NATIONAL CONFERENCE IN ANATOMY

On

Evolution, Education and Evidence Based Anatomy in Medicine

44TH ANNUAL NATIONAL CONFERENCE OF ASSOCIATION OF ANATOMISTS TAMIL NADU

EEE 2023

Conference Proceedings & Abstracts

13th & 14th October - 2023

Department of Anatomy,

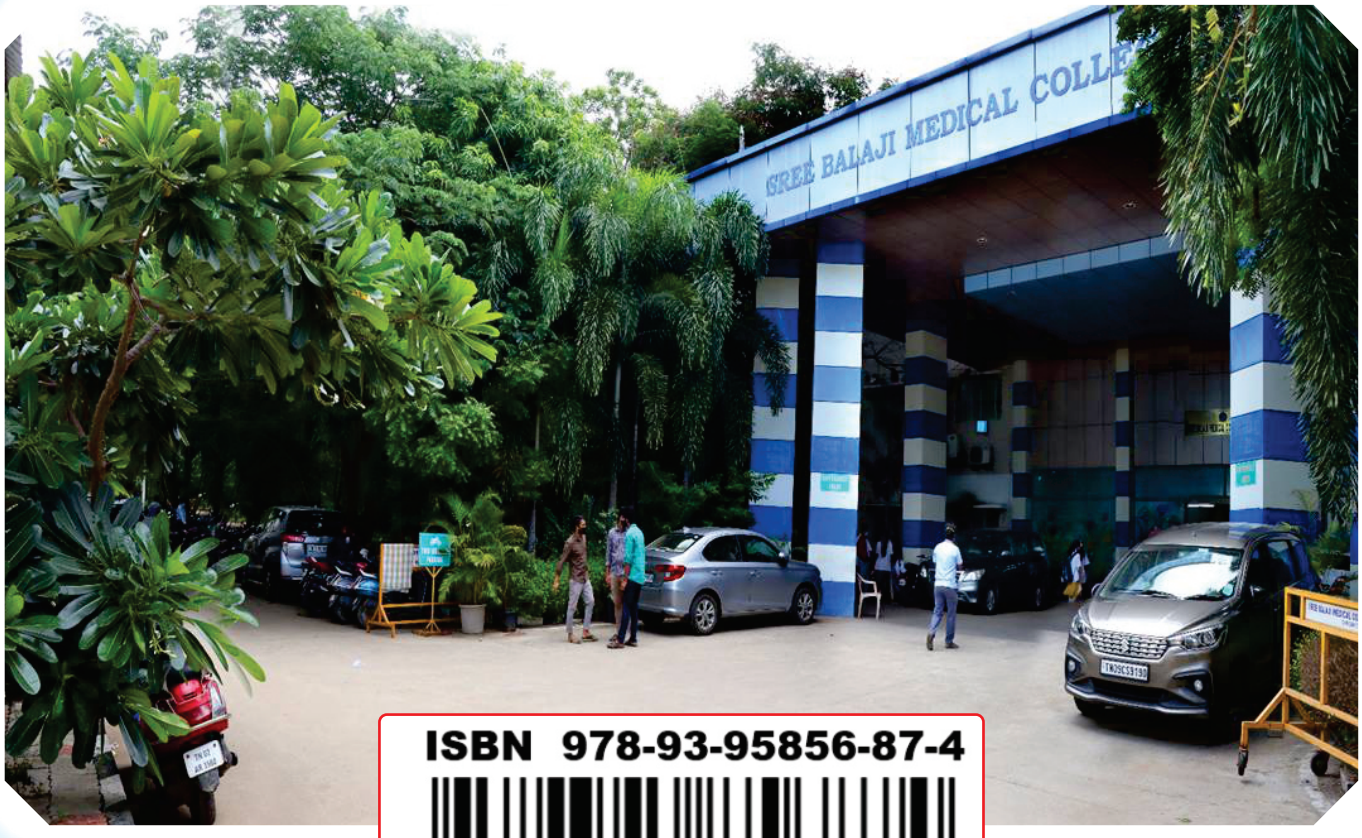
Sree Balaji Medical College &Hospital,
Chromepet, Chennai-600044.

47TH ANNUAL NATIONAL CONFERENCE OF ASSOCIATION OF ANATOMISTS TAMILNADU

EDUCATION • EVIDENCE • EVOLUTION

EEE'23

★ SBMCH ★



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DEPARTMENT OF ANATOMY, SREE BALAJI MEDICAL COLLEGE & HOSPITAL, CHROMEPET.

Front row (Left to Right): Dr.S.Jayakumari, Dr.G.Durga Devi, Dr.M.Kavimani, Dr.W.M.S Johnson, Dr.K.Prabhu, Dr.Mary Antony Praba, Dr.Archana.R, Dr.Jinu Merlin Koshy.

Back row (Left to Right): Dr.Benilsha.A, Dr.Moksha Dayini.B, Dr.Krishnaveni Sharath, Dr.Chitra.S, Dr.R.Aarthe, Dr.Rahe.R, Dr.Evangeline Singh, Dr.Ramya.A.

FACULTY & NON-TEACHING STAFF

DEPARTMENT OF ANATOMY, SREE BALAJI MEDICAL COLLEGE & HOSPITAL, CHROMEPET.

Front row (Left to Right): Dr.S.Jayakumari, Dr.G.Durga Devi, Dr.M.Kavimani, Dr.W.M.S Johnson, Dr.K.Prabhu, Dr.Mary Antony Praba, Dr.Archana.R, Dr.Krishnaveni Sharath.

Middle row (Left to Right): Dr.Chitra.S, Dr.Benilsha.A, Dr.Evangeline Singh, Dr.Ramya.A, Dr.Jinu Merlin Koshy, Dr.Rahe.R, Dr.R.Aarthe, Dr.Moksha Dayini.B.

Back row (Left to Right): Mrs.Gomathi, Ms.Subalakshmi.M, Ms.Aarthi.R, Mr.Hemachandran.K, Mr.Sampath, Mr.Selvam.

44th National Conference of Association of Anatomists Tamilnadu

Department of Anatomy
Sree Balaji Medical College & Hospital - BIHER

The Management, Staff and the Organizing Committee Cordially invite you all, to attend the Inaugural Ceremony of the National Conference in Anatomy

EEE 2023

Evolution, Education and Evidence Based Anatomy in Medicine

Date

13th October 2023
09.00 am

Venue

TR Raman Hall - 4th Floor
Hospital Block

Chief Guest

Dr.Sarah.R
Additional Professor & Head
Department of Anatomy
AIIMS, Madurai

Guest of Honour

Dr.Sudha Seshayyan
Former Vice - Chancellor
The Tamilnadu
Dr.M.G.R Medical University

OBJECTIVES OF THE CONFERENCE

- To understand the importance of evolution in anatomy perspective by focusing on similarities and differences in the Anatomy of different species including the ones that are visible during embryonic development that may indicate a shared evolutionary ancestry.
- To discuss pressing issues with anatomy education.
- To share the significance and the need to appraise the available anatomy literature in the concept of evidence-based anatomy in medicine.
- Provide students a platform to showcase their work and build strong new friendship that span across various medical, dental and paramedical colleges.
- The event will not only incorporate guest speakers and discussion, but will also consist of Award paper presentation, Oral presentation and E-poster presentation, that will help our students and faculty to develop networks and transform their ideas into actions.

MESSAGE
FOUNDER CHANCELLOR

Department of Anatomy of Sree Balaji Medical College and Hospital, a constituent Institution of Bharath Institute of Higher Education and Research (BIHER) has decided to conduct the 44th National conference of Association of Anatomist – Tamil Nadu, the **"EEE-2023".** As the founder chancellor **DR.S.JAGATHRAKSHAGAN** I am extremely happy and I congratulate the Organizing committee for choosing theme **"Education, Evolution and Evidence based Anatomy in Medicine"** for this National conference.

I am happy that eminent medical health professionals are participating in this conference and sharing their vast experience and knowledge.

Also I am sure the National Conference conducted by the department of Anatomy will be a milestone in the history of Sree Balaji Medical College Hospital. I wish the organizing committee and all the participants a great success in all their future endeavors.

DR.S.JAGATHRAKSHAGAN,
Founder Chancellor,
Bharath Institute of Higher Education and Research.

MESSAGE
CHAIR PERSON

I am happy to know that the Department of Anatomy of Sree Balaji Medical College and Hospital has taken an initiative in organizing the 44th National conference of Association of Anatomist – Tamil Nadu, the **"EEE-2023".**

I am certain that the conference will provide the delegates a platform for acquiring knowledge and updates on the theme **"Education, Evolution and Evidence based Anatomy in Medicine".**

I profoundly acknowledge the organizers who have toiled to make this event a grand success. The overwhelming registration of delegates from various institutions shows the successful organization of this conference. I congratulate the dedication of the organizing committee.

This event will surely be etched in the memories and will remain a milestone in the academic pursuits of this institute.

I once again congratulate the organizing committee and wish the conference a grand success.

DR.J.SRINISHA,
Chair Person &Trustee,
Sri Lakshmi Ammal Educational Trust, Chennai.

MESSAGE

ADVISOR - SBMCH

I am glad to know that the Department of Anatomy of Sree Balaji Medical College& Hospital is conducting the 44th National conference of Association of Anatomist – Tamil Nadu, the **"EEE-2023".**

Highly academic professors in various divisions of Anatomy are sharing their experiences in the theme **"Education, Evolution and Evidence based Anatomy in Medicine**" for the benefit of young doctors and clinicians.

I wish the conference a great success.

R. Veerabahu

DR.R.VEERABAHU,MD.
Advisor,
Sree Balaji Medical College and Hospital.

MESSAGE

REGISTRAR - BIHER

I am happy to know that the department of Anatomy is organizing a National conference on **"Education, Evolution and Evidence based Anatomy in Medicine"** the **"EEE-2023".**

This is a milestone in the progress of the Department of Anatomy, of Sree Balaji Medical College and Hospital, Chennai.

The conference ingrained with a vision to encourage the students and faculty to achieve brilliance in the field of Anatomy.

I wish this conference to be a torch bearer for the generation of new ideas and a brilliant future.

I once again congratulate the organizing committee and wish the conference a grand success.

DR.S.BHUMINATHAN,
MDS,MFDS RCPS (Glasgow UK)Ph.D.,
Registrar.

MESSAGE

MEDICAL DIRECTOR- SBMCH

I hope this National Conference on **"Education, Evolution and Evidence based Anatomy in Medicine"** the **"EEE-2023",** organized by departments of Anatomy will be a hallmark for the entire institution.

Extremely happy to express my feelings towards the conference which will feed complete knowledge about Anatomy without any fraction of doubt to the delegates.

The conference will be a boost to our institution. Ongoing through the brochure, I can appreciate that apt persons are invited for guest lectures. I appreciate the organizing secretary in this regard.

I congratulate the organizing team for the dedication and involvement in organizing this 44th National Conference of Association of Anatomist – Tamil Nadu.

I wish the conference a grand success.

Medical Director,
Sree Balaji Medical college and hospital

MESSAGE

DEAN - SBMCH

Dear Colleagues,

I am very happy to note that Team Anatomy in Balaji is hosting the 44th National Conference of the Association of Anatomists, Tamilnadu with the theme "Evolution, Education, Evidence based Anatomy"

Evolution is the biological process by which species change over time through the inheritance of genetic traits. It's a fundamental concept in biology.

Education is the process of acquiring knowledge, skills, values, and habits. It plays a crucial role in disseminating scientific understanding, including Anatomy.

Evidence-based anatomy the use of empirical evidence, research, and scientific methods to understand the structure and function of the human body. It's essential for advancing our understanding of anatomy. No more Anatomy can be called the Dead teach the living but it is a subject full of life.

I am sure the delegates from across the country will exchange ideas and carry forward the research in their places. I am happy to note that this is the 3rd Anatomy Conference in two decades of existence of our college and 5th in our university, BIHER.

I wish grand success for the conduct of the proceedings.

Dr WMS Johnson,
Dean,
Sree Balaji Medical College and Hospital

MESSAGE

MEDICAL SUPERINTENDENT - SBMCH

I am extremely pleased for the conduct of the national conference **“EEE-2023”** on **"Evolution, Education and Evidence based Anatomy"** by the Department of Anatomy, Sree Balaji Medical College and Hospital.

Happy to know that many Eminent International and National faculties will be part of this conference to share their knowledge and experience in this conference. Hope that the comprehensive agenda of the conference will be presented through various scientific sessions and will provide an academic feast to all the participants in the conference.

I congratulate the entire Organizing team of “EEE-2023” for organizing this conference and wish them Success.

DR.SASIKUMAR.P,
Medical Superintendent,
Sree Balaji Medical College and Hospital.

MESSAGE

VICE-PRINCIPAL - SBMCH

It gives me immense pleasure that the Department of Anatomy, Sree Balaji Medical College and Hospital has organized **"EEE 2023"** the **"44th National Conference of Association of Anatomists of Tamil Nadu on Evolution, Education and Evidence based Anatomy in Medicine"**

I take this opportunity to congratulate the organizing team of "EEE 2023" who have put in their efforts to make the event a grand success.

Integration of evolution, education, and evidence-based anatomy is indispensable in the field of medicine.

I wish the invited lectures and the research paper presentation will enlighten and update the delegates of the latest scientific research, ultimately benefiting patients.

My best wishes to one and all.

DR.RENUKA DEVI MR,
Vice-Principal,
Sree Balaji Medical College and Hospital

MESSAGE

PRESIDENT

Association of Anatomists - Tamil Nadu

In my observation, **"Wisdom consists of ideas and doctrine whose meanings change with the mind that entertain them".** The more we collaborate the more we improvise the knowledge.

I am glad to know that this 44th Annual Conference of Association of Anatomists, Tamilnadu – Organized, by the department of Anatomy Sree Balaji Medical College and Hospital is one such event that paves a gateway for knowledge, creation, and dissemination. My heartfelt wishes to the organizing secretary Prof. Dr. WMS Johnson and his team, towards their dedication, hard work and successful conduction of the conference.

The purpose of this conference is to bring together the experts in the field of Anatomy with a focus. We are confident that this conference will be highly interactive and encourage the young minds to put their efforts with the knowledge in this field. I wish all the participants "Success" in all their future endeavors.

HOD OF ANATOMY

PROF & HOD OF ANATOMY
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES
Kudu Agaram Village, Pondicherry-605 502

(Prof. Dr. VIJISHA PHALGUNAN)

MESSAGE

GENERAL SECRETARY
Association of Anatomists - Tamil Nadu

On behalf of the Association of Anatomists Tamil Nadu. It gives me immense pleasure to extend my Hearty wishes to the Department of Anatomy, Sree Balaji Medical College and Hospital, BIHER (DU) for organizing the **44th Annual Conference of Association of Anatomists Tamil Nadu.**

EEE 2023 - THEME: Evolution and Evidenced Based Anatomy in Medicine.

I hope this conference will be a platform of high caliber of interaction foremost and exchange of knowledge. I congratulate the organizing secretory Dr. WMS Johnson and his team, for their dedication, hard work and for successful conduction of the conference.

I extend my warm greetings and felicitations to all the delegates and speakers and wish the conference a grand success.

(Dr. S. SENTHIL KUMAR)
Additional Registrar – SRIHER (DU),
Professor of Anatomy,
Sri Ramachandra Medical College &
Research Institute,

MESSAGE

TREASURER

Association of Anatomists - Tamil Nadu

I am glad to know the Association of Anatomists - Tamil Nadu (anon-profit organization) promoting scientific talent in the field of Anatomy, is conducting its 44th Annual Conference of Association of Anatomists Tamil Nadu, on 13th & 14th of October 2023 at Sree Balaji Medical College and Hospital, BIHER (DU), Chromepet, Chennai - 600044. Tamil Nadu.India.

Founded in 1977, the Association has more than 500 members from all over India. The association fosters a multi-disciplinary approach to the study of Anatomy and exists to promote the exchange of scientific knowledge.

I congratulate the Organizing Secretary Dr. W.M.S. Johnson and all the committee members for taking up the challenge and providing a platform for scientific interaction through this Conference. This conference is likely to be one of the finest opportunities for scientists, researchers and students from all over India to participate and share ideas over the same dais. I am confident that the scientific deliberation during the program would be a greater scientific feast of knowledge and information.

We wish to thank all the authors, reviewers/chairperson, invited speakers and sponsors, members of the advisory board and organizing team, student volunteers and all others who have contributed towards the successful organization of the conference.

I wish the conference a grand success.

Dr.S.Prakash,
Professor of Anatomy
Dean, University Industry Community Interaction Centre
PGIBMS- Taramani.

MESSAGE

Editor-in-Chief – IJAS,
Association of Anatomists - Tamil Nadu

Association of Anatomists, Tamil Nadu is a pioneer association which has the credit and pride of existing with harmony and integrity among the anatomists of India for along period more than 45 years and happy to see that it is expanding its name and fame across the country by conducting annual conferences in various medical colleges across the state of Tamil Nadu. With the advent of CBME now it is right time to make a paradigm shift in focusing anatomy teaching from a subject based to evidence based and application based. And I sincerely appreciate Balaji Medical College for conducting the conference with the main theme on Evidence Based Anatomy. My special wishes to Sri Balaji Medical College for conducting the **44th National conference of Association of Anatomists, Tamil Nadu** under the leadership of Dr. Johnson and his team.

I am sure the delegates and participants will have a grand feast by the sharing of knowledge by eminent speakers, delegates and students.

I wish the organizing team a grand success of the conference.

Dr. Girija Sivakumar,
Editor-in-Chief,
Professor of Anatomy,
Anna Medical College, Mauritius

ORGANISING COMMITTEE

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Dr.J.Srinisha,Chairperson
Er.N. Elamaran, Managing Director</td></tr>
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Office Bearers - Association of Anatomists –Tamil Nadu
2022-2023

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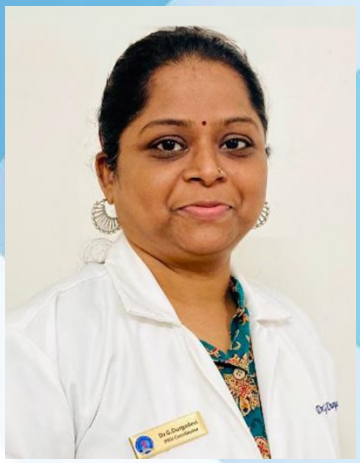
Dr. Ravishankar	▹	SRM Dental College
Mr. K. Yugesh	▹	Sri Ramachandra Medical College & Research Institute

GREETINGS FROM HOD



It is an honor and privilege to be a part of the organizing team and host the **44th National Conference of Association of Anatomists Tamilnadu**. The **Department of Anatomy of Sree Balaji Medical College & Hospital** has always been enthusiastic in conducting academic events under the fervent guidance and support of the management and the head of the Institution, Dr. W.M.S Johnson. This National Conference bearing the theme, "Evolution Education and Evidence-based Anatomy in Medicine will encapsulate the significance of integrating evolution education and evidence-based anatomy into medical education and practice. This integration will equip healthcare professionals with the knowledge and skills necessary to comprehend the intricacies of diseases, enabling them to make precise diagnoses, develop effective treatments, and ultimately improve the overall well-being of patients. The conference will serve as a platform for sharing insights, fostering discussions, and promoting the implementation of these principles, thereby advancing the quality of healthcare and contributing to medical advancements.

I am extremely humbled and take immense pleasure to be part of the organizing committee and wish the conference a great success.

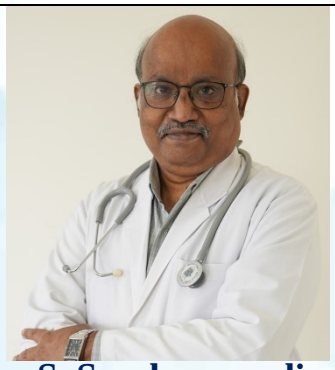
Dr.G.Durga Devi,
Professor & HOD.,
Department of Anatomy,
SBMCH.

CHIEF GUEST
&
GUEST SPEAKERS

CHIEF GUEST

Dr. Sarah, Additional Professor & Head, Department of Anatomy, All India Institute Of Medical Sciences, Madurai

GUEST SPEAKERS



Dr. S. Sundarapandian,
Professor and Head,
Department of Anatomy,
SRM Medical College & Hospital.

Dr. Sudha Seshayyan,
Former Vice – Chancellor,
The Tamilnadu Dr.MGR Medical University.

Dr. Ilavenil Karunagaran,
Assistant Professor,
Karpagam Faculty of Medical Sciences & Research Institute, Coimbatore

Dr. Pushpalatha K,
Professor, Department of Anatomy,
Co-Convener MEU, Convener CCLPE,
JSS Medical College – Mysore.

PROGRAM AGENDA

Time	Program
13th Oct-2023	
8:00 am	Breakfast (College Ground Floor)
8:30 am	Registration (College Ground Floor)
9:00 to 11:00 am	Inauguration @ TR Raman Hall (4th Floor-Hospital Block)
11:00 to 12:00 noon	Dr, M M Cooper Oration Dr.S.Sundarapandian Professor and HOD, Anatomy SRM Medical college and Hospital. 
12:00 to 1:00 pm	Prof.Vathsala Venkatesan Oration Dr. Sudha Seshayyan Former Vice-Chancellor, The Tamilnadu Dr.M.G.R. Medical University 
1:00 to 2:00 pm	Lunch
2:00 to 5:00 pm	Awards Session
5:00 to 7:00 pm	General Body Meeting @ College Block
14th Oct-2023	
8:30to9:00am	Breakfast (College Ground Floor)
9:30to10:00am	Prof.Kamalesh Sundareshwaran Oration Dr.Ilavenil Karunakaran, Assistant Professor, Karpagam Faculty of Medical Sciences & Research Institute, Coimbatore. 
10:00to10:30 am	Prof.P.SaiKumarOration Dr PushpalathaK Professor, Anatomy Department Co-Convener MEU, Convener CCL PE, J.S.SMedicalcollege, Mysore. 
10:00 to 1:00pm	ORAL /Poster Presentation /Infotainment
1:00 to 2:00 pm	Lunch
2:00to3:00pm	Valedictory

GREETINGS

FROM

CHIEF GUEST

Dear Esteemed Colleagues and Friends,

It is both an honour and a privilege to be part of the National Anatomy Conference EEE 2023, hosted by the Department of Anatomy at Sree Balaji Medical College and Hospital.

The conference theme, "Evolution Education and Evidence-based Anatomy in Medicine, "strikes a chord with the essence of what we, as anatomists and medical professionals, strive for every day. Our journey into the intricate world of anatomy not only enables us to comprehend the remarkable structures within the human body but also offers a gateway to understanding the diversity of life itself. Embracing the wisdom of evolution allows us to appreciate the interconnectedness of all living beings, transcending species boundaries. It is this very interconnectedness that holds the key to unlocking the mysteries of both the past and the future of medicine.

In our pursuit of excellence, it is imperative that we continually address the pressing issues in anatomy education. The knowledge and skills we impart to the next generation of medical professionals are the foundation upon which quality healthcare is built. Thus, forums like this conference provide a vital platform for sharing insights and finding innovative solutions to enhance anatomy education.

Moreover, the concept of evidence-based anatomy in medicine is paramount in today's healthcare landscape. As practitioners and educators, we must ensure that our practices and teachings are grounded in the latest scientific evidence. This conference is an opportunity to delve into the world of anatomy literature, critically appraise it, and adapt our approaches accordingly to provide the best care to our patients and the best education to our students.

I am particularly excited about the prospect of interacting with students and faculty from various medical, dental, and paramedical colleges. These interactions often lead to the birth of new ideas, collaborations, and lifelong friendships. The significance of this networking opportunity cannot be overstated.

In the days to come, I look forward to engaging in thoughtful discussions, learning from the brilliant minds gathered here, and collectively shaping the future of anatomy education and research. I am excited to be part of this transformative event.

Warm regards,
Dr. R. Sarah
Additional Professor & Head,
Department of Anatomy,
All India Institute of Medical Sciences, Madurai

SYNOPSIS

GUEST SPEAKERS

DR. MM COOPER ORATION

Unveiling the Secrets of Human Anatomy: Evidence-Based Teaching and Learning Strategies.

Dr. Sundarapandian S, Professor and Head, Department of Anatomy. SRM Medical College and Hospital.

Human anatomy is a foundational subject in medical, healthcare, and biological sciences education. To optimize the learning experience in this complex field, evidence-based teaching and learning strategies are essential.This synopsis provides a concise overview of a presentation that delves into these strategies, highlighting their significance and supporting research.

Introduction:

This presentation underscores the vital importance of evidence-based teaching and learning in human anatomy education. It emphasizes that evidence-based practices are rooted inresearch and have a profound impact on student outcomes.

Importance of Evidence-Based Teaching:

Evidence-based teaching methods are shown to significantly improve student performance, reduce failure rates, and enhance learning outcomes, according to a meta-analysis by Freeman et al. (2014).

Active Learning:

Active learning is presented as a corner stone of effective anatomy instruction. Research by Michael etal.(2019) reveals that active learning classrooms out perform traditional lecture-based settings in anatomy examinations.

Technology Integration:

The integration of technology in anatomy education is highlighted, with research by DeSantis and Hickey (2017) and Nnodim and Adesina (2018) demonstrating the positive impact of virtual dissection tools and 3 Danatomical models.

Use of Visual Aids:

Visualaids, such as anatomical charts and multimedia presentations, are show cased as effective tools for comprehension. Asystematic review by Alexanderetal.(2019) underscores their contribution to improved student performance.

Formative Assessment:

Regular formative assessment is presented as a valuable technique for gauging student understanding. Memon et al. (2017) provide evidence that formative assessment quizzes enhance anatomy examination performance.

Real-Life Scenarios:

Real-lifeclinicalscenarios areintroducedasameansofconnectingtheorytopractice.Evidence from Gordon and Durstine (2020) underscores the effectiveness of case-based learning in improving clinical reasoning skills in anatomy.

Collaborative Learning:

Thebenefitsofcollaborativelearningareoutlined, supported byameta-analysis by Johnsonetal. (2014), which shows that collaborative learning methods positively impact anatomy learning outcomes.

Addressing Learning Styles:

Recognizing and accommodating diverse learning styles is presented as a key consideration in anatomy education. Research by Fleming et al. (2018) emphasizes the importance of adapting instructional methods to students' learning styles.

Supportive Learning Environment:

Creating a supportive learning environment is discussed as a factor that fosters motivation and confidence in students. Research by Mercerand Ryan(2019) emphasizes that a positive classroom climate enhances student engagement and participation in anatomy.

Continuous Improvement:

The presentation concludes by stressing the importance of continuous improvement in evidence- based teaching. Feldmanetal.(2022) underscore the need for ongoing adjustments based on student performance andfeedback.

In summary, this presentation provides a comprehensive overview of evidence-based teaching and learning strategies for human anatomy. It highlights the impactof these strategies on student outcomes, drawing from a wealth of research evidence. By incorporating active learning, technology, visual aids, formative assessment, real-life scenarios, collaborative learning, and a supportive environment, educators can create a dynamic and effective learning experience in the field of human anatomy.

PROF. VATHSALA VENKATESAN ORATION

“Anatomy” The Enchanting Enigma

Dr. Sudha Seshayyan, FormerVice-Chancellor, The Tamilnadu Dr.M.G.R. Medical University

"Anatomy: The Enchanting Enigma" is a captivating exploration of the intricate and awe-inspiring world of the human body which takes the students on a mesmerizing journey through various systems, organs, and structures that make up the human anatomy, unraveling the mysteries that lie beneath the surface.

Anatomy unveils the intricacies of the human body, revealing a world of astonishing precision and complexity. From the symphony of bones and muscles that allows us to move with grace and purpose to the delicate choreography of cells that sustains life itself, the human body is a masterpiece of design. It is in the exploration of these intricate details that anatomy becomes truly enchanting.

Beyond its scientific significance, anatomy weaves a narrative of human existence. It tells the story of evolution, adaptation, and survival, offering profound insights into our past and our potential future. The study of anatomy enables us to understand the interplay between form and function, shedding light on the marvel of adaptation that has allowed life to flourish in the most diverse and challenging environments.

In conclusion, anatomy is far more than a scientific discipline; it is a source of enchantment. It invites us to explore the wonders of our own bodies, to marvel at the intricacies of life, and to contemplate the profound mysteries of existence. Whether studied for academic purposes or appreciated for its aesthetic beauty, anatomy continues to captivate and inspire those who venture into its enchanting realm.

PROF. KAMALESH SUNDARESHWARAN ORATION

Intersection of AI on Medical Education Opportunities and Challenges

Dr.IlavenilKarunakaran, Assistant Professor, Karpagam Faculty of Medical Sciences &ResearchInstitute, Coimbatore.

Artificial Intelligence (AI) is part of our everyday life. AI is growing at an exponential pace, and it has been integrated into several domains, including healthcare. AI is already transforming the specialities of radiology, pathology, dermatology, cardiology, psychiatry, neurosurgery among others. AI will be part of everyday healthcare workflows. Medical education will mandate a modified set of skills for learners that will include awareness of the AI tools available, the knowledge of how AI works, its strengths, challenges and principles of AI use. It is the responsibility of educators to embrace the technology and to facilitate the responsible use of AI by relevant training of our learners. In this session, we will discuss the ways in which AI works in healthcare and also in medical education. In this context, we will look at a few tools available and the roles that faculty will play in ushering in AI enabled medical education and healthcare.

PROF. P. SAI KUMAR ORATION

Planning, Implementing and Evaluating Outcome Based Education

Dr. PushpalathaK, Professor, Anatomy Department, Co-Convener MEU, Convener CCL PE, J.S.SMedicalcollege, Mysore.

Objectives:

- What? Why? & How?
- Benefits, challenges and framework of OBE
- Explain the difference between the traditional system of education and OBE
- Outcome based accreditation and administrative system of OBE

What is outcome-based education?

Outcome-Based Education (OBE) is an educational approach that focuses on defining desired learning outcomes for students and designing the educational process to achieve those outcomes. Rather than solely focusing on the delivery of content or completion of courses, OBE emphasizes the measurable knowledge, skills, and attitudes that students should attain by the end of their educational journey.

In OBE, the learning outcomes are identified first, and then the curriculum, teaching methods, and assessments are aligned to support the achievement of those outcomes. The emphasis is on the mastery of specific skills and competencies, rather than just the accumulation of knowledge.

Effective learning outcomes are specific, measurable, attainable, relevant, and time-bound (SMART). They provide clear expectations and benchmarks for both educators and students, facilitating focused teaching and learning experiences while enabling effective assessment and evaluation.

Essentials of Outcome Based Education

- In OBE, what matters ultimately is not what is taught, but what is learned
- Teachers must set appropriate course intended learning outcomes, instead of teaching objectives
- Constructive alignment: What we teach, how we teach and how we assess ought to be aligned with the intended learning outcomes, such that they are fully consistent with each other
- The quality of teaching is to be judged by the quality of learning that takes place
- All OBE approaches take a criterion-based view of assessment and focus on what students can do with knowledge after a period of learning

Importance of Outcome Based Education in Higher Education:

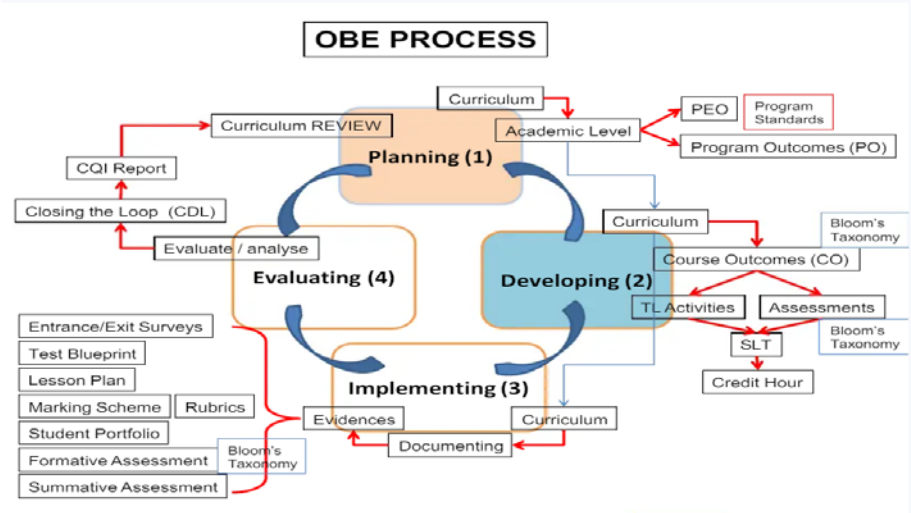
- Clear Learning Outcomes
- Focus on Mastery
- Relevant Learning
- Continuous Improvement
- Higher Education Quality

- Flexibility
- Engaging Learning Experience
- Self-Directed Learning
- Better Career Opportunities

Outcome Based Learning vs Traditional Learning

Traditional teaching	Outcome based
Passive learners	Active learners
Examination driven	Continuous assessment
Content based syllabus (teacher and textbook centred)	Integration of knowledge (learner Centred)
Syllabus is rigid/ Rigid time frame	Lecturers can be innovative and creative/Flexible time frames
Teachers role as instructor	Teachers role as partner/facilitator
Focuses on teachers input	Focuses on learners output
Rote learning and emphasis on products	Critical thinking, reasoning and action and emphasis on progress and overall learning

Challenges in Implementing Outcome-Based Education
Resistance to Chang
Developing Learning Outcomes
Aligning Assessment Methods with Learning Outcomes
Creating Rubrics
Faculty Training
Resource Restrictions
Limited Access to Technology



SCIENTIFIC SESSIONS

44th National Conference of Association of Anatomists, Tamilnadu.

Evolution Education Evidence Based Anatomy in Medicine EEE -2023

Department of Anatomy, Sree Balaji Medical College & Hospital

AWARD SESSION

VENUE:T R RAMAN HALL

HOSPITAL BLOCK 4TH FLOOR, SREE BALAJI MEDICAL COLLEGE & HOSPITAL

13th October2023 2:00pm to 3:00 pm

Si No	Delegate	Title	Institution	Category
1	Mr. Vishnu B	A Study to Assess the Cytogenetic Toxicity and the Expression Pattern of N-Cadherin in Buccal Epithelial Cells of Covid-19 Patients	AIIMS, Mangalagiri	UG
2	Mr.Danush Aditya	How Common is Appendages of Testis and Epididymis and their Positions- A Cadaveric Study in South indian Population	ESIC Medical College & Hospital, Chennai	UG
3	Ms.Suganitha Balasundaram	A Preparation of Pongamia Pinnata Leaves Extract inhibits the Apoptosis of Cortical Neurons in Pre/Post-Stroke Rat Via Regulating the Expression of Bax/Bcl-2 and Caspase-3	Saveetha University, Akash Institute of Medical Sciences	Faculty
4	Dr. Parul Upadhayay	Pattern of First Costal Cartilage Calcification for Sex Determination	Army College of Medical Sciences, Delhi Cantt.	Faculty
5	Dr. Prabavathy Gajendran	Corroborative Evidence of Gross Anatomy andsonoanatomy of Supraclavicular Brachial Plexus – A Cadaveric Study	Mahatma Gandhi Medical College & Research Institute, Sri Balaji Vidyapeeth, Puducherry, India	Faculty

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Evolution Education Evidence Based Anatomy in Medicine EEE -2023

Department of Anatomy, Sree Balaji Medical College & Hospital

LECTURE HALL 1, FIRST FLOOR COLLEGE BLOCK,
SREE BALAJI MEDICAL COLLEGE & HOSPITAL

SESSION 1, TOPIC- General Anatomy & Digital Anatomy

14th October2023 10:30 am to 12:00 noon

MODERATOR :Dr. Rahe R

Si No	Delegate	Title	Institution	Category
1	Dr. Anandarani.V.S	Prevalence, Location and Arterial Relation of Middle Cervical Ganglion - A Cadaveric Study	Sri Ramachandra Institute of Higher Education And Research, Chennai	Faculty
2	Dr. Satheesha Nayak B	Morphometric Study of Thelateral Collateral Ligament of the Knee Joint	Department of Basic Medical Sciences, Manipal Academy of Higher Education, Manipal, India.	Faculty
3	Mr. Akhil Suresh	Anatomical Study of the Sternal Angle & Anomalies of Adult Human Sternum	Indira Medical College & Hospital, Mahatma Gandhi University	Faculty
4	Mr. Amal M Soman	A Study on Mandibular Canine in Sex Determination	Indira Medical College & Hospital, Mahatma Gandhi University	Faculty
5	Mr.Saran Sabu	Study of Morphological Features of the First Rib with Clinical Importance	Indira Medical College & Hospital, Mahatma Gandhi University	Faculty
6	Ms.M. Sobana	Capturing Newborn Dermatoglyphics: A Feasibility Study using Digital Photography	KMCH Institute of Health Sciences & Research, Coimbatore-14	Faculty

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Evolution Education Evidence Based Anatomy in Medicine EEE -2023

Department of Anatomy, Sree Balaji Medical College & Hospital

PHYSIOLOGY DEMO ROOM 1, FIRST FLOOR COLLEGE BLOCK,
SREE BALAJI MEDICAL COLLEGE & HOSPITAL

SESSION 2, TOPIC- Biotechnology& Medical Education

14th October2023 10:30 am to 12:00 noon

MODERATOR: Dr. Thenaruvi

Si No	Delegate	Title	Institution	Category
1	Dr. Anupriya A	Benefits of Flipped Classroom in human Embryology Subject for Medical Students	Sri Ramachandra Institute of Higher Education And Research, Chennai	Faculty
2	Dr. Saurabh Kulkarni	Artificial intelligence in Medical Education: Medical Student's Perspectives	Government Medical College, Aurangabad, Maharashtra	Faculty
3	Dr. E. Gnanagurudasan	Estrous Cycle Estimation Through Non-invasive Vaginal Lavage Method: A Tool for the Assessment of Altered Endocrine Milieu in Swiss Albino Mice	Dhanalakshmi Srinivasan Medical College & Hospital, Siruvachur, Perambalur – 621113	Faculty
4	Mr. Senthil Kumar. A	Effect of Salacia Oblonga on Beta Cell of Diabetic Rats – An Electron Microscopic Study	Sri Venkateswaraa Medical College Hospital And Research Center, Ariyur	Faculty
5	Dr. Jayanthi S	Effect of Curcumin on Wistar Rat Testis Exposed to 4g Cell Phone Radiation – A Histological, Biochemical and Immunohistochemical Study	Mahatma Gandhi Medical College & Research Institute, Sri Balaji Vidyapeeth, Puducherry, India	Faculty
6	Ms. S Hemavathy	Comparative Study on the Efficacy of Antibiotic Treated and Non-Treated Amniotic Membrane by using Universal Testing Machine	MAPIMS	Faculty
7	Ms.Suganitha B	Neuroprotective Effect of Pongamia Pinnata Leaves on Cerebral Ischemia/Stroke of Rat Model.	Saveetha University & Akash Institute of Medical Sciences	Faculty

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Evolution Education Evidence Based Anatomy in Medicine EEE -2023

Department of Anatomy, Sree Balaji Medical College & Hospital

HIPPOCRATES HALL, GROUND FLOOR COLLEGE BLOCK,
SREE BALAJI MEDICAL COLLEGE & HOSPITAL

SESSION 3, TOPIC-Anthropometry& Clinical Anatomy

14th October2023 10:30 am to 12:00 noon

MODERATOR: Dr. Jinu Merlin Koshy

Si No	Delegate	Title	Institution	Category
1	Dr. N. Pratheepa Sivasankari	Morphometry and Morphology of Axis Vertebra and its Implications in Crown Dens Syndrome	S.R.M. Institute of Science & Technology, Kattangalathur	Faculty
2	Dr. Saravana Kumar.S	Sex Determination using Orbital Measurements in South Indian Population Based on CT Scans	Meenakshi Medical College & Research Institute, Kancheepuram	Faculty
3	Ms. Febamol.E.S	Morphological and Morphometric Study of Pterion in Adult Dry Human Skull	Indira Medical College & Hospital, Mahatma Gandhi University	Faculty
4	Dr.T.Srimathi	Clinical Correlation on Ultrasound Guided Radial Nerve Block at Elbow with the Course of the Radial Nerve Course -A Study	Sri Ramachandra Institute of Higher Education And Research, Chennai	Faculty
5	Dr. S Vijayakumar	Evaluation of Femoral intercondylar Notch with and its Clinical Applications	Sri Ramachandra Institute of Higher Education And Research, Chennai	Faculty
6	Dr. Debajani Deka	Poland Syndrome-A case Report	Gauhati Medical College & Hospital, Kamrup, Assam	Faculty
7	Dr.Kavitha M	Unilateral Accessory Breast Tissue - A Rare Case Scenario	Sri Ramachandra Institute of Higher Education And Research, Chennai	Faculty
8	Dr. B Senthil Kumar	Ocular Impact on Chronic Smart Phone Users	Vinayaka Mission's Kirupananda Variyar Medical College & Hospitals, Vinayaka Missions Research Foundation (DU), Salem	Faculty

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Department of Anatomy, Sree Balaji Medical College & Hospital

PHYSIOLOGY DEMO ROOM 2, FIRST FLOOR COLLEGE BLOCK,
SREE BALAJI MEDICAL COLLEGE & HOSPITAL

SESSION 4 - PG ORAL PRESENTATION TOPIC: Gross Anatomy

14th October2023 10:30 am to 12:30 pm

MODERATOR: Dr. Evangeline Singh K

Si No	Delegate	Title	Institution	Category
1	Dr. Raja Nandhini	Gastrocnemius Tubercle: Attachment Point of the Gastrocnemius Muscle Tendon in South Indian Population	PSG Institute of Medical Sciences & Research, Coimbatore	PG
2	Dr. F. Noonan Abrahma	Incidence, Morphometry and Variations of Psoas Minor Muscle in Adult Human Cadavers	Government Kilpauk Medical College, Chennai	PG
3	Dr. Ilakkiya L	Morphology of Coronary Sinus Ostium and Thebesian Valve	Indira Gandhi Medical College and Research Institute, Puducherry	PG
4	Dr.E.Aishwarya	Left Coronary Artery – A Cadaveric Study	K.A.P.V Govt Medical College, Trichy	PG
5	Dr. Ambiga R	Morphology of Chordae Tendineae in Ventricles of the Human Heart in a Tertiary Care Hospital	Jawaharlal Institute of Postgraduate Medical Education And Research (JIPMER), Puducherry	PG
6	Dr.I.Jithender Singh	Morphometric Cross Sectional Cadaveric Study of Human Trachea	Government Kilpauk Medical College, Chennai	PG
7	Dr. J Muthu Rohini	A Rare Anatomical Variation of Bilobed Spleen	Government Medical College, Mahabubnagar	PG
8	Dr. Savita Mhetre	Cadaveric and Ultrasonographic Morphometry of Cervicothoracic Ganglion (Stellate Ganglion)	Government Medical College, Aurangabad, Maharashtra	PG
9	Dr. Sonal Chamatkar	C T Morphometric Analysis of Size of Internal Jugular Veins and its Relationship with Common Carotid Artery in the Carotid Sheath	Government Medical College, Nagpur, Maharashtra, MUHS, Nashik	PG

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Evolution Education Evidence Based Anatomy in Medicine EEE -2023

Department of Anatomy, Sree Balaji Medical College & Hospital

ANATOMY DEMONSTRATION HALL 3, GROUND FLOOR,
SREE BALAJI MEDICAL COLLEGE & HOSPITAL

SESSION 5 - PG ORAL PRESENTATION TOPIC: GROSS ANATOMY & EMBRYOLOGY

14th October2023 10:30 am to 12:30 pm

MODERATOR: Dr. RAMYA

Si No	Delegate	Title	Institution	Category
1	Dr. Nithya D	Hypoplastic Internal Jugular Vein and Fenestrated External Jugular Vein with Variant Ansa Cervicalis - A Case Report	Jawaharlal Institute of Postgraduate Medical Education And Research (JIPMER), Puducherry	PG
2	Dr. Elaveni. J	Morphology and Morphometric Study of Moderator Band and its Clinical Significance	Government Theni Medical College	PG
3	Dr.V. Anupama	Morphology and Morphometric Study of Carotid Canal in Dry Skull Specimens	Government Theni Medical College	PG
4	Dr. Pavithra S	A Morphological Study on Variations in the Termination of Brachial Artery and its Clinical Significance	K.A.P.V Govt Medical College, Trichy	PG
5	Dr. Jiby Livingta H	Analysis of Uniqueness of Cheiloscopy and Dermatoglyphics	S.R.M.Medical College And Research Center	PG
6	Dr. M. Sivanesan	Morphological and Morphometric Study of Human Placenta	Government Theni Medical College	PG
7	Dr. Sneha Sinha	Variations in the Branching Pattern of Ventral Branches of Abdominal Aorta- A Cadaveric Study	Burdwan Medical College, West Bengal	PG
8	Dr. Nandini Rajaram	Assessing the Neurovascular Pattern of the Triangular Fibrocartilage Complex [TFCC] of the Wrist Joint: A Cadaveric Observational Study	Jawaharlal Institute of Postgraduate Medical Education And Research (JIPMER), Puducherry	PG
9	Dr. Keerthana K	Congenital Anomalies of Defects in Development of Anterior Abdominal Wall Development	Government Cuddalore Medical College, TN	PG

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Department of Anatomy, Sree Balaji Medical College & Hospital

ANATOMY DEMONSTRATION HALL 1, GROUND FLOOR,
SREE BALAJI MEDICAL COLLEGE & HOSPITAL

SESSION 6 - PG ORAL PRESENTATION TOPIC: HISTOLOGY AND CLINICAL ANATOMY

14th October2023 10:30 am to 12:30 pm

MODERATOR: Dr. AARTHI

Si No	Delegate	Title	Institution	Category
1	Ms. Santhi Venkatapathy	A Study on The Role of Pap Smear and Significance of its Cytological Pattern in Screening the Carcinoma of Uterine Cervix	S.R.M.Medical College And Research Center, SRMIST, Kattangalathur,	PG
2	Mr. J Godwin Issac Jebaselvan	Role of Morphometric Variationsof The Anterior Abdominal Wall in the Development of Inguinal Hernia	S.R.M.Medical College And Research Center, SRMIST, Kattangalathur,	PG
3	Dr.V.Sivaranjani	Unusual Origin of Accessory Left Gastric Artery From Celiac Trunk and its Clinical Significance: A Case Report	Dhanalakshmi Srinivasan Medical College & Hospital, Siruvachur, Perambalur	PG
4	Dr. Jenolin Bruna J F	Anatomical Variations of Median Nerve: Case Series	Christian Medical College, Vellore	PG
5	Dr.Gracelyn Donah D	Variation in Branching Pattern of Common Peroneal Nerve – A Case Report	Christian Medical College, Vellore	PG
6	Dr.Afna Jayash J S	Replaced Right and Left Hepatic Arteries: A Case Report	Christian Medical College, Vellore	PG
7	Dr.M.Vasanthakohila	Morphological Study of Liver and its Surgical Importance	Government Kilpauk Medical College, Chennai	PG

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Department of Anatomy, Sree Balaji Medical College & Hospital

ANATOMY DEMONSTRATION HALL 2, GROUND FLOOR,
SREE BALAJI MEDICAL COLLEGE & HOSPITAL

SESSION 7- PG ORAL PRESENTATION TOPIC: OSTEOLOGY AND RADIOLOGY

14th October2023 10:30 am to 12:30 pm

MODERATOR: Dr. MOKSHADAYINI

Si No	Delegate	Title	Institution	Category
1	Dr. C. Pavithra	Study of Sacralization of Lumbar Vertebra (L5)	Government Theni Medical College	PG
2	Dr. S. Jagapriya	Morphometric Study of Mastoid Process on Dry Skulls	PSG Institute of Medical Sciences & Research, Coimbatore	PG
3	Dr. M. Gunasekaran	Morphometric Study of Head of Radius and its Clinical Implications:	Government Kilpauk Medical College, Chennai	PG
4	Dr. Nishvin. J	Incidence of Ossified Superior Transverse Scapular Ligament and Morphological Study of Suprascapular Notch in Dry Scapula	Government Theni Medical College	PG
5	Dr. Janani.S.V	Diaphyseal Tibio-Fibular Synostosis in Dry Bone	Sri Ramachandra Institute of Higher Education And Research, Chennai	PG
6	Dr.P.Murugeshwari	Bilateral Cervical RIB – A Case Study	K.A.P.V Govt Medical College, Trichy	PG
7	Dr. Nikilesh S	Anatomical Variations of Osteomeatal Complex -A Computed Tomographic Study	Jawaharlal Institute of Postgraduate Medical Education And Research (JIPMER), Puducherry	PG
8	Ajay Kumar Agrawal	A Study of Coronary Artery Variations in Patients Under going Invasive Coronary Angio graphy	RKDF Medical College & Hospital, Bhopal, M.P, India	PG

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SESSION 8- POSTER PRESENTATION

14th October2023 10:30am to 12:30 pm

MODERATOR: Dr. MARY ANTONY PRABA

Si No	Delegate	Title	Institution	Category
1	Dr.B. Prakash Babu	Variant Anatomy of Recurrent Branch of The Median Nerve: A Case Report	Vidyaratna Institute of Health Sciences, Udupi, RGUHS, Karnataka	Faculty
2	Dr. Jayanthi S	Effect of Curcumin on Wistar Rat Testis Exposed to 4g Cell Phone Radiation – A Histological, Biochemical and Immunohistochemical Study.	Mahatma Gandhi Medical College & Research Institute, Sri Balaji Vidyapeeth, Puducherry, India	Faculty
3	Dr.T.Srimathi	Fairbairn-Robin Triad (Frt) with Patent Ductus Arteriosus: A Case Report	Sri Ramachandra Institute of Higher Education And Research, Chennai	Faculty
4	Dr. J Muthu Rohini	A Rare Anatomical Variation of Bilobed Spleen Category	Government Medical College, Mahabubnagar.	PG
5	Dr. Savita Mhetre	Clinico-Embryologic Patterns of Developmental Ocular Anomalies in 0 to 5 Years of Age Group at a Tertiary Care Center	Government Medical College, Aurangabad, Maharashtra	PG
6	Dr. Sonal Chamatkar	Unilateral Pectoralis Minimus Muscle: A Case Report	Government Medical College, Nagpur, Maharastra, MUHS, Nashik	PG
7	Dr. Sneha Sinha	Bilaterally Distinct Renovascular Variations - A Cadaveric Study	Burdwan Medical College, West Bengal	PG
8	Dr. Nandini Rajaram	Assessing the Morphology, Histology, and Microscopic composition of the Triangular Fibrocartilage Complex [TFCC] of the Wrist Joint: A Cadaveric Observational Study	Jawaharlal Institute of Postgraduate Medical Education and Research (Jipmer), Puducherry	PG

9	Dr. Keerthana K	Study on the Ossification of Suprascapular Notch and its Clinical Significance	Government Cuddalore Medical College, TN	PG
10	Dr. Nikilesh S	A Case Report on Trifurcation of Common Hepatic Artery with Absent Proper Hepatic Artery.	Jawaharlal Institute of Postgraduate Medical Education and Research (Jipmer), Puducherry	PG
11	Dr.P.Murugeshwari	Bilateral Complete Cleft Lip & Palate Grade III –with Projected Premaxilla – A Case Study	K.A.P.V Govt Medical College, Trichy	PG
12	Dr. B. Joe Sheril	Split Atlas	Government Cuddalore Medical College, TN, Dr MGR Medical University	PG
13	Dr. Akash Deep Shivhare	Polycystic Kidney Disease A Case Report	Dr. Shankar Rao Chavan Government Medical College.	PG
14	Dr.Anbuchezhean B	Spot-Craft (Spotter Performance Observation Through Technology-Computerised Resource Assessment for Fundamental Testing): Comparative Study of Traditional Versus Digital Tool in Assessment of Anatomy Spotters- A Cross Sectional Study.	Sri Venkateswaraa Medical College Hospital And Research Center, Ariyur	PG
15	Dr. Marriswari. B	Claw Hand	Government Cuddalore Medical College, TN,	PG
16	Dr. Muthu Roshni	Study of Supratrochlear Foramen in Adult Dried Human Humerus Amoung South indian Population	Kodagu Institute of Medical Sciences, Rajiv Gandhi University of Health Sciences	PG
17	Dr.Pradeepa.V	Study of Variations in Horizontal Fissuring Pattern in Right Human Lungs	Govt Stanley Medical College, Chennai-01.	PG
18	Dr. Raamadas R	A Retrocaval Testicular Artery: Embryological Basis and Clinical Significance	Indira Gandhi Medical College And Research Institute, Puducherry	PG
19	Ms. Mahalakshmi P	Morphometric Study of Mastoid Triangle for Sexual Dimorphism of Adult Human Dry Skulls	S.R.M.Medical College and Research Center, SRMIST, Kattangalathur,	PG
20	Dr. Sukumari M	Bilateral Superficial Brachial Artery – A case Report	Christian Medical College, Vellore	PG

ORIGINAL RESEARCH PAPERS

DR.MM COOPER AWARD

FACULTY CATEGORY

⁂ 01 ⁂

A PREPARATION OF PONGAMIA PINNATA LEAVES EXTRACT INHIBITS THE APOPTOSIS OF CORTICAL NEURONS IN PRE/POST-STROKE RAT VIA REGULATING THE EXPRESSION OF BAX/BCL-2 AND CASPASE-3

Dr. Suganitha Balasundaram, SR, Department of Anatomy, Akash Institute of Medical College and Research Centre, Bangalore.

ABSTRACT:

BACKGROUND:

Ischemic stroke/ cerebral ischemia is a devastating condition with high mortality and disability rates that causes greatest socioeconomic burden worldwide.Research has been keenly focussing on developing an efficient treatment for ischemic stroke which has evolved to be highly challenging.[1] Aim of the current study is to compare and determine the effect of using hydroalcoholic extract of *Pongamiapinnata*leaves on ischemia induced rat brain.

METHOD: In a male Wistar rat model of brain, ischemia/reperfusion (I/R) was incorporated by occlusion of **Bilateral common carotid occlusion** method for 60 minutes followed by reperfusion for 24 hours for neuro protective group, and 21 days for neuro restorative group.Rats were divided into 6 groups. They are(**G1**-Control+NS), **G2**-Sham (Sh+NS), G3- induced control for neuro protective (BCCAO+ NS), **G4**-neuro protective (treated with 400mg *P.pinnata*+NS), **G5**- induced control for neuro restorative (BCCAO+ NS), **G6**- Neuro restorative(treated with 400mg *P.pinnata*+NS). The effect of herb was examined by using RTPCR to study the expression of Bax protein. It was used to understand the changes occurred in the brain infarct. The mRNA levels of Bax protein is analysed by RTPCR to see the neuro protective and Neuro restorative effect of *P.pinnata*leafextract.

RESULTS:

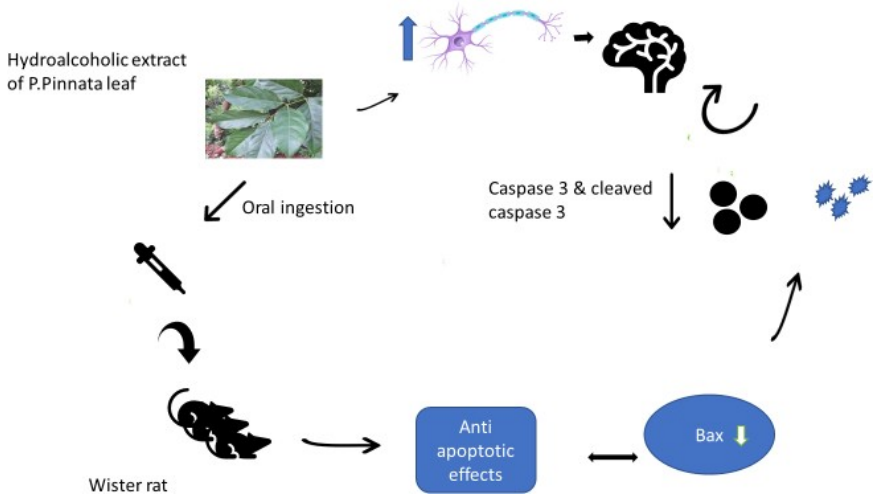
The *Pongamiapinnata* leaf extract treatment significantly decrease dcortical neuronal apoptosis. RTPCR results showed that Bax protein inhibited the activation of Caspase-3 protein in the motor cortex after ischemic stroke. TheBax protein exert anti-apoptotic effect in addition to reducing the expression of Cleaved-Caspase-3 in the motor cortex in neuro protective &Further RT-PCR showed inhibited apoptosis of cortical neurons by regulating the mRNA and protein expressions of apoptotic molecules in Neuro restorativegroup.

CONCLUSION:

The study concludes that the element of *P.pinnata*leaf extract has neuroprotective & Neuro restorative potential in ischemic injury, by increasing vascularity and reducing the cell death.

KEYWORDS:*Pongamiapinnata* leaf, Neuro protective, Neuro restorative, Bax gene expression.

Pictorial Abstract:



INTRODUCTION:

Ischemic Stroke has always been a challenge to address with the current modes of treatments. The mortality and disability rates of ischemic stroke has become a major concern worldwide. Determining an effective cure is still under focus with the present technological improvements. However, the challenge occurs with the pathophysiological condition of Cerebral Ischemia Reperfusion Injury (CIRI) that includes excitotoxicity, oxidative stress, inflammation, and apoptosis in the ischemic penumbra. Nevertheless, the current mode of treatmentsare focussed towards anti-apoptotic condition or anti-inflammatory conditions or with antioxidizing agents. Few other treatments act as calcium channel blockers and free radical scavengers.[2]The situation occurs due to the unknown physiological condition of the patient which ultimately causes ineffective prognosis in the patients undertaking the presently available treatment options.

Pongamiapinnata which is more commonly referred to as the Indian beech tree, pongam oil tree and karanja. Numerous herbal benefits were known to be obtained from it.

Pongamiapinnata has antioxidant properties, anti-lipid oxidative, anti-inflammatory, anti- diarrhoeal, anti-hyperglycaemics, anti-nociceptive and various other properties. Phytochemical components include Furano flavonoids and chalcones, Alkaloids, Carbohydrates, Phytosterols, Saponins, Tannins, Flavonoids etc. Phytochemical components include Furano flavonoids and chalcones which exert a neuroprotective activity in various neurodegenerative diseases.[3-4] This study focuses on evaluating the possibility of protective and restorative effect on stroke animal model of rat.

Compelling evidence indicates that apoptosis may occur after transient cerebral ischemia. Moreover, recent cerebral ischemia studies in rats and gerbils have revealed that dysregulation of Bcl-2 family proteins can exacerbate ischemic neuronal injury and that the interaction between Bcl-2 family members that supress (such as Bcl-2 and Bcl-xl) and those that promote (such as Bax) apoptosis determines whether cells undergo survival or apoptosis.[5]In our experiments, we subjected the animals to bilateral common carotid artery occlusion (BCCAO).So it is indicating that Bax is necessary for efficient activation of proapoptotic mitochondrial signaling in infected/inflammatory neurons. Our studies suggest that Bax is important for neurogenesis and pathogenesis in neurons and that the intrinsic pathway of apoptosis, mediated by Bax, is important for full expression of disease, CNS tissueinjury.[6]

Similarly, a simultaneous molecular analysis of the Bax protein can help to correlate the levels of each factor, the probability of the incidence of a stroke to occur and the neuroprotective & neuro-restorative property of p.pinnata70% ethanolic leaf extract.

Neuroprotective and neurorestorative therapy comprising strategies are of major priorities to constitute a potential drug element. There are various pathological processes such as excitotoxicity, inflammation, neurogenesis and angiogenesis that underlies acute and ischemic brain injury. *P.pinnata* has proven to possess notable advantages over standard treatment options in regulating multi-site and multi-target diseases. The biological activity of *P.pinnata* was capable of promoting neuroprotection such as excitotoxicity, apoptosis, inflammation, oxidative stress and autophagy. In addition, *P.pinnata* was capable of promoting angiogenesis, neurogenesis and axonal sprouting proving their neurorestorative nature. With various reports of studying neuroprotective effects of plant compounds are available globally, the current study has additionally evaluated the neurorestorative effect of

*P.pinnata.*The current study aims to evaluate the neuroprotective &neurorestorative effect of *Pongamiapinnata* on stroke induced rat models with molecular level analysis.

MATERIALS AND METHODS

Experimental Protocol

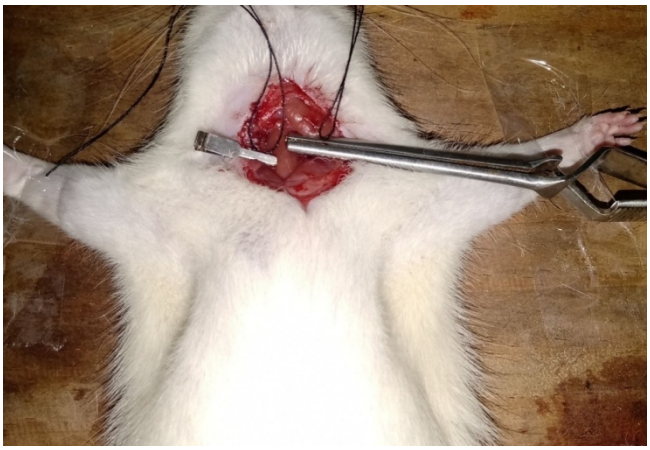
All chemical used in this study, are up to the analytical and required standards. Preparation of *P.pinnata*extract from leaves were done. The plant material was derived from mature green leaf of *Pongamiapinnata*. It was collected from Bangalore Medical College & Research Institute Campus. The plant was identified and authenticated at the Herbarium of the Vishveswarapura college of

science. Voucher number of the specimen is **B-00010**. The *Pongamiapinnata* leaves are collected and dried under the shade at room temperature. The dried leaves are then powdered, and then packed into SoxhletaP.pinnataaratus for an extraction. The extraction is carried out using 70% ethanol. The solvent is extracted under lower temperatures.While screening for the phytochemical constituents, the ethanolic extract of P.pinnataleaves, showed the presence of flavonoids, flavans, chalcones, terpenes, glycosides, sterols, and tanninsetc.[7]

Experimental Design:

Wister male rats were used, in the age of about 10-12 weeks and a weight of 280-320 grams. Rats were fed a commercial rat pellet diet provided by MASS BIOTECH, CHENNAI, and were provided with water ad libitum. They were kept at a natural light and dark cycle under a temperature of 25 - 20 degrees C, a humidity of 50 to 55 percent.After receiving approval from the Institutional Animal Ethical Committee at SDC, CHENNAI, India (BRULAC/SDCH/SIMATS/IAEC/08-2022/138), the experiment was carried out. Rat models were subjected to induced stroke (Bilateral Common Carotid Artery Occlusion method). The animals were segregated into 6 groups and regulated through the protocol initiated in this study. Rats were divided into 6 groups. They are (G1-Control+NS), G2-Sham (Sh+NS), G3- induced control for neuro protective (BCCAO+ NS), G4-neuro protective (treated with 400mg *P.pinnata*+NS), G5- induced control for neuro restorative (BCCAO+ NS), G6- Neuro restorative(treated with 400mg *P.pinnata*+NS). The effect of herb was examined by using RTPCR to study the expression of Bax protein. It was used to understand the changes occurred in the brain infarct. The mRNA levels of Bax protein is analysed by RTPCR to see the neuro protective and Neuro restorative effect of *P.pinnata*leafextract.

The experimental stroke induction was done, via a fascinating method called Bilateral Common Carotid Artery Occlusion (BCCAO). Rats were anaesthetized with injection of 0.3 ml of ketamine & xylazine, followed by crown of head was shaved and cleaned with 70 % alcohol, and continuously monitored for spontaneous breathing. The skin incision was done on the ventral aspect of neck, Both the carotid arteries were visualized in the surgical field occluded by ligating the both common carotid artery and it left for 60 minutes. under the aseptic condition the incision was sutured & were placed in a dry cage separately with assistance of heat pad. Temperature was monitored procedure accordingto Bederson et al.[8]



BCCAO MODEL

A continuous monitoring was done to ensure the same.In Neuro protective and neurorestorative group, the rats were orally administered with *P.pinnata* leaf 70 % ethanolic extract400 mg/kg for 21 days to group G3(neuro protective) and (Neuro restorative)G6 respectively.

A set of rat models for neuroprotective group were sacrificed with in 24hours of stroke induction where as in Neuro restorative group the rats were sacrificed at day 21 after stroke induction, and the tissue sections of brain were taken for Molecular analysis. The mRNA levels of candidate genes were also analysed *via* RT-PCRanalysis.

Distribution of Groups

The experimental protocol, for the study, was set up as with relevant groups of animals as follows: (Each group n=3**)** (Table no. 1).The rat models that werecategorized under group 1, are positive control rat models. The molecular data of normal rat models is what is sought to be achieved. Group 2 rat models, are categorized as sham control for neuroprotective group where the surgery was done without proceeding with occlusion. G3 are negative control for neuroprotective group where these rats are subjected to the method of BCCAO but not treated with drug to cause an infarct and observe the changes that take place during an ischemic stroke sequence. G4 are the experimental group of rat models for neuroprotective group, which have been subjected to the BCCAO technique, and then orally administered with ethanolic*P.pinnata*leaf extract, at a dosage of 400mg/kg. G5 are negative control for neuro restorative group where rats were subjected to the BCCAO technique and fed with normal saline and food for 21 days without any drug.G6- are the experimental group of rat models for neurorestorative group, which have been subjected to the BCCAO technique, and then orally administered with ethanolic*P.pinnata*leaf extract, at a dosage of 400mg/kg.

As stated earlier, the rats are sacrificed at the 21st day of trial, and histological analysis of brain tissues and molecular level analysis of the neurotrophic factors are reviewed.**Table No. 1 – Distribution of Groups**

Groups	Details	No. of Animals
G1	Positive Control (Normal)	3
G2	Sham control for neuro protective group	3
G3	Negative Control for neuro protective group	3
G4	Experimental group for neuroprotective treated with *P.pinnata* (400 mg/kg)	3
G5	Negative Control for neuro restorative group	3
G6	Experimental group for neurorestorative*P.pinnata*400 mg/kg)	3
	Total Number of Animals	18

Statistical Analysis:

The method used was ANOVA test (a multiple variance test) Probability criteria- values less than 0.001 were considered significant (*P< 0.001)*.

Real time PCR analysis

Traditionally RT-PCR involves two steps: the RT reaction and PCR amplification. CFX96 Touch Real Time PCR Detection system was used for this analysis. Genes Forward primer and Reverse primer are givenbelow

- Forward primer – TGAAGACAGGGGCCTTTTTG
- Reverse primer -AATTCGCCGGAGACACTCG

Primer Designing was the initial step which was done by synthesizing the primers of the target gene. **The next step was that of RNA extraction. The brain sections were used to extract the total RNA present in the given model, and this was carried out using the standard protocol with Trizol, which was then dissolved using DEPC-treated deionized water and quantified with a spectrophotometer. Enrichment was done for the RNAs with polyadenylated tails.** The next step was, the Real time PCR wherein the targets were amplified and then set for quantification of gene expression was performed to obtain the fold changes of the targets. Finally, the result analysis was performed to depict the comparative levels of mRNA expression in treated groups and effect of *P.pinnata*in animalmodels.[9-11]

RESULTS:

Bax expression in Neuroprotective group:

In neuroprotective models that were orally treated with *P.pinnata* leaf extract, were sacrificed and levels of BAX were determined. As depicted in the figure below (Figure-1)

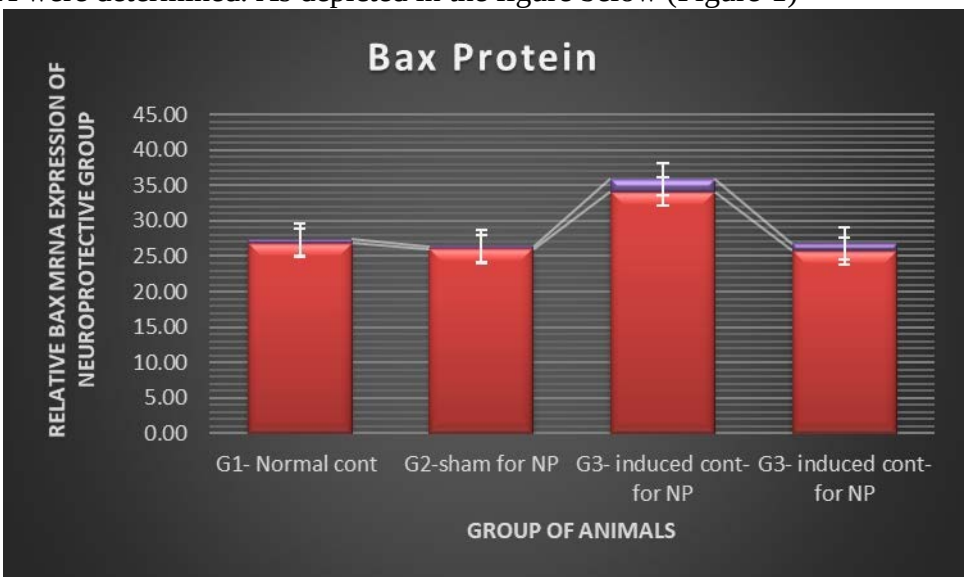


Figure 1- Graphical representations of real time PCR analytic results- Levels BAX for Neuroprotective group of animals.

The levels of BAX was increased in negative control group(G3) compared with normal (G1) and Experimental group(G4) which is treated with 400 mg dosage of the *P.pinnata*leaf extract. The MRNA level is almost same in Normal control(G1) and Sham control(G2) group.

Bax expression in Neurorestorative group:

In the results obtainedhere, initially Post- stroke the levels of BAX were increased facilitating the mechanism of neuronal injury and brain damage. the BAX levels were compared within the testing groups after 21 days of treatment with *P.pinnata*leaf extract. It was clearly evident that, in the positive control models(G1), the BAX expression levels were significantly decreases when compared to the negative control models(G5). The level of Bax protein is drastically reduced in treated group(G6) and almost equal to G1 were significant with neuronal cell survival and recovery of the brain.(Figure 2)

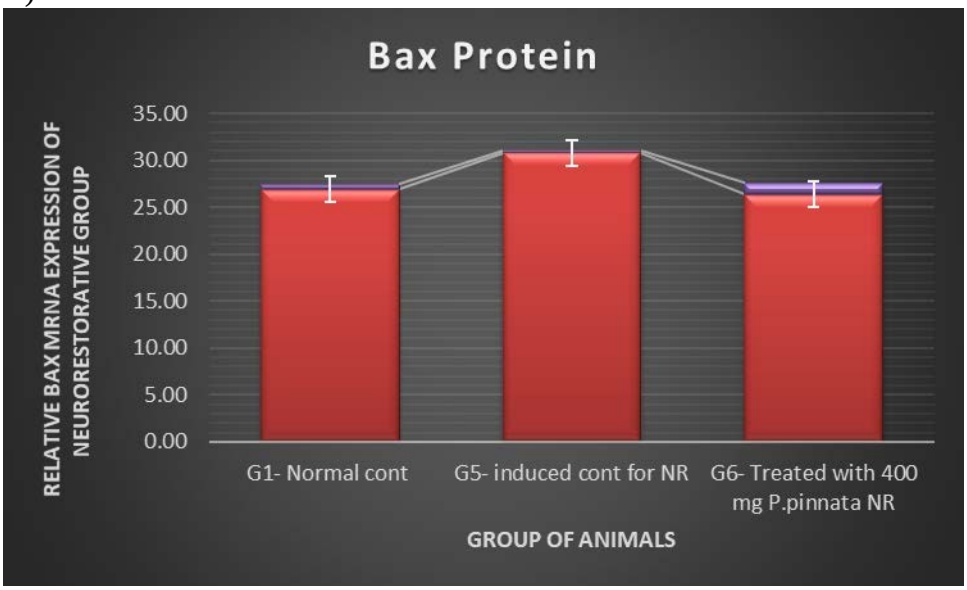


Figure 2 - Graphical representations of real time PCR analytic results- Levels BAX for Neurorestorative group of animals.

DISCUSSION:

In the pathogenesis of ischemic stroke, different cells of the central nervous system undergo various alterations. Neurons exhibit morphological changes whereas the axons and cell bodies disintegrate. Glial cells and neurons undergo cytoplasmic swelling and disappearance of nucleolus. In penumbra, the ischemic neurons show changes like Nissl's bodies' disintegration and endoplasmic reticulum. The other cells like glial cells, astrocytes and microglia also exhibit one or the other morphological changes.[12] The permeability of BBB is exceedingly increased during a stroke sequence. This leads to infiltration of immune cells like macrophages, monocytes and leukocytes in the site of ischemic lesions. This in turn causes a rapid influx of neurotoxic and neurotropic factors to exert either neuroprotective or detrimental effects on ischemic braintissues.[12-13]

An abrupt interruption in the cerebral blood flow, causes the oxygen and glucose stores to be depleted from the brain tissues. Hence there is a derangement of ion homeostasis, acid-base imbalance, ATP synthesis, and increased energy deficiency. Activation of various signalling pathways takes place during these pathological transitions.[14-15]The various pathways occur either separately or simultaneously in the stroke sequence. There is a reduction in oxygen and glucose owing to the energy deficiency which is after effect of deranged cerebral blood flow. This is seen in increased rate in the neurons.

Presence of mitochondrial dysfunction and oxidative stress-induced damage caused due to energy deficiency. The cerebral ischemia triggers neuronal cell depolarization and glutamate release, due to oxygen and glucose deficiency.[14] The specific pathways that trigger ischemic stroke can be listed as follows. Phosphatidylinositol 3-kinase (PI3K)-Aktsignaling pathway wherein stimulation of synaptic NMDARs activates the pro-survival PI3K/Aktsignaling pathway, thereby exerting a neuroprotective effect. NMDAR activation at the synaptic junction and Ca2+ influx leads to activation of the Ras/extracellular signal- regulated kinase (ERK) signaling pathway and nuclear Ca2+/ calmodulin-dependent protein kinases, which activates and phosphorylates CREB. Together with NMDAR and BDNF, there is an activation of numerous pro-neuronal genes via CREB. Extrasynaptic NMDARs are increasingly related to the pathways that are associated with cell death and hence curbs the effects triggered by synapticNMDARs.[14, 16]

DAPK1 participates in excitotoxicity in ischemic stroke. During ischemia, NMDAR overactivation leads to Ca2+ influx, activates the Ca2+/calmodulin pathway, and stimulates calcineurin phosphatase, which subsequently dephosphorylates and activates DAPK1. DAPK1 is then transferred to the GluN2B subunit of NMDARs, potentially activating ischemic injury.[19] Interestingly, DAPK1 is inhibited, by the pro-survival signalling factor of ERK. Hence DAPK1-ERK relations would curb the neurodefensive effect of ERK on experimentally induced stroke models. The nitric oxide production is heavily sortedbyNeuronal NMDARs, which is associated with calcium/calmodulin and is regulated by nNOS.14, 16-17

Mitochondrial dysfunction, oxidative stress, and related signalling pathways include Hypoxia-inducible factor (HIF) signalling pathway, (Nrf2) signalling pathway and Casein kinase 2 (CK2) signalling pathways.[19, 21, 23]In presence of oxidative stress there is a release of free radicals. Generation of free radicals leads to lipid peroxidation that in turn is reflected in the increased levels of TBARS (Thiobarbituric acid reactivesubstances).[14]

Significance of candidate targets analysed by Real time PCRanalysis:

BAX is a pro-apoptotic protein, that plays a vital role in regulation of cell death of various cell types, including the neurons [24-25]. Expression of BAX protein is usually seen to beinelevatedconditionintheneurologicaldiseasesandinneurologicaldamageconditions [26]. Immune reactivity for BAX protein is often increased in injured neurons and soinischemic experimental models, after a traumatic brain injury sequence.[27-28]Bax remains unchanged in its level when the neurons survive without getting affected.[29, .30, 31]

There occurs the neuronal cell death with the increased level of the BAX proteins in the neurons.[32-33]

On correlating with the observed findings, it was found that the potential increase in BAX expression

gave an undesirable outcome, by facilitating Apoptosis and hence neuronal cell death. The increase in BAX expression is thus attributed to the fact that, BAX plays a vital role in apoptosis, by increasing the cellular permeability to cytochrome c, causing mitochondrial dysfunction and facilitating the mechanisms that cause cell death.[34]Bax expression has been identified in {evaluated through immunoreactivity), the areas of infarction and absent in non-ischemic areas. Hence, it would be logical to consider the down regulation of BAX expression after the administration of *P.pinnata*leaf extract, is a positive indicator of post strokerecovery.[35]

In the study done by Kang et al, 271of the 963 genes were related with apoptosis, overall more than that of immune reaction, inflammatory response, angiogenesis and vasculogenesis. Most significantly, the antiactivity of GBE in ischemic cardio- cerebrovascular diseases has for long been accounted for, and its system of activity is firmly connected with the guideline of the statement of Bax, Bcl-2 and Caspase-3 in hipocampal neurons.[36]

Bax (pro apoptotic part) and Bcl-2 (anti apoptotic part) have a place with the Bcl-2 protein family and are a pair of antagonistic proteins. Bcl-2 protein restrains cell apoptosis, and Bax protein joins with Bcl-2 to make a complex, which advances the degradation of Bcl- 2 to free the inhibitory impact from Bcl-2 on cell apoptosis.

Numerous different researches have been directed utilizing the different parts of the Pongamiapinnata plant material.(Annie et al., 2003) utilized the P.pinnata flowers and Thakur RS et al., 1989.Described the medicinal impacts of ethanolic extract of P.pinnata roots.16 AHMV Master et al., 2013 explored the impact of P.pinnata stem bark impact on monosodium Glutamate stroke actuated rodents and the outcomes were satisfactory.[38, 39, 40]

This data supports the findings stated by Annie et al., in their study, wherein*P.pinnata* flowerextractwereshowntoexertprotectiveeffectincisplatinandgentamycininduced renal injury, owing to the antioxidative property of the plant .The observed beneficial effect may be contributed by the presence of Flavonoids, which exhibits the antioxidant property.[38]

Saini et al., 2017 mentioned after therapy that Karanjin extracted from *Pongamiapinnata* were restorative in relieving Alzheimer's disease.[41]Manigauha, Ashish et al., 2009 in their report discovered that ethanolic extract of *P.pinnata*leaf, was found to have great anti-convulsant properties on laboratory rats.[42]. *Pongamiapinnata* significantly has good Neuro protective & neurorestorative effect on stroke induced ratbrain.

Bcl-2-related X-protein (Bax) and Bcl-related executioner (Bak) protein are proapoptotic killer proteins that induce apoptosis by forming mitochondrial permiability transition pores and permitting arrival of cyt c. Once cyt c is delivered, cells, including neurons, are falls on death.However Bax and Bak have a similar extreme capability at the mitochondria, one protein might play the prevailing job as the killer inside a particular cell type. Bax is believed to be the principal killer in neurons and assumes a fundamental part in neuronal cell passing in processes as different as formative apoptosis, hypoxia, ischemia, oxidative stress, nerve growth factor withdrawal, potassium deprivation, p53 overexpression, furthermore, nerve injury.[43]

The previously mentioned pathways and connections were contemplated to examine the impact of P.pinnata, on stroke . According to the data obtained from the current study, the 70% leaf extract of P.pinnata leaves protect and reverses ischemia-reperfusion injury in neuro protective and Neurorestorative groups respectively, which is brought about by ischemic stroke. The outcomes affirmed that the values of Bax protein were increased in stroke induced rats, which decreased essentially after *P.pinnata* organization in protective and restorative group.

CONCLUSION:

Our results Neuroprotective and neurorestorative showed that cerebral ischemia can induce motor cortex neuronal apoptosis, while *Pongamiapinnata leaf extract* inhibits neuronal apoptosis by regulating Bax/Bcl-2 and blocking Caspase-3 activation. Therefore, *Pongamiapinnata leaf extract* may be a promising treatment strategy to reduce the neuronal damage and to improve the prognosis ofstroke.

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⁂ 02 ⁂

PATTERN OF FIRST COSTAL CARTILAGE CALCIFICATION FOR SEX DETERMINATION

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OBJECTIVE:

Estimation of sex by pattern of calcification of first costal cartilage in North IndianPopulation.

METHODS:

The present study has been conducted in the Department of Anatomy in collaboration with the Department of Forensic Medicine and Department of Radiology, PGIMS, Rohtak.

To estimate the pattern of calcification, the specimen comprised of 50 pairs of first rib along with manubrium in both sexes in the age ranging from 15-30 years. The specimen were collected from the cases of medico-legal autopsies done in Department of Forensic Medicine after taking proper consent from the legal heir of the deceased and were radiographed in the Department of Radiology.

RESULTS:

In the present study, calcification was observed in cartilages of both sexes aged above 16 years. Type A (marginal bracket), type A 1 (marginal linear) and type B (central) pattern were found more frequently in females on both sides with an estimated predictive value of 66.32%, 50.27% and 100% respectively. Type C (mixed) pattern occurred more frequently in males on both sides with estimated PREDICTIVE VALUE TO BE 100%.

CONCLUSION:

No bilateral asymmetry was noticed in patterns of calcification on right and left sides. This concludes that calcification of first costal cartilage exhibits a definite pattern in relation to the sex involved.

INTRODUCTION:

There are twelve pairs of ribs, of which the first, second, tenth, eleventh, and twelfth are atypical and articulate posteriorly with the vertebral column and anteriorly with costal cartilage[1]. The first costal cartilage, which extends from the front of the ribs and

primarily consists of hyaline cartilage, significantly enhances the thoracic region's mobility and flexibility. Chondrosternal joint refers to the joint that develops between costal cartilage and the sternum[2]. The cartilages at the anterior end of the ribs form a primary cartilaginous joint in this area. On radiographs, the earliest costal cartilages are noticeable when they have developed calcification. After adolescence, the first costal cartilages are vulnerable to calcification[3]. Calcification of the first costal cartilage is a subject of interest as it is unique in showing ossification taking place throughout adult life. This ossification is unrelated to disease or habitus, though disease may play a part by interfering with the normal blood calcium balance[4, 5, 6].

MATERIAL AND METHODS:

The present study has been conducted in the Department of Anatomy in collaboration with the Department of Forensic Medicine and Department of Radiology, Pt.

B.D. Sharma Post Graduate Institute of Medical Sciences, Rohtak.

To study the age of fusion in sternal end of the costal cartilage of first rib with manubrium in North Indian Population, the specimen comprised of 50 pairs of first rib along with manubrium in both sexes in the age ranging from 15-30 years. The specimens were collected from the cases of medico-legal autopsies done in Department of Forensic Medicine after taking proper consent from the legal heir of the deceased. A sample of consent form is enclosed in the end.

INCLUSION CRITERIA

Specimens from the bodies whose autopsies have been performed within 24 hours of death were analyzed.

EXCLUSION CRITERIA

The following cases have been excluded from the study:

1. Accident/Trauma cases where first rib or manubrium werefractured.
2. Cases in which first rib or manubrium were distorted duringautopsy.
3. Cases in which first rib or manubrium showed any dislocation ormalunion.

PRELIMINARY DATA RECORDED

The recorded data comprises of the following information:

1. Postmortem reportnumber.
2. Age and sex of theperson.
3. Time of death of theperson.
4. Time ofpostmortem.

METHOD OF EXTRACTION

Manubrium along with 2-3 cm of sternal ends of first rib with costal cartilage were taken for study. The specimens were collected after giving midline incision in thorax and reflecting the skin and the muscles laterally in upper part of thorax. After elevating the clavicle, manubrium along with the first rib 2-3 cm lateral to the costochondral junction were cleaned on both the sides and the above part was dissected and removed from the dead body. The specimens were tagged and numbered. The specimens were kept in the glass container filled with saturated solution of sodium chloride for 6-8 weeks so that the soft tissues which was adherent to the bone macerates and then these specimens were cleaned, driedand then radiographed to see the patterns of calcification first costal cartilage with manubrium.

The pattern of costal cartilage calcification was classified according to the study done by Rao and Pai[7]as follows:

None- No calcification.

Type A- Marginal square bracket type: Calcification is commencing at costochondral junction and extends along the upper and lower margin of the cartilage bar, directed towards the sternum.

Type A_1- Marginal linear type: calcification is mainly confined to the upper and lower margins of the cartilage bar.

Type B- Central or tongue shaped type of costal cartilage calcification. Type C- Mixed calcification: combination of Type A, Type A_1, Type B

The result obtained has been tabulated and analysed by entering it in the MS Excel spreadsheet and then coded appropriately in SPSS (Statistical Package for Social Sciences) for windows version 20.0. After tabulating the frequency distribution of costal cartilage calcification patterns for males and females estimated 'Predictive value' was calculated for eachofthepatternsofcalcificationobservedinthestudyusingtheformula:PredictiveValue

$= P_1/P_{1+}P_2$, where in P_1 is the prevalence of the pattern, in the sex predicted by a pattern and P_2, is the prevalence of the same pattern in the opposite sex.

RESULTS:

The present study was conducted in Department of Anatomy on 50 pairs of first costal cartilage along with manubrium in either of sex retrieved from Department of Forensic Medicine, Pt. B. D. Sharma PGIMS, Rohtak in association with Department of Radiology, Pt.

B. D. Sharma PGIMS, Rohtak. For this purpose, 50 pairs (100) of first costal cartilage along with manubrium were taken.

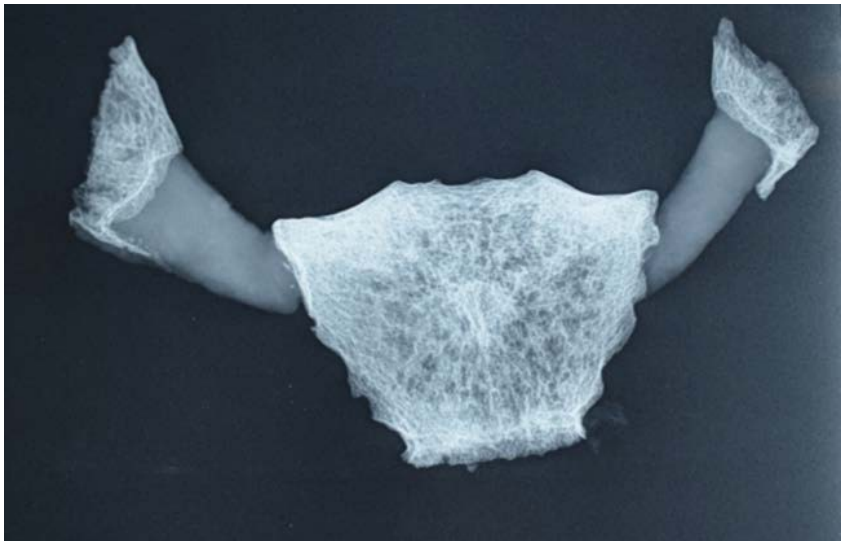

Figure 1:None- No calcification.

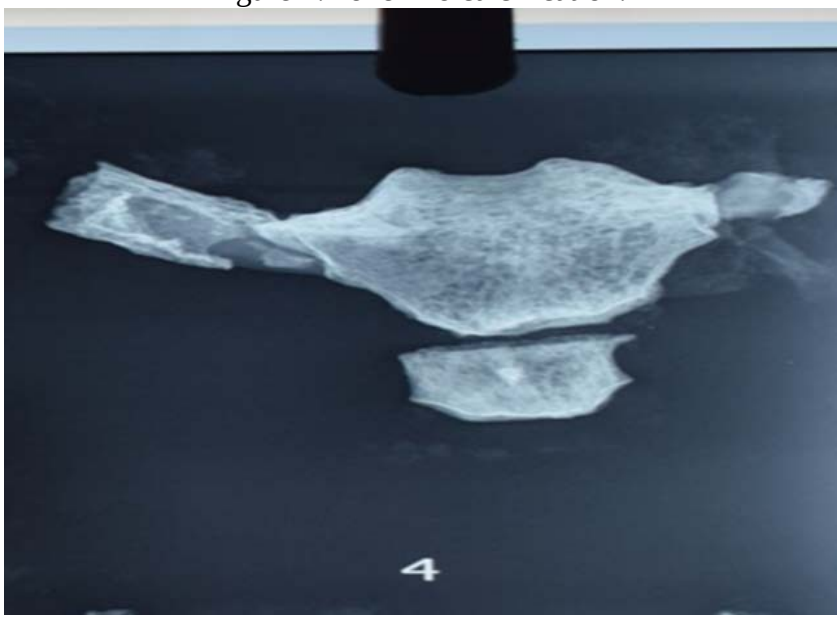

Figure 2: Type A- Marginal bracket type of pattern calcification.

Figure 3: Type A1- Marginal linear type of pattern of calcification.

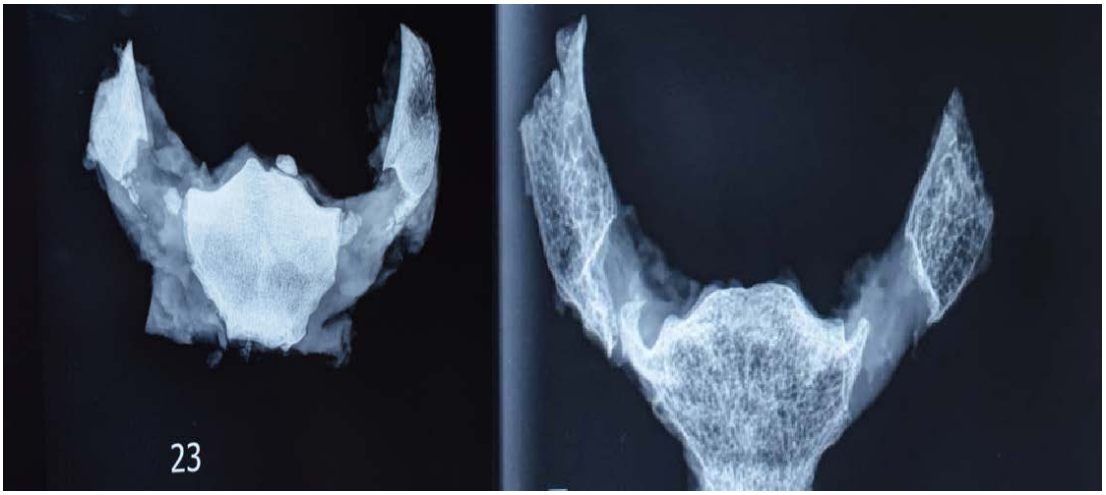

Figure 4: Type B- Central or tongue type pattern of calcification.

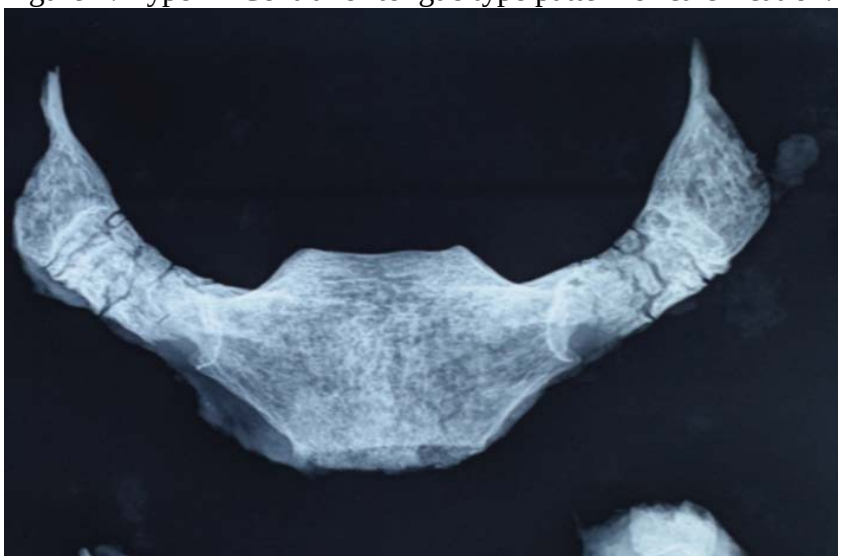
Figure 5: Type C- Mixed type (Combination of type A, type A1, type B).

Costal cartilage calcification pattern type	Sex predicted by pattern	Estimated predictive value	
		Right	Left
Type A	Female	66.32%	66.32%
Type A_1	Female	50.27%	50.27%
Type B	Female	100%	100%
Type C	Male	100%	100%

Table 1: Frequency distribution of first costal cartilage calcification patterns for males and females on both sides.

	Male				Female			
	Number of cases		Percentage (%)		Number of cases		Percentage (%)	
	Right	Left	Right	Left	Right	Left	Right	Left
None	5	5	20	20	0	0	-	-
Type A	5	5	20	20	10	10	40	40
Type A_1	13	13	52	52	14	14	56	56
Type B	-	-	-	-	1	1	4	4
Type C	2	2	8	8	-	-	-	-
Total	25	25	100	100	25	25	100	100

Table 2: Estimated predictive value of first costal cartilage calcification on both side

Discussion-

Table 3: Comparison on pattern of first costal cartilage calcification

Authors	Number of patterns	Type of patterns
Sanders CF[8] (Africa)	3	Male type (Marginal), common female type (central), uncommon female type
Elkeles[9] (London) (30-80 years age group)	3	Short linear and ring like, granular type, band type
Rao and Pai[7] (Karnataka) (1-80 years age group)	5	None, Type A (marginal bracket), Type A_1 (Marginal linear), Type B (central), Type C (Mixed).
Navani et al[10](Boston) (10-95 years age group)	3	Marginal, central and mixed
Zhanger et al[11] (China) (10-90 years age group)	4	Central, peripheral, mixed, no calcification
Present study (15-30 years age group)	**5**	**None, Type A, Type A_1, Type B, Type C**

Different patterns of calcification of first rib with its costal cartilage have been studied by different authors[7, 9, 10, 12]. In the present study, five types of patterns (No calcification, Marginal bracket type, Marginal linear type, Central type and Mixed type) have been studied for the first rib costal cartilage calcification as described in previous sections. The type of patterns observed in the present study are almost similar to the patterns observed by Navani et al, Rao and Pai and Sanders. The number of patterns observed in the present study are five which is similar to those reported by Rao and Pai. However, the number of patterns observed by Elkeles, Sanders, Navani et al are only three. This discrepancy may be due to the technique used to radiograph the specimens in different studies. Elkeles stated that the conventional chest radiographs often do not show the extent and the degree of calcium deposits of the ventral costal cartilages.In the present study standard radiograph techniques have been used and the sample after procurement has been cleaned properly and the soft tissues covering the sample have been removed, hence a greater number of patterns have been observed. The differences in the number of patterns observed may also be since different studies studied on different age groups. Zhangetal stated that almost all studies have displayed only the degree of costal

cartilage calcification but with no accurate value about the calcium content because to date all the studies used conventional X-ray techniques.

Different patterns seen in costal cartilage calcification can be attributed to the fact that the hyaline costal cartilage is a flexible linkage connecting the bony ribs to the sternum. It is known to calcify (also referred to as ossify) in humans. Chondrocytes secrete alkaline phosphatase which hydrolyses alkaline phosphate to free phosphate ions. The latter combines with soluble calcium of the tissue fluid to precipitate in the matrix of cartilage tissue as calcium phosphate. This process is known as calcification[12, 13, 14, 15]

CONCLUSION: Marginal bracket type and central type of pattern of calcification occurred more frequently in females, with the predictive value of 66.32% and 100% respectively. Mixed type of calcification occurred more frequently in males with the estimated predictive value of 100%. This concludes that calcification of first costal cartilage exhibits a definite pattern in relation to the sex involved.

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⁂ 03 ⁂

CORROBORATIVE EVIDENCE OF GROSS ANATOMY AND SONOANATOMY OF SUPRACLAVICULAR BRACHIAL PLEXUS – A CADAVERIC STUDY

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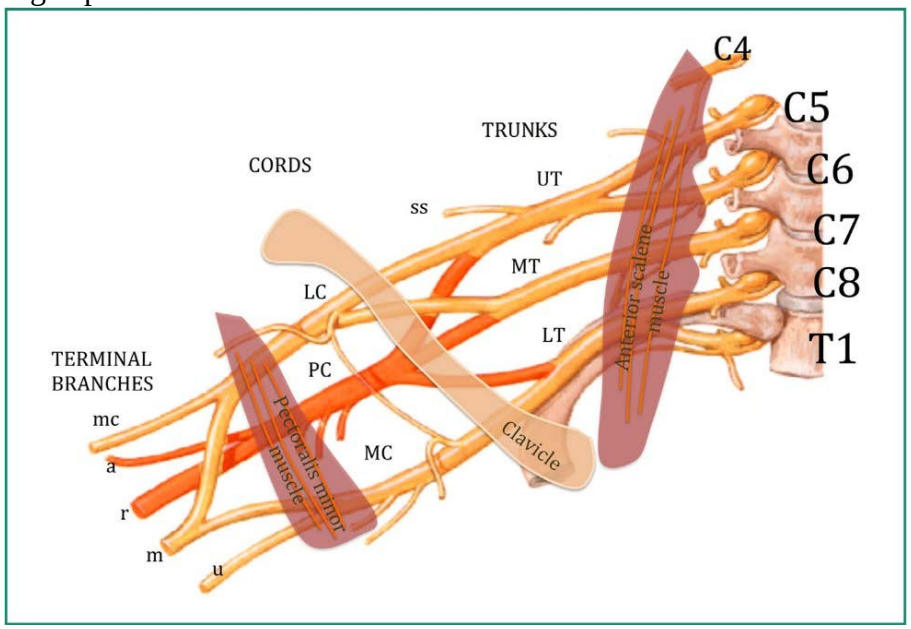
ABSTRACT:

The anatomy of the brachial plexus is complex. To facilitate the understanding of the ultrasound appearance of the brachial plexus, we present a review of important anatomic considerations. High-definition ultrasonography (USG) of the 5 ventral ramiof brachial plexus has been demonstrated. A detailed correlation of reconstructed, cross-sectional gross anatomy with ultrasound sonoanatomy is provided.Ultrasound examination of the brachial plexus is perfectly feasible with fairly rapid practical and theoreticaltraining.

KEYWORDS: brachial plexus, sonoanatomy, corroboration

INTRODUCTION:

The brachial plexus is formed from the ventral roots of C5 to T1. It is most compactly arranged at the level of the trunks (upper, middle, lower). Nerve blockade at this level has the great possibility to block all the branches of the brachial plexus. It is still one of the few areas dreaded by musculoskeletal ultra-sonographers because of its complex anatomy and its bony relations (the clavicle) hindering exploration.



Ultrasound examination of this region is still challenging with few reference and anatomical landmarks. Sonoanatomy of Brachial plexus elements above the clavicle were vaguely termed like bunch of grapes, cluster as they could not identify individual brachial elements.[1]

Normally the roots, trunks and cords appear as homogenous, hypoechoic structures, tubular in longitudinal and oval in axial view.[2]

IMPLICATIONS:

Anaesthetist still describing the brachial plexus block in terms of Interscalene or supraclavicular block. The neural elements are called as bunch of grapes / clusters etc. There is alack of knowledge

of corroboration of actual anatomy with sonoanatomy, even from CT/MRI. And also, there is lack of knowledge of exact site of injection in case of block. Supraclavicular brachial plexus block provides effective regional anaesthesia to the upper extremity. Ultrasonography has become an extremely effective tool for exploring the nerves of the upperlimb.

AIMS AND OBJECTIVES:

- To identify the part of brachial plexus above the clavicle (Roots, trunks).
- To produce the corroborative evidence of actual anatomy withsonoanatomy of brachial plexus elements above theclavicle.
- To interpret the ultrasound images obtained at thatlevel.

MATERIALS AND METHODS:

Study setting: Department of Anatomy, Department of Anaesthesiology, MGMC&RI, Puducherry.
Study design: Observational
Study population: Voluntary donated bodies (MOKSHA – body donation program) Sample size: 5 embalmed human cadavers (3 Male and 2 Female)
Inclusion criteria: Adult Human cadavers of both gender
Exclusion criteria: Human cadaver with any significant gross deformity in neck region and Delayed embalming cases

METHODOLOGY: Head and neck region of all the cadavers were sectioned. Neck region was scanned with USG, brachial plexus elements were identified. Each element was tagged with needle for identification. Skin was marked at the same plane, and at the level of marking sequential oblique cut sections were made. Finer dissection was done and photographs documented. **(Fig1)**

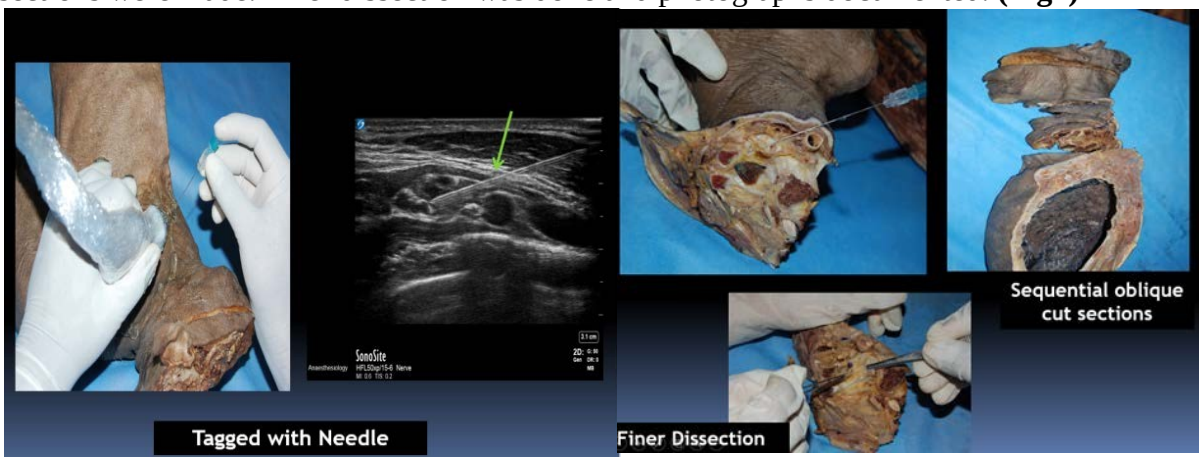


Fig 1: Steps to show the sections and USG images obtained

OBSERVATIONS:

C5 Root identification:

In serial section of cadaver at the C5 vertebra level, C5 root is observed above the bifid transverse process of C5 vertebra. In comparison with ultrasound imaging at the same level, identified as single round hypoechoic – appearing on top of M shaped hyper –echoic white line with post acoustic shadow. **(Fig 2)**

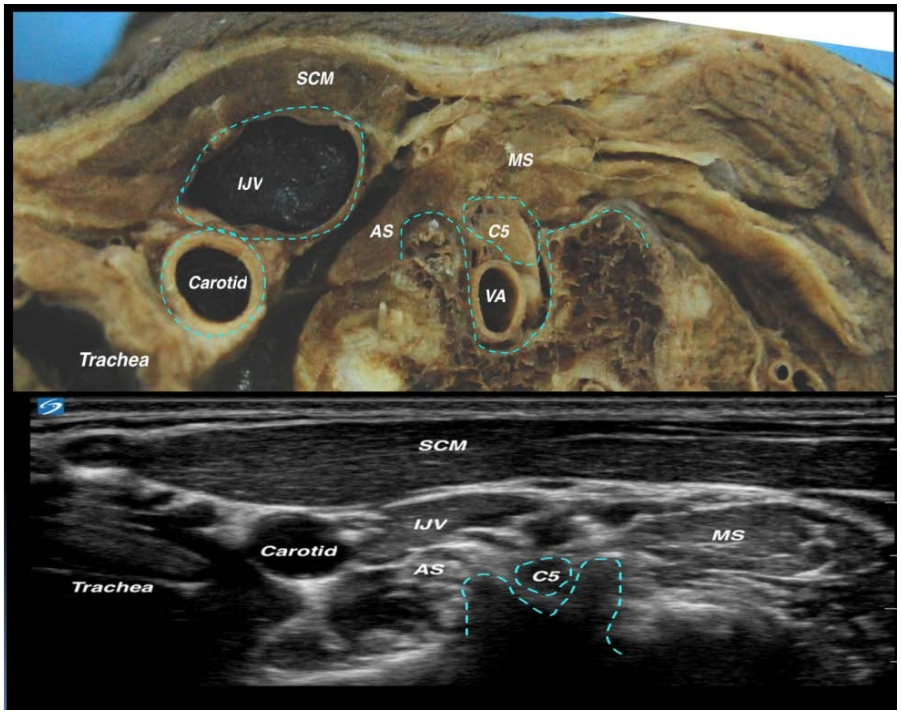


Fig: 2: C5 root above the C5 bifid transverse process(SCM- Sternocleidomastoid, IJV - Internal jugular vein, VA- Vertebral artery, AS, MS – Anterior and middle scalene)

C6 Root identification: In serial section of cadaver at the C6 vertebra level, C6 root lies above the bifid C6 transverse process. In comparison with ultrasound imaging at the same level, identified as single round hypoechoic – appearing on top of M shaped hyper –echoic white line with post acoustic shadow **(Fig 3)**

Fig: 3 Lies above the bifid C6 transverse process

C7 root idenitification: C7 root appears over the flattened transverse process of C7. In comparison with ultrasound imaging at the same level, single hypoechoic round structure present on top of transverse process of C7- which has only posterior tubercle is observed. **(Fig4)**

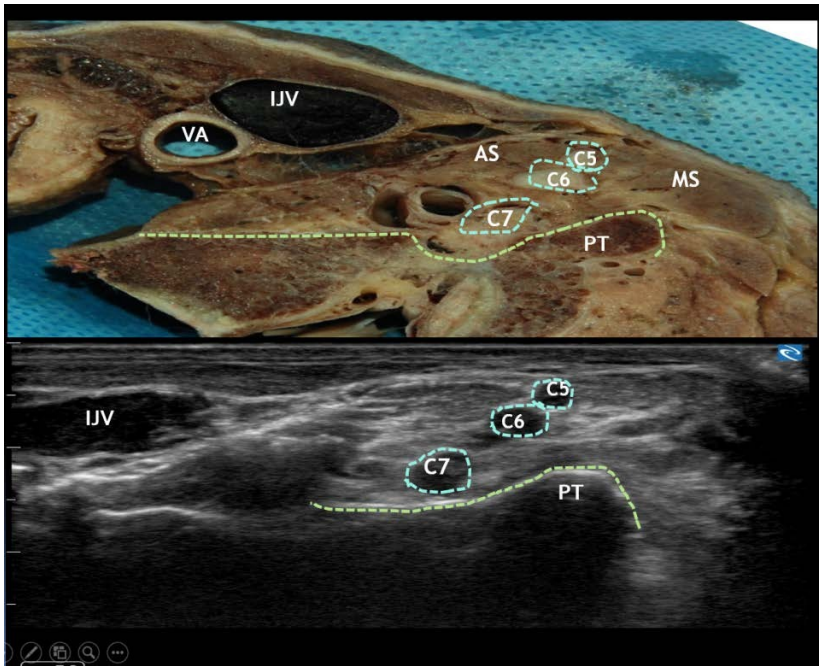


Fig: 4 Appears over the flattened transverse process of C7

C8 root identification: Cadaveric section at the level of C8 showed presence of C8 rootabove the first rib, Transverse process of T1 lies deep to it. At C8 level it is in the form of trunks formation (Upper and middle trunk). USG showed the presence of C8 root above the white line identified as

first rib. **(Fig:5)**

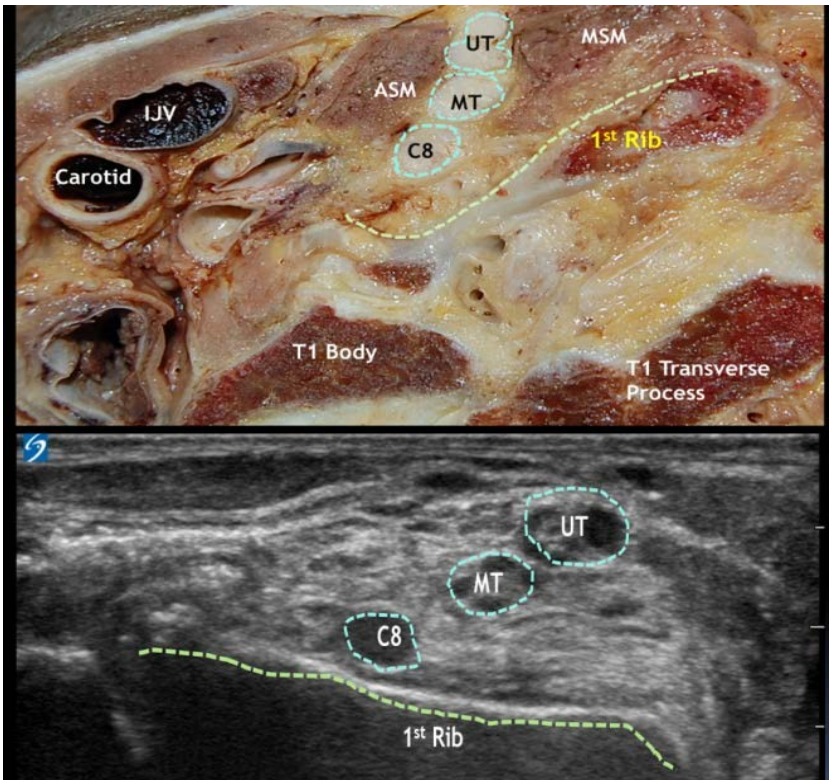


Fig: 5 -C8 root lies above the first rib

T1 root identification: Section at the level of T1 showed the T1 root lies below the first rib and above the pleura. Also showed the formation of inferior trunk by going above to join with C8. USG showed single round hypoechoic structure which lies below the white line (first rib). The upper trunk started dividing into anterior and posterior division.**(Fig6)**

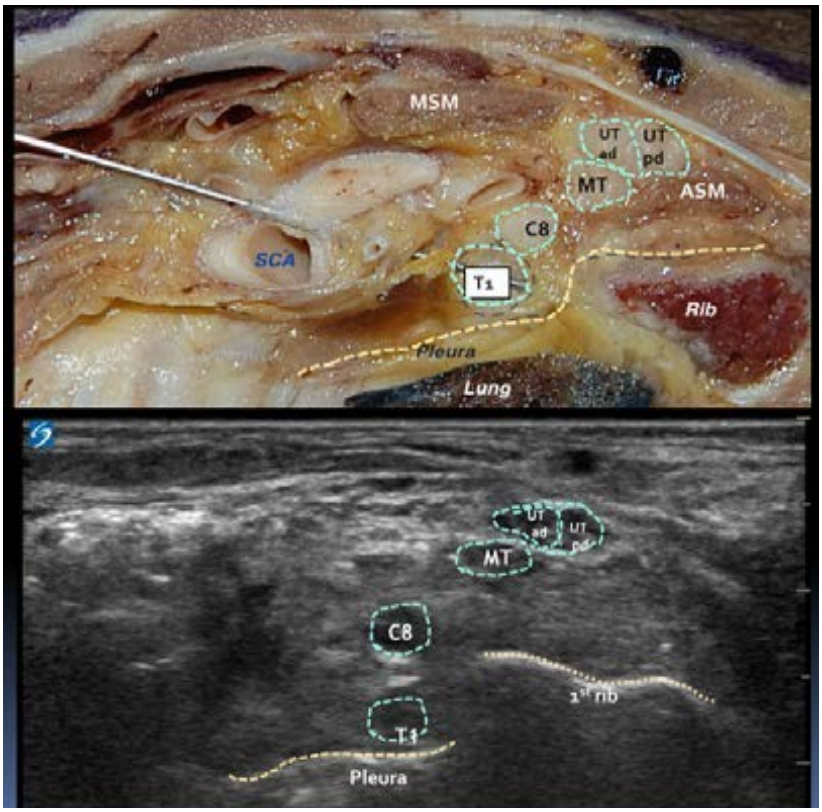


Fig 6: Lies below the first rib and above the pleura(SCA- Subclavian artery, UT ad- upper trunk-anterior division, UT-pd – Upper trunk posterior division, MT- Middle trunk)

DISCUSSION:

The brachial plexus is readily visualized as rounded hypoechoic nodules on transverse sonograms and as tubular hypoechoic structures on longitudinal scans.[3] In the present study, the roots appear as single round hypoechoic appearing on top of M shaped hyperechoic white line with post acoustic shadow. The roots are identified due to the shape of the transverse process of C7 in the paravertebral space, and the superficial position of C5 in the interscalene groove.[4]

In the present study, C5 and C6 root lies above the bifid transverse process of C5, C6 vertebra respectively. C7 root appears over the flattened transverse process of C7. C5–C7 roots were visible sonographically in all cases, whereas the C8 and T1 levels were seen respectively, in only 16 of 20 and eight of 20 cases.[5] In the present study, C8 root present above the first rib, transverse process of T1 lies deep to it. T1 root lies below the first rib and above the pleura. The cords of the brachial plexus are clustered together lateral to the axillary artery, and share a consistent relation relative to one another and to the axillary artery, at the costoclavicular space.[6, 7] In the present study, bunch of grapes had been observed above the clavicle, identified as trunks of Brachial plexus.

CONCLUSION:

Sonography of the brachial plexus requires a good grounding in anatomy. Ultrasound, with its higher definition and dynamic character, is an excellent additional method which is still under-exploited. Ultrasound examination of the brachial plexus is perfectly feasible with fairly rapid practical and theoretical training. We undertook this cadaveric study to confirm and validate the sonoanatomy of brachial plexus elements and there by produce corroborative evidence for the same.

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ORIGINAL RESEARCH PAPERS

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UG CATEGORY

⁂ 01 ⁂

A STUDY TO ASSESS THE CYTOGENETIC TOXICITY AND THE EXPRESSION PATTERN OF N-CADHERIN IN BUCCAL EPITHELIAL CELLS OF COVID-19 PATIENTS

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BACKGROUND:
SARS CoV 2 virus causes COVID 19 by infecting nasal and oral cavities primarily by attaching its spike proteins to angiotensin converting enzyme 2 receptors expressed in epithelial cells. N cadherin plays an essential role in cellular adhesion in mesenchymal tissues and its expressions are increased or decreased in tumour cells and chronic inflammatory conditions[1].

OBJECTIVES:
This study is to evaluate the micronucleated cell count, metanuclear abnormalities, Genotoxic factor and expression of N cadherin in exfoliated buccal mucosal cell among the COVID-19 suspected patients.

METHODOLOGY:
This cross-sectional study was conducted in 100 (AIIMS/MG/IEC/2022-23/177) symptomatic COVID 19 suspected patients from the institute. The sample size 100 was divided into Group 1: RT-PCR positive patients (n= 25); Group 2: RT-PCR negative patients (n=75). The buccal smear was stained for RAPID-PAP and immunohistochemical expression of N cadherin. Statistical analysis was done using Chi-square test.

RESULT AND DISCUSSION:
The micronuclei count and metanuclear abnormalities were significantly higher in COVID 19 patients compared to negative patients (**Figure 1 &2**). The genotoxic factor was
2.68 which indicate positive genotoxicity effect of COVID 19 infection on buccal mucosal cells. The micronuclei occur due to mal-segregation of sister chromatids during mitotic divisions leading to aggregation of nuclear material outside the nucleus[2]. There was increased expression of N cadherin in SARS Cov 2 positive patients exfoliated cells (**Figure 3**) indicating SARS Cov 2 increases the epithelial to mesenchymal transition and may lead totumourogenesis[3].

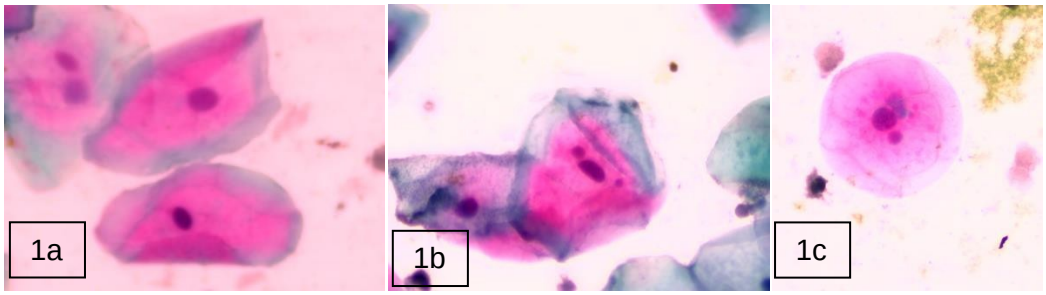

Figure 1: Exfoliated buccal mucosal cells stained with PAP stain 1a – SARS CoV 2 negative patients exfoliated buccal mucosa with single nucleus. 1b & 1c – SARS CoV 2 Positive patients with prominent large nucleus and multiple micronuclei.

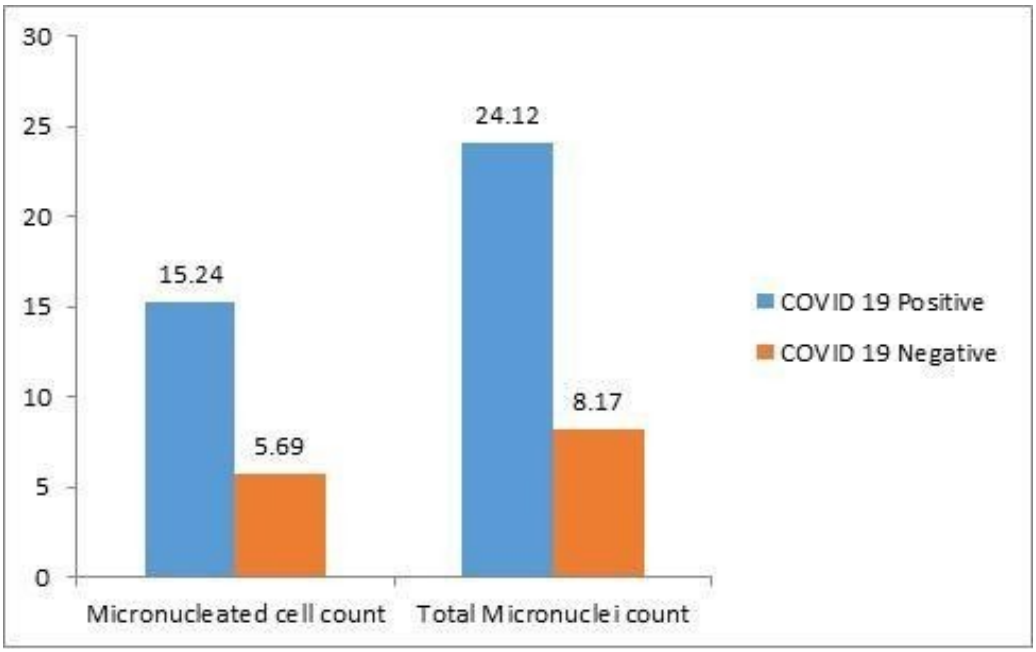

Figure 2: Graphical representation of increased metanuclear changes in COVID 19 positive patients comparing COVID 19 negative patients

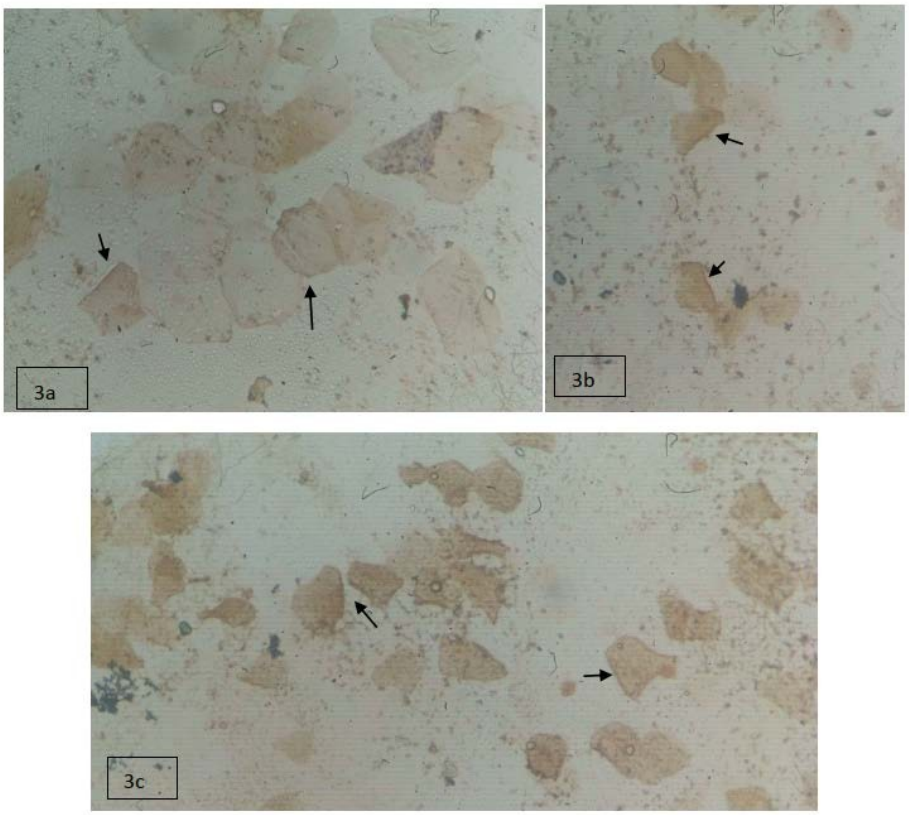

Figure 3: Exfoliated buccal mucosal cells stained for N Cadherin expression in COVID 19 suspected patients. Figure 3a – SARS CoV 2 negative patients showing less intense staining in few buccal cells (Black arrows). Figure 3b & 3c – SARS CoV2 Positive patients showing increased expression of N Cadherin along the periphery of the buccal cells (Black arrows).

CONCLUSION:

SARS CoV 2 has positive genotoxicity effect and expresses its carcinogenic toxicity effect on buccal mucosal cells by increasing the expression of micronucleated cells, pyknotic cells, karyolytic cells, karyorhexic cells and N cadherin. These micronuclei and metanuclear changes can be used as a

reliable marker to identify the early genomic damage caused by SARS CoV2 virus expressing on buccal mucosal cells.

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⁂ 02 ⁂

HOW COMMON IS APPENDAGES OF TESTIS AND EPIDIDYMIS? AND THEIR POSITIONS- A CADAVERIC STUDY IN SOUTH INDIAN POPULATION.

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INTRODUCTION:

Gross features:

Human testicles are paired structures. Each testis in humans weighs around 25 grams (0.875 ounce), is 4-5 cm (1.6-2.0 inches) length, and is 2-3 cm (0.8-1.2 inches) in diameter. Each is covered by a fibrous capsule called the tunica albuginea and is split into 200 to 400 wedge-shaped pieces, or lobes, by partitions of fibrous tissue from the tunica albuginea. Each lobe contains 3 to 10 coiled tubules called seminiferous tubules that create sperm cells. The scrotum is a skin-like pouch that protects the testicles. It is made up of two layers: the skin on the outside and the dartos fascia on the inside. When it is cold, muscle fibres in the dartos fascia contract, causing wrinkling of the scrotal skin and bringing the testes closer to the body. As a result, heat loss is reduced when the outside temperature is too low. The testicular covers are located inside the scrotum. These layers are contiguous with the front abdominal wall and range from superficial to deep. The external spermatic fascia is derived from the external oblique muscle. Cremaster muscle derived from the internal oblique. Internal spermatic fascia derived from transversalis fascia. The tunica vaginalis is a peritoneal pouch that partly surrounds the testicles. It develops throughout the embryonic vaginal process. This is the outpouching of the parietal peritoneum, which follows and encloses the testes throughout descent. It is made up of parietal and visceral layers. The testis, the head of the epididymis, and the inferior section of the ductus deferens are all covered by the visceral (internal) layer. The parietal (external) layer is bigger and superiorly covers the distal section of the spermatic cord before continuing over the tunica vaginalis visceral layer and covering the epididymis duct before merging into the visceral layer. A little quantity of serous fluid exists between the layers, preventing friction and allowing the testis to move in thescrotum.

Embryology: The testes develop intrauterine on the posterior abdominal wall, retroperitoneally. They usually descend into the scrotum through the inguinal canal in the 26th week of pregnancy. The neurovascular structures and primary drainage ducts of the testes stay within the spermatic cord throughout descent. The ductus deferens, three arteries (testicular, ductus deferens, and cremasteric), the pampiniform venous plexus, genitofemoral nerve branch, sympathetic nerve branches, and lymphatic veins are all included.The testes push layers of the anterior abdominal wall (internal and external oblique muscles, as well as the transversalis fascia) into the scrotum as they descend. These anterior abdominal wall extensions form a musculofascial pouch that protects the testes within the scrotum.As successful spermatogenesis requires temperatures 2-3°C lower than body temperature, the testes must descend outside the human cavity. If the testes do not descend, testosterone synthesis continues, but spermatozoa cannot begenerated.

AIM:

Generally human testis has 2 appendages the Appendix testis and Appendix epididymis. The appendix testis is a vestigial remenant of Mullerian duct.When present, it is positioned on the superior pole of the testicle between the testis and the epididymis and is the most commonly tormented testicular appendage. It is similar to the female's fimbriated end of the Fallopian tube. The appendix epididymis is a residual Wolffian (mesonephric) duct found in 22% to 28% of testes. It appears along the head of the epididymis when present. It is occasionally thought to be a disconnected efferent epididymal duct. The aim is to identify the testicular appendages and their incidence in south Indian population.

APPARATUS NEEDED:

Testis from embalmed cadaver, Vernier caliper

METHOD OF DISSECTION:

1. Start from the superficial inguinal ring and extend the incision downwards longitudinally through the skin of the anterolateral part of thescrotum
2. Reflect the dartos layer from the loose areolar tissue, the external spermatic fascia, deep to it. Towards the median plane, the dartos layer extends superiorly between the testes. Complete the separation through the layer of areolar tissue up to the superficial inguinal ring. Lift the testis and spermatic cord from thescrotum.

OBSERVATION:

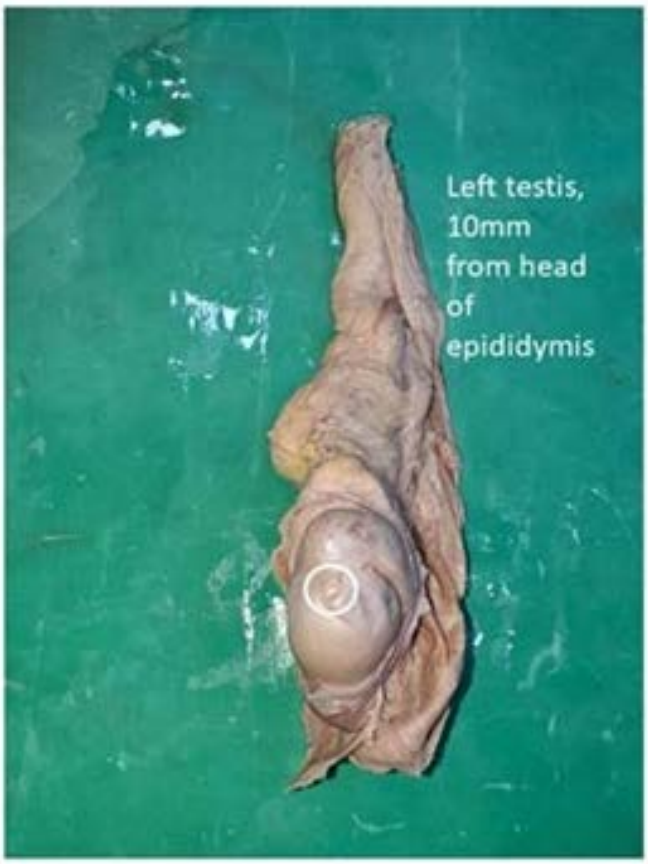
A study done in 7 samples of testis in which 4 are right and 3 are left shows the following findings:
Right testis: **Epididymal appendages**-2mm and 3mm. **Testicular appendages**-9mm, 10mm, 12mm and 16mm. **Left testis**: **Testicular appendages**-6mm, 9mm and 10mm.
NOTE: All these measurements are taken with reference to the head of epididymis.

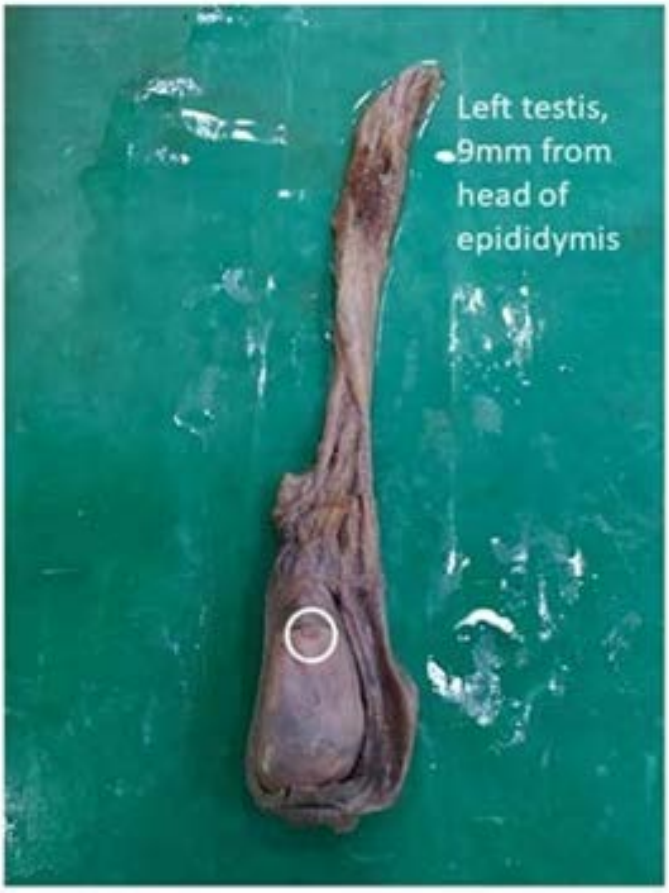
DISCUSSION:

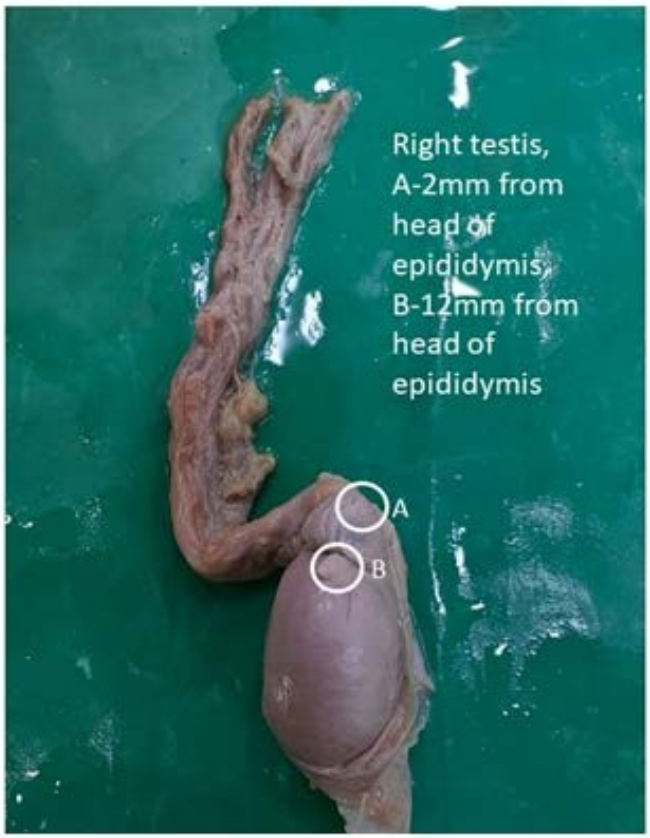
THISstudy can be helpful for doctors to know the approximate location of the testicular appendages with reference to the head of epididymis. Also in the given sampling size the appendages are more common in the right testis. The possibility of occurrence of epididymal appendages in testis are less in comparison with the occurrence of testicular appendages.

CONCLUSION:

Testicular appendages are in average distance of 9-11mm from the head of epididymis where as the epididymal appendages are in average distance of 2-3mm from the head of epididymis.
Images: The images taken from south Indian cadavers are attached below the side of the testis is decided based on the orientation of thesinus.


Left testis,
10mm
from head
of
epididymis


Left testis,
9mm from
head of
epididymis


Right testis,
A-2mm from
head of
epididymis,
B-12mm from
head of
epididymis
A
B


Right testis,
16mm from the
head of
epididymis

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ABSTRACTS

ORAL PRESENTATION

FACULTY CATEGORY

⁂ 01 ⁂

CAPTURING NEWBORN DERMATOGLYPHICS: A FEASIBILITY STUDY USING DIGITAL PHOTOGRAPHY

Presenting author:
M. Sobana, Tutor, Department of Anatomy, KMCH IHSR, Coimbatore-14
Co-Author:
Dr. A. Sharmila MS, PhD, Professor & Research Supervisor, Department of Anatomy, SRM MCH &RC.

ABSTRACT:

AIM:

This pilot study aims to assess the feasibility and utility of using digital photography as a contact-less method for capturing and analysing dermatoglyphics patterns in newborns.

OBJECTIVES:

To investigate the practicality of employing digital photography for Dermatoglyphic analysis in newborns in terms of image quality, consistency, challenges identification.

MATERIALS AND METHODS:

Study design: Pilot study**. Study population:** footprints ofnew born babies taken within 5 days from birth. **Sample size:** 29 (10% of main study with sample size 292). **Study methodology:** Footprints of new born are acquired using a mobile device camera attached with macro lens. Then the footprints are analysed with following key factors: image quality, ease of use, accuracy, lighting conditions, participant comfort, data collection time, image processing, cost, challenges encountered.

RESULTS:

Initial observations suggest that digital photography shows promise as a viable tool for Dermatoglyphic analysis in newborns. It offers advantages in terms of reduced discomfort for infants and improved data storage and sharing capabilities. However, challenges related to lighting conditions, image quality and standardization require consideration for future implementation.

KEY WORDS: dermatoglyphics, contact-less, footprints, macrolens.

⁂ 02 ⁂

BENEFITS OF FLIPPED CLASSROOM IN HUMAN EMBRYOLOGY SUBJECT FOR MEDICAL STUDENTS

Dr Anupriya A, Sri Ramachandra Medical College & RI, Porur

ABSTRACT

In the recent decades, flipped classrooms have gained attention over traditional lectures especially in the health care field. The flipped classrooms mode of teaching enables active learning which in turn leads to better retention and application of the knowledge. This study considers the benefits of the flipped classroom on Medical students -perceptions of their knowledge and motivation during the current pandemic period. In the field of healthcare, the application of knowledge is essential, flipped classrooms helps in meeting this requirement. This study aims to evaluate the efficacy of flipped classrooms against traditional lectures for medical graduates for the course embryology. A total of 125- study subjects and 125- control subjects were evaluated after the lectures. This study concluded that in study group mean score was 2.79 pretest and 9.67 post-test as compared to the control group where mean score was 2.30 pretest and 6.21 post-test . The study also concluded that both lecturers and students are open to the efficient, time-saving and application oriented teaching of flipped classrooms.

KEYWORDS: flipped classroom, traditional lectures, active learning, education

⁂ 03 ⁂

ARTIFICIAL INTELLIGENCE IN MEDICAL EDUCATION: MEDICAL STUDENT'S PERSPECTIVES

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INTRODUCTION:

The application of artificial intelligence (AI) in clinical practice is considered a promising area of expansion in medical education. The researcher worked on the role of AI in medical education and highlighted the demand for curriculum reforms based on the latest technologies in education. This study examined the perceptions of future physicians on the possible influences of artificial intelligence on medicine, and to determine the needs that might be helpful for curriculum restructuring.

METHODS:

An e- survey form was conducted among all three phases of medical students of same institute during the May 2022–2023 academic year, To collect data on medical students' perceptions of the possible influences of AI on medicine, student's attitude towards training in AI and Opinions on the importance of topics that can be integrated into an AI education in medicine.

RESULTS:

80.6 % participant agreed for possible positive influence of AI on future clinical practice. Participants do acknowledge that AI will be effective patient education tool but equivocal response was obtained for AI affecting doctor-patient relationship. if AI applications are introduced in training programme, 63.9% participants are very hopeful towards improvisation of their knowledge, clinical judgment. 92.3% participants interested in orienting themselves to fundamental knowledge and skills about AI applications.

DISCUSSION:

According to Ken Masters, AMEE guide, 2019, medical practice and ethics will be influenced by AI in a big way with the key technical developments that revamps computer asan 'intellectual, ' 'deductive' instrument, parallel to a physician's role in the medical care system. Machine learning (AI tool) with its sub-disciplines like deep learning and Cognitive computing can create automated computerized models that can solve bulk of clinical problems without human assistance. Therefore Access to computer-assisted learning in all phases of medical education can orient the students to critically appraise research and learn evidence based medicine with AIperspectives.

CONCLUSION:

Medical students are enthusiastic to learn new skills in artificial intelligence. Responsibility of designing competencies for them would lie withfaculty.

K**EYWORDS:**

Artificial intelligence, Medical education, students' perceptions

⁂ 4 ⁂

SEX DETERMINATION USING ORBITAL MEASUREMENTS IN SOUTH INDIAN POPULATION BASED ON CT SCANS

Saravana Kumar.S[1], Karthick S [2], Gnanavel A[3], Lalitha R[4], Sarathkumar S [5]
***Associate Professor[1], Professor & HOD[2], Associate professor[3, 4,] Senior Resident [5]**
Department of Anatomy, Meenakshni Medical college &Hospitals, Kancheepuram.

INTRODUCTION:

The orbit is a structure which attracts much interest for researchers, both because of its complexity and the variability of diameters from one individual to another. Specialists have tried to quantify these measurements and make correlations between groups, related to ethnicity, gender and race. In forensic medicine and anthropology, an important role of these measurements is to determine the identity of a group of skeletalremains

AIM:

The aim of the study is to estimate the degree of sexual differentiation using direct measurements of orbit diameters on dry adult skulls, being representative for the contemporary south Indian population through CT scans

MATERIALS & METHODS:

The quantitative morphometry of orbital cavity will be studied in computed tomographic images of brain belonging to 100 patients (50males and 50 females), after getting the informed consent from thepatients.

The following Paramaters are measured in right and left orbit of the skulls. The parameters like orbital height and width, Length of Medial wall, lateral wall, superior wall and inferior wall, orbital perimeter, orbital index, biorbital distance, interorbital distance and orbital opening area where done. Kolmogorov Smirnov test has been used to test the normality **of** the data. Mann Whitney U test was used to find the statistically significant difference in orbital parameters between males and females Discriminant analysis was performed to predict whether the CT belongs to male orfemale.

RESULTS:

P values of 0.017, <0.001, 0.009, 0.009 and <0.001 indicate that there is significant difference between males and females in Length Of Superior Wall Right, Length Of Superior Wall Left, Length Of Medial Wall Left, Length Of Lateral Wall Right and Length Of Lateral Wall Left respectively.

P value of 0.029, <0.001 and 0.034 indicate that there is significant difference between males and females in Orbital Rim Perimeter (CM) Right, Orbital Rim Perimeter (CM) Left, Orbit opening area Rightrespectively.

The discriminate function revealed a significant association between groups and all predictors, accounting for 64.9% of between group variability, although closer analysis of the structure matrix revealed two significant predictors, namely Length Of Superior Wall Left(- 0.445) and Orbital Rim Perimeter (CM) Left (–.357) with remaining parameters as poor predictors. The cross validated classification showed that overall 78.0% were correctly classified

CONCLUSION:

Comparing the results from the present study with other similar studies we found that the highest accuracy for sex determination is length of superior wall left side and orbitl rim perimeter on the left side.

⁂ 05 ⁂

MORPHOMETRY AND MORPHOLOGY OF AXIS VERTEBRA AND ITS IMPLICATIONS IN CROWN DENS SYNDROME

Dr. N. Pratheepa sivasankari, Dr. Vignesh, Dr. Sundarapandian

INTRODUCTION:

Crowned dens syndrome (CDS) is a clinical entity consisting of acute neck pain, accompanied by specific radiographic findings of calcifications from calcium pyrophosphate dihydrate crystals surrounding the dens of the axis, resulting in a “crown-like” appearance. Periodontoid calcification has been reported to induce inflammation, which results in acute neck pain. This disease is called crowned dens syndrome (1, 2) This was noted frequently in patients with pseudogout of the peripheral joints (3) Since many studies were on CT images, we wanted to know the Morphology and Morphometry of Axis vertebrae, the prevalence of periodontoid calcification in the dried vertebra, causing crown dens syndrome.

METHODOLOGY:

It was a Descriptive study 100 Undamaged axis vertebrae were studied for periodontal calcification. The odontoid process of C2 was divided into three segments as mentioned above; the tip, the neck, and the base, and the length and width of the calcified part were measured.

RESULTS:

Odontoid calcifications were found in 38 out of 100 vertebrae. The average length of the odontoid process, body, and the dens body ratio was 23. 6±1. 2 12. 5±1. 2 1.8.59%of the dried bones had a METD (minimal external transverse diameter) of the odontoid process of less than 9mm

CONCLUSION:

Since the METD was very less only one screw could be safely placed in an odontoid process. Since it induces inflammation, in might cause sudden onset neck pain/stiffness, and fever.

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⁂ 06 ⁂

MORPHOLOGICAL AND MORPHOMETRIC STUDY OF PTERION IN ADULT DRY HUMAN SKULL

Ms. Febamol.E.S, Tutor, Indira Medical College & Hospital, Mahatma Gandhi University.

ABSTRACT

INTRODUCTION:

Pterion is significant bony landmark because it commonly lies near the anterior branch of middle meningeal artery as well as Broca’s Area. The aim is to study the types of pterion and measure the

distance from various bony landmarks on skull to the midpoint ofpterion.

SUBJECTS AND METHODS:

This study was performed on 100 adult dry human skulls of unknown age and sex. Types and location of pterion was observed bilaterally. Measurements were taken in millimeter using Vernier caliper from midpoint of pterion to i) fronto- zygomatic suture ii) middle of zygomatic arch.

RESULTS:

We observed five types of pterion: spheno-parietal, fronto-temporal, stellate, epipteric. Among the skulls studied the most common type was sphenoparietal bilaterally. The mean of distances from midpoint of pterion to fronto-zygomatic suture was, 31.68±5.58 mm and 31.18±5.82 mm; to the middle of zygomatic arch was 38.87±3.63 mm and 37.84±3.99 mm;

CONCLUSION:

Pterion is the most commonly used surface landmark. Findings of present study regarding classification of pterion will be helpful for neurosurgeons, radiologists, anthropologists and forensic pathologists

⁂ 07⁂

STUDY OF MORPHOLOGICAL FEATURES OF THE FIRST RIB WITH CLINICAL IMPORTANCE

Mr. Saran Sabu, Tutor, Indira Medical College & Hospital, Mahatma Gandhi University.

ABSTRACT

The first rib is the most curved rib and very distinct from other ribs. The significant landmarks on the first rib include the head, tubercle, vascular groves on the superior surface and the scalene tubercle.

Anomalous ribs are often discovered incidentally on chest radiographs. Such anomalies, maybe associated with the compression of the neurovascular bundle at the root of the neck. Further research on the first rib may also yield information that substantiates the growing relevance of fint nb in sex identification and age estimation, particularly when the skull and pelvis are damaged to a significant extent.

AIM AND OBJECTIVES

The study aims to study morphological features of the first rib with clinical importance

MATERIALS AND METHODS

One hundred and twenty adult human dry first ribs of unknown sex were studied. The morphological features studied were scalene tubercle, vascular groove, oblique ridge, tubercle, and the head of the first rib. The obtained data were recorded andanalyzed.

RESULTS

Groove for subclavian vein is prominent in 33% left and 58.33% right ribs. It is shallow in 50% left and 33.33% right ribs and rudimentary in the 16% of left and 8.33% right ribs the groove for subclavian artery is deep grooved in 28.33% left ribs and 3.33 %right ribs, shallow in the 33.33% left ribs and 50% of the right ribs. It is rudimentary in 38.33% left ribs and 16.66% right ribs.

Study the scalene tubercle is absent in 8.3% left ribs and 25% right ribs, in75% of left ribs present scalene tubercle while scalene tubercle is rudimentary in 16.66% of left ribs and 25% Of the right ribs.

In our study groove for subclavian vein is prominent in 33% left and 58.33% right ribs. It is shallow in 50% left and 33.33% right ribs and rudimentary in the 16% of left and 8.33% right ribs. The

groove for subclavian artery is deep grooved in 28.33 left ribs and 3.33 right ribs. In the case of Tubercle for first rib about 38.33% of left rib shows prominent while right ribs Shows 33.33%. The tubercle is normal in 50 % of the left ribs while 58% of in right ribs. Tubercle is hyper trophied or in 11.66% of left rib while right ribs shows 8.33%.
In the case of Head for first rib about 26.66% of left rib shows Large while right ribs shows 33.33%. The head is normal in 53.33% of the left ribs while 45% of in right ribs. Head is rudimentary in 20% of left rib while right ribs shows 21.66%.

CONCLUSIONS

The findings of the present study will be useful for anatomists, anesthetists, forensic surgeons, and general surgeons for the identification of the first rib and management of anomalies related to the first rib. The present study was an initial step in estimation of the angle which can be used for estimating sexual dimorphism.

⁂ 08⁂

PREVALENCE, LOCATION AND ARTERIAL RELATION OF MIDDLE CERVICAL GANGLION - A CADAVERIC STUDY

Author; Dr.Anandarani.V.S, Professor, SRIHER, Chennai-116.

INTRODUCTION:

Middle cervical ganglion [MCG] is formed by the fusion of C5 and C6 sympathetic ganglia. It is the smallest cervical ganglion which innervates head and neck. Study of the cervical sympathetic chain and its variations will minimize the risk and complications of sympathectomies.

AIM AND OBJECTIVES:

To identify the middle cervical ganglion[MCG], in the cervical sympathetic chain on both sides and to study its relation with inferior thyroid artery.

MATERIALS AND METHODS:

Present study was conducted in the Anatomy department of SRMC, Chennai, as a part of routine under graduate dissection programe.25 human adult cadavers of both sexes were studied. Dissection was carried out on both sides in all the specimens.

RESULTS:

Middle cervical ganglion was present only in 50% of the cervical sympathetic chains. Vertebral level of MCG was located anterior to the transverse process of C6in all the studied specimens. MCGwas closely related to inferior thyroid artery and posterior relation to the artery was observed in 94%.

CONCLUSION:

Study revealed the absence of MCG in 50% of the specimens and many previous studies stated similar results. The notification of this finding is clinically significant.

⁂ 09⁂

MORPHOMETRIC STUDY OF THELATERAL COLLATERAL LIGAMENT OF THE KNEE JOINT

Authors:[1]Satheesha B Nayak, [1]Ashwini Aithal P, [1]Surekha D Shetty.
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BACKGROUND:
Knee joint helps in the movements of the lower limbs and faces a high risk for injuries. Collateral ligaments maintain the stability of the knee joint. Lateral collateral ligament (LCL) of the knee is an extra capsular ligament of the knee joint that protects and stabilizes the lateral aspect of the knee.
METHODS:
The current study was conducted on 35 knee joints of formalin embalmed adult cadavers. The ligaments were isolated through careful dissection. Variations in the morphology of the ligaments were noted down. The length and widths of the ligaments were measured. The data was analysed using SPSS v16.
RESULTS:
We observed cord (Type 1), band (Type 2) and mixed type (Type 3) of LCLs with a frequency of 65.71%, 25.72%, and 8.57 % of specimens. The Type 1 measured 52.60 ± 6.1mm in length and 3.59 ± 0.7 mm in width. The Type 2 measured 54.0 ± 4.5 mm in length and 5.38± 0.6 mm in width. The Type 3 was broad proximally and narrow distally. The mean length of this type was 54.0 ± 5.25 mm. The mean width of the broad end was 8.6 ± 1.5 mm and the mean width of the narrow end was 2.6 ± 0.5 mm.
CONCLUSION:
We tried to classify the various shapes of the LCLs and studied their morphometrics. Results of this study could be useful to radiologists and orthopaedic surgeons due to its clinical implications in these fields ofmedicine.

⁂ 10⁂

ANATOMICAL STUDY OF THE STERNAL ANGLE & ANOMALIES OF ADULT HUMAN STERNUM

Mr. Akhil Suresh, Tutor, Indira Medical College & Hospital, Mahatma Gandhi University.

ABSTRACT
The sternum or breast bone is one of the flat axial bone forming the anterior part of the thoracic skeleton. It consists of three parts. Manubrium, body & xyphoid process.
The sternal angle or angle of Louis is formed by the articulation of the manubrium and body of sternum. It perform generic functions of the skeletal system.
The current study aimed to determine the anatomical study of the sternal angle and anomalies of adult human sternum. And also bring awareness about the variation of sternal angle. The study was performed by 100 sternum.
Measurements were taken by using Vernier calliper and scale. From this study concluded that over 40% of specimens had variation in size, location, shape & fusion of sternalangle.

⁂ 11⁂

A STUDY ON MANDIBULAR CANINE IN SEX DETERMINATION

Mr. Amal M Soman, Tutor, Indira Medical College & Hospital, Mahatma Gandhi University.

ABSTRACT

Teeth are an excellent material in living and Non-living populations for anthropological, genetic, odontologic and forensic investigations.

The current study aims at evaluating the effectiveness of Mandibular canine index (MCI) in the determination of sex by the measurement of mesiodistal width and intercanine width.

The materials used are the casts of mandibular impressions of the subjects taken using impression material (Alginate) and dental stone measured by Vernier calliper's, Divider and scale.

It is concluded that using permanent MCI and Mandibular mesiodistal dimension is a quick and easy method for determining sex in identification.

⁂ 12⁂

NEUROPROTECTIVE EFFECT OF PONGAMIA PINNATA LEAF ON CEREBRAL ISCHEMIA/ STROKE OF RAT MODEL

***Suganitha B[1, 2], # Vijayakumar J[1], $ Priya R[3], & Vasudha K[2]**

***1(phd scholar) Saveetha University, # 2(Senior resident) Akash Institute of Medical Sciences & Research Centre, Bangalore, India, $ 3 BMCRI**

BACKGROUND:

Cerebral ischemic stroke is the most common cause of disability worldwide. The concept of Neuroprotection is gaining a lot of attention in the hunt for innovative therapies that have the ability to enhance the cognitive and motor abilities. The aim of this study is to compare and determine the efficacy of hydroalcoholic extract of Pongamia pinnata leaves on ischemia induced rat brain.

METHOD:

In a male Wistar rat model of brain, ischemia/reperfusion (I/R) was incorporated by occlusion of **Bilateral common carotid occlusion** method for 60 minutes followed by reperfusion for 72 hours. Rats were divided into 4 groups. They are (G1-Control+NS), G2-Sham (Sh+NS), G3-induced (BCCAO+ NS), G4- (400mg *p.pinnata*+NS). The effect of herb was examined by using a various histological staining such as Cresyl violet staining for quantification of normal neurons, acridine staining for detecting apoptopic cells present and Hematoxilin &Eosin staining was used to understand the changes occurred in the brain infarct. The mRNA levels of GDNF, BDNF analysed by RTPCR.

RESULTS:

The results of Cresyl violet staining, Acridine orange, and H&E were observed. When compared to the G1 & G2 group, G4 showing near equal histological representation than induced group (G3).ThemRNA levels (GDNF, BDNF) were increased in stroke models exposed to *P.Pinnata* leaf extract compared to induced model.

CONCLUSION:

The study concludes that the element of *P.pinnata* leaf extract has neuroprotective potential in ischemic injury, by increasing vascularity reducing the cell death.

Key words; Pongamia pinnata leaf, cresyl violet, Acridine orange, Neuro protective.

⁂ 13⁂

ESTROUS CYCLE ESTIMATION THROUGH NON-INVASIVE VAGINAL LAVAGE METHOD: A TOOL FOR THE ASSESSMENT OF ALTERED ENDOCRINE MILIEU IN SWISS ALBINO MICE

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2 – Professor, Department of Anatomy, Sri Ramachandra Medical College Hospital and Research Institute, Porur, Chennai – 600116.

INTRODUCTION:

Evaluation of estrous cycle in laboratory animals can be a useful measure of the integrity of hypothalamic-pituitary-ovarian reproductive axis. In the present study a novel non-invasive method was performed to assess the different stages of estrous cycle through vaginal cytology.

MATERIAL AND METHODS:

In the present study 60 healthy female swiss albino mice were used. The end of the latex bulb containing 100µl of ddH20 was placed at the entrance of the vaginal canal. Care was taken to avoid penetration into the vaginal orifice. The bulb was gently pressed and ddH20 was expelled into the vaginal canal. The vaginal cells were flushed by introducing small amount of distilled water or saline through pipette and placing few drops of cell suspension in a glass slide for microscopic examination.

RESULT:

In proestrus phase presence of nucleated epithelial cells which were seen, non- nucleated cornified cells were seen in estrus cycle. In metestrus stage large number of leucocytes and small number of large, non-granular and non-nucleated cornified epithelial cells were seen. Diestrus was identified with the large number of leucocytes.

CONCLUSION:

The non-invasive method of estrous cycle estimation is ideal for the precise estimation of the estrous cycle and this method can be applied for a long term as it is non- invasive and there is no risk of pseudo pregnancy as in vaginal smearmethod.

⁂ 14⁂

EFFECT OF *SALACIA OBLONGA* ON BETA CELL OF DIABETIC RATS – AN ELECTRON MICROSCOPIC STUDY

Senthil kumar. A[1], Manickam. S[2]

1. ***Assistant professor, Sri Venkateshwaraa Medical College Hospital &Research Institute, Puducherry***
2. **Associate professor, Chettinad Hospital &Research Institute, Kelambakkam.**

ABSTRACT

BACKGROUND:

Incidence of diabetes, a non-communicable disease characterized by hyperglycaemia has increased multifold in the recent past. *Salacia oblonga* is a well-known antidiabetic plant with alpha glucosidase inhibiting activity. Its role on pancreatic beta cell remains unclear.

AIM:

To study the antidiabetic effect of aqueous extract of *Salacia oblonga* and observe the ultrastructural

changes in the beta cell of diabetic rats.

MATERIALS & METHODS:

40 male Wistar albino rats weighing 200 gm each was randomly allotted in 5 groups. Streptozotocin (40mg/kg) induced diabetic rats were treated with *Salacia oblonga* (200mg/kg.) and *Glibenclamide* (2mg/kg.). Fasting blood glucose measurements were done before and after treatment using glucometer. After 8 weeks of treatment pancreas is dissected from euthanized rats for transmissionelectron microscopic study. The population, morphometry, and ultrastructural changes of the beta cells were observed &photographed.

DISCUSSION:

Reduction of beta cell population, diameter of secretory vesicles and of nucleus were observed in untreated diabetic rats when compared to control animals. Karyolytic changes, nuclear derangement, shrunken nucleus was less pronounced in *Salacia oblonga* treated group. Mean difference of nuclear diameterand fasting blood glucose level between *Salacia oblonga* treated and untreated groups were 0.14µm higher and 40mg/dl lower respectively.

CONCLUSION:

This study demonstrates the role of *Salacia oblonga* in reducing the destructive effect of streptozotocin on beta cells and in ameliorating the ultrastructural pathological changes in beta cells of diabetic rats. Its mechanism of action and clinical utility has to be ascertained by further research.

⁂ 15⁂

EFFECT OF CURCUMIN ON WISTAR RAT TESTIS EXPOSED TO 4G CELL PHONE RADIATION - A HISTOLOGICAL, BIOCHEMICAL AND IMMUNOHISTOCHEMICAL STUDY

Jayanthi S[1] and Chandra Phillip X[2]

[1]Ph.D. Scholar cum Tutor and [2]Professor, Department of Anatomy, Mahatma Gandhi Medical College & Research Institute, Sri Balaji Vidyapeeth (Deemed-to-be-University), Puducherry.

BACKGROUND:

Oxidative stress due to electromagnetic radiation (EMR) emitted from mobile phones negatively influences men's reproductive potential. Curcumin (CUR) is said to be a source of potential antioxidants. The goal of this study is to identifythe protective effect of curcumin on serum testosterone and oxidative parameters of testes in 4G-mobile phoneexposed rats and to compare the effect of two- and four-monthexposure period.

MATERIALS AND METHODS:

Set up - 2 and 4 months:(n=6 animals/group in each setup)

a) **Control group:** No cell phoneradiation.
b) **CUR 1/CUR 2group:**
   Received orally 100mg of curcumin /kg body weight /day for 2 and 4 months respectively.
c) **R 1 /R2group:**
   Exposed to 4G mobile radiation for 2 hrs. daily for 2 months and 4 months respectively.
d) **R 1 + CUR /R2 +CURgroup:**
   Exposed to 4G mobile radiation for 2 hrs. daily & received orally 100mg ofcurcumin /kg body weight /day for 2 months and 4 months respectively.

After the experimentation, Serum testosterone ELISA was performed. The levels of oxidative stress parameters (Malondialdehyde, Superoxide dismutase)wereanalyzed in testicular tissue homogenate using ELISA. Data were analyzed using ANOVA.

RESULTS:

- In 4 months, setting, EMR induced a significant reduction in the level of serum testosterone.
- In both settings there is a significant increase in Malondialdehyde and decrease in Superoxide dismutase in radiation exposedgroups.
- Curcumin significantly reverses the parameters to normal. Significance more marked in 2 months set up than 4 months setup.

CONCLUSION:

- Longer duration of exposure causes more harmfuleffect.
- Protective role of curcumin is wellestablished.
- But as the duration of exposure to radiation is increased there is a decline in the protective property of curcumin as shown in the comparativestudy.

⁂ 16 ⁂

COMPARATIVE STUDY ON THE EFFICACY OF ANTIBIOTIC TREATED AND NON-TREATED AMNIOTIC MEMBRANE BY USING UNIVERSAL TESTING MACHINE

Name: Ms. S Hemavathy, Tutor, Department of Anatomy, MAPIMS
Guide: Dr. Mary Antony Praba.A, Associate Professor, Department of Anatomy, SBMCH.

BACKGROUND:

The amniotic membrane, being the inner layer of the placenta, encircles the embryo thus forming a sac filled with amniotic fluid. The Amniotic membrane grafts has therapeutic potential for wound healing and recuction of scar tissue formation. The wound healing property is due to its cytokines and essential growth factors and its non-immunogenic property. The hyaluronic acid present in the amniotic membrane inhibits excessive fibrotization and so reduce scar formation. This natural biomaterial also offers a wide range of applications in Tissue Engineeringapplications.

AIM/OBJECTIVE:

To find the efficacy of human amniotic membrane from C-section deliveries treated with and without antibiotics by analyzing its tensile strength in Universal testing machine.

METHODOLOGY:

In this study, 6 samples of Amniotic membranes from placenta were collected during caesarean sections. The membranes were divided into 2 parts and placed in transportation containers one with solution of DPBS and another with antibiotics (Gentamycin sulphate & Amphotericin B). Collected Human Amniotic membranes were processed by dehydration method and the tensile strength of Human Amniotic membrane with and without antibiotics was measured as per standardized protocol.

RESULTS:

The non-antibiotic treated Amniotic membrane has twofold increase in tensile strength when compared to antibiotic treated amnioticmembrane.

CONCLUSION:

Amniotic membrane without antibiotic treatment has revealed more tensile strength, whereas in antibiotic treated Amniotic membrane the tensile strength was reduced when compare to non-antibiotic treated membrane. From this we can conclude non-antibiotic treated amniotic membrane can be an ideal choice for woundhealing.

⁂ 17 ⁂

UNILATERAL ACCESSORY BREAST TISSUE - A RARE CASE SCENARIO ABSTRACT

Dr.Kavitha. M, Senir Resident, Sri Ramachandra institute of Higher Education and Research, Porur.

BACKGROUND

Accessory breast tissue is a congenital condition which results due to abnormal embryological development along the milk line ridge. The incidence of the accessory breast tissue is 0.4 to 0.6 %. Since there is an abnormality in the development of breast tissue and also cause discomfort to the females during pregnancy, delivery, and lactation, It is considered as a rare casescenario.

CASE REPORT:

A 26-year-old female presented with a large mass at the left axilla with the accessory nipple above the mass. She complaints of occasional pain in the left axilla. No history of pus discharge from the mass. On examination the mass measures about 12 X 15 cm, mobile, mildly tender and there is no retraction of the mass. Her right breast and axilla is normal.

INVESTIGATION

Ultrasound investigation revealed the Accessory Breast Tissue at the left axilla with accessory nipple over the breast tissue.

CONCLUSION:

The knowledge of this breast tissue becomes essential to diagnose the benign or malignant tumors to suspect that apart from normal breast, it can also present even in the accessory breast tissue. Sometimes it can cause a discomfort in the female breast after puberty, during pregnancy and lactation. Due to these reasons, and its utmost clinical importance for the early diagnosis of tumors, this case is considered as a rare case scenario.

⁂ 18 ⁂

EVALUATION OF FEMORAL INTERCONDYLAR NOTCH WIDTH AND ITS CLINICAL APPLICATIONS

Dr. S Vijayakumar, Dr. Christina Deborah A, Dr. V S Anandarani Sri Ramachandra Medical College and RI, SRIHER. Chennai.

INTRODUCTION:

Anterior cruciate ligament reconstruction is the sixth most common procedure performed in orthopedics. Determining the osseous anatomy of the femoral intercondylar notch is crucial for accurate reconstruction of anterior cruciate ligament (ACL).

AIM:

The aim of the study is to determine the osteometric parameters of the femoral intercondylar notch in adult dry femurs of Indian population.

OBJECTIVES:

- To measure the morphometry of the femoral intercondylar notchwidth
- To analyze the gender differences if any in the aboveparameters

MATERIAL AND METHODS:

The study was conducted in the department of anatomy, Sri Ramachandra Medical College and Research institute, SRIHER. Chennai. Total of 464 dry adult human femurs were selected and

separated into right and left and then male and female femur based on the standard protocol given in the literature. 200 were male bones (100 right and left each) and 264 female bones (133 left and 131 right). The intercondylar notch width was measured from the distance between half the anteroposterior diameter of the lateral surface of the medial femoral condyle and half the anteroposterior diameter of the medial surface of the lateral femoral condyle using Vernier caliper. The data collected was analyzed using SPSS software.

RESULTS:

The mean intercondylar width was found to be 19.92mm. There was significant difference between male and female femurs ($p<.05$) and there was no significant difference in side (right and left) distribution of intercondylar width of femurs.

CONCLUSION:

Accurate identification of osseous landmarks will help the surgeons to place the tunnel in a correct location. The importance of the notch dimensions is that small notch has been described as a problem of impingement of the notch on the ACL in hyperextension or of the lateral condyle on the ACL causing it to rupture during twisting or cuttingmaneuvers.

⁂ 19 ⁂

CLINICAL CORRELATION ON ULTRASOUND GUIDED RADIAL NERVE BLOCK AT ELBOW WITH THE COURSE OF THE RADIAL NERVE COURSE -A STUDY

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ABSTRACT

INTRODUCTION:

Upper limb nerve blocks are done commonly by brachial plexus (C5-T1) blocks via supraclavicular, infraclavicular approaches. Sometimes a single peripheral nerve needs additional block with local anaesthetic to achieve adequate block. Peripheral nerve blocks are useful for minor surgical procedures in a single nerve distribution.

AIM:

To study the course and clinical significance of the radial nerve in 50 cadaveric upper limbs.

MATERIALS AND METHODS:

A cross-sectional study was conducted on 50 intact dissected upper limbs. The upper limbs were obtained from the Department of Anatomy, Sri Ramachandra Medical College from August 2020 to December 2020. Radial nerve was exposed by routine dissection in all the upper limbs and its entire course was studied and observed for any variation. The distance from the biceps tendon to the radial nerve at the elbow, distance of the radial nerve in the Lateral Intermuscular Septum (LIS) from the epicondyles at the elbow were measured. The results obtained were statistically analysed using SPSS version 16.0. Radial nerve localisation was done by USG at theelbow.

RESULTS:

In present study, the mean distance of the radial nerve in the LIS to the medial epicondyle was 12.4±0.31 cm and to the lateral epicondyle was 12.1±0.28 cm. The mean distance from the biceps tendon to the radial nerve at the elbow was 1.75±0.22 cm. **It was observed** that effective peripheral radial nerve block can be achieved by blocking the nerve
1.75 cm lateral to the biceps tendon at the elbow 3 cm above the elbow crease.

CONCLUSION:
From the present study, it can be inferred that effective peripheral radial nerve block can be achieved by blocking the nerve 1.75 cm lateral to the biceps tendon at the elbow 3 cm above the elbow crease. This can be made comfortable to the patient and more precise by ultrasound localisation of the radial nerve.

⁂ 20 ⁂

POLAND SYNDROME- A case report.

Author- Dr Debajani Deka, Demonstrator, Department Of Anatomy, Gauhati Medical College And Hospital. Kamrup, Assam.

Alfred Poland, a student demonstrator in anatomy, described his case in 1841; however, there were earlier reports of this anomaly: in 1826 (Lallemand) and in 1839 (Froriep). The full anatomical spectrum of the disease was first summarized by Thompson in 1895. In 1900, Furst suggested a common cause.
In 1962, Clarkson coined the name Poland's syndactyly after more than 300 patients had been reported Poland sequence, also known as Poland syndrome or Poland anomaly consists of congenital absence of the pectoralis major muscle; classically this sequence includes ipsilateral hand anomalies and it may also be associated with ipsilateral breast and nipple hypoplasia, and/or aplasia, deficiency of subcutaneous fat and axillary hair, and hypoplasia of the rib cage.
It is a rare anomaly, and its incidence ranges from 1:20000 to 1:50000 as reported by different authors. Here we report a case series of this rare disorder. Poland's syndrome is a nongenetic, congenital disorder with low (1%) risk of reoccurrence in the same family.
A report of Poland's syndrome in one identical female twin suggests the sporadic nature of the syndrome. Familial transmission has been reported only in about 20 patients . The vertical transmission from parent to child or affected siblings with normal parents is consistent with delayed mutation of an autosomal dominant gene. Such a dominant mutation may be associated with increased parental (especially paternal) age. The right side of the body was found to be involved in 60% to 75% of patients.
KEYWORDS- Poland, breast, hand, pectoralis major etc.

⁂ 21 ⁂

OCULAR IMPACT ON CHRONIC SMART PHONE USERS

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[1] Associate Professor in Anatomy, Head - Central Research Laboratory for Biomedical Research, Vinayaka Mission's Kirupananda Variyar Medical College & Hospitals, **Vinayaka Missions Research Foundation (DU), Salem - 636308.**

ABSTRACT
INTRODUCTION:
Recent International reports on ocular health shared that diplopia and dry eye are the prevalent ocular

disorders caused by overuse of smartphone in young adults. Studies on smart phone usage in young adult's reports that the smartphone use begins at the age group ranges from 12–18 years old, were the minimum duration of smartphone use per day is 4–6 hrs. The association between smartphone use and prevalence of ocular manifestations has recommended the need of Health education programs on smartphone use and its ocular impacts. Increasing use of smart devices also can cause acute acquired comitantesotropia in adolescents.

AIM:

To investigate the influence of smartphone reading on the ocular surface and to compare the various effects of different screens and light conditions on the ocular surface.

METHODOLOGY:

This is a prospective randomized controlled study on volunteers who continued reading for 2 hours on different smartphone screens. A total of 100 volunteersabove 18 years of age without any ocular diseases had participated in the study. A structured questionnaire was used to collect the details of smart phone usage and the Schirmer test, visual acuity and Intraocular pressure (IOP) was taken as some of the parameters in the study.

RESULT:

The continuous use to smartphone causesvarious problems, headaches, eye dryness, earache, fatigue, and musculoskeletal manifestations. The Schirmer test, visual acuity and IOP of both right and left eye was analysed to check out the ocular defects in chronic usage of smart phones. The ocular manifestations are noted and correlated with the duration of usage. The precautions were recommended further from the results of the study.

CONCLUSION:

The prevalence of eye diseases is high in most of the age groups and it is important to educate about the adverse effect of smart phone usage in all categories. The study also suggests about the screen time limitation and usage of smart phones for young adults.

KEYWORDS – Ocular Impact, Smart Phones, Schirmer Test, Visual Acuity.

ABSTRACTS

ORAL PRESENTATION

PG CATEGORY

⁂ 1 ⁂

A STUDY ON THE ROLE OF PAP SMEAR AND SIGNIFICANCE OF IT S CYTOLOGICAL PATTERN IN SCREENING THE CARCINOMA OF UTERINE CERVIX

Santhi Venkatapathy, Radhika Krishnan, Research Scholar, SRM Medical College and Research Institute.

ABSTRACT

BACKGROUND:

Cervical cancer is one of the most common cancer which results in death among the women worldwide. Early detection of the disease can reduce the mortality and morbidity rate. Papanicolaou smear is used for the early cytological screening of uterine cervical carcinoma. The aim of present study is to assess the use of Pap smear screening in finding the cytological abnormalities and precancerous lesions of uterine cervix.

MATERIALS AND METHODS:

The study was conducted among 300 women attending the OPD, Department of Obstetrics & Gynaecology at SRM Medical college Hospital and Research Centre, kattankulathur, Chennai between January 2022 to January 2023. Ayre's spatula was used to take sample of Pap smear and then immediately smeared on to a glass slide and then fixed. After cytopathological examination, the reporting of slides were done according to the New Bethesda III classification system for Reporting cervical cytology.

RESULTS:

Out of 300 women, 41.7% belongs to the age group between 41-50 years. The chief complaint by most of the women was White vaginal discharge and many of the cases were NILM (Negative for Intraepithelial lesions or Malignancy) 92%, with inflammatory smear 71.1%. The study reported epithelial cell abnormalities were ASC-US in 3.02%, ASC- H in 1%, LSIL in 2% and HSIL in 0.7%

CONCLUSION:

As cervical cancer is a preventable disease, early detection with Pap smear can prevent the further progression of the disease. Pap smear is cost-effective, simple, harmless and easily applicable method. Health care practitioners should be instructed to contact the women to improve their knowledge about the screening of cervical cancer by Pap test.

KEY WORDS: Cervical carcinoma, Pap smear, Screening.

⁂ 2 ⁂

MORPHOLOGICAL AND MORPHOMETRIC STUDY OF HUMAN PLACENTA

AUTHOR: Dr. M. Sivanesan (Post Graduate)

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2. Associate Prof. Dr. J. Karpagajothi M.D. Anatomy., Department of Anatomy, GTMCH, Theni.

ABSTRACT BACKGROUND:

Human placenta is a maternofetal organ which plays a vital role in fetal development.
Variations and anomalies of placenta can alter the fetal outcome.

AIM:
This study focuses mainly on morphology, morphometry, vascular pattern and alsothe attachment of umbilical cord to the placenta.
MATERIALS AND METHODS:
Fifty human Placenta with umbilical cord which were collected from the Department of Obstetrics and Gynecology, Government Theni Medical College and stored in 10% formalin solution in the Department of Anatomy, Government Theni Medical College were used in this study. Placenta were observed for its weight, number of cotyledons, size, vascular pattern, insertion of umbilical cordto placenta. Measurements were taken using Vernier Caliper, Measuring scale. The weight of the specimens was measured using the Weighing scale.
RESULTS:
In my study, the following observations were made,

1. Weight of the Placenta was decreased in oval shape and increased in Irregularshape.
2. Most common type of placental shape was found to be Discoidshape.
3. Average placental diameter was found to be18.3cm.
4. Most common type of Umbilical cord Insertion was found to be Eccentrictype.
5. Most common type of vascular pattern was found to be Dispersedpattern.
6. Average number of Maternal cotyledons was found to be18 innumber.

CONCLUSION:
This study helps to understand morphology and morphometry of placenta which will be helpful to obstetricians in relevance with clinical significance. This is also very helpful for Radiologists for reporting USG in correlation with clinical significance.

⁂ 3 ⁂

CONGENITAL ANOMALIES OF DEFECTS IN DEVELOPMENT OFANTERIOR ABDOMINAL WALL DEVELOPMENT.

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INTRODUCTION:

- Two of the most common malformations of the anterior abdominal wall deficit include gastroschisis and omphalocele affecting the infants. Both of which are associated with high mortality andmorbidity.
- Gastroschisis occurs when body wall closure fails in the abdominal region due to which abdominal contents protrudes through the body wall directly into the amniotic cavity.
- Loops of bowel are not covered by amnion because they herniate through the abdominal wall directly into the amnioticCavity.
- It occurs lateral to the umbilicus usually on the right, and the defect is most likely due to abnormal closure of body wall around the connectingstalk.
- Omphaloceles are due to failure of fusion of 4 ecto-mesodermalfolds.
- They occur when portions of the gut tube[mid gut] that normally herniates into umbilical cord during 6^{th} to 10^{th}weeks [physiological umbilical herniation] fail to return to the abdominalcavity.
- The defect is in the infra-umbilical part of anterior abdominal wall with abdominal organs lyingoutside.

MATERIALS AND METHODS:
This study was conducted in the Department of Pediatric Surgery -cuddalore Medical College, Chidambaram.
RESULTS:
- The baby had a defect in anterior abdominalwall.
- Gastroschisis-Umbilical cord is adjacent to the defect inGastroschisis.
- Herniated visceraare small bowel, stomach and colon.The bowl is inflamed and edematous.
- Omphalocele-Umbilical cord is attached to the sac. Herniated viscera are small bowel, Stomach, colon, liver inomphalocele.
- Bowel is normal inomphalocele.

CONCLUSION:
Anterior abdominal wall defects must be treated at the earliest to avoid morbidity and mortality in infants.

⁂ 4 ⁂

TITLE: CADAVERIC STUDY OF MORPHOLOGICAL VARIATIONS IN CAUDATE LOBE OF HUMAN LIVER IN TELANGANA REGION

Author: Dr J Muthu Rohini, 1st Year Pg, Government Medical College, Mahabubnagar
Guide: Dr T Nava Kalyani, Prof and HOD of Dept of Anatomy;
Dr M Thanuja Kumari, Asso Prof; Government medical college, Mahabubnagar.

ABSTRACT
INTRODUCTION
Liver is the largest organ of the abdominal viscera. The liver has four lobes, Caudate lobe is a separate liver lobe which is located on posterior surface of liver and has separate blood supply.
AIMS AND OBJECTIVES
The aim of this study was to evaluate the morphological variations of caudate lobe of liver in human cadaver.
BACKGROUND
Knowledge of normal and variant anatomy of the caudate lobe of the liver is a prerequisite for better surgical outcome. Morphology of the caudate lobe has significance in diagnostic imaging and also minimally invasive surgical approaches.
MATERIALS AND METHODS
The present cross-sectional study was conducted in Government medical college, Mahabubnagar, Telangana.Morphological analysis of the caudate lobe of the human liverwere determined in 52 formalin fixed human liver specimens of unknown sex, in Anatomy Department
RESULTS
Out of 52 specimens, various shapes of caudate lobe were noticed. Caudate notch seen in 30%, prominent papillary process in 15%, prominent caudate process in 19% were noted.
CONCLUSION
Knowledge of these variations are important for radiologists in proper interpretation and to achieve correct diagnosis and for surgeons to achieve good surgical outcome.
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⁂ 5 ⁂

CADAVERIC AND ULTRASONOGRAPHIC MORPHOMETRY OF CERVICOTHORACIC GANGLION (STELLATE GANGLION)

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Co-Author: Dr Saurabh Kulkarni, Assistant Professor, Department of Anatomy, Government Medical College, Aurangabad, Maharashtra

ABSTRACT

BACKGROUND:
Stellate ganglion block (SGB) inhibits sympathetic innervation and is a common treatment for reflex sympathetic dystrophy. During the positioning of the needle, there is a risk of injury to the adjacent structures. Cardiac sympathetic denervation (CSD) to treat ventricular arrhythmias (VAs) requires transection at the middle or lower third of stellate (cervicothoracic) ganglia (SG). However, the morphological appearance of the adult SG and its distribution are not welldescribed.

OBJECTIVE:
To determine the morphology of left and right SG (LSG and RSG) and the irrelations with adjacent structures.

METHODS:
1. Cadaveric: LSG and RSG (n=30) from 15 embalmed adult cadavers were dissected intact. Weights, volume, height, morphologic appearance, relationship between C8 and T1 ganglia (which form the SG) were determined. 2. Ultra-sonographic:Fifty adult patients enrolled for other than neck pathology evaluation wereincluded. The size, shape, the relationship between the superior pole of SG and the transverse process of C7, the relationship between the superior pole of SG and the inferior thyroid artery, and the relationships between SG and other surrounding tissues wereevaluated.

RESULTS:
1. *Cadaveric*part: Three distinct morphologies of SG were identified: fusiform- rounded; fusiform-elongated; and bi-lobed. RSG and LSG did not differ in weight or volume.
RSG were longer than LSG. Bi-lobed morphology was most common in RSGs while fused, elongated was most common in LSG 2. *Ultra-sonographic* part: it was difficult to visualize SG No significant differences found in thickness and cress-sectional area on right and left side. In fact, 60% of SGs were located in the C7 transverse process level, 75% of SGs were located under the inferior thyroid artery, and all of these SGs were located lateral to the thyroid gland and medial to the anterior scalene muscle and the vagus nerve.

CONCLUSION:
Knowledge of the stellate ganglia's morphology may help for greater precision and accuracy in the transection of the lower half to distal third of the SG during stellate ganglionectomy to treat cardiac arrhythmias. Ultra-sonographic guided SGB may improve safety and allows the visualization of the

local anesthetic injection site. Studying the local anesthetic spread might allow the avoidance of side effects as well as typical complications of SGB. Thus potentially improving both the safety and efficacy of the procedure.

⁂6 ⁂

GASTROCNEMIUS TUBERCLE: ATTACHMENT POINT OF THE GASTROCNEMIUS MUSCLE TENDON IN SOUTH INDIAN POPULATION

Dr Raja Nandhini, PSG IMSR CO- AUTHORS.Dr M. Jamuna

ABSTRACT INTRODUCTION:

The Gastrocnemius tubercle is a third bony prominence found in the medial inferior part of the femur, distal and posterior to the adductor tubercle. It was named after its close location to the depression corresponding to the insertion of the medial Gastrocnemius tendon. The Gastrocnemius tubercle is likely to provide an extra surface for the insertion of the medial head of the Gastrocnemiusmuscle.

AIMS AND OBJECTIVE:

The aim of this study is to verify the incidence of the Gastrocnemius tubercle in dry femur bones which will be useful for the orthopaedicians and surgeons in diagnosing and treating the clinical implications related to the medial surface of knee.

MATERIALS AND METHODS:

The study is done in 100 dry adultfemur bones with intact medial femoral condyles, to find the presence of the Gastrocnemius tuberclein femurs of unknown age and gender, in PSG IMSR, Coimbatore.

CONCLUSION:

The Gastrocnemius tubercle has a high incidence in the medial femoral condyles of human adults, and its recognition is of great importance to clinicians and orthopaedic surgeons in the diagnosis and treatment of injuries on the knee medialface.

Recognition of the Gastrocnemius tubercle is important so that clinicians do not confuse it with the adductor tubercle during palpation, which is significant in performing clinical and surgical procedures in the medial part of the knee.

⁂ 7 ⁂

C T MORPHOMETRIC ANALYSIS OF SIZE OF INTERNAL JUGULAR VEINS AND ITS RELATIONSHIP WITH COMMON CAROTID ARTERY IN THE CAROTID SHEATH

Author: Dr. SonalChamatkar; Second Year Post Graduate Student, Department of Anatomy ; Government Medical College, Nagpur (India)

INTRODUCTION:
The internal jugular vein (IJV) is used to obtain central venous access for various reasons. Awareness of the expected location and anatomic variations of the IJV is very important to avoid inadvertent arterial puncture.

METHODS:
This retrospective study included a total of 303 adult patients (Male-177, Female-126) who underwent neck computed tomography between June 2022 and May 2023. The diameters of the right and left IJVs were measured at three locations (hyoid bone, cricoid cartilage, and first thoracic vertebra). At the level of cricoid cartilage depth from skin surface and relative distance between the IJVs and common carotid artery (CCAs) were taken bilaterally. Bilateral CCAs were taken as reference points for measuring the location of the IJVs, recorded as lateral, ANTERIOR OR POSTERIOR POSITION.

RESULTS:
The right IJV was significantly larger than the left IJV at each position and the area of the lumen was the largest at the cricoid cartilage level. The right IJVs were significantly located more superficial than the left IJVs (16.2 ± 2.34 mm vs. 17.0 ± 3.8 mm).The right IJVs tended to have distance far from the CCAs more than the left IJVs (1.3 ± 0.5 mm vs. 1.2 ±mm).Most of the IJVs located laterally to the CCAs(92.8%).

DISCUSSION:
Computed tomography is an excellent method to delineate the anatomy of IJV. Variations in the anatomy of the IJV and their correlation to the CCA are common. Age, associated co-morbid conditions and BMI significantly affect these blood vessel sizes. Results of this study can make practitioners aware of the potential problems in common procedures on IJV and to reveal the expected location and anatomic variations of the IJVs in the proximity of theCCAs.

CONCLUSION:
Anatomical variations of the IJVs, including diameter, depth from skin surface, relative distance from the CCAs and position in relation to CCAs, are potential risk when jugular venous access is attempted. Therefore it is recommended that ultrasound-guided access to the IJVs be routinely applied to increase the chance of successful cannulation and minimizing the risk to the patients.

Keywords: Central venous access, CT, internal jugular vein (IJV).

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INCIDENCE, MORPHOMETRY AND VARIATIONS OF PSOAS MINOR MUSCLE IN ADULT HUMAN CADAVERS

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INTRODUCTION:
The Psoas Minor is a fusiform and slender muscle with tendinous insertion. It belongs to posterior abdominal wall muscles and is inconstant due to agenesis during the process of evolution. Its presence is significant to clinicians in differential diagnosis of appendicitis and diverticulitis.

OBJECTIVES:
1. To determine the incidence of Psoas Minor Muscle in adult Humancadavers.
2. To study the morphometry and variations of Psoas MinorMuscle.

MATERIALS AND METHODS:
The study analysed the posterior abdominal wall of 16 Human cadavers (32specimens) of South Indian population for the presence of Psoas Minor muscle in Department of Anatomy, Government Kilpauk Medical College, Chennai. After careful dissection as per Cunningham's Manual, the presence of psoas minor muscle, it's origin, insertion and morphometry were explored anddocumented.

RESULTS:
The Psoas Minor muscle was observed in five out of 16 cadavers, having the incidence (31.25%). It was bilateral in one cadaver and unilateral in other four cadavers. The attachments of Psoas Minor muscle also varied in somecadavers.

CONCLUSION:
A comprehensive knowledge of Psoas Minor muscle anatomy and its variations are vital for radiological and clinical interpretations of various abdominal disorders. The muscle can be involved in infections, hematomas, neoplasms of retroperitoneal organs. Hence, this study throws light on incidence and morphometric dimensions of Psoas Minor Muscle.

KEYWORDS: Psoas Minor, Morphometry, Cadaveric study, Appendicitis.

⁂ 9 ⁂

VARIATIONS IN THE BRANCHING PATTERN OF VENTRAL BRANCHES OF ABDOMINAL AORTA- A CADAVERIC STUDY

Author: Dr SnehaSinha (PGT, Department of Anatomy, Burdwan Medical College)
Co authors: 1. Dr Prerana Aggarwal (Associate Professor, Department of AnatomyBurdwan Medical College)
2. Prof Dr JonakiDas(Sarkar) (Professor and Head of the Department, Department of Anatomy Burdwan Medical College)

INTRODUCTION:
Abdominal aorta is a broad vessel, lifeline to all viscera and parietal structures in the abdominal cavity.The three ventral branches namely coeliac trunk (CT), superior mesenteric artery (SMA) and inferior mesenteric artery (IMA) are responsible for supplying blood to the derivatives of primitive foregut, midgut and hindgut respectively.

METHOD:
An observational study was conducted in the department of anatomy, Burdwan Medical college, West Bengal. 39 cadavers of both genders and age ranging between 50 - 80 years were dissected. The dissection was conducted as per Cunningham's manual of practical anatomy.

RESULTS:
Variations in branching pattern of ventral branches of abdominal aorta were found in 29 cadavers out of 39 (74.35%). The variations foundwere-

1. right gastric artery (RGA) arising from the trunk ofCT, found in 23 % of the dissected cadavers (12.8% males and 10.2% of the females),
2. Left Inferior phrenic artery (LIPA) arising from CTfound in 7.7% of the dissected cadavers (5.1% males and 2.6% females),
3. right colic & ileocolic arising from an abnormal common branch (ACB) from right side of SMA found in 41% of the dissected cadavers (23% males and 18% females) and
4. CT & SMA arising from a common point from abdominal aorta found in 2.5% of the dissected cadavers (2.5% males, nofemales).

CONCLUSIONS:
Variations are common in the origin and branching pattern of these arteries. The knowledge of these variations is important for gastroenterology surgeons, oncologists, radiologists etc. The knowledge of variations in Coeliac trunk is important forHepatic, gastric and splenic surgeries, that of Superior Mesenteric artery is important for Intestinal surgeries.

KEY WORDS: Coeliac trunk, Superior mesenteric artery, Left Inferior phrenic artery, Variations, branching pattern.

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SSESSING THE NEUROVASCULAR PATTERN OF THE TRIANGULAR FIBROCARTILAGE COMPLEX [TFCC] OF THE WRIST JOINT: A CADAVERIC OBSERVATIONAL STUDY

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ABSTRACT:

BACKGROUND:
TFCC, being a complicated structure, located on the ulnar side of the wrist is composed of multiple distinct anatomic entities which together play a critical role in wrist biomechanics. The anatomy of TFCC has not been extensively studied in the Indian population. The outcomes of the study would serve as much-needed data while planning arthroscopic procedures and radiological investigations.

AIM/OBJECTIVE:
To elucidate the neurovascular pattern of the triangular fibrocartilage complex of the wrist joint using auramine chloride (Palmgren's method) and immunohistochemistry.

METHODOLOGY:
Samples collected from 40 specimens including 20 right and 20 left limbs were placed in 10% neutral buffered formalin for fixation. Paraffin-embedded blocks were prepared and tissue sections were taken at 7-micron thickness. The slides were subjected to Palmgren's and immunohistochemistry staining following standardized protocol.

RESULTS:
The neuro vascular pattern of the seven components of triangular fibrocartilage complexes were assessed. The articular discconsisted of least number of nerve fibres and periphery of the complex which consisted of the different ligaments showed highernerve density comparatively. The distribution of nerve fibres predominated in the proximal portion compared to distal areas of TFCC. The vascular pattern observed in various components showed less number of blood vessels in the articular disc area than the periphery. Higher vascularity was observed in the proximal portion of the TFCC complex.
CONCLUSION:
Understanding the innervation and distribution of nerve fibres of TFCC will be of immense help in selective denervation procedures during wrist arthroscopy. Knowledge regarding the vascularity of TFCC is one of the crucial factor for determining the end outcomes of wrist surgeries.
KEYWORDS: Wrist joint, Triangular fibrocartilage complex, neurovascular pattern .

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MORPHOLOGY OF CORONARY SINUS OSTIUM AND THEBESIAN VALVE

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ABSTRACT
INTRODUCTION
The coronary sinus ostiumin the right atrium is covered by endocardial tissue called the Thebesian valve, which can influence and cause difficulty in many cardiac procedures like cannulation and lead placements.Theaim of this study is to measure the dimensions of coronary sinus ostium and Thebesian valve covering theostium.
METHODOLOGY & RESULTS
Our study of 25 formalin fixed hearts showed the presence of Thebesian valve at an incidence of 76%. The shape of the Thebesian valves were also noted and semilunar type was found to be predominant with 42.10%, followed by remnant type.Out of the total hearts, 20% of specimens were more likely to cause obstruction, which includes fenestration and cord type. No specimen was found to have Thebesian valve completely obstructing the ostium. The mean transverse and craniocaudal diameter were significantly more in the hearts without Thebesian valve than the hearts with Thebesian valve. The dimensions of the Thebesian valves revealed the mean transverse diameter was minimum in remnant type (5.25mm) and maximum in fenestrated type (8.7mm). The minimum and maximum craniocaudal diameters of the valve were found in the remnant type (1.86mm) and the fold type (8.3mm)respectively
CONCLUSION
Knowing about the variations and careful evaluation of these diameters and Thebesian valve will be helpful for the surgeons to overcome the difficulties faced during interventional cardiac procedures.
KEY WORDS: Thebesian valve, Coronary sinus ostium, Cardiac procedures.

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LEFT CORONARY ARTERY – A CADAVERIC STUDY

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BACKGROUND:
Knowledge about the Variations in Coronary arteries is required for the diagnosis & treatment of Coronary Artery Disease. The Left coronary artery, usually arising from the left posterior aortic sinus, divides into Left Anterior Descending Artery & Left Circumflex Artery. The branching pattern and the morphometric measurements may vary significantly. Eg: Bifurcation, trifurcation, quadfurcation, pentafurcation, hypoplastic, superdominant Right coronary artery/Left coronary arteryetc.

SUBJECTS &METHODS:
The study was undertaken in 30 Human cadaveric hearts in the Department of Anatomy, KAPVGMC, Trichy, during routine anatomical dissection. The preserved hearts were further dissected to study the origin, branching pattern, dominance & morphometric measurements of Left Coronary Artery.

RESULTS:
In our study, it was observed that the most common branching pattern was trifurcation, followed by bifurcation. Quadfurcation was noted in only one specimen. The dominance pattern was predominantly Right. Left dominance was noted in 3 specimens. Third coronary artery was noticed in 2 specimens. Left Circumflex Artery was absent in one specimen. Hypoplastic coronary artery was observed in one specimen. Muscular bridging along the course of Left Anterior Descending artery was noticed in fewspecimens.

CONCLUSION:
Coronary Artery Disease is one of the leading causes of death in India & with the recent advances in Radiology, Coronary Artery By-pass Graft surgeries have been giving promising results. Therefore, it is of paramount significance to have vast knowledge regarding the variations in coronary arteries for interpretation of coronary angiography and surgicalmyovascularisation.

KEYWORDS:
Left Coronary Artery, Left Anterior Descending Artery, Left Circumflex Artery, Coronary arteries, Dominance.

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HYPOPLASTIC INTERNAL JUGULAR VEIN AND FENESTRATED EXTERNAL JUGULAR VEIN WITH VARIANT ANSA CERVICALIS - A CASE REPORT

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ABSTRACT:

INTRODUCTION:
The external and internal jugular vein (IJV) drains blood from the head and neck region. The external jugular vein (EJV) is used as the recipient vein in free tissue transfers and for cannulation to perform diagnostic operations or intravenous therapy.IJV isutilized for critical medical procedures such as cannulation, intravenous infusion, and central venous pressureMONITORING.

CASE REPORT:
During routine dissection, a hypoplastic IJV and fenestrated EJV were observed on the left side. Slit-like fenestration in the EJV was present in themiddle third of the vein. IJV was thin throughout its course in the neck. The superior root of the ansa cervicalis was given off from the vagus nerve without any communication to the hypoglossal nerve.
DISCUSSION:
The prevalence of hypoplastic IJV is 3.9%. Small-sized IJV (≤7 mm) was found in 1.6% on the right side and 4.16% on the left side.The EJV is an important drainage site for shunt procedures and cannulation for diagnostic procedures or intravenous therapies. Ansa cervicalis is used in reconstructive surgical techniques for re-innervating the tongue and laryngeal musculature.
CONCLUSION:
Head and neck surgeons, Anesthetists, and Intensivists frequently access IJV and EJV during cervical lymphadenectomy and placing central venous catheters for central venous pressure monitoring, drug administration, or volume resuscitation. Thus, it is critical to be aware of anatomical irregularities and to avoid unanticipated complications.
KEY WORDS: Internal jugular vein; External jugular vein; Fenestration; Hypoplastic.
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MORPHOLOGY AND MORPHOMETRIC STUDY OF MODERATOR BAND AND ITS CLINICAL SIGNIFICANCE

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ABSTRACT
BACKGROUND:
Moderator band connects interventricular septum to the base of anterior papillary muscle. It is a part of ventricular conduction system in apical region of right ventricle.This study classifies various types of moderator band in relation with anterior papillary muscles.
AIM:
To study the various types of moderator band and to provide fundamental knowledge for repairing the congenital defects likeVSD.
MATERIAL & METHODS:
This study was observed in 50 Human cadaveric specimens were obtained during routine dissection from Department of Anatomy, Government Theni Medical College. The relationship between moderator band and anterior Papillary muscle was observed and measured using vernier caliper.
RESULTS:
Moderator band was evident in 49 specimens. The morphology of moderator band and its

connection with Anterior papillary muscle was found to be variable. The mean thickness of band was 4.2± 1.6 mm, The mean length of band was 15.46 ±1.8 mm, mean distance to base of Tricuspid value32±6.1mm.Mean distancet obase of pulmonaryvalue
42.6 ± 3.2mm.All moderator band was attached to base of Anterior Papillary muscle except three.

CONCLUSION:

Based on the results the moderator band was classified into 4Types,
21 specimens show 42% shortand thickband.
14 specimens show 28 % short and thin band.
09 specimens show 18% long and thin band.
05 specimens show 10 % long and thick band.
These data may be useful for cardiothoracic surgeons during surgical repairs like Apical VSD.

⁂ 15 ⁂

MORPHOLOGY AND MORPHOMETRIC STUDY OF CAROTID CANAL IN DRY SKULL SPECIMENS

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Co-Author: Prof. Dr.S. Ezhilarasan, M.S. Anatomy, HOD, Department of Anatomy, GTMCH.
Associate Prof.Dr.J.Karpagajothi, M.D. Anatomy.

ABSTRACT

BACKGROUND:

The carotid canal transmits the internal carotid artery along with the sympathetic plexus and veins. Carotid canal fracture is seen in cases of blunt head injury following road traffic accidents. So, a thorough knowledge about the location, length and distance from the midline is important in skull base surgeries.

AIM:

The aim of the study is to observe the morphology and morphometric measurements
of the carotid canal in both sides of the skull and correlate with previously done studies.

MATERIAL AND METHODS:

The study was performed in 25 dry skull specimens obtained from Department of Anatomy, Govt Theni Medical college. The measurements were made by direct bone method using digital sliding vernier calipers.

RESULTS:

The shape of the carotid canal could be grouped as round (40%), oval (40%) and tear drop (20%).In study by Naidoo et al round, oval, tear drop were 28.4%, 49.4%, 22.2%respectively. Absence of carotid canal bilaterally /unilaterally was not seen in this study. The length of the canal was different on both sides in each skull. In a study by Vidya C.S et al length was 22.64 mm(right), 22.4mm(left).The canal was equidistant from midline in only one skull(4%). In the rest, the distance from the midline was found to be variable ranging from 20.2mm to 29.9mm. In study by Ozalp et al, the range was 25.83mm to 26.08mm.

CONCLUSION:

The morphology, external length and the distance from midline may help the neurosurgeons in accessing the carotid canal and the important structures that pass through it, without difficulty.

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A MORPHOLOGICAL STUDY ON VARIATIONS IN THE TERMINATION OF BRACHIAL ARTERY AND ITS CLINICAL SIGNIFICANCE

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INTRODUCTION:

Brachial artery is the main artery of upper limb. It begins as a continuation of third part of axillary artery at the inferior border of teres major muscle. It runs downwards in front of the arm and ends in the cubital fossa at the level of neck of radius by dividing into radial and ulnar arteries.

AIM & OBJECTIVE:

To study the morphological variations in the brachial artery and its branches.

MATERIALS AND METHOD:

The study was done on 50 upper limbs of 25 cadavers from our department of Anatomy. The upper limbs of the cadaver were dissected and observed for any variations in the branching pattern of brachial artery.

RESULTS:

In the present study, a total number 50 upper limbs of 25 cadavers, were studied. In one male cadaver we found unilateral higher division of brachial artery on right side, with superficial course of radial artery. On an average, the length of brachial artery was 26.32cm and it divided into ulnar and radial arteries at an average of 3.05cm distal to intercondylar line. Among the 50 upper limbs studied, 5upper limbs showed a mild deviation from the normal bifurcation level ranging from 1.5 to 2cm below and above the neck of theradius.

CONCLUSION:

The knowledge about variations in brachial artery is important during vascular and reconstructive surgeries. Variation of the brachial artery may cause difficulties while measuring the blood pressure. The superficial course of radial artery can easily be injured by trauma.

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ANALYSIS OF UNIQUENESS OF CHEILOSCOPY AND DERMATOGLYPHICS

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INTRODUCTION:

Dermatoglyphics and cheiloscopic analysis have been useful in understanding basic question in Biology, medicine, genetics, evolution and forensic. Now they are considered as the extremely useful tool for preliminary investigations into conditions with suspected genetic basis. Dactylography is the process of taking impression of papillary or friction ridges of the fingertips, for the purpose of identification of a person. In this study we evaluated the Cheiloscopy and dermatoglyphics of medical students in Indianpopulation.

AIMS AND OBJECTIVES:

- To assess the distribution of lip print and fingerprint patterns among the gender groups
- To determine the predominant lip print and fingerprintpatterns

METHODOLOGY:
This study enrolled 50 male and 50 female medical students aged between 18 and 24 years from varying ethnic backgrounds studying in SRM Medical college Hospital and Research centre, Kattankulathur.
RESULT& CONCLUSION:
From the study, each individual has an unique type of lip print, in all six compartments and no individual had a similar type of lip print pattern. When sex was evaluated, both the population combined, in male predominantly, Type 1 in Upper right, Type 1 in Upper middle, and Type 2 in upper left and Type 2 in lower right, Type 1 in lower middle, Type 2 in lower left wasnoted.
In females, type 2 in the Upper right, Type 1 in Upper middle, Type 2 in Upper left, type 2 in the Lower right, Type 1 in Lower middle, Type 2 in Lower left was noted. For the dermatoglyphics, in both males and females, loop pattern was predominant.
Therefore my inference is that there is similar pattern of predominancy in the types of each quadrant in both males and females.

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MORPHOLOGYOF CHORDAE TENDINEAEIN VENTRICLES OF THE HUMAN HEART IN A TERTIARY CARE HOSPITAL

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INTRODUCTION:
The Chordae Tendineae (CT) preventprolapse of atrioventricular (AV) valves into atria, during ventricular systole. The number and morphology of CT is essential for chordal repair and replacement procedures. Limited studies observed the morphology of CT in both ventricles of autopsied human hearts, henceforth this study was planned.
AIM AND OBJECTIVES:
To assess the number and morphology of CT in ventricles of human heart.
MATERIALS AND METHOD:
A total of 130 fresh adult human heart specimens (Males-84; Females-46) were obtained from routine autopsies done by Forensic Medicine and Toxicology department, JIPMER, Puducherry, from 2022 to 2023. The average age of subjects was 50±13.2 years (Range:18-76).The hearts were dissected to note the number and morphology of CT in both ventricles.
RESULTS:
The average number of CT originated in right ventricle (RV) and left ventricle (LV) were 12.6±2.8 (6-20) and 21.1±5.1 (11-33), respectively. Most of the chordae originated from the PPM (4.4±1.2, 35.8%) in RV and APM (11±3.2, 52%) in LV. The average number of CT that inserted to AV valve were 53.6±12.3 (31-75) in RV and 46.6±7.3 (26-68) in LV. The insertion of CT was majority on the commissural leaflet (15.3±3.7, 29.1%) in RV and anterior leaflet (19.5±4.2, 42%) in LV. Marginal (RV-53.4%; LV-50%) and rough zone chordae (RV-37.8%; LV-37.7%) were the commonly observed types. The commonly noted branching pattern of CT were fan-shaped (RV-31%; LV-

31.1%) and dichotomous (RV- 33.3%; LV-28%). Tendinous chordae (RV-87.3%; LV-89.7%) were the frequently observed type in both ventricles ofheart.

CONCLUSION:

CT commonly inserted to the commissural leaflet in RV and anterior leaflet in LV. Chordae frequently attach to the marginal and rough zones of the valves. Wide knowledge about the origin and insertion of CT is vital for surgeons to locate them intraoperatively and to customize the surgical procedure, to reduce treatmentfailures.

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MORPHOMETRIC CROSS SECTIONAL CADAVERIC STUDY OF HUMAN TRACHEA

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ABSTRACT

Purpose: Details regarding tracheal anatomy are currently lacking, with existing literature focussing mainly on the cricoid-tracheal region or the carina. External gross anatomy and internal morphology throughout the entire trachea is important for normal physiological functioning and various clinical applications such as designs for tracheal implants or endotracheal devices.

Objective: To determine quantitative and qualitative characteristics of gross tracheal and individual tracheal ring anatomy.

Method: 10 tracheas were harvested from formaldehyde-fixed Human cadavers of both sex.

PARAMETERS:

Tracheal length, height and inter-ring distance were measured from complete tracheas. Individual rings measurements were taken at three points on the ring: thickness, width, and antero-posterior (A-P)length.

RESULTS:

Tabulated and analysed using Statistical analysis and interpretation will be performed using IBM SPSS Statistics .

CONCLUSION:

This study provides further details regarding tracheal anatomy which will be useful for implant design. Of interest for anatomists, is the marked variability in tracheal ring morphology which could be further characterised in larger studies.

KEYWORDS: C-shaped ring, Human trachea, Tracheal anatomical variation, Tracheal anatomy, Tracheal ring.

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ANATOMICAL VARIATIONS OF OSTEOMEATAL COMPLEX - A COMPUTED TOMOGRAPHIC STUDY

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INTRODUCTION:

Osteomeatal complex (OMC) is the important component for the drainage of frontal, anteriorethmoidal, maxillary air sinus. The components of OMC arenasal septum, concha bullosa, uncinate process, superior turbinate, middle turbinate, inferior turbinate, agger nasi cell and haller cell. Knowledge of these variations is important from surgeons and radiologists point of view. Computed tomography (CT) is the investigation of choice in delineating the anatomical structures and evaluating its variations with increasedclarity.

OBJECTIVES:

1. To identify the anatomical variations of osteomeatalcomplex.
2. To understand the clinical implicationsof thesevariations.

MATERIALS AND METHODS:

This study was retrospective based on200 Computed Tomography of paranasal air sinus scan records of patients archived in Picture Archiving and Communication System (PACS), of the Department of Radio diagnosis, JIPMER, Puducherry. The axial and coronal CT images were analysed for anatomical variations of Osteomeatal complex.

RESULTS& CONCLUSION:

It was observed that there were lot of clinically significant anatomical variations. These variations are essential for the surgeons and radiologists to perform an effective surgery. Thus, it helps us to avoid pre, intra and post-operative complications. Hence, this study will guide the surgeons and radiologists to understand the normal anatomy and the possible variants.

⁂ 21 ⁂

A STUDY OF CORONARY ARTERY VARIATIONS IN PATIENTS UNDERGOING INVASIVE CORONARY ANGIOGRAPHY

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ABSTRACT:

BACKGROUND:

Invasive coronary Angiography (ICA) is a readily available invasive imaging modality that provides high-resolution anatomical information of the coronary arteries. Studies of coronary artery dominance and variants may helpful for management of coronary artery diseases.

AIM:

The aim of this study was to evaluate the prevalence of coronary artery dominance and variation in patients undergoing invasive coronary angiography.

METHODS:

This was a descriptive research study design. 20-90 years age group patients undergoing invasive

coronary angiography were enrolled in our study. Wide ranges of data were collected as well as evaluation of medical reports in order to distinguish perception over this “Coronary Artery Variations & Anomalies” and prevalence in this country context. In all patients in which a coronary anomaly, origin, course and/or termination of the coronary arteries had been originally REPORTED.

RESULTS:

A total of 390 patients undergoing coronary angiography were evaluated for coronary artery variations and anomalies. Majority of the patients (32%) were 50-60 year age group. Most of the patients (77%) had right dominant circulation. Ramus intermedius was the common anatomical variant found in 13.4% cases.

CONCLUSIONS:

ICA is a first line method for detecting coronary artery dominance, variation and anomalies, lead to helping in diagnosing and management of coronary artery diseases.

KEYWORDS:Invasive coronary angiography, coronary artery, Right dominance, coronary variants, RI.

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STUDY OF SACRALIZATION OF LUMBAR VERTEBRA (L_5)

AUTHOR: Dr. C. Pavithra (Post Graduate)

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2. Associate Prof. Dr. J. Karpagajothi M.D. Anatomy., Department of Anatomy, GTMCH, Theni.

ABSTRACT:

BACKGROUND:

Lumbosacral region plays a very important role in weight transmission and to maintain posture ofbody.

This region is associated with sacralization of fifth lumbar vertebra. It is a common congenital anomaly of Lumbosacral region, in which fifth Lumbar vertebra fuses completely or partially with first sacral vertebra, unilaterally and bilaterally.

AIM:

To analyze the morphology and morphometric pattern of sacralized vertebra.

MATERIALS AND METHODS:

30 Vertebral specimens were used from the Department of Anatomy, Government Theni Medical College, for the study of sacralization of Lumbar vertebra.

All the sacral vertebra were observed for

1. Sacralization,
2. Number of ventral and dorsalforamina,
3. Length of sacralvertebra.

The parameters of sacralized bone were compared with normal sacrum. The Parameters were measured using vernier caliper.

RESULTS:

The Average length of the sacrum in normal sacral bone and sacralized bone were 103.9 mm and 93.85 mm respectively.

In my study, two sacralized bone were observed. Both sacral vertebrae were found to be

incompletely fused.The Height of the normal sacrum were found to be more than that of sacralized bone.

CONCLUSION:

This study helps radiologists in relevance with clinical diagnosis. The study also helps orthopedicians and neuro surgeons to avoid surgeries at incorrect spinal levels. The study is also much more helpful for anesthetists in administration of Epidural and Subdural anesthesia.

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MORPHOMETRIC STUDY OF MASTOID PROCESS ON DRY SKULLS

Dr. S. Jagapriya, PG, PSG IMS&R.
CO-AUTHOR - Dr. G.Amudha

INTRODUCTION:

Mastoid process is the downward projection from themastoid part of the temporal bone located posteroinferior to external auditory meatus. It is the least prone site to be damaged due to its inferolater allocation on the skull. Moreover it is the mostdimorphic bony feature of the skull. Due to itsdimorphism it is a favourable point for sexdiscrimination.

It is larger in males than infemales. Not only the size of mastoid process but also shape is a statistically significant genderindicator.

Asterion is the junction of lambdoid, parietomastoid and the occipitomastoid sutures on the lateral aspect of the skull. It overlies the junction of transverse and sigmoid sinuses. Asterion is a landmark commonly used by neurosurgeons in cerebellopontine trigone surgery, transmastoidcisternoscopy, mastoid antrum surgery and venous sinus surgery. However, its location has population specific variations. Mastoid process is a palpable bony structure which enables to determine the location of asterion. Distance between apex of mastoid process and asterion is a valuableparameter for propercraniotomy.

AIMS AND OBJECTIVES:

In the present study we aim to define details of mastoid process anatomy to enlighten urgeons, anatomists, anthropologists and forensic experts.

MATERIALS AND METHODS:

Present study will be conducted on 50 skulls Of unknown sex in the Department of Anatomy, PSG IMS&R. 100 mastoid process will be evaluated.

Adult skulls with morphologicdeformities, variations and skulls with Wormian boneswill not be involved in the study for proper determinationof landmarks used in measurements. Landmark points and measurements to be taken on mastoidprocess are:

- X point:Asterion
- Y point: Apex of mastoidprocess
- Z point: Suprameatalspine
- A line: Distance between X and Ypoints
- B line: Distance between X and Zpoints
- C line: Distance between Y and Zpoints
- D line: Vertical distance between imaginary planefrom the superior border of external auditorymeatus to Ypoint.

CONCLUSION

Mastoid process morphology and its anatomical relations are important for anatomists, neurosurgeons, anthropologists and forensic experts. As it is commoncentre of interest for multidisciplines, morphometry of this feature should be welldefined.

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MORPHOMETRIC STUDY OF HEAD OF RADIUS AND ITS CLINICAL IMPLICATIONS:

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Dr.V. Lokanayaki -Professor& Head of the department,
Dr. Christabel Divya- Assistant professor- Department of Anatomy, Kilpauk medical college, chennai-10

ABSTRACT

INTRODUCTION:

Radius is a lateral bone of forearm, has proximal and distal end with a shaft, proximal end includes head, neck and tuberosity. Head is discoid in shape; its superior articular surface articulate with capitulum of humerus and articular circumference of head articulate with radial notch present in ulna and annular ligament. Humero-radial joints permits flexion and extension movements at elbow, superior radio ulnar joints permit supination andpronation.

AIM:

To measure the various parameters of the head of the radial bones.

OBJECTIVES: The objectives of the present study are

1. To measure the radial head and neck forming an integral part of the pivot joint (Superior Radio UlnarJoint)
2. An osteo-metric study to help plan the prosthesis measure and production in the relevant size ofprosthesis.

MATERIALS AND METHODS:

A cross sectional study will be conducted in 50 individual dry radial bones (unknown of age and sex) collected from department of anatomy, Kilpauk medical college with fulfilling inclusion and exclusioncriteria.

PARAMETERS:

1. Antero posterior diameter of radialhead
2. Transverse diameter of radialhead
3. Medial height of radialhead
4. Lateral Height of radialhead
5. Depth of superior articular facet. After measuring Each parameter, it will be rechecked anddata to be tabulate and analysis by spss statistics version 22.0software.

CONCLUSION:

Head of the radius is fundamental element for the physiological and prosthetic stability of elbow joint. Knowledge of size and shape of radial head is necessary for creation of radial head prosthesis that is proportionate andcorrect for a specificpopulation.

An osteo-metric study to help plan the prosthesis measure and production in the relevant Indian sizes.

An osteo-metric study to help plan the prosthesis measure and production in the relevant Indian sizes.

Since the Head of the radius is a fundamental element for the physiological or prosthetic stability of elbow joint, the above study will be beneficial to the clinician and orthopaedician.
International Journal of Anatomical Sciences, 2015, 6(1): 10-15 Research Paper

⁂ 25 ⁂

INCIDENCE OF OSSIFIED SUPERIOR TRANSVERSE SCAPULAR LIGAMENT AND MORPHOLOGICAL STUDY OF SUPRASCAPULAR NOTCH IN DRY SCAPULA

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ABSTRACT

BACKGROUND:

Suprascapular nerve, a branch of upper trunk of brachial plexus passes through suprascapular notch beneath superior transverse scapular ligament. Rengachary et al has classified the scapula into 6 types. They are, Type 1 –Shallow notch, Type 2 – No notch, Type 3 – 'U' shaped notch, Type 4 – 'V' shaped notch, Type 5 –Partially ossified superior transverse scapular ligament, Type 6 – Completely ossified superior transverse scapular ligament. In certain types like ossified superior transverse scapular ligament, the suprascapular nerve could be entrapped and cause shoulder pain in individuals who perform frequent abduction like volleyball players.

AIM OF STUDY:

The aim of the study is to find the incidence of ossified Superior Transverse Scapular ligament and morphological variations of suprascapular notch.

MATERIALS AND METHOD:

Observational study of suprascapular notch in 40 dry scapula in Department of Anatomy, Government Theni Medical College.

RESULTS:

In my study the following findings are noted, Type1:11 (27.5%), Type2:0 (0%), Type3: 18 (45%), Type4: 6 (15%), Type5:2 (5%), Type6: 3(7.5%).The incidence of ossified Superior Transverse Scapular ligament (Type 5 and Type 6) is 5 (12.5%).In a previous study done by Usha Kannan et al, the findings were Type 1: 20%, Type 2: 10%, Type 3: 52%, Type 4: 4%,
Type 5: 4%, Type 6: 10%.

CONCLUSION:

Shoulder pain in individuals with risk factors like work with frequent abduction should be managed with the knowledge of the morphological variation in scapula. This data is useful to Orthopedicians andRadiologist.

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DIAPHYSEAL TIBIO-FIBULAR SYNOSTOSIS IN DRY BONE

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INTRODUCTION:

Abnormal union between adjacent bones or parts of single bone composed of either cartilage, osseous material or fibrous tissue constitutes a synostosis. Tibiofibular synostosis is a rare clinical occurrence characterized by adhesion of the proximal or distal tibial and fibular metaphysis and/or diaphysis.

CASE REPORT:

The present case was discovered as the incidental finding from the Osteology section of the Anatomy Museum, Sri Ramachandra Institute of Higher Education and Research. The left tibia and fibula were malunited by synostotic segment of bone at the junction of upper 1/3rd and lower 2/3rd of the bone. Callus formation was not noted. History of the present case was not available since this specimen discovered was an incidentalcase.

DISCUSSION:

Proximal, middle, or distal segments of the bones may be affected by tibiofibular synostosis. In most cases, proximal synostoses are inherited while distal ones are acquired, with the exception of those associated with numerous hereditary exostoses.

If congenital synostosis develops before epiphyseal union, it frequently manifests as growth abnormalities. Acquired ones may have the following etiologies: post-traumatic, such as after stress injuries or fractures that result in hematoma formation that may eventually become ossified. Iatrogenic causes, such as intraoperative soft tissue injury from nailing and osteotomy for tibial fracture reduction that results in bleeding or subperiosteal dissection across the interosseus membrane that induces osteogenesis.

Ankle pain with limited range of motion, peroneal neuropathy, and valgus deformity of the ankle are just a few of the symptoms that might occur. Few patients are asymptomatic and incidentally found.

CONCLUSION:

The clinical spectrum of tibiofibular synostosis spans from asymptomatic to inducing growth abnormalities. As a result, orthopaedic surgeons must monitor postoperative leg cases using radiology and assess cases of leg and ankle discomfort while keeping this entity in mind.

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BILATERAL CERVICAL RIB – A CASESTUDY

Guide: Prof. Dr. V. Anandhi D.G.O., M.S., Professor &HOD Presenter: Dr. P. Murugeshwari M.D., (Post-graduate)
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Abstract

INTRODUCTION:

Cervical rib, also referred to as a "neck rib" or "extra rib in the cervical region, " is a congenital condition where there is overdevelopment of the transverse process of C7 vertebra. These ribs are typically found in about 5% individuals. They occur in various sizes, shapes, and attachment points, and may appear on one or both sides.

CASE HISTORY:
A 15-year-old female presented in the OPD with complaints of pain and numbness over medial side of left hand. On radiological examination, it was found to be due to the compression caused by cervical rib. She was evaluated and operated to remove the cervical rib, after which her symptoms were relieved and she was discharged.
DISCUSSION:
A cervical rib can appear on one side or both sides; it is typically seen as an excessive growth of the transverse process of the C7 vertebra. However, documented instances exist where cervical ribs have emerged from C5 and C6, and even involving multiple levels of cervical ribs.
CONCLUSION:
Most often cervical ribs are unexpectedly found during chest or cervical X-ray. On rare occasions, people might report symptoms arising from pressure on nearby structures like the lower trunk of brachial plexus, subclavian artery, or subclavian vein, leading to thoracic outlet syndrome. In the majority of instances of thoracic outlet syndrome, the primary concern is neurological symptoms, resulting in a feeling of numbness and tingling in the pinky and ring fingers, following the pathway of the ulnarnerve.
KEYWORDS: Cervical rib, bilateral, thoracic outlet syndrome

UNUSUAL ORIGIN OF ACCESSORY LEFT GASTRIC ARTERY FROM CELIAC TRUNK AND ITS CLINICAL SIGNIFICANCE: A CASE REPORT

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INTRODUCTION:
The celiac trunk is one of the main sources of vascularization of the supracolic abdominal compartment. It arises from the anterior aspect of abdominal aorta, at the level of T12 vertebra and classically branches into the splenic artery, common hepatic artery, and left gastric artery.The present study aimed to record the variations in the vascular pattern of branches of the celiac trunk in cadavers.
METHODOLOGY:
A total of 10 properly embalmed and formalin-fixed cadavers from the Department of Anatomy, Dhanalakshmi Srinivasan Medical College and Hospital, Siruvachur, Perambalur were used for the study. Dissection was done to observe and record the branching pattern of the celiac trunk.
RESULT:
The left gastric, common hepatic and splenic arteries were found to arise from the celiac trunk in 9 cadavers. An unusual branching pattern of the celiac trunk, found during dissection of abdomen, an accessory left gastric artery was found arising from the celiac trunk in one out of 10CADAVERS
CONCLUSION:
Knowledge in detail about normal anatomy and variation in the branching pattern of the celiac trunk is important in surgical, oncological, and radiological interventional procedures and must be taken into account to avoid possible complications.

⁂ 29 ⁂

MORPHOLOGICAL STUDY OF LIVER AND ITS SURGICAL IMPORTANCE

Dr.M.Vasanthakohila, PG, Government Kilpauk Medical College, Chennai.

ABSTRACT INTRODUCTION

Knowledge of external morphology of liver is essential during surgery and radiological investigations.

AIM

To study the morphology of liver.

MATERIALS AND METHODS:

The study is done in 30 formalin fixed livers from the Department of Anatomy, Government Kilpauk medical college, Chennai.

RESULTS

The morphology of liver was studied along with its variations such as changes in size and shape, presence or absence of fissures, pons hepatis and accessory lobes were noted

.Among the 30 livers studied, 18 livers (60%) were normal in their external appearance, number of lobes and fissures. However 12 livers (40%) showed anomalies in lobes, fissures, shape or in the size of gall bladder. Variations in shape were found in 16.6% of cases. In 3.3% cases the fissure for ligamentum teres was absent. In 13.3% of cases each the liver was either extremely long or extremely flat. In 6.6% of the cases, the gall bladder was short and its fundus did not project beyond the inferior border of theliver

CONCLUSION:

In this study, various morphological variations of liver were observed. The awareness about this will aid the clinician to plan their treatment during lobectomy surgeries.

⁂ 30 ⁂

ANATOMICAL VARIATIONS OF MEDIAN NERVE: CASE SERIES

Dr. Jenolin Bruna JF, Dr. Bina Issac, Dr. Suganthy Rabi

ABSTRACT

BACKGROUND:

The comprehensive knowledge of anatomical variations of the median nerve is of great significance in clinical and surgical procedures to avoid iatrogenic injury. The aim of this presentation is to report variations in the origin and course of median nerve in South Indian POPULATION.

MATERIALS AND METHODS:

The course of the median nerve was observed in 20 upper limb specimens belonging to 6 female and 4 male formalin-fixed cadavers at the Department of Anatomy, at our institution. Dissections were done using Cuningham's manual of practical anatomy. The variations were noted and PHOTOGRAPHED.

RESULTS:

In one specimen, the median nerve was formed anomalously by two roots from the lateral cord and one root from the medial cord. The lateral root of the median nerve from the lateral cord gave a communicating branch to the ulnar nerve which pierced through the medial root for the median

nerve. The median nerve was formed anteromedial to the distal part of the axillary artery. In another cadaver, the musculocutaneous nerve gave a communicating branch to the median nerve after its formation. In another male cadaver, the median nerve was found to be posteromedial to the pronator teres muscle and passing below its ulnar head, not being a content of the cubitalfossa.

CONCLUSION:

In this case series, supernumerary roots to the median nerve, variation in its relation to the axillary artery, its communication with the ulnar nerve and the musculocutaneous nerve and its position in the cubital fossa are reported. These facts can be of interest to anatomists and clinicians for relevant clinical correlations and surgeries.

KEYWORDS: Median Nerve, Musculocutaneous nerve, Cubital fossa, Anatomical variation.

⁂ 31 ⁂

VARIATION IN BRANCHING PATTERN OF COMMON PERONEAL NERVE – A CASE REPORT

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INTRODUCTION

The common peroneal nerve divides into superficial and deep peroneal nerve at the neck of fibula. The superficial peroneal nerve after supplying the lateral compartment muscles, also innervates the skin of the lower part of the front of the leg, the greater part of the dorsum of the foot and the toes. In this presentation, an accessory peroneal given off by the common peroneal nerve on the right lower limb of a male cadaver isreported.

CASE REPORT

During routine dissection for the medical students, the following variation was observed in a 76 year old male cadaver in right lower limb. The common peroneal nerve gave the following branches 1.6 cm above the neck of fibula: 1.muscular branch to peroneus longus; 2. superficial peroneal nerve, which after giving muscular branches to peroneus longus and brevis continued as intermediate dorsal branch; 3.muscular branches to extensor digitorum longus; 4. an accessory superficial peroneal nerve which after piercing the anterior intermuscular septum 22.1 cm above the lateral malleolus continued as the medial dorsal branch. Below the ankle joint it further divided into two dorsal digital branches which supplied the medial aspect of the great toe and the adjacent sides of the 2nd and 3rd toe; 5. deep peroneal nerve that had the usual course, divided into medial and lateral terminal branches and articular branches to knee.

DISCUSSION & CONCLUSION

A good knowledge of the anatomical relationships and common variations of the superficial peroneal nerve is required to prevent injuries during surgical procedures like fasciotomy. In the present report where, an accessory superficial peroneal nerve given off by the common peroneal nerve is of academic and clinical significance to surgeons performing procedures in the middle third of the lateral leg. The surgeon also should be aware of thevariation where the common peroneal nerve gives of muscular branches to both lateral and anterior compartment muscles.

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⁂ 32 ⁂

REPLACED RIGHT AND LEFT HEPATIC ARTERIES: A CASE REPORT

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ABSTRACT INTRODUCTION:
Variations in the origin of hepatic artery pose difficulty during surgeries like pancreaticoduodenectomy (1). It usually arises from the coelic trunk as common hepatic artery and then divides into the gastorduodenal artery and proper hepatic artery. The proper hepatic artery further divides into right and left hepatic arteries (2, 3). Here we report a variation in the origin of both the right and left hepatic arteries from the superior mesenteric artery and left gastric artery respectively, in a femalecadaver.

CASE REPORT:
On routine dissection of a 73-year-old female cadaver for first year medical students in the Anatomy department of our institution, the following variation in the origin of the hepatic arteries was noted. It was noticed that the deceased had undergone partial gastrectomy and gastrojejunostomy. The splenic artery and the left gastric artery were given off by the coelic trunk. In addition, the gastroduodenal trunk directly took origin from the celiac trunk. The hepatic artery took origin from the superior mesenteric artery. This replaced right hepatic artery, ascended upwards posterior to the body of pancreas and was crossed anteriorly by gastroduodenal artery. Then it ascended in the free margin of lesser omentum and entered the liver at the porta hepatis. This artery gave rise to the cystic artery. The left hepatic artery arose from the left gastric artery. It entered the hilum of the liver by traversing between the caudate lobe and the left lobe of theliver.

DISCUSSION & CONCLUSION:
A knowledge of variations of blood supply to the upper gastro intestinal organs is important in planning diagnostic, hepatobiliary and pancreatic surgeries. In the present report, both the right and left hepatic arteries are replaced and is of utmost surgical importance to surgeons performing upper gastrointestinal surgeries.

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⁂ 33 ⁂

ROLE OF MORPHOMETRIC VARIATIONSOF THE ANTERIOR ABDOMINAL WALLIN THE DEVELOPMENT OF INGUINAL HERNIA

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Co-author: Dr A SharmilaMS, PhD
Professor & Research Supervisor, Department of Anatomy, SRMMCH&RC.

ABSTRACT:

INTRODUCTION:

Inguinal hernia is a condition in which a bulging of the contents of the abdomen through a weak area in the anterior lower abdominal wall. Various defensive mechanisms of the inguinal canal like shutter and slit valve mechanisms help prevent its formation. In this study, a comparison has been made between the morphometric measurements of the anterior abdominal wall in patients with and without inguinal hernia to look for a statistically significant difference which can affect the various protective mechanisms and cause inguinal hernia.

AIM:

1. To analyze the morphometry of the anterior abdominal wallparameters.
2. To study its influence in predisposition of inguinalhernia.

OBJECTIVES:

To measure the distances between anterior superior iliac spine, xiphoid process, pubic tubercle and symphysis pubis and the angulation between the lines connecting them in the anterior abdominal wall.

To correlate the differences in the length between the fore said anatomical landmarks in relation to inguinal hernia.

To interpret the inference in diagnosis of inguinal hernia.

METHODS AND MATERIALS:

Study design: Case control study. Sample size: Calculated based on T- Statistic method 210 consenting male patients and meeting the inclusion criteria, of which 105 each were patients of inguinal hernia and patients without inguinal hernia. Materials: Standard measuring tape, weighing scale, Pelvic X-rays, Case Group, Control group

RESULTS AND CONCLUSION:

It can be concluded from this study that factors such as increase in the distance between xiphoid process and pubic tubercle, between ASIS and Pubic tubercle and other related anthropometric variables are statistically significant in predisposing patients to develop inguinalHERNIA

KEYWORDS: Anterior superior iliac spine, inguinal canal, inguinal hernia, Pubic tubercle, Xiphoid Process, Anterior abdominal wall.

ABSTRACTS

E-POSTERS

FACULTY CATEGORY

⁂ 1 ⁂

VARIANT ANATOMY OF RECURRENT BRANCH OF THE MEDIAN NERVE: A CASE REPORT

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INTRODUCTION

The recurrent branch of median nerve is a motor nerve supplies muscles of thenar eminence in hand.Owing to its subcutaneous location it can be easily damaged resulting in the paralysis of thenar muscles during hand surgery. Anatomical variations in the branching pattern of recurrent branch of median nerve are fairly uncommon. A good knowledge of anatomy of the nerve is important in treatment of carpal tunnel syndrome to avoid itsinjury.

CASE REPORT

We report a rare case of thick recurrent branch of median nerve in right hand. The median nerve after emerging from distal border of transverse carpal ligament, gave off recurrent motor branch and later divided into medial, intermediate and lateral divisions. A thin branch was arising from lateral division supplying thenar muscle.In left hand in same cadaver there was only one recurrentnerve.

DISCUSSION

Anatomical variations in the branching pattern of recurrent branch of median nerve are common.The classification by Poisel is extra ligamentous, subligamentous and transligamentous types.Cadaveric studies report marked differences in the incidence of transligamentous branching of nerve ranging from 9% to 80 % as cited by Siverhus SW et al., and Tountas CP et al., .Scott H reported transligamentous type in 7%, 93% extra ligamentous types, nerves were arising distal to transverse carpal ligament. In his study on cadavers majority contained one recurrent nerve arising from median nerve while 4% had more than one recurrent branch and is central position or just radial to central origin. The present case report belongs origin of recurrent branch of median nerve is extra ligamentous and is radial position. This confirms the necessity of approaching the median nerve from the ulnar side when opening the carpal tunnel during surgery of carpal tunnel syndrome. Sound knowledge with good visualization of anomalous branching of median nerve and the recurrent median nerve isimportant.

⁂ 2 ⁂

EFFECT OF CURCUMIN ON WISTAR RAT TESTIS EXPOSED TO 4G CELL PHONE RADIATION - A HISTOLOGICAL, BIOCHEMICAL AND IMMUNOHISTOCHEMICAL STUDY.

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[1]Ph.D. Scholar cum Tutor and [2]Professor, Department of Anatomy, Mahatma Gandhi Medical College & Research Institute, Sri Balaji Vidyapeeth (Deemed-to-be-University), Puducherry

BACKGROUND:

Through oxidative stress, the electromagnetic radiation (EMR) released by mobile phones negatively influences men's reproductive potential. Curcumin (CUR) is said to be a source of potential antioxidants. The goal of this study is to identifythe protective effect of curcumin on sperm count

and viability in 4G-mobile phone-EMR exposed rats and to compare the effect of two-month and four month- exposure period to radiation.

MATERIALS AND METHODS:

Setup - 2 and 4 months: (n =6 animals /group in each setup.

a) **Controlgroup:**
   No cell phone radiation.
b) **CUR 1/CUR2group:**
   Received orally100mg of curcumin /kg body weight /day for 2 and 4 months respectively.
c) **R 1 /R2group:**
   Exposed to 4G (2300-2400 MHz) mobile phone radiation for 2 hrs. daily(5mts every half an hour from 8am-8pm daily) for 2 months and 4 months respectively.
d) **R 1 + CUR group/R2 + CUR (n= 6 in eachsetup):**
   Exposed to 4G mobile phone radiation for 2 hrs. daily for 2 months & received orally 100mg of curcumin /kg body weight /day for 2 months and 4 months respectively.

After the experimentation, the rats were sacrificed and epididymal fluid was collected to make semen sample.Sperm count was determined with a hemacytometer and expressed in millions/ml.Semen-smeared slides were prepared and stained with eosin-nigrosin.Under microscope, the sperms were listed as alive (unstained head) and dead (stained head) according to eosin staining-state of their head.Data were analyzed using ANOVA.

RESULTS:

Sperm count and viability were significantly lower ($P<0.05$) in both settings in radiation exposed group, but these parameters were kept at a normal level in
R+ CUR group.

CONCLUSION:

These results suggest that curcumin can preserve sperm count and viability when they are exposed to 4G-mobile phone EMR.

⁂ 3 ⁂

FAIRBAIRN-ROBIN TRIAD (FRT) WITH PATENT DUCTUS ARTERIOSUS: A CASE REPORT

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ABSTRACT:

Pierre Robin sequence associated with many congenital abnormalities in 20 percent of patients and needs prompt diagnosis and treatment to prevent upper respiratory tract obstruction and aspiration pneumonia. Here we report A two years old girl child with Patent ductus arteriosus, cleft palate and tongue tie (Pierre Robin sequence) who was promptly treated. Early closure of PDA with a device was done at 11 months of age. Corrective surgery was done for cleft palate, and tongue tie at the age

of two years. Early Diagnosis and timely intervention helps to alleviate the cardiac, respiratory failure, pulmonary hypertension.

KEYWORDS: Congenital heart diseases, Craniofacial anomalies, Cleft lip, Pierre Robin sequence, Cleft palate, micrognathia, retrognathia, patent ductus arteriosus, device closure of PDA, Tongue tie, glossoptosis, Siebold-Robin sequence.

ABSTRACTS

E-POSTERS

PG CATEGORY

⁂ 1 ⁂

TITLE: A RARE ANATOMICAL VARIATION OF BILOBED SPLEEN.

Author: Dr J Muthu Rohini, 1st year PG, Government medical college, Mahabubnagar.
Guide: Dr T Nava Kalyani, Prof And Hod Of Anatomy; Dr M Thanuja Kumari, Asso Prof, Government Medical College, Mahabubnagar.

ABSTRACT INTRODUCTION

The Spleen is the largest lymphoid organ and is located in the upper left quadrant of abdominal cavity situated between fundus of stomach and diaphragm.

CASE REPORT

During routine dissection of abdomen in 60year old female cadaver, using cunninghams manual, an unusual presentation of bilobed spleen is noted.

DISCUSSION AND CONCLUSION

Spleen is developed from mesoderm as number of lobules, then fuse to form a single mesenchymal mass. Failure of fusion leads to lobulated spleen or accessory spleen

Bilobed spleen is a rare type of congenital splenic anomalies. This finding is valuable for distinguishing splenic variations from other visceral abnormalities in abdominal imaging and conservatory splenectomies.Knowledge about such variations of spleen is important to physicians, surgeons, radiologists for accurate clinical diagnosis and for proper treatment strategies.

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⁂ 2 ⁂

Clinico - Embryologic Patterns of Developmental Ocular Anomalies in 0 To 5 Years of Age Group At A Tertiary Care Center

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Abstract

Background: Congenital ocular anomalies are rare but important cause of childhood blindness. This study aimed to observe the clinical patterns of congenital ocular anomalies in the pediatric age group (0 to 5 years) and its association with various demographic parameters.

Methods: a cross-sectional study done at ophthalmology department of Govt Medical College on patients in the 0-to-5-year age group presenting with congenital ocular anomalies between July 2022 and July 2023. Thorough clinical history was obtained, and comprehensive ocular examination was done in each case.

Results: A total of 1286 patients in the 0 to 5 years age group attended the eye OPD during the study period. Congenital ocular anomalies were seen in 34 patients. The prevalence of ocular anomalies was 2.64%. Average age of patients was 3.56± 1.12 years. There were 20 (68%) males and 14 (32%) females. Antenatal period was uneventful in 95.6% cases. Decreased vision was the most common presentation (40%).one case was studied from rare disorders like Blepharophimosis-ptosis-epicanthus inversus syndrome, Axenfeld–Rieger syndrome and Nance–Horan syndrome.

Conclusion: Findings of the study can act as a reference guide for clinicians and genetic counselors for counseling and health planning.

⁂ 3 ⁂

SPLIT ATLAS

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ABSTRACT INTRODUCTION:
Fusion defects in both the anterior and posterior arches of the first cervical vertebra is called as Split or Bipartite Atlas. It is a rare congenital anomaly of Atlas. The osseous defects are spanned by

fibrous tissue. The anterior arch defects are mostly in the midline and smaller, while the posterior arch defects may be away from the midline and larger.

CASE REPORT:

A 37 years old male had a fall from ladder from a height of 10 to 12feet and sustained injury, - contusion of 5*4*4cm over the occipital region. He complained of headache. CT scan of brain with screening of cervical vertebra was done. Radiological imaging revealed a normal brain study. Incomplete anterior and posterior arches of first cervical vertebra noted. The defect in the anterior arch had well corticated margins. The posterior defect had tapered osseousmargins.

DISCUSSION:

Anatomical knowledge of congenital fusion defects of cervical vertebra is significant in differentiating them from potentially dangerous fractures. In this case, the defect in the anterior and posterior arches were due to incomplete fusion of the neural arches, that resulted in Split Atlas.

CONCLUSION:

In acute post traumatic radiological investigations, it is important to rule out congenital defects to avoid misinterpretation and intervention. Clinical significance of identifying fusion defects of Atlas is self established in all post traumatic screening.

ATLAS – CORONAL VIEW

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⁂ 4 ⁂

UNILATERAL PECTORALIS MINIMUS MUSCLE: A CASE REPORT

1. DrSonalChamatkar -Second Year Post Graduate Student (PresentingAuthor),
2. DrKirtiNemade -Associate Professor(Co-author)
3. DrArunKasote - Professor and Head (Co-author) Department of Anatomy, Government Medical College, Nagpur

INTRODUCTION:

There are several reports about the presence of aberrant muscles in the pectoral region. Some investigators have reported about the presence of a Pectoralis minimus muscle lying between the first costal cartilage and the coracoid process.We report about the presence of a similar muscle, in a male cadaver, which was observed during routine dissection for undergraduates.Researchers observed Pectoralis quartus muscle, a thin muscle of triangular shape, on the left thoracic wall of a male cadaver and also reported about the presence of Pectoralis intermedius muscle on the right thoracic wall of a femalecadaver.

METHODS:

The variant muscle originated from the 2nd costal cartilage and becomes tendinous laterally. The tendon passes superficial to pectoralis minor muscle and gets inserted into the superior surface of coracoid process. The muscular part also receives some fibers from the clavicle along its medial side. The thoracoacromial vessels pass above the variant muscle and some branches of thoracoacromial vessels pass between the minor and the variant.

DISCUSSION:

Pectoralis minimus muscle (sterno-costo-coracoidian muscle) is a rare muscle extending between the first costal cartilage and the coracoid process. The pectoral muscles develop from the pectoral premuscle mass. This pectoral premuscle mass lies in the lower cervical region on the medial side of the arm bud.Hyper abduction and lateral rotation of the shoulder may press excessive stretch on the neurovascular structures, thereby giving rise to neurological and vascular symptoms in the arm. This variation may cause pain during certain shoulder movements, because of compression of the vessels, and may lead to mechanical alterations in the muscular dynamics of the shoulder.

⁂ 5 ⁂

POLYCYSTIC KIDNEY DISEASE
A Case Report

Dr.Akash Deep Shivhare, Dr. Anuja Deshmukh, Dr. Poorva Kardile, Dr. Vaishali Inamdar

ABSTRACT

INTRODUCTION:

Renal cysts are fluid-filled cavities on the surface of kidneys which may be solitary or multiple. They may present as incidentalfinding during routine radiological investigations for chronic renal failure, end-stage renal disease or due to associated abdominalsymptoms.

CASE REPORT:

During routine cadaveric dissection at the Institute, multiple cysts were observed on the surface of right kidney in amale cadaver. The cysts were carefully observed for gross appearance and on coronal section. The left kidney was normal in gross appearance. In one male cadaver we found polycystic kidney with dilatation of renal pelvis externally on right side.On coronal section, the cysts were greyish-white in colour, fluid was pale yellow and viscous in consistency. There WAS TOTAL 8 CYSTS APPEARED.

DISCUSSION:

One cases of ADPKD were reported by bear RA, in 1974, unilateral ADPKD and agenesis of the opposite kidney. In family history, his father was suffering from polycystic kidney and later died due to hypertension and kidney failure [3].

Levine E and Huntrakoon M, reported two cases using abdominal computerised tomography (CT) and proposed the term unilateral renal cystic disease (URCD) as a distinct disease entity from ADPKD [4].

CONCLUSION:

In present case report, we found polycystic kidney with no other clinical condition. but thorough awareness and understanding of these variations is of paramount significance for surgeons for varioussurgeries.

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⁂ 6 ⁂

SPOT-CRAFT (SPOTTER PERFORMANCE OBSERVATION THROUGH TECHNOLOGY-COMPUTERISED RESOURCE ASSESSMENT FOR FUNDAMENTAL TESTING): COMPARATIVE STUDY OF TRADITIONAL VERSUS DIGITAL TOOL IN ASSESSMENT OF ANATOMY SPOTTERS- A CROSS SECTIONAL STUDY.

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ABSTRACT:

BACKGROUND:

In the dynamic realm of medical education, the methods employed for assessments have evolved significantly over time. One notable shift is the transition from traditional paper-based spotter tests to the incorporation of technology, often facilitated by PowerPoint presentations. The conventional approach of spotter tests, which involves identifying and labelling anatomical structures or medical conditions on physical images, has been a staple in medical assessments. However, digital tools have introduced a new dimension to this evaluationprocess.

AIM &OBJECTIVE:

Aim: To comprehensively investigate and compare the impact of two distinct assessment methodologies—PowerPoint presentations and traditional methods—within the framework of spotter tests designed for aspiring medical professionals

OBJECTIVE:

- To describe and characterize the features, strengths, and limitations of both PowerPoint presentations and traditional methods as tools for conducting spottertests.
- To assess and compare the quality of the learning experience facilitated by each methodology.
- To analyze the level of student engagement fostered by PowerPoint presentations and traditional methods during spottertests.

METHOD:

A total of 150 first-yearstudentshave participated in thisstudy. Each student was assessed by the two methods of examination in a sequential cross-over manner. A survey was also administered asking student's perceptionsof the two different methods of assessment.

RESULT:

- Accreditation Council for Graduate Medical Education (ACGME) categorizes medical competence into six related domains: medical knowledge, patient care, professionalism, communication and interpersonal skills, practice-based learning and improvement, and systems-basedpractice.
- In medical education for the 50 years there are many changes in assessment of students based on the above-mentioned category. We had changed from the traditional method of evaluation to complex methods.
- Medical students today are tested on knowledge, attitudes, and skills across multiple settings and methods. Feasibility and practicality play the major role in success of any assessment. The cost of implementation for conventional spotters is comparatively high in terms of personnel, facilities, finances, and time for examinees and faculty. Depending on the availability of resources, institutions often need to deviate from conventional testdesigns.
- We observed that students showed more interest on the traditional method of assessment because of some disadvantages like PowerPoint visibility, loss of 3- dimensional perception of the structures, difficult to correlate with thespecimen.
- But at same time, students shown interest over the PowerPoint presentation as they are exposed to variety of question and leaking of questions are also less as the assessment is conducted for the entirestudent.

CONCLUSION:

The renewed emphasis on patient safety, quality outcomes and the social consciousness in medical education necessitates it to use high-quality, reliable, valid, educationally sound assessment methods. Traditional method has testing higher level of cognition the pure recalls as well as in clinical simulation-based question as it is easy to show or create such assessment on slides which may further improve the validity of examination.

So, PowerPoint based spotter examination can be an efficient, feasible, valid and acceptable tool for conducting such examinations for a large number of students.

KEYWORD: Anatomical structures, Power-point presentation, Learning experience, Overall efficacy.

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CLAW HAND

CATEGORY: PG

Authors With Designation And Affiliations: Dr Marriswari. B, Dr J.Sujitha Jacinth, Associate Professor, Dr Santhakumar, Hod, Department Of Anatomy

INTRODUCTION:

Claw Hand is an abnormal hand position that develops due to a problem with ulnar nerve or both ulnar nerve & median nerve.

A hand in ulnar claw position will have the 4^{th}& 5^{th} fingers extended at the Metacarpophalangeal joints and flexed at the Interphalangeal joints.

The patients with this condition can make a full fist (punch) but when they extend their fingers, the hand posture is referred to as CLAWHAND.

IMAGE:

CASE REPORT:

The patient is a 55 year old male came to out patient department with multiple hypo pigmented patches all over the body with left hand weakness and inability to extend any of hisfingers, hebegantoexperienceweaknessofhislefthandthatworsenedprogressivelytothe point where he lost functional use of that hand.He also had intermittent numbness and tingling of the entire hand.

DISCUSSION & CONCLUSION:

A complete claw hand is involving all the digits and resulting from both median and ulnar nerve palsy proximal to wrist resulting in complete functional loss of hand.

Early Diagnosis is important since treatment will require Surgery and Bracing in the acute phase.It Behooves clinicians to consider when the patients presented with a complete claw hand to prevent delays in Diagnosis and Treatment.

Complete Claw Hand is very difficult to treat hence early evaluation can localize the lesion for surgical intervention.

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BILATERALLY DISTINCT RENOVASCULAR VARIATIONS - A CADAVERIC STUDY

Dr. Sneha Sinha Abstract, PG, Jawaharlal Institute of Postgraduate Medical Education and Research (Jipmer), Puducherry.

INTRODUCTION:
Each kidney is supplied by a renal artery which reaches the hilum of the kidney between the renal vein in front and pelvis of the ureter behind and divides into anterior and posterior trunks. Anterior trunk passes in front of the renal pelvis and subdivides into four segmental arteries. Posterior trunk passes behind the renal pelvis and continues as the posterior segmental artery. Each kidney drains into inferior vena cava (IVC) by corresponding renal vein. Metanephros, which becomes the definitive kidney, starts growing during the 5th week and migrates cranially from the pelvis. The arterial supply also migrates cranially with the metanephros initially from the median sacral arteries to a persistent lateral intersegmental artery. Persistent fetal vessels may result in variations in numbers and origins of renal arteries.
OBJECTIVES:
Study the variations in renal vessels and its clinical importance.
METHODS:
During routine dissection in a formalin-fixed male cadaver of approximately 65 years in the department of Anatomy bilateral renovascular variations were detected.
RESULTS:
Anterior trunk of left renal artery crossed left renal vein winding around its upper border to anterior aspect and divided into 5 segmental arteries before reaching the hilum. Posterior trunk of the left renal artery entered into the hilum between ureter and left renal vein. On the right side the posterior segmental tributary of the right renal vein failed to join the main trunk and drained into IVC at a lower level after passing behind the right ureter and right testicular vessels.
CONCLUSIONS:
Renal vascularization differs between individuals due to complex embryogenesis. It has implications for surgeons, radiologists, and nephrologists. Present cadaveric study was a humble effort to throw light on this knowledge.
KEY WORDS: Renal anatomy, Renal artery, Renal vein, Anatomical variations

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ASSESSING THE MORPHOLOGY, HISTOLOGY, AND MICROSCOPIC COMPOSITION OF THE TRIANGULAR FIBROCARTILAGE COMPLEX [TFCC] OF THE WRIST JOINT: A CADAVERIC OBSERVATIONAL STUDY

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ABSTRACT:
BACKGROUND:
TFCC, being a complicated structure, located on the ulnar side of the wrist is composed of multiple distinct anatomic entities which together play a critical role in wrist biomechanics. The anatomy of TFCC has not been extensively studied in the Indian population. The outcomes of the study would

serve as much-needed data while planning arthroscopic procedures and radiological investigations.

AIM/OBJECTIVE:

To elucidate the microscopic anatomy and composition of the triangular fibrocartilage complex of the wrist joint using haematoxylin-eosin and Verhoff Van Gieson staining methods.

METHODOLOGY:

Samples collected from 40 specimens including 20 right and 20 left limbs were placed in 10% neutral buffered formalin for fixation.Paraffin-embedded blocks were prepared and tissue sections were taken at 7-micron thickness.The slides were subjected to H&E and VVG staining following standardizedprotocol.

RESULTS:

The morphological structure of the seven components of triangular fibrocartilage complexes were assessed. The articular discconsisted of tightly interlaced fibrocartilage with fewerblood vessels. Radioulnar ligamentsshowed densely parallel collagen bundles. A mixture of tightand loose parallel tissuewas observed in the sub-sheathof the extensor carpi ulnar muscle, the ulnar-triquetral, andthe ulnar-lunate ligaments. Irregular morphologicalcomposition and loose connective tissue predominated in the ulnar-carpal meniscus. Blood vessels were observed in the epi-fascicular/ fascicular areas of the ulnar- triquetral ligament and interstitial region of ulnar-lunate ligaments.

CONCLUSION;

The microscopic anatomy of TFCC was complex owing to the varied nature of its entities. An understanding ofthe distribution of connective tissue, blood vessels, and elastic fibreswould be of immense help in planning out the approaches for arthroscopic procedures. Keywords: Wrist joint, Triangular fibrocartilage complex, microscopic composition.

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STUDY OF SUPRATROCHLEAR FORAMEN IN ADULT DRIED HUMAN HUMERUS AMOUNG SOUTH INDIAN POPULATION

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ABSTRACT

INTRODUCTION :

Meckel in 1825, described thin plate of compact bone separating coronoid and olecranon fossa in distal part of humerus. This septum can be opaque, translucent or perforated forming supratrochlear foramen(STF).It can be oval, round or irregular.Incidence varies and is racial dependent. It has been observed in dogs, pig andprimates.

OBJECTIVES OF THE STUDY:

1. To study incidence of supratrochlearforamen.
2. To study various shapes of supratrochlearforamen.
3. To measure morphometry of supratrochlearforamen.

MATERIALS AND METHODS :
This study was conducted in 79 (37 right and 42 left) adult dry human humerus bones of unknown sex and age obtained from Department of Anatomy, Kodagu institute of medical sciences. Presence and various shapes of STF was studied.The transverse diameter (TD) and vertical diameter (VD) of STF was measured using a digital vernier caliper.The distance from the lateral margin of foramen to lateral epicondyle(LM-LE) and from medial margin of the foramen to medial epicondyle(MM-ME) was also measured. Data collected was analyzed statistically.
RESULTS:
In total 79 humeri studied, 19 showed presence of STF. Incidence of STF was more on left side. STF was oval, rectangular, round and irregular. The mean transverse diameter on right was 3.52mm and on left was 8.43mm. The mean vertical diameter on right was 1.95 mm and on left was 7.14mm.LM-LE on right was 25.7mm and on left was 29.6mm.MM-ME on right was 24.3mm and on left was 26.8mm.
CONCLUSION :
The anatomic knowledge of STF is beneficial for surgeons in intra-medullary nailing, to rule out pseudo lesions by radiologists and significant for anthropologists in racial study.
KEYWORDS :SUPRATROCHLEAR FORAMEN, HUMERUS, MORPHOMETRY
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STUDY ON THE OSSIFICATION OF SUPRASCAPULAR NOTCH AND ITS CLINICAL SIGNIFICANCE.

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INTRODUCTION:
The superior border of the scapula presents with a notch called “supra- scapular notch” usually bridged by a transverse Scapular Ligament or supra scapular ligament across the notch to form a supra-scapular foramen which transmits the supra-scapular nerve belowandthe vessels above the ligament respectively.
BACKGROUND:
In some individuals, the transverse scapular ligament may undergo ossification, thus formation of supra scapular foramen which transmits the supra scapular nerve.This condition is known as an ossified suprascapular notch. Variations in themorphology of suprascapular notch have been identified as one of the causes of supra scapular nerve entrapment producing symptoms of nerve compression.
MATERIALS AND METHODS:
50 dried human scapulae of both left and right sides were obtained from the Department of

Anatomy-Government cuddalore medical college.
RESULTS: Among the 50 Scapulae studied 4 were fully ossified and 6 partially ossified.
CONCLUSION:
Clinicians need to be aware of the possibility of an ossified suprascapular notch when examining patients with unexplained shoulder pain or weakness. Understanding its clinical significance is crucial for early diagnosis and intervention. Imaging studies can help in the diagnosis. This can prevent complications and improve patient outcomes.

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STUDY OF VARIATIONS IN HORIZONTAL FISSURING PATTERN IN RIGHT HUMAN LUNGS

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ABSTRACT
AIM:
The aim of the study is to know the variations in horizontal fissure in right human lungs, its length and completeness of thefissure.
MATERIALS AND METHODS:
50 right lung specimens from unclaimed embalmed adult cadavers in the department of anatomy were used for the study. Horizontal Fissural pattern, its completeness was noted and length of the fissure weremeasured.
RESULTS:
Horizontal fissure was complete in 56% of specimens, incomplete in 32% and absent in 12%. In the present study 46% of horizontal fissures belonged to grade I, 30% - grade II, 12%- grade III and 12%-grade IV according to Craig and Walker fissural classification. The minimum and maximum length of horizontal fissure were 2.5cm and 19 cm. All the results obtained were compared with various authors and analyzed.
CONCLUSION:
The knowledge of variations in horizontal fissure is helpful for Radiologists for accurate radiological interpretation and for Cardiothoracic surgeons to locate bronchopulmonary segments while performing segmental resections or pulmonary lobectomy. It is also useful for Clinicians, Pulmonologists and Chest physicians for better clinicalapproach.
KEY WORDS: lung, horizontal fissure, variation, fissure completeness

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A RETROCAVAL TESTICULAR ARTERY: EMBRYOLOGICAL BASIS AND CLINICAL SIGNIFICANCE

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INTRODUCTION

The testicular arteries (TA) are the direct branches from the abdominal aorta.Right testicular artery descends anterior to the inferior vena cava, left testicular artery descend anterior to inferior mesenteric vein, left colic artery and descending colon then both the testicular arteries become content of inguinal canal.

MATERIALS AND METHODS

Routine cadaveric dissection done at IGMC&RI, showed variation in the number and course of right testicular artery.

RESULTS

We found that on right side two testicular arteries superior one originates from anterior surface of abdominal aorta just below renal vessel and inferior one gets origin from 4cm below the level of renal artery.Right superior testicular artery passeshorizontally and behind the inferior vena cava.On the left side, there was only one testicular artery and vein with normalcourse.

DISCUSSION

Double testicular arteries occur due to the persistence of more than one lateral mesonephric arteries.Retrocaval course occurs when there is variation in the formation in renal segment of inferior venacava. The retrocaval course of testicular artery can cause compromise in blood flow which may lead to testicular dystrophy and infarct. Presence of double testicular artery and its retrocaval course should be thoroughly studied before any interventions done on testis. Incomplete ligation of accessory arteries could result in retroperitoneal hematoma.

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A CASE REPORT ON TRIFURCATION OF COMMON HEPATIC ARTERYWITH ABSENT PROPER HEPATICARTERY

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BACKGROUND:

Common hepatic artery (CHA) arises from the celiac trunk (CT). Incidence of the variations of CHA ranges from 0.5-3.5%. The CHAcontinues as proper hepatic artery (PHA) after giving off gastroduodenal artery. PHA gives off right and left hepatic arteries. Knowledge of variations of these arteries helps to prevent vascular damage during hepatic and pancreaticsurgeries.

CASE REPORT:

During routine dissection of a65-year-oldmale cadaver, the CT wasobserved to have the following variations.CT had a normal origin from the abdominal aorta at the level of T12 vertebra. It divided into three branches left gastric artery, splenic artery, and CHA.CHA coursed towards the right side

and trifurcated into right hepatic artery(RHA), left hepatic artery(LHA) and gastroduodenal artery (GDA). PHA was absent.The RHA gave off the cystic artery(CA) then it divided into right and left branches. These branches of RHA entered the hilum of liver along with LHA.GDA hada normal course andbranches.

CONCLUSION:

These variations will guide surgeonsin performing effective surgerieslikelaprotomy, cholecystectomy and liver transplantation procedures. It will also help radiologists for planning and performing interventional radiological procedures and aids to avoid complications.

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MORPHOMETRIC STUDY OF MASTOID TRIANGLE FOR SEXUA DIMORPHISM OF ADULT HUMAN DRY SKULLS

Presenting Author : Ms. Mahalakshmi P M.Sc Anatomy Postgraduate S.R.M.Medical College and Researchcenter

Co-Author : Dr. Shanta Chandrasekaran(M.D Anatomy)

INTRODUCTION:

The present study proposes to determine sex from morphometry of the mastoid process. The area of mastoid triangle proved to be the best parameter for sex discrimination.

AIMS AND OBJECTIVE:

- To study the measurements of mastoid triangle for sexdetermination.
- To find out the significance of the parameters among male and female dryskulls.

METHODS:

This study was conducted in 50 skulls of unknown sex in department of anatomy in SRMMCH& RC. For the measurement purpose digital vernier caliper was used. Porion, asterion, mastoidale points were used for measurement.

RESULTS:

All the parameters measured using asterion, poroion, mastoidale showed to have higher level in males compared to females. And there are statistical significance for the parameters measured.

CONCLUSION AND KEYWORDS:

These measurements can be used to determine the sex of the skull.

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BILATERAL COMPLETE CLEFT LIP & PALATE GRADE III –WITH PROJECTED PREMAXILLA – A CASE STUDY

Guide: Prof. Dr. V. Anandhi D.G.O., M.S., Professor & HOD
Presenter: Dr. P. Murugeshwari M.D., (Post- graduate)
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Abstract:

Children with isolated cleft lip, & cleft lip and palate, show a similar incidence of 0.6-0.7/1000 live births. Incidence of bilateral clefts in children is found to be **0.3/1000 live births**.

CASE HISTORY:

A G2P1L1 28-year-old woman with first degree consanguinity, delivered a live male baby, by repeat LSCS. The Newborn was diagnosed with BCLP Grade III with projected maxilla. Lip repair was done at 3 months of age by straight line closure method. Palatoplasty was done at 9 months of age by push back method.

DISCUSSION:

Bilateral complete cleft palate occurs if both the palatine processes of maxillae fail to fuse with the premaxilla. In this type, secondary palate was divided into two equal halves by a median cleft with an anterior V-shaped cleft separating the premaxilla completely.

CONCLUSION:

Cleft lip & palate may occur due to inherited genetic conditions like Van-der-Woude syndrome, ectodermal dysplasia syndrome, X-linked cleft palate. Maternal use of anti-epileptic drugs such as Topiramate, valproate may cause Cleft lip & palate. By series of surgeries normal function and normal appearance can be restored with minimal scarring.Under Rashtriya Bal SwasthyaKaryakram (RBSK) Programme, screening is being done for 0-18 years children to identify Defects at birth, Developmental delays including disabilities, Deficiencies and Diseases by 805 Mobile Health Teams, and sent to one of the 34 District Early Intervention Centers (DEIC) in Tamil Nadu.

KEYWORDS: Cleft lip palate, bilateral, congenital malformation, RBSK.

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TITLE: BILATERAL SUPERFICIAL BRACHIAL ARTERY – A CASE REPORT

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INTRODUCTION:

Anomalies of the ramification of arteries in the upper extremity are an important consideration for both diagnostic and therapeutic reasons. The brachial artery, a continuation of the axillary artery terminates at the level of the neck of the radius into the radial and ulnar arteries (1). Here, we report a case of superficial brachial artery bilaterally in a 90 year old female cadaver which continued as radial artery.

CASE REPORT:

During the routine cadaveric dissection for the medical students, a bilateral case of superficial brachial artery in a 90 year old female cadaver was observed. The superficial brachial artery originated from the third part of axillary artery after the origin of subscapular artery just above the junction of two roots of median nerve. It crossed anterior to the lateral root of median nerve. It gave muscular branches to muscles of arm and continued as the radial artery. The axillary artery continued as brachial artery, related lateral to the median nerve in the cubital fossa, later continued as the ulnar artery deep to the flexor carpi ulnaris. A communication between the radial and ulnar artery was observed in both the upper limbs which was deep to biceps tendon in right limb whereas superficial in the left limb. The ulnar artery was superficial to flexor retinaculum in wrist and joined with the superficial branch of radial artery forming the superficial palmar arch**.**

DISCUSSION AND CONCLUSION:

The term superficial brachial artery was first defined in 1928, as that artery that runs superficial to the median nerve (2). The incidence of this artery in the different populations studied ranged from 0.12% to 19.7%, which may be a potential cause of median nerve compression that may explain the cause of idiopathic median neuropathies (3, 4).

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