverse and descending branches.

During routine cadaveric dissection of femoral triangle we found femoral artery trifurcation that is immediately below the inguinal ligament femoral artery divided into superficial femoral, deep femoral (profunda femoris) and lateral circumflex femoral artery.

Femoral artery trifurcation is a rare anatomical variation with important clinical and surgical significance. Awareness of this variation is essential for vascular surgeons, interventional radiologists and orthopedic surgeons.

Key words: femoral artery, anatomic variation , trifurcation.

MULTIPLE CONGENITAL ABDOMINAL ANOMALIES IN AN ADULT HUMAN CADAVER WITH EMBRYOLOGICAL CORRELATION

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INTRODUCTION

Congenital anomalies and anatomical variations of abdominal viscera and their vascular supply are clinically important as they may influence radiological interpretation, surgical planning, and patient outcomes. Although individual developmental anomalies are well documented, coexistence of multiple congenital anomalies in a single individual is rare. This study describes a unique combination of abdominal anomalies identified during routine cadaveric dissection and discusses their embryological and clinical significance.

METHODS

Routine cadaveric dissection of an embalmed adult human cadaver was performed as part of MBBS anatomy teaching. The abdominal viscera and major branches of abdominal aorta were systematically examined for congenital morphological and vascular variations. The identified anomalies were photographed and analysed with reference to standard anatomical literature and their embryological development.

RESULTS

Multiple congenital anomalies were observed. The left inferior phrenic artery originated directly from coeliac trunk as a vascular variation. The spleen exhibited multiple persistent notches along its superior border and received separate terminal branches of splenic artery at hilum. A Meckel's diverticulum with characteristic gross features was present on antimesenteric border of ileum. The gallbladder demonstrated absence of its fundus. And also, no variations were noted in other regions. The coexistence of these developmental anomalies in a single adult cadaver represents a rare anatomical finding with important embryological and clinical implications.

CONCLUSIONS

Recognition of coexisting abdominal anomalies is essential for anatomists, surgeons, radiologists, and gastroenterologists, as such variations may influence diagnostic interpretation and surgical planning. Cadaveric studies continue to provide valuable insights into developmental anatomy and enhance medical education and clinical practice.

A MORPHOLOGICAL STUDY OF FASCIA TRANSVERSALIS IN INGUINAL HERNIAL PATIENTS – A HISTOCHEMICAL STUDY

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INTRODUCTION

Inguinal hernia is a protrusion of abdominal viscera into the inguinal canal. Clinically it presents as a pear-shaped swelling above and lateral to pubic tubercle. The etiology of hernia is multi-factorial like, elderly people, heredity, obese persons and in heavy weight lifters. Some studies showed that alterations in collagen content in the fascia transversalis also can cause the hernias. The altered component of the extracellular matrix also plays a role in hernia formation. The importance of collagen which promotes a loss of resistance and elasticity of the fascia transversalis and it determines the onset and recurrences of hernias.

MATERIALS & METHODS

A case series of 188 patients undergoing inguinal hernia surgery was conducted at KLES Dr. Prabhakar Kore Hospital, Belagavi. Transversalis fascia tissue (1 × 1 cm) was fixed in 10% buffered formalin, paraffin-embedded, sectioned at 5 µm, and stained with H&E and Van Gieson stains. Morphology was assessed using the Bonar score.

STATISTICS

Data collected will be analyzed using Microsoft Excel and SPSS Software version 29.

RESULTS

Inter-observer agreement was excellent for both staining methods. For H&E staining, a kappa value of 0.914 ($p < 0.001$) with 94% agreement was observed, while Van Gieson staining showed a kappa value of 0.920 ($p < 0.001$) with 95% agreement.

CONCLUSION

The Bonar scoring system demonstrated excellent inter-observer reliability for assessing the morphology of the transversalis fascia using both H&E and Van Gieson staining.

CORONARY ARTERY ANATOMICAL VARIATIONS AND ANOMALIES: AN ANGIOGRAPHIC STUDY

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INTRODUCTION

Coronary arteries demonstrate considerable anatomical diversity. Recognition of these variations and anomalies during coronary angiography is important for understanding coronary anatomy. This study aimed to characterize the spectrum of coronary anatomical variations and anomalies identified angiographically.

METHODOLOGY

a) Study design: Descriptive observational study.

b) Study population: 50 Patients aged >18 years who underwent CAG in a tertiary care center

c) Inclusion criteria : i) Patients aged >18 years who underwent CAG.

ii) Patients with documented coronary artery anatomical variations or anomalies, including myocardial bridging, on CAG.

d) Exclusion criteria: i) Patients without identifiable coronary artery anatomical variations on CAG. ii) Patients without identifiable coronary artery anomalies on CAG.

e) Method: Coronary angiographic records and images were acquired using the Philips FD10 AND FD20 systems and were reviewed to identify and characterize coronary artery anatomical variations and anomalies based on the anatomical pattern and vessel involved.

RESULTS

Among 50 cases, 38 (76%) had myocardial bridging, involving the left anterior descending artery (34), left circumflex artery (3) and obtuse margin 1 (1). Coronary anomalies were identified in 12 (24%) cases, with variations in coronary artery origin .

CONCLUSION

Coronary artery anatomical variations and anomalies may influence coronary circulation and myocardial perfusion. Early angiographic recognition aids appropriate evaluation and procedural planning. Timely identification supports individualised management and better understanding of coronary anatomy.

KEYWORDS

Coronary Artery Variations,Coronary Anomalies,Myocardial Bridging,

MORPHOLOGY OF THE CORONARY SINUS OSTIUM AND THEBESIAN VALVE: A CADAVERIC STUDY WITH CLINICAL IMPLICATIONS

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INTRODUCTION

Coronary sinus (CS) ostium morphology and the Thebesian valve are of considerable clinical importance during cardiac resynchronization therapy, electrophysiological procedures, retrograde cardioplegia, and coronary sinus cannulation. Variations in their anatomy may influence the ease and success of these interventions. The present study was undertaken to evaluate the morphology and morphometry of the coronary sinus ostium and the Thebesian valve in adult human cadaveric hearts.

METHOD

Study Design: Descriptive Cross-Sectional study.

METHODOLOGY

Study is conducted on 30 formalin fixed adult human cadaveric hearts obtained during routine dissection in the Department of Anatomy, KAHER's, J N Medical College, Belagavi. The right atrium was opened to expose the coronary sinus ostium. The ostium was assessed for its shape and dimensions, while the Thebesian valve was examined for its presence, morphology and degree of ostial coverage. Morphometric measurements were obtained using a digital vernier caliper.

STATISTICS

Data collected will be analyzed using Microsoft Excel and SPSS Software version 29.

RESULTS

The coronary sinus ostium is predominantly oval then circular or slit-like shape. Thebesian valve is anticipated to be present in all specimens with semilunar or crescentic shape. The detailed results will be discussed during presentation.

Conclusion: Knowledge of these variations is essential for interventional cardiologists and cardiac surgeons, as it may facilitate successful coronary sinus cannulation, improve procedural outcomes, and minimize complications during cardiac interventions.

ANATOMICAL VARIATION OF THE LEFT CORONARY ARTERY : A CADAVERIC CASE REPORT.

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The left coronary artery arises from the left aortic sinus of the ascending aorta and normally bifurcates into the left anterior descending , Left circumflex arteries . The artery first run towards and to the left and emerges between the pulmonary trunk and left auricle. Here it gives the anterior interventricular branch which run downwards in the anterior interventricular groove. The further continuation of the left coronary artery is called the circumflex artery. After giving off the anterior interventricular branch , the artery runs to the left in the left anterior coronary sulcus, near the posterior interventricular groove it terminates by anastomosing with the right coronary arteries.

During routine cadaveric dissection in the department of Anatomy ,Karnataka medical college & research institute, Hubballi. We found the left coronary artery trifurcates into Left anterior descending artery ,Left circumflex artery and Ramus intermedius.

Recognition of variation of coronary artery is essential for anatomists, radiologist, cardiologists for better understanding of coronary artery and provide valuable information for safe diagnosis and therapeutic procedures.

Keywords : Left coronary artery , Ramus intermedius, Left coronary artery trifurcation.

CADAVERIC MORPHOMETRIC EVALUATION OF THE AXILLARY NERVE AND POSTERIOR CIRCUMFLEX HUMERAL ARTERY IN RELATION TO THE DELTOID MUSCLE: IMPLICATIONS FOR SAFE INTRAMUSCULAR INJECTION.

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INTRODUCTION

The deltoid muscle is one of the most commonly used sites for intramuscular injections in clinical practice. Injection-related nerve palsy has been reported, with studies indicating an incidence ranging from 1.5% to 15%. Accurate identification of the location of the axillary nerve and the posterior circumflex humeral artery, along with assessment of deltoid muscle thickness, is important to minimize the risk of neurovascular injury during intramuscular injections. Therefore, the present study aimed to assess these anatomical parameters in the South Indian population.

METHODOLOGY

A convenience sample of 30 specimens (19 left and 11 right) obtained from embalmed South Indian cadavers was studied. After removal of the skin and subcutaneous tissue, the deltoid muscle was carefully dissected and reflected to expose the underlying neurovascular structures. The thickness of the deltoid muscle was measured using digital Vernier caliper at 3, 5, 7, and 9 cm from the mid-acromial point.

RESULTS

In the anatomical position, the mean distances of the axillary nerve and posterior circumflex humeral artery from the mid-acromial point were 59.01 ± 6.04 mm (mean $\pm$ SD) and 61.77 ± 7.51 mm (mean $\pm$ SD), respectively. The mean deltoid muscle thickness measured at 3, 5, 7, and 9 cm from the mid-acromial point was 7.44 ± 2.67 mm, 10.21 ± 3.54 mm, 13.03 ± 4.45 mm, and 11.74 ± 3.67 mm, respectively. The quantitative and qualitative data obtained were tabulated and subjected to statistical analysis.

CONCLUSION

Based on the anatomical measurements obtained, deltoid intramuscular injections should be administered at or below the midpoint of the deltoid muscle to minimize the risk of injury to underlying neurovascular structures. Based on our findings, a site approximately 8 cm below the mid-acromial point may provide a safer location for deltoid intramuscular injection.

MORPHOLOGICAL ANALYSIS OF SUPRASCAPULAR NOTCH WITH SAFE ZONE MEASUREMENTS IN DRY SCAPULAE: SURGICAL IMPLICATIONS FOR SHOULDER PROCEDURES

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INTRODUCTION

The suprascapular notch is located on the lateral part of the superior border of the scapula. It is bridged by the superior transverse scapular ligament, above which the suprascapular artery passes and below which the suprascapular nerve travels to reach the supraspinous fossa. The suprascapular nerve supplies the supraspinatus and continues through the spinoglenoid notch to reach the posterior shoulder region and supplies the infraspinatus muscle. Due to this close anatomical relationship, morphological variation of the notch predisposes to suprascapular nerve entrapment neuropathy. Additionally, the nerve is at risk of iatrogenic injury during shoulder procedures, potentially causing shoulder pain and muscle paralysis.

METHODS

A cross-sectional observational study was conducted on 99 dry scapulae obtained from the Departments of Anatomy, GIMS and ESIC Medical College, Kalaburagi. Notch morphology was classified using Rengachary's six-type classification system. Notch dimensions including superior transverse diameter (STD), middle transverse diameter (MTD) and maximum depth (MD) were measured using a digital Vernier calliper, except in Type I and Type IV where these dimensions are not measurable. Safe zone distances M1 (posterior limit) and M2 (posterosuperior limit) were recorded for surgical reference. No selection criteria based on age, sex or sidedness were applied.

RESULTS

Of 99 scapulae examined, Type III (U-shaped) was the most common (n=53, 53.5%), followed by Type I (n=23, 23.2%), Type IV (n=9, 9.1%), Type II (n=7, 7.1%), Type VI (n=6, 6.1%) and Type V (n=1, 1.0%). Complete ossification of the STSL was found in 7 specimens (7.1%) and partial ossification in 1 specimen (1.0%). The mean posterior safe zone distance M1 was 20.17 ± 6.89 mm and mean posterosuperior safe zone M2 was 27.99 ± 5.81 mm. Notch dimensions differed significantly across measurable Rengachary types. No significant correlation was found between scapular width and safe zone distance ($r = 0.15$).

CONCLUSION

Type III (U-shaped) notch was the most common morphology (53.5%) with STSL ossification identified in 8 specimens (8.1%). No significant differences were observed between right and left sided scapulae. Scapular width showed weak correlation with safe zone distance ($r = 0.15$), indicating these are structurally independent — surgeons cannot assume a wider scapula guarantees a safer operative field during shoulder procedures.

THE MYSTERY BEHIND THE MYSTICAL BRIDGE TO OPTIC CANAL – IMAGING AND ANATOMICAL VARIATIONS IN OPTIC STRUT AND ANTERIOR CLINOID PROCESS AND ITS CLINICAL IMPORTANCE

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INTRODUCTION

The optic strut is an important osseous structure of the sphenoid bone and a key landmark in parasellar and skull-base surgery. Its anatomical relationship with the optic canal, superior orbital fissure and Anterior Clinoid Process is clinically significant during anterior clinoidectomy, where anatomical variations may increase the risk of optic nerve injury. This study aims to evaluate the morphology and anatomical relationships of the optic strut and ACP using dry skulls, cadaveric specimens and CT scans.

METHODS

44 dry adult skulls and 15 cadaveric specimens was examined. Length, width and thickness of the optic strut and ACP was measured using vernier calipers. The position of the optic strut in relation to ACP and prechiasmatic sulcus was assessed. Additionally, 50 plain CT head scans in bone-window settings was evaluated for optic strut morphology, angle, pneumatization and presence of carotico-clinoid foramen.

RESULTS

The optic strut demonstrated considerable morphological variation. Its estimated mean thickness was 3.6 mm with a CT angle of approximately 42.5°. Mean ACP length was approximately 12mm. On CT, optic strut attachment was most frequently at the middle third of the ACP (57%), followed by the posterior (28%) and anterior thirds (15%). Approximately 50% were sulcal, 31% presulcal and 16% postsulcal. Carotico-clinoid foramen was present in approximately 20–22%, while pneumatization occurred in 10–15%.

CONCLUSIONS

This combined anatomical and radiological assessment is expected to provide comprehensive morphological data on the optic strut and ACP, potentially aiding preoperative planning and improving anatomical understanding and surgical safety during skull-base procedures.

ALMOND FABELLA – A RARE SESAMOID BONE FOUND IN LATERAL GASTROCNEMIUS & ITS IMPLICATIONS

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INTRODUCTION

The term fabella is Latin word which means little bean. The fabella which is located in the lateral head of gastrocnemius muscle, is a sesamoid bone. It can lead to Fabella syndrome where the patient will complain of posterolateral knee pain during knee extension, snapping or clicking sensation that is exacerbated by aerobic activities.

METHODS

In the cadaveric study of 16 knees from 8 cadavers, the presence of fabella was recorded. The length, breadth and thickness of fabella was measured using Vernier callipers

The fabella was found in lateral gastrocnemius of right leg. Its length was 23.30mm, transverse diameter was 9.96mm, anteroposterior diameter was 7.24mm.

DISCUSSION

Fabella is a sesamoid bone which can cause various pathologies. Fabella pain syndrome, Common fibular nerve palsy, Popliteal artery entrapment syndrome. The patient may have persistent pain in the posterolateral aspect of knee.

CONCLUSION

Globally, the fabella—a small sesamoid bone located in the tendon of the lateral head of gastrocnemius muscle behind the knee—has an average incidence of roughly 25%. The fabella can be sometimes mistaken for osteophytes. Hence a better understanding of the anatomy of the knee & its variations is important in diagnosing & treating.

ANATOMICAL VARIATIONS IN BRANCHING PATTERN OF CELIAC TRUNK: A CASE REPORT

**Dr Sonica GG, Co-author: Dr Prakash BS
Hassan Institute of Medical Sciences**

Celiac Trunk constitutes a surgically significant splanchnic branch of abdominal aorta emerging anteriorly at the level of T12. This vessel provides the principal blood supply to foregut-derived organs and divides into left gastric, common hepatic and splenic arteries.

This trifurcation type is the typical pattern of the celiac trunk in about 89% of individuals. In contrast, anatomical variations of bifurcation type occur in 11% of the population and their absence is rare, affecting 0.2% of individuals.

The routine abdominal dissection was conducted for medical undergraduates at Department of Anatomy, Hassan Institute of medical sciences, Hassan. The course, branching pattern and any anatomical variations were documented.

In a 65-year-old female cadaver (Token No. 61), two left gastric arteries were observed arising independently from the hepatic artery and were designated as superior and inferior left gastric arteries. The superior left gastric artery gave rise to three branches, while the inferior left gastric artery gave rise to two branches. Additionally, the gastroduodenal, hepatic, and splenic arteries were found to arise from a common arterial trunk.

The above findings highlight the prevalence of Celiac trunk variations and their branching patterns, providing a crucial foundation for improving the efficacy & safety of surgical & radiological procedures in the upper abdomen. Clinical and embryological significance will be discussed later.

MORPHOMETRIC ANALYSIS OF THE HORNS OF THE LATERAL VENTRICLES: A CADAVERIC STUDY

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INTRODUCTION

The lateral ventricles are the largest C-shaped paired cavities in each cerebral hemisphere, containing cerebrospinal fluid. Understanding their anatomy and dimensions is crucial for neuroanatomy and clinical procedures. The present study measured the lengths of the anterior, posterior, and inferior horns of the lateral ventricles in adult human cadavers, comparing their dimensions between right and left sides.

METHODS

Fifteen adult cadaveric brains were dissected carefully to expose the lateral ventricles in the Department of Anatomy. Measurements were taken with a digital vernier calliper and non-elastic thread. The anterior horn was measured from its tip to the interventricular foramen of Monro; the posterior and inferior horns were measured from their tips to the midpoint of the collateral trigone.

STATISTICS

Data were analyzed using Excel and SPSS v29.

RESULTS

The mean anterior horn length was 24.94 ± 8.42 mm (right) and 29.81 ± 4.32 mm (left). Posterior horn lengths were 17.49 ± 4.58 mm (right) and 19.19 ± 4.53 mm (left). Inferior horn lengths were 41.69 ± 7.92 mm (right) and 41.60 ± 10.14 mm (left). The anterior and posterior horns were longer on the left, while the inferior horn was nearly equal on both sides.

CONCLUSION

This study demonstrated measurable side-to-side variations in the morphometry of lateral ventricular horns. This contributes to a better understanding of ventricular anatomy, with potential relevance to neuroanatomical, radiological, and neurosurgical applications.

A MORPHOMETRIC STUDY OF CRANIAL INDICES IN ADULT DRY HUMAN SKULLS AND ITS ANTHROPOMETRIC SIGNIFICANCE IN THE SOUTH INDIAN POPULATION

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INTRODUCTION

Quantitative osteometric evaluation of the human skull is essential in clinical anatomy, physical anthropology, and surgical planning for understanding anatomical variations and sexual dimorphism. This study aimed to determine the Nasal, Orbital, Palatine, and Foramen Magnum indices in adult dry South Indian skulls, assess sexual dimorphism between male and female skulls, and analyse the correlations among these four cranial indices.

METHODOLOGY

An observational cross-sectional study evaluated 50 dry adult human skulls. Sex was determined morphologically. Linear measurements of the nasal aperture, orbit, hard palate, and foramen magnum were recorded using digital Vernier callipers. Indices were calculated and categorized according to standard physical anthropology classifications.

STATISTICAL ANALYSIS

By applying descriptive statistics- mean and standard deviation in excel.

RESULT

The mean values for the following parameters of 10 skulls.

Outcome Measures & Formula Calculations:

- 1. Nasal Index (NI): : mean= 182.4**
- 2. Orbital Index (OI): : mean= 84.4**
- 3. Palatine Index (PI): : mean= 88.6**
- 4. Foramen Magnum Index (FMI): : mean= 116.4**

CONCLUSION

This study establishes population-specific normative baseline data for South Indian cranial indices, providing crucial reference standards for physical anthropology, forensic identification, and regional surgical approaches.

Keywords: Cranial Indices and Morphometry.

ANATOMICAL VARIATIONS IN THE BIFURCATION LEVEL OF COMMON CAROTID ARTERY: A CADAVERIC STUDY

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INTRODUCTION

The Common Carotid Artery (CCA) typically bifurcates into Internal Carotid Artery (ICA) and External Carotid Artery (ECA) at the level of Superior Border of the Thyroid Cartilage (SBTC). However, high bifurcations upto C1/hyoid, or low bifurcations upto T2, not just hold an anatomical curiosity for the study of its variations but also carry a direct clinical, surgical and radiological significance.

METHODS

Study design: Descriptive cross-sectional study.

Methodology: 30 hemi-neck specimens fulfilling inclusion criteria are obtained from Department of Anatomy, ESIC MC, Rajajinagar. The level of bifurcation of CCA will be described with respect to level of SBTC; A ruler is projected from SBTC perpendicular to long axis of neck and perpendicular vertical distance from this projected line to apex of carotid bifurcation is measured.

Statistical Analysis: The data collected is analyzed using descriptive statistics.

RESULTS

15 right and 15 left hemi-neck specimens are considered for the study. The most common /highest/lowest level of bifurcation and other data will be discussed during the presentation.

CONCLUSION

The anatomical knowledge on the variations of the bifurcation of CCA is of great importance for surgical safety in neck surgeries, Carotid Endarterectomy, Anterior Cervical Spine Procedures and carotid artery stenting. Pre-operatively documenting the level of the CCA bifurcation will be of great value in identifying patients at increased risk of iatrogenic injury.

CONCOMITANT BOVINE AORTIC ARCH CONFIGURATION AND ANOMALOUS ORIGIN OF THE LEFT VERTEBRAL ARTERY: A CADAVERIC SPECIMEN CASE REPORT

Dr. Kaveri Swapnika Sharon (Pg), Dr. Nachiket Shanker (PgGuide), Dr.Yogitha Ravinder (Pg co-ordinator), Dr. Stephen S Dayal (Pg mentor).

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INTRODUCTION

The standard branching pattern of the human aortic arch consists of three major branches: the brachiocephalic trunk, left common carotid artery, and left subclavian artery. Variations in the embryological development of these vessels are relatively common; however, recognition of their exact anatomical configuration is essential to prevent complications during thoracic, vascular, and neuro-interventional procedures. This report describes a rare concomitant occurrence of a bovine aortic arch configuration with an anomalous origin of the left vertebral artery.

OBJECTIVES

To describe the gross anatomical features and embryological basis of a concomitant bovine aortic arch configuration and anomalous origin of the left vertebral artery observed during routine cadaveric dissection, and to highlight its clinical significance.

METHODS

During routine gross anatomical dissection of a formalin-fixed adult cadaver in the Department of Anatomy, the superior mediastinal vessels were examined. The branching pattern of the aortic arch was carefully documented and correlated with embryological development and relevant literature.

RESULTS

The brachiocephalic trunk and left common carotid artery arose from a common trunk, representing a bovine aortic arch (Type II/Type E configuration). At the superior end of this common trunk, the right common carotid artery, right subclavian artery, left common carotid artery, and a narrow-calibre anomalous left vertebral artery were identified. The left subclavian artery arose independently as the distal branch of the aortic arch. This rare combination represents an uncommon variation in the branching pattern of the aortic arch.

CONCLUSION

Recognition of concomitant aortic arch and vertebral artery variations is important for anatomists, radiologists, vascular surgeons, and interventional specialists. Awareness of these variants may facilitate safer angiographic, endovascular, and surgical procedures by anticipating altered vascular anatomy and reducing the risk of inadvertent vascular injury.

Keywords: Aortic arch variation, Bovine arch, Left vertebral artery, Cadaveric dissection, Vascular embryology.

MORPHOMETRIC ANALYSIS OF COMMON CAROTID AND EXTERNAL CAROTID ARTERY- A CADAVERIC STUDY

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INTRODUCTION

The right common carotid artery originates from the brachiocephalic artery, whereas the left common carotid artery arises from the aortic arch. The common carotid artery is clinically vital for emergency pulse checks, monitoring blood pressure and oxygen, and is a primary site for atherosclerosis and strokes. The external carotid artery helps control refractory maxillofacial bleeding. Catheter-based external carotid artery access is used to starve hyper vascular head and neck tumors or arteriovenous malformations prior to resection, accounting for rich midline collateral networks.

MATERIALS AND METHODS

30 (10 right and 12 left side) cadaveric head and neck specimens were used for this cross-sectional study. Various parameters of common carotid artery and external carotid artery were measured using digital vernier callipers.

RESULTS

The average diameters of the common and external carotid arteries were 7.38mm and 5.98mm, respectively. A variation in the common carotid artery bifurcation level and the positions of the internal and external carotid arteries was observed in one specimen. An indirect T-test evaluated parameter differences between the right and left carotid arteries.

CONCLUSION

This study provides morphometric data to enable a more efficient head and neck surgery as it provides the positions, diameters and distances from key landmarks of carotid arteries.

Morphological variation of duplication of optic canal and morphometric analysis of optic canal -osteological and cadaveric study.

Mrs. K. Kolanchiyammal. Basaveshwara medical college and hospital , Chitradurga.

AIM OF STUDY

During routine morphological and morphometric osteological and cadaveric study of the optic canal was medial located between lesser wing of sphenoid and body of sphenoid bone connecting orbit with the middle cranial fossa through optic nerve and ophthalmic artery. But in the optic canal duplication variation.

OBJECTIVE

to study the morphological and analysis duplication of optic canal presence of unilateral or bilateral either complete or partial duplication based on shape and with and without septa and number of canal. According to morphometric analysis based on the data collection , there are three parameter, length, vertical and transverse diameter both left and right side were measured.

MATERIAL AND METHODS

Descriptive cross sectional study was conducted in cadaver and dry human skull bones were collected from Basaveshwara medical college and hospital chitradurga, karnataka. Out of 60 dry skull and 60 cadaveric study skull observational study one of the skull keenly observed it was duplicated on right side . Morphometric also analysed based on length and transverse diameter and vertical diameter measure randomly by using vernier caliper and needle standard and mean we're calculated manually. Highlight of study one skull was ridiculously examined it was duplicated ,based on morphological observational study was conducted shape, number of canal and with and without septa either partially or fully, either unilateral or bilateral likewise observed gender wise.

RESULTS

The morphological observation duplication canal was somewhat oval shape and unilateral only on right side, left side absent. The duplication was occur by thickening of dura matter and it was calcified during age changes , by dissolving of soft tissue and make it septum between the ophthalmic artery and optic nerve. Not at all observing 8 shaped and round. The morphometric study was conducted right side transverse diameter dry skull mean was $\pm 4.86\text{mm}$ and standard deviation 0.64mm . The cadaveric study right side transverse diameter mean was $\pm 5.75\text{mm}$ standard deviation 1.21mm . The left side dry skull transverse diameter was mean $\pm 4.34\text{mm}$, and standard deviation 0.28mm . The left side cadaveric study transverse diameter mean was $\pm 5.43\text{mm}$ and standard deviation 0.12 . The vertical diameter of right side dry skull study mean was ± 4.92 , and standard deviation 0.06mm . The vertical diameter of right side cadaveric study was mean $\pm 4.89\text{mm}$ and standard deviation was 0.002mm . The vertical diameter of left side dry skull study mean was $\pm 5.47\text{mm}$ and standard deviation was 0.82mm . The vertical diameter of left side cadaveric study mean was $\pm 4.96\text{mm}$ and standard deviation was 0.007mm were measured. The length of right side Dry skull study optic canal mean was $\pm 7.1\text{mm}$ and standard deviation 1.8mm . The length of optic canal right side cadaveric study was mean $\pm 10.47\text{mm}$ and standard deviation 0.86 . The length of optic canal on left side dry skull study mean was $\pm 7.2\text{mm}$ and standard deviation was 3.2mm . The length of optic canal left side cadaveric study mean was ± 10.47 , and standard deviation was 0.87mm likewise measured. Canal length was

CONCLUSION

The highlight of the larger optic canal diameter always randomly larger oval shape in cadaveric study and it becomes round shape in human dry skull study but in small size. The dry skull study out of sixty skull ,one it was duplicated and it was divided by dura matter thickening become ossified..one canal for optic nerve and another one for ophthalmic artery in right side... But in the cadaveric study not at all duplication occur, no septa were observed... The study was clinically important for during surgical exploration of the orbit and it may be helpful for ophthalmologist and neurosurgeons during surgical approach ... And it may be helpful for anthropological study also. Key words : duplication of optic canal, morphology, morphometry, dry skull, cadaver, gender differences.

AIM OF STUDY

During routine osteological study the optic canal was medically located between lesser wing and body of sphenoid bone , connecting orbit with the middle cranial fossa through optic nerve and ophthalmic artery. But triplication of optic canal is a rare variation.

OBJECTIVE

To study the presence of optic canal unilateral or bilateral triplication of the optic canals and complete or partial duplication in human skull bones.

MATERIAL AND METHODS

A descriptive cross sectional study was conducted on 60 dry human skull bones collected from Basaveshwara medical college and hospital chithradurga,Karnataka, from June 01 2024 to 2026 till now. Each skull was keenly observed out of 60 skull ,one skull was ridiculously examined it was triplicated optic canal on the right side, partial or complete unilateral or bilateral , one more it was duplicated in the left side.

RESULTS

A completely triplicated optic canal was found in the only one human dry skull bones on the right side. On the other hand left side of similar bone the optic canal was triplicated have not found . In additionally from behind to forwards on the medial wall of the orbit posterior one main optic canal,middle one accessory optic canal and anterior one smaller than other two canal.

CONCLUSION

The study was provides further insights into the rare variation of the optic canal triplication is a rare findings. It was clinically significance especially during surgical exploration of the orbit that may be helpful for ophthalmologist and neurosurgeons during surgery approach. It also access the cavernous sinus, sella tursica, and decompression of the optic nerve .

KEYWORD

triplication of optic canal, optic nerve, ophthalmic artery, skull bone.

ANATOMICAL DUPLICITY – A CASE REPORT OF VARIANT LEFT RENAL ARTERY

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INTRODUCTION

The Kidney is typically supplied by a single renal artery arising from abdominal aorta. In early fetal development the kidney ascends from pelvis to abdomen.

During this transit they receive temporary blood supply from network of local arteries. A duplicated renal artery occurs when one of these temporary vessels fails to disappear.

This structural variation found in 20-30% of population, cause symptoms rarely during life & usually found incidentally during imaging or cadaveric dissection.

METHODOLOGY

During routine anatomical dissection of a formalin-fixed adult human cadaver, the retroperitoneum was exposed following the Cunningham's manual. The abdominal aorta, inferior vena cava, kidneys, ureters, and associated renal vessels were carefully dissected, cleaned and photographed to document the origin, course, relations and termination.

RESULT

A double left renal artery was identified arising directly from the anterolateral aspect of the abdominal aorta:

- **Superior (Main) Left Renal Artery:** Originated at the upper L1 vertebral level, entering the upper aspect of the renal hilum anterior to the renal pelvis.
- **Inferior (Accessory) Left Renal Artery:** Originated 2 cm inferiorly at the L2 level, entered the lower aspect of hilum of the left kidney anterior to the renal pelvis.

CONCLUSION

A double left renal artery is an essential anatomical variation for vascular and renal transplant surgeons, and interventional radiologists. Precise preoperative awareness prevents accidental intraoperative haemorrhage, warm ischemia, and polar renal infarction during procedures such as donor nephrectomy, abdominal aortic aneurysm repair, and renal angiography.

ANATOMY OF OSTEOMEATAL COMPLEX: A CADAVERIC STUDY

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INTRODUCTION

Morphometric analysis of Osteomeatal complex is crucial to understand sinusitis pathophysiology and guiding endoscopic surgeries. This study is aimed to observe the anatomy and variations of the Osteomeatal complex and determine the proximity of key surrounding structures.

MATERIAL & METHODS

A cross-sectional study involved dissecting the osteomeatal complex in 32 sagittal sections of cadaveric heads. Dimensions of the uncinate process, primary maxillary ostium, and accessory maxillary ostium were measured. Distances from the primary ostium to the orbital floor, nasolacrimal duct, and hard palate were also recorded. Data were analyzed using descriptive statistics and paired t-tests.

RESULTS

The primary maxillary ostium was typically oval (75%), mostly located in the posterior third of the hiatus semilunaris, measuring 3.09 ± 0.9 mm by 2.10 ± 0.7 mm. An accessory ostium occurred in 35.5% of cases. The uncinate process had a mean width of 4.83 ± 1.0 mm. Distances measured from the primary ostium averaged 1.69 ± 0.9 mm to the orbital floor, 4.51 ± 1.2 mm to the nasolacrimal duct, and 17.75 ± 2.1 mm to the hard palate. One variant exhibited no maxillary ostium and a small uncinate process.

Conclusion

This study provides basic morphometric data of structures present in the Osteomeatal complex and the structures surrounding it. The anatomy and variations of the Osteomeatal complex aids in understanding sinusitis pathophysiology. Understanding its close proximity to critical structures is essential for minimizing complications during endoscopic sinus surgery.

MULTIPLE CONGENITAL ABDOMINAL ANOMALIES IN AN ADULT HUMAN CADAVER WITH EMBRYOLOGICAL CORRELATION

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INTRODUCTION

Congenital anomalies and anatomical variations of abdominal viscera and their vascular supply are clinically important as they may influence radiological interpretation, surgical planning, and patient outcomes. Although individual developmental anomalies are well documented, coexistence of multiple congenital anomalies in a single individual is rare. This study describes a unique combination of abdominal anomalies identified during routine cadaveric dissection and discusses their embryological and clinical significance.

METHODS

Routine cadaveric dissection of an embalmed adult human cadaver was performed as part of MBBS anatomy teaching. The abdominal viscera and major branches of abdominal aorta were systematically examined for congenital morphological and vascular variations. The identified anomalies were photographed and analysed with reference to standard anatomical literature and their embryological development.

RESULTS

Multiple congenital anomalies were observed. The left inferior phrenic artery originated directly from coeliac trunk as a vascular variation. The spleen exhibited multiple persistent notches along its superior border and received separate terminal branches of splenic artery at hilum. A Meckel's diverticulum with characteristic gross features was present on antimesenteric border of ileum. The gallbladder demonstrated absence of its fundus. And also, no variations were noted in other regions. The coexistence of these developmental anomalies in a single adult cadaver represents a rare anatomical finding with important embryological and clinical implications.

CONCLUSIONS

Recognition of coexisting abdominal anomalies is essential for anatomists, surgeons, radiologists, and gastroenterologists, as such variations may influence diagnostic interpretation and surgical planning. Cadaveric studies continue to provide valuable insights into developmental anatomy and enhance medical education and clinical practice.

MORPHOMETRIC ANALYSIS OF ROUVIERE'S SULCUS IN ADULT CADAVERIC LIVERS AND THEIR SURGICAL IMPLICATIONS FOR SAFE LAPAROSCOPIC CHOLECYSTECTOMY

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INTRODUCTION

Rouviere's sulcus (Sulcus processus caudatus/Incisura dextra of Gans) is a 2–5 cm sulcus located to the right of the liver hilum and anterior to the caudate lobe. Its contents consist of the right portal vein and its division, the right hepatic artery, and the right hepatic bile duct, making it an important extrabiliary landmark during hepatobiliary surgery. This study determined its frequency, morphometry, and classification in the South Indian population.

METHODOLOGY

A convenience sample of 35 cadaveric liver specimens was studied in the anatomy dissection hall. The frequency of Rouviere's sulcus was recorded, and identified sulci were classified according to the classification of Drs. M. Singh and N. Prasad. Length, width, and distances from the cystic duct, porta hepatis, gallbladder neck, and liver edge at the near and far ends of the sulcus were measured in millimetres using digital vernier calipers.

RESULTS

Type 1 Rouviere's sulcus was the most common variant (48%), while the sulcus was absent in 17% of specimens. Mean sulcus length and width were 25.89 ± 10.43 mm and 2.37 ± 1.03 mm, respectively. Mean distances from the near and far ends of the sulcus to the cystic duct were 16.39 ± 6.49 mm and 37.05 ± 13.33 mm, respectively.

CONCLUSION

This study provides baseline morphometric data to facilitate safer laparoscopic cholecystectomy by aiding identification of Rouviere's sulcus, thereby minimizing the risk of injury to the cystic artery and common bile duct while potentially reducing operative time.

DUPLICATED GREAT SAPHENOUS VEIN IN THE THIGH: CADAVERIC FINDINGS WITH RELEVANCE TO BYPASS CONDUIT SELECTION AND VARICOSE VEIN SURGERY

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INTRODUCTION

The great saphenous vein (GSV) is the longest superficial vein in the lower limb and the most commonly used autologous conduit in coronary and peripheral bypass surgery, and the primary target vessel in varicose vein interventions. Though the GSV follows a predictable course in most individuals, duplication in the thigh is a recognised but infrequently encountered variant with significant implications for bypass harvest and completeness of varicose vein treatment if unrecognised. This report describes a duplicated GSV identified during routine cadaveric dissection.

METHODS

During routine cadaveric dissection of the lower limb in the Department of Anatomy the great saphenous vein was meticulously traced from the medial aspect of the knee up to the saphenofemoral junction. The Length of the vein was measured along its course. Due to the fragile nature of the formalised vessels, a flexible, non-extensible thread was used to measure the length of each vein. The length of this thread segment was then measured using a standard metric measuring tape. All measurements were taken by the same investigator to eliminate inter-observer variability.

RESULTS

Two distinct great saphenous venous trunks were found running parallel within the superficial fascia of the thigh, separated by a strip of fascia and adipose tissue. Both trunks converged into a single channel in the proximal thigh before draining into the femoral vein at the saphenofemoral junction. No associated variation was noted in the femoral vein, femoral artery, or GSV tributaries below the knee.

CONCLUSION

Duplication of the GSV in the thigh, though uncommon, carries significant surgical relevance: unrecognised duplication may compromise conduit harvest in bypass surgery or cause recurrent varicosities after venous intervention. Preoperative duplex ultrasonography and awareness of this variant are essential for surgical planning, reinforcing the value of cadaveric dissection in documenting relevant variations.

DETERMINATION OF SEX FROM DRY ADULT HUMAN MANDIBLES USING VARIOUS METRIC AND NON-METRIC PARAMETERS

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BACKGROUND

Mandible exhibits considerable sexual dimorphism, with variations in its size, shape and morphological characteristics. These variations in osteometric parameters can therefore contribute to forensic identification, especially when other skeletal remains are unavailable.

OBJECTIVES

To determine the sex from dry adult human mandibles using metric and non-metric parameters.

MATERIALS AND METHODS

The study was conducted on 95 adult human mandibles available in the Department of Anatomy, Sri Siddhartha Medical College Tumkur. Metric parameters including maximum and minimum breadth of ramus, condylar height, symphyseal height, coronoid breadth, body thickness, height of ramus, coronoid height, bigonial breadth, mandibular length, bimental breadth, bicondylar breadth, angle of mandible, body height will be measured using appropriate osteometric instruments. Non-metric parameters including shape of chin, muscle markings, surface, gonial flare, shape of coronoid process will also be assessed. The observations will be recorded and compared between male and female mandible using appropriate statistical methods.

RESULTS AWAITED

CONCLUSION

The metric and non-metric characteristics of the mandible helps in sex determination. Previous studies have reported with males showing higher metric values and morphological features such as square chin, everted gonial flare, and increased muscle markings, while females more often show a rounded chin and inverted gonial flare. A combination of these parameters improves accuracy in forensic anthropology and medicolegal cases, particularly in cases involving unidentified or fragmented skeletal remains. Therefore, the present study aims to assess both metric and non-metric parameters for determining the sex of dry adult human mandibles.

KEYWORDS

Sex determination, Sexual dimorphism, Metric parameters, Non-metric parameters, Forensic anthropology.

A CASE OF DOUBLE OUTLET RIGHT VENTRICLE WITH SEVERE PULMONARY STENOSIS & INLET VENTRICULAR SEPTAL DEFECT.

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BACKGROUND

Double Outlet Right Ventricle (DORV) is a complex cardiac anomaly with prevalence of 1-3% of total Congenital Heart Defects (CHD) and it is associated with a significant hemodynamical consequences. It is characterized by abnormal Atrioventricular and Ventriculoarterial connections co-existing with Ventricular Septal Defect (VSD) & Pulmonary Stenosis (PS).

CASE DESCRIPTION

A 7-year-old male patient presented with a history of breathlessness on exertion and easy fatigability. On general physical examination bluish discoloration was seen on lips, fingers and toes. Echocardiographic evaluation was performed to assess complete hemodynamics and to define detailed anatomy of the heart. Proper surgical procedure was planned and performed successfully. Post-operative Echocardiography showed stable cardiac function with intact and functional surgical repair.

OBSERVATION

On general physical examination cyanosis was observed. Echocardiography revealed a cyanotic type of CHD, showing complex cardiac anomaly with multiple defects. Successful surgical execution of Intra Cardiac Repair (ICR) and 'Rastelli procedure' was performed. Post-operative recovery was uneventful.

RESULTS AND CONCLUSION

The findings were consistent with DORV + severe PS + Inlet VSD. Early diagnosis of these types of cases are necessary to avoid complications of arrhythmia, stroke and heart failure in patients. Timely planning and proper execution of surgical & medical management plays a major role in better clinical outcome.

KEYWORDS

DORV, PS, VSD, cyanotic CHD, ICR, Rastelli procedure.

TITLE: AN UNILATERAL ATYPICAL PRESENTATION OF THE PIRIFORMIS MUSCLE

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INTRODUCTION

Piriformis muscle is the key muscle of the gluteal region as several neurovascular structures emerge above and below the muscle. From a clinical stand point it is relevant in the context of piriformis syndrome and sciatica due to its immediate relationship to the sciatic nerve.

METHODS

During routine dissection of the gluteal region in the anatomy laboratory a unique presentation of the piriformis muscle was observed on the right side of a female cadaver.

RESULTS

After retraction of the gluteus maximus muscle, a slip of pyriformis muscle partly fleshy and partly tendinous, just below the gluteus medius was observed. The muscle originated from gluteal surface of the ilium and ventral aspect of the first upper segment of the sacrum. The musculotendinous belly of the piriformis inserted into the medial aspect of the greater trochanter of the femur.

CONCLUSION

This case report hints at an agenesis of the piriformis muscle and persistence of an accessory slip of the muscle which is a rare entity. Studying such variants can aid the clinicians in identifying undiagnosed cases of chronic back pain and pain in gluteal region.

A CASE OF DOUBLE INLET LEFT VENTRICLE WITH DOUBLE OUTLET RIGHT VENTRICLE

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BACKGROUND

Double inlet left ventricle (DILV) with double outlet right ventricle (DORV) is a rare and complex congenital cardiac anomaly characterized by abnormal atrioventricular and ventriculoarterial connections. The coexistence of a dominant morphological left ventricle, hypoplastic right ventricle and mispositioned great arteries create complex cardiac anatomy with significant hemodynamics consequences.

CASE DESCRIPTION

A 21 years old male presented with a history of syncopal attacks. He also gave history of seizures associated with loss of consciousness in the past. On general physical examination cyanosis was noted. On investigation, ECG revealed supraventricular tachycardia. Echocardiographic evaluation was also performed for detailed hemodynamical assessment and will be discussed in detail in this study.

OBSERVATION

Echocardiography revealed complex ventricular morphology with abnormal atrioventricular and ventriculoarterial connections. A dominant ventricular chamber with a hypoplastic outlet chamber was identified. The great arteries showed an abnormal spatial relationship. Detailed 2D and doppler assessment was performed to delineate the anatomy and hemodynamics.

RESULTS AND CONCLUSION

The findings were consistent with DILV with DORV and early recognition of this findings is important to avoid complications such as severe pulmonary hypertension, arrhythmia, and heart failure in patients

KEY WORDS

DILV, DORV, HYPOPLASTIC, ANOMALY.

MIRROR OR MISMATCH? MORPHOMETRIC ANALYSIS OF HIPPOCAMPAL ASYMMETRY IN HEALTHY ADULTS: PREVALENCE AND CLINICAL CORRELATION

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BACKGROUND

The hippocampus is a paired structure within the medial temporal lobe that plays a critical role in memory, learning, emotional regulation, and spatial navigation. Physiological asymmetry between the right and left hippocampi has been demonstrated in neuroimaging studies; however, data regarding its prevalence and clinical significance in healthy Indian adults remain limited.

AIM

To determine the prevalence of hippocampal asymmetry in healthy adults and assess its association with clinical symptoms related to memory, cognition, and neurobehavioral function.

METHODS

A retrospective observational cross-sectional study will be conducted using archived MRI brain scans from the Department of Radiology, ESIC Model Hospital, Rajajinagar, Bengaluru. Approximately 30 adults aged 20–70 years meeting the inclusion criteria will be included. High-resolution T1-weighted MRI images will be analyzed for morphometric measurements of both hippocampi. Hippocampal asymmetry will be quantified using the Asymmetry Index, and findings will be correlated with available clinical records.

RESULTS

The prevalence and pattern of hippocampal asymmetry, along with its relationship to clinical symptoms, will be evaluated and statistically analyzed.

Conclusion: Establishing normative data on hippocampal asymmetry may improve differentiation between physiological variation and pathological changes, thereby enhancing radiological interpretation and clinical assessment of hippocampal disorders.

KEYWORDS

Hippocampus, Asymmetry Index, MRI, Morphometry, Cognition, Healthy Adults.

FROM LESION TO LOCALISATION- TOPOGRAPHIC MRI MAPPING OF HUMAN BRAIN ANATOMY IN ACUTE ISCHEMIC STROKE: A RADIOLOGICAL ANATOMY AND CLINICO-ANATOMICAL CORRELATION STUDY

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BACKGROUND

Acute ischemic stroke (AIS) is a major cause of death and long-term disability worldwide, accounting for approximately 85–87% of all strokes. The anatomical location of ischemic lesions influences stroke severity and functional outcomes. Therefore, early diagnosis (“time is brain”) and accurate lesion localization are essential for timely treatment, prediction of neurological deficits, and rehabilitation planning. Similar clinical syndromes may arise from infarcts in different anatomical regions, while lesions within the same vascular territory may produce variable neurological manifestations. MRI-based clinico-anatomical correlation may therefore contribute to better understanding of the relationship between lesion topography and clinical presentation.

AIM

This study aims to compare & correlate the radiological anatomy of the brain in AIS patients with their clinical presentation & functional outcomes.

METHODS

In this study, a retrospective analysis was conducted on a series of 60 AIS patients for a period of 2 months referred to the Department of Radiology of ESI Model Hospital, Rajajinagar. We investigated the MR Imaging of the patients, analyzing & recording the location of infarct/bleed, size & volume of lesion. Their clinical status was also recorded based on the NIH Stroke Scale and was correlated with the MRI scans.

RESULT

The details of the results of the study have been recorded and will be discussed during the presentation in detail.

CONCLUSION

The study demonstrated a relationship between the anatomical location and volume of cerebral infarction and the corresponding clinical manifestations. However, lesion volume alone did not consistently correspond to the severity of neurological deficits. Detailed results of the clinico-anatomical correlations will be presented.

KEYWORDS

Acute Ischemic Stroke, Middle Cerebral Artery, Internal capsule, Hemorrhagic transformation, DW Imaging, MR Imaging, NIH Stroke Scale

STRUCTURAL CHANGES OF CARDIAC CHAMBERS IN MITRAL VALVE DISEASE: AN ECHOCARDIOGRAPHY ASSESSMENT OF VALVULAR HEMODYNAMIC.

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BACKGROUND

Mitral valve disease produces pressure and volume loading that can lead to cardiac remodeling. Mitral stenosis increases left atrial pressure, while mitral regurgitation produces volume loading of the left atrium and left ventricle. Echocardiography can assess structural and hemodynamic changes.

METHOD

A retrospective observational study was conducted using echocardiographic records of patients with mitral valve disease. Left atrial size, left ventricular dimensions, ejection fraction, mitral valve orifice area (MVOA), peak pressure gradient (PPG), mean pressure gradient (MPG), tricuspid regurgitation, and pulmonary arterial hypertension were recorded. Findings were analysed to identify chamber remodeling and hemodynamic abnormalities.

RESULTS

Among 30 patients, LA enlargement was present, with a mean LA diameter of 45.5 mm, compared with sex-specific upper reference limits of 38 mm in females and 40 mm in males. Left atrium diameter ranged from 35–62 mm. Tricuspid regurgitation and Pulmonary artery hypertension were documented each. Mitral valve orifice area (MVOA) and transmitral pressure gradients demonstrated variable mitral obstruction. Left ventricle dimensions and Ejection fraction showed variable patterns across mitral stenosis, mitral regurgitation and mixed lesions.

CONCLUSION

Mitral valve disease is associated with remodeling beyond the mitral valve, with Left atrium enlargement being predominant finding. Pulmonary artery hypertension and Tricuspid regurgitation indicate pulmonary and right-heart involvement. Integrating valve characteristics, hemodynamic and chamber measurements will provide comprehensive assessment of cardiac remodeling and support evaluation.

KEYWORDS

Mitral valve disease; cardiac remodeling; left atrial enlargement; MVOA; pulmonary hypertension.

A RARE CADAVERIC VARIATION OF THE SCIATIC NERVE IN RELATION TO THE PIRIFORMIS MUSCLE: A CASE REPORT

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The sciatic nerve, the largest nerve in the human body, is normally formed by the ventral rami of L4–S3 and emerges as a single trunk inferior to the piriformis muscle before dividing into the tibial and common peroneal nerves near the popliteal fossa. Variations in its relationship with the piriformis muscle are clinically significant due to their association with piriformis syndrome, failed sciatic nerve blocks, and iatrogenic injuries during gluteal and hip surgeries.

According to Bergman's Comprehensive Encyclopedia of Human Anatomic Variation, the normal anatomical pattern is observed in approximately 84% of individuals, while variations occur in nearly 16%. During routine cadaveric dissection in the Department of Anatomy, Hassan Institute of Medical Sciences, Hassan, a rare unilateral variation was observed. Gross anatomical dissection and photographic documentation revealed that the sciatic nerve emerged from the pelvis as two separate components in relation to the piriformis muscle, reunited distal to the gluteal region to form a single sciatic trunk, and finally divided into the tibial and common peroneal nerves at the junction of the upper one-third and lower two-thirds of the posterior leg. No associated muscular or vascular anomalies were identified. This rare anatomical configuration expands the spectrum of known sciatic nerve variations and highlights the importance of recognising such variants during surgical procedures, regional anesthesia, radiological interpretation, and the management of sciatic neuropathies, thereby reducing the risk of inadvertent nerve injury and improving clinical outcomes.

HISTOMORPHOMETRIC STUDY OF THE PITUITARY GLAND

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INTRODUCTION

The pituitary gland is a neuroendocrine gland located in the hypophyseal fossa. Histomorphometric analysis provides information about its microscopic structure and normal anatomical variations. Such data is valuable for understanding normal histology and may serve as a reference for anatomical and pathological studies.

METHODS

A descriptive study was conducted on seven human pituitary glands, comprising four male and three female specimens. Three histological sections from each gland were examined. Histological evaluation was performed using light microscopy and images were taken. Parameters assessed included diameter of the cords, width of the gland and variations (if present)

RESULTS

The study demonstrated variations in gland dimensions (mean: $l=1986.68$, $b=2120.47$) and cord diameter (mean: $l=963.73$, $b=813.73$) among the specimens. Intraglandular cysts and hyaline masses were observed in 3 out of 7 (42.85%) glands. The mean, standard deviation, minimum, and maximum values were calculated for the parameters and analysed. Comparative observations between male and female specimens were also recorded

CONCLUSION

The study provides histomorphometric data on the human pituitary gland and documents normal microscopic structure and variations. These findings may contribute to anatomical reference data and may be helpful for physicians, especially surgeons performing procedures on pituitary gland.

HISTOMORPHOMETRIC ANALYSIS OF FETAL THYMUS

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INTRODUCTION

Quantitative histomorphometry assessment of the fetal thymus provides valuable insights into its developmental progression. Parameters such as cortical and medullary thickness, lobular architecture, and Hassall's corpuscle morphology have been shown to correlate with gestational age and thymic maturation.

METHODS

The study was conducted on 4 human fetuses obtained from department of Obstetrics and Gynecology, Akash Medical Hospital, of gestational age ranging from 19 weeks to 35 weeks. Thymus was dissected out from each fetus followed by tissue processing. Sections were cut and stained with hematoxylin and eosin stain. All slides were observed under low and high powers of the light microscope.

RESULTS

Histomorphometric analysis of the fetal thymus demonstrated a progressive increase in both cortical and medullary thickness with advancing gestational age. The thymic lobules became increasingly well differentiated from 19 to 35 weeks of gestation, with corticomedullary distinction in the later stages. The maximum cortical thickness increased from 864.02 μm at 19 weeks to 1678.3 μm at 35 weeks, while the maximum medullary thickness increased from 700.8 μm to 1497.9 μm over the same period. Additionally, the average diameter of Hassall's corpuscles increased with gestational age, mean diameter varying between 262 μm at 19 weeks to 499.8 μm at 35 weeks.

CONCLUSION

The observed increase in cortical and medullary thickness with advancing gestational age reflects the normal growth and maturation of the fetal thymus. These findings are consistent with previous studies, supporting progressive development of thymic architecture and establishment of fetal immune competence during gestation.

MORPHOMETRIC ANALYSIS AND HISTOLOGICAL STUDY OF SEPTOMARGINAL TRABECULA

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INTRODUCTION

The septomarginal trabecula (moderator band) is a muscular bridge present in the right ventricle that connects interventricular septum to anterior papillary muscle and transmits impulses through the right bundle of His. This study is clinically relevant during cardiac imaging and surgical innervations. the aim of the present study was to determine morphometrical parameters of septomarginal trabecula in human cadaveric hearts.

METHODOLOGY

A cadaveric study was done on 30 formalin fixed human hearts obtained from the Department of Anatomy, AIMS & RC. The length, width, thickness, and distance from tricuspid valve was measured using a digital vernier caliper.

RESULTS

The moderator band was identified in 29 of 30 specimens (96.7%). All identified moderator bands were cylindrical in shape. Changes in the attachment of origin and insertion were observed. Length ranged from 8.33–20.80 mm, width from 1.23–5.80 mm, and thickness from 1.13–4.07 mm.

CONCLUSION

This study provides baseline morphometric data on the septomarginal trabecula, contributing to the understanding of its anatomical variability. These findings may serve as a reference for pathologists, radiologists, and cardiac surgeons to support accurate diagnosis and safer cardiac interventions.

Morphometric Evaluation of Medial Temporal Lobe: A Cadaveric Study

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INTRODUCTION

Medial temporal lobe is a neuroanatomical structure involved in memory, emotions and behavior. It consists of parahippocampal gyrus, uncus, dentate gyrus, hippocampus, fimbria, and amygdala. It is most commonly involved in conditions like temporal lobe epilepsy, Alzheimer's disease, uncal herniation. Few of these conditions require surgical interventions in severe conditions. Detailed morphometrical data of these structures is lacking. Hence aim of present study was to determine morphometrical parameters of Uncus, parahippocampal gyrus (PHG) and dentate gyrus (DG).

MATERIALS AND METHOD

13 formalin preserved cadaveric brain specimens were procured from Department of Anatomy under Karnataka Anatomy Act. The medial temporal lobe structures were exposed after careful removal of meninges from the cerebral hemispheres. Uncus, PHG and DG were categorized as well/moderately/ill defined. Quantitative assessment was done by measuring length and width. All readings were recorded in nearest mm. Fischer's exact test was used for statistical analysis. $P < 0.05$ was considered clinically significant.

RESULTS

100% Uncus and PHG were found to be well defined. 75% DG was found to be well defined whereas remaining 25% was moderately and ill defined collectively. The mean of following parameters were as follows - Uncus length - 21.37 ± 2.99 , Uncus width - 9.33 ± 4.88 . length of DG - 39.64 ± 7.04 and length of PHG - 17.78 ± 1.88 .

CONCLUSION

The results of this study can be useful for providing baseline morphometrical data which can be important for neurosurgeons for taking decisions during resection surgeries of Medial temporal region.

THE MERMAID WITHIN: ANTENATAL DIAGNOSIS OF A RARE CASE OF SIRENOMELIA

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INTRODUCTION

Sirenomelia is a birth defect of the lower body characterized by fusion of the legs, making it look like a mermaid hence, it is also known as mermaid syndrome. It is associated with a variable combination of severe abnormalities most commonly urogenital and gastrointestinal, making sirenomelia a multisystemic condition. It is a rare and fatal congenital anomaly with an incidence of 0.8 to 1 case per 1,00,000 births.

CASE REPORT

A 29-year-old woman, married for 11 years in a non-consanguineous marriage, presented with primary infertility who underwent ovulation induction followed by luteal-phase progesterone support resulting in spontaneous conception

- Obstetric history: G1P0L0

- T1: Uneventful

- T2: NT Scan showed constellation of lower-limb fusion, single umbilical artery, spinal dysraphism, absent/non-visualised kidneys and a radial ray anomaly was considered. The report noted the limitation that fetal anomaly assessment is more reliable at 20–24 weeks, and suggested either an early anomaly scan at 16–18 weeks or chorionic villus sampling (CVS) for karyotyping.

- Past History: H/o consumption of Ecospirin 75mg 0-0-1. Not a known case of HTN, T2DM, epilepsy, tuberculosis, epilepsy

- Treatment: Fetus did not survive. Termination of pregnancy was carried out with T. Mifepristone followed by T. Misoprostol. The fetus (60g) was expelled along with placenta and membranes in toto.

CONCLUSION:

Sirenomelia is an exceptionally rare and fatal congenital anomaly associated with severe multisystem malformations. This case underscores the value of meticulous first-trimester prenatal screening, enabling early diagnosis, informed parental counseling, and timely management of a non-viable pregnancy.

INCIDENTAL FINDING OF ABSENCE OF DORSAL PANCREATIC BUD WITH ASSOCIATED VASCULAR VARIATIONS: A CADAVERIC CASE REPORT

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INTRODUCTION

Partial or complete agenesis of pancreas is a rare congenital anomaly. There have been less than hundred reported cases in the existing literature. Most of the reported cases are incidental findings of radiological investigations

METHODS

During the routine dissection of the abdomen, in a 70 year old male cadaver we noticed a variation in the morphology of pancreas, and coeliac trunk. We explored the associated relations of the same.

RESULTS

The head of the pancreas was enlarged, with absence of neck, body and tail. The main pancreatic duct was traced to termination at the major duodenal papilla with absence of minor pancreatic duct. Coeliac trunk presented with splenic, gastroduodenal and common hepatic as its main branches. Additionally there was an elongated process from the hilum of the liver.

CONCLUSION

Reported variation in the agenesis of pancreas is limited. Our findings include complete absence of the neck, body and tail of the pancreas along with the variation in the coeliac trunk. This anomaly could be explained due to the absence of the dorsal pancreatic bud. This variation is of clinical significance to endocrinologists, radiologists, gastroenterologists and transplant surgeons.

ANATOMY OF OSTEOMEATAL COMPLEX: A CADAVERIC STUDY

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INTRODUCTION

Morphometric analysis of Osteomeatal complex is crucial to understand sinusitis pathophysiology and guiding endoscopic surgeries. This study is aimed to observe the anatomy and variations of the Osteomeatal complex and determine the proximity of key surrounding structures.

MATERIAL & METHODS

A cross-sectional study involved dissecting the osteomeatal complex in 32 sagittal sections of cadaveric heads. Dimensions of the uncinate process, primary maxillary ostium, and accessory maxillary ostium were measured. Distances from the primary ostium to the orbital floor, nasolacrimal duct, and hard palate were also recorded. Data were analyzed using descriptive statistics and paired t-tests.

RESULTS

The primary maxillary ostium was typically oval (75%), mostly located in the posterior third of the hiatus semilunaris, measuring 3.09 ± 0.9 mm by 2.10 ± 0.7 mm. An accessory ostium occurred in 35.5% of cases. The uncinate process had a mean width of 4.83 ± 1.0 mm. Distances measured from the primary ostium averaged 1.69 ± 0.9 mm to the orbital floor, 4.51 ± 1.2 mm to the nasolacrimal duct, and 17.75 ± 2.1 mm to the hard palate. One variant exhibited no maxillary ostium and a small uncinate process.

CONCLUSION

This study provides basic morphometric data of structures present in the Osteomeatal complex and the structures surrounding it. The anatomy and variations of the Osteomeatal complex aids in understanding sinusitis pathophysiology. Understanding its close proximity to critical structures is essential for minimizing complications during endoscopic sinus surgery.

PROSECTION vs DISSECTION: PERCEPTION AND PREFERENCE AMONG UNDERGRADUATE MEDICAL STUDENTS

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INTRODUCTION

Cadaveric dissection has traditionally been regarded as a cornerstone of anatomy education, providing students with hands-on experience and opportunities for three-dimensional understanding of anatomical structures. However, increasing student intake, limited availability of cadavers, and restricted curricular time have created challenges in conducting conventional dissection sessions. Prosection, involving expertly pre-dissected specimens, offers a time-efficient alternative that may complement traditional dissection. Understanding students' perceptions and preferences can help optimize anatomy teaching within the CBME framework.

OBJECTIVES

- To assess undergraduate medical students' perceptions of prosection and dissection in anatomy learning.
- To compare students' preferences and perceived learning outcomes between the two methods.
- To identify the perceived advantages and limitations of prosection and dissection.

METHODOLOGY

- **Study design:** Cross-sectional, questionnaire-based study
- **Study setting:** Department of Anatomy, Sri Siddhartha Medical College, Tumkur
- **Participants:** 250 undergraduate MBBS students
- **Study tool:** Pre-validated, semi-structured questionnaire
- **Question format:** Likert-scale items (Strongly Agree to Strongly Disagree) and multiple-choice questions

Domains assessed:

- Ease of understanding
- Time efficiency
- Knowledge retention
- Interest and engagement
- Emotional stress
- Hands-on learning
- Teamwork
- Respect and attitude towards the cadaver

RESULTS

Statistical analysis: Descriptive statistics and Chi-square test. The study is expected to identify differences in students' perceptions of the two teaching methods. Dissection may be perceived as beneficial for hands-on experience, teamwork and deeper anatomical understanding, whereas prosection may be perceived as advantageous for time efficiency, focused learning and examination revision. The findings may also reveal students' preference for using both methods in a complementary manner.

CONCLUSION

Prosection and dissection offer distinct educational benefits. A balanced, complementary approach incorporating both methods may help address time and resource constraints while preserving the experiential and professional values of cadaveric dissection. Incorporating student perspectives may contribute to the development of a more effective and learner-centred anatomy curriculum.

KEYWORDS

Anatomy | Dissection | Prosection | Undergraduate Medical Education | Student Perception | CBME

ASSOCIATION OF 3D-ASSISTED ANATOMY LEARNING AND CLINICAL EXPOSURE WITH ANATOMY KNOWLEDGE AMONG UNDERGRADUATE MEDICAL STUDENTS: A CROSS SECTIONAL STUDY

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INTRODUCTION

The integration of 3D anatomical models / virtual technology has emerged as valuable educational tools that may improve spatial understanding and learning outcomes among undergraduate and postgraduate medical students. Understanding anatomy mainly depends on cadaveric dissection and lectures with pictorial representation. Learning outcome and visualisation of anatomical structure especially Gross anatomy, neuroanatomy and embryology, is a considerable task for the students. Despite the increasing use of 3D-assisted learning, there is limited evidence that exists regarding its association with objective anatomy knowledge at different levels of clinical exposure.

AIM

To determine whether exposure to 3D-assisted anatomy learning and clinical training is associated with differences in anatomy knowledge among undergraduate medical students, and to compare these effects between preclinical and clinical phase students.

MATERIALS AND METHODS

A cross-sectional study will be conducted among first- and second-year MBBS students around 300 (150 each at SIMS, Shimoga. After taking consent, the students will be assessed using 40 validated questionnaires, on three sections (Gross Anatomy, Embryology and neuroanatomy). Participants will be categorised according to their academic year, clinical exposure, and previous exposure to 3D-assisted anatomy learning. First-year students will represent students without clinical exposure, while second-year students will represent students with clinical exposure. Within these two groups, they will be categorised into whether they have studied using these 3D assisted tools. All participants will complete the same standardised 40 questionnaire. Descriptive statistics will be used to summarise participant characteristics and scores. A two-way analysis of variance (ANOVA) will be used to evaluate the main effects of 3D exposure and clinical exposure and their interaction on anatomy scores.

RESULTS

The study will determine whether 3D-assisted anatomy learning and clinical exposure are associated with differences in overall anatomy performance. Final results awaited. To be discussed at the time of presentation.

CONCLUSION

Three-dimensional anatomical models significantly enhance anatomy learning and student satisfaction. Incorporating these tools alongside traditional teaching methods may improve anatomy education in undergraduate medical curriculum. The study may provide evidence regarding the educational relevance of 3D-assisted anatomy learning and its relationship with anatomical knowledge at different stages of undergraduate medical education.

KEYWORDS

3D-assisted learning; anatomy education; clinical exposure;

MORPHOMETRIC ANALYSIS OF THE CORPUS CALLOSUM AND ITS CORRELATION WITH BRAIN DIMENSIONS: A CADAVERIC STUDY

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BACKGROUND

The corpus callosum represents the largest commissural fibre bundle of the brain, connecting the two cerebral hemispheres and facilitating interhemispheric communication. Evaluation of its morphometric characteristics is important for understanding its anatomical relationships and morphological variations. Such measurements also provide valuable baseline information for neuroanatomical and neurosurgical research.

AIM

To assess the morphometric characteristics of the corpus callosum in human cadaveric brains and determine its topographical position in relation to the brain.

METHODS

A cross-sectional anatomical study was performed using human cadaveric brains available in the Department of Anatomy. Morphometric parameters of the corpus callosum and selected anatomical distances were measured in the midsagittal plane using a thread and ruler. The collected data were recorded in Excel sheet.

RESULTS

Considerable variation was observed in the morphometric dimensions of the corpus callosum among the examined specimens. Positive correlations were noted between corpus callosum length and selected dimensions of the brain, particularly brain length and height. statistical analysis done using SPSS software

CONCLUSION

The present study describes the morphometric characteristics of the corpus callosum and their association with overall brain dimensions. The positive correlations observed suggest a proportional relationship between corpus callosum dimensions and brain size. These findings provide baseline morphometric data that may contribute to a better understanding of anatomical variations and serve as a reference for future anatomical and neurosurgical studies.

KEYWORDS

Corpus callosum, morphometry, cadaveric brain, neuroanatomy

HOLOGRAM-ASSISTED ANATOMY EDUCATION: ENHANCING LEARNING DURING CADAVERIC DISSECTION IN MEDICAL STUDENTS

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INTRODUCTION

Anatomy forms the cornerstone of medical education, and cadaveric studies remain the gold standard in understanding the gross anatomy of the human body. However, due to time constraints and limited cadavers, students may fail to grasp information beyond the textbook related to clinical aspects, variations in anatomical structures, etc. Holographic visualisation will provide a three-dimensional representation of anatomical structures, potentially enhance students' spatial understanding, and complement traditional dissection.

OBJECTIVE

To assess the effectiveness of HOLOGRAM-ASSISTED anatomy studies in enhancing understanding of gross anatomy among the students

METHODOLOGY

Previously published research articles, systematic reviews, and educational studies were analysed to examine the effectiveness, advantages, limitations, and educational outcomes of hologram-assisted learning. Reports on the use of holograms in surgery and their effectiveness in improving patient understanding of procedures helped assess the scope of using holograms in medical education.

EXPECTED RESULTS

Hologram-assisted learning is expected to enhance students' spatial understanding of anatomy and facilitate visualisation of rare clinical and pathological conditions (like congenital anomalies). The immersive nature of holograms is anticipated to make anatomy learning more engaging, stimulate curiosity, improve attention during dissection sessions, and encourage self-directed learning. By bridging basic anatomy with clinical applications, holographic technology may improve knowledge retention and foster greater appreciation of anatomy as a clinically relevant subject.

CONCLUSION

Holographic visualisation has the potential to serve as an effective adjunct to cadaveric dissection, enriching anatomy education by improving conceptual understanding, clinical integration, and student engagement while inspiring interest beyond traditional textbook learning.

KEYWORDS

Hologram, applied anatomy, surgery, medical education

GASTRIC DIVERTICULUM -A CASE REPORT

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Guided by - Dr.Shruthi B.N -Professor, Department of Anatomy, Rajarajeswari Medical College And Hospital, Bangalore

INTRODUCTION

Gastric diverticula are out pouchings of the stomach wall that are located most commonly in the posterior wall of the fundus of the stomach . Often, they are asymptomatic and are found incidentally. When symptoms manifest, they most commonly appear as upper abdominal pain, nausea, emesis and dyspepsia. There are two types of gastric diverticulum- congenital and acquired. They are the least common gastrointestinal diverticula, and are rare anatomic abnormalities overall.

PURPOSE

1. To help physicians to diagnose a patient who presents with gastric diverticulum.
2. To promote further research of this rare and unique presentation of the gastrointestinal system.

Methodology:

-Cadaveric study

RESULT

We present a unique case of two congenital gastric diverticula- one was larger than the other, found during routine dissection. They are present on the anterior wall of the body of the stomach, near the lesser curvature. We described them as D1(larger) and D2(smaller) having the diameters 1.9 cm and 1.5 cm respectively.

CONCLUSION

The study of Gastric diverticulum is important as when patients present with the symptoms, the clinician must be aware about differential diagnosis of these symptoms so as to avoid misdiagnosis. Treatment and removal of GD takes a high level of skill and precision by the clinician.

MORPHOLOGICAL AND MORPHOMETRIC VARIATIONS OF THE GALLBLADDER IN HUMAN CADAVERS: A DESCRIPTIVE ANATOMICAL STUDY

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BACKGROUND

The gallbladder shows considerable variation in its morphology and dimensions. These anatomical variations may have important clinical implications during radiological evaluation and surgical procedures, particularly laparoscopic cholecystectomy. Familiarity with variations in gallbladder shape, size, and structural configuration is essential to facilitate safe identification and dissection of the biliary structures and to reduce the risk of iatrogenic injury.

AIM

To study the morphological and morphometric characteristics of the gallbladder in human cadavers and document the various anatomical configurations and structural variations.

Materials and Methods:

A descriptive anatomical study was carried out on human cadaveric liver and gallbladder specimens available in the Department of Anatomy, East Point Medical College. The maximum length and transverse diameter of the gallbladder were measured using Vernier calipers. The external morphology was assessed and classified. The observations and morphometric measurements were recorded in an Excel sheet.

RESULTS

The pear-shaped gallbladder was the predominant morphological type. However, several variations in shape and structural configuration were observed among the specimens. Cylindrical, hourglass, flask-shaped, and irregular forms were identified. Structural variations including Phrygian cap, Hartmann's pouch, bilobed configuration, internal septation, and localized diverticula were also documented. Statistical analysis was done using SPSS software.

CONCLUSION

The study highlights the considerable morphological and morphometric variability of the gallbladder. Detailed knowledge of gallbladder variants may facilitate safer dissection in the region of Calot's triangle and help minimize inadvertent biliary and vascular injuries during cholecystectomy.

KEYWORDS

Gallbladder, Morphometric variations, Cadaveric study, Laparoscopic cholecystectomy

HISTO-MORPHOMETRY OF CADAVERIC LINGUISTIC CORTEX – A PILOT STUDY

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Research Centre, Bangalore**

INTRODUCTION

Linguistic areas of cerebral cortex are highly developed regions gifted to humans. It consists of Broca's area, Wernicke's area, Angular gyrus and Supramarginal gyrus of dominant cerebral hemisphere. These regions are modified histologically compared to other areas of cerebral cortex to perform special function of speech. The aim of present study was to observe histological architecture of these areas.

METHODOLOGY

Brain tissues were procured from Department of Anatomy under Karnataka Anatomy act. These tissues were taken from linguistic areas of left hemisphere and were H&E stained. 16 slides each of these linguistic areas were studied. 10 optical fields from each slide were examined using calibrated microscope with camera. Statistical analysis (ANOVA test) was used for the following parameters -thickness of individual layers, pyramidal cellsize and its density.

RESULTS

The histology of linguistic areas showed the same six layers as seen in cerebral cortex. All these layers were clearly defined in all linguistic areas except Broca's area where they were ill defined. While Broca's area showed largest pyramidal cells in layer III and V, Wernicke's area showed dense population of pyramidal cells in Layer III. Supramarginal gyrus had dense layer II and angular gyrus showed densely populated small sized pyramidal cells in layer III. $P < 0.05$ was considered as statistically significant.

CONCLUSION

These results can provide a baseline data for understanding histopathology of severe neurological and psychiatric conditions involving speech such as aphasia, stroke, dementia, epilepsy, Alzheimer's disease and dyslexia.

KEY WORDS

Linguistic cortex, histomorphometry, cadaveric study



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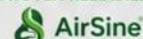


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