



Anatomica-AIMS



A Message from the Editor

With the divine blessings of bhairavaiky paramapoojya jagadguru Sri Sri Sri Balagangadharanatha Mahaswamiji, in the presence of paramapoojya jagadguru Sri Sri Sri Nirmalanandanatha mahaswamiji and under the able guidance of our beloved Principal, Dr. Shivaramu M G, it brings me great pleasure to present the current issue of our departmental newsletter, "**ANATOMICA-AIMS**".



The past few months have been very productive academically with our staff members participating in various activities to enrich their knowledge and experience in fields of medical education, biostatistics, bioethics, research methodologies and genetics. I'm confident that that such well trained and experienced faculty will ably shoulder the responsibility of carrying the department to new heights.

Our first year undergraduate students (2014 batch) have performed stupendously well in the final

examinations pushing the pass percentage to an all-time high of 90%! Eleven and seventy six students have secured distinction and first class respectively. I wish the students the very best for their future and also exhort the 2015 batch students to emulate their seniors' academic performance.

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VARIATIONS IN THE ARTERIAL SUPPLY OF PROSTATE GLAND IN SOUTH INDIAN POPULATION- CADAVERIC STUDY

Arterial supply of prostate gland is usually by inferior vesicle, middle rectal and internal pudendal artery, these are all branches of internal iliac artery. Apart from these other branches of internal iliac arteries also supply to prostate gland frequently.

The variations of arteries were inferior vesicle artery was 44.8%, internal pudendal artery 14.2%, obturator artery 14.21%, umbilical artery 14.21%, middle rectal artery 7.14% and gluteo pudendal trunk 7.14%.

These observations differ with previous studies of North India and abroad. There is any documentation found in English literature to justify these variations. The probable reasons could be (a) in general arteries pursue the shortest, most direct course to reach their destination. (b) The angle at which branches leave the

months of foetal life². Delay in proliferation of these germ layers might have demanded more vascularity in post natal life which has resulted in variation in arterial supply. (i) Embryonic rudiment of glandular tissues can undergo surprising degree of self-differentiation to adopt normal development which requires more vascularity. Hence these could be variations in vascular pattern.

(j) As India is a multiracial country different races have drifted in to India. Hence these variations may represent their ancestors³. (k) variations in the C.R. length of foetus in intra uterine life leads to differential growth in germ layers which might have resulted in variations in the arterial supply to adopt the erect posture of post natal life. (l) It is also suggested that, these variations of arterial supply to

prostate gland is due to contiguity of organs i.e. seminal vesicle and urinary bladder with dual embryonic derivatives⁴. (m) Variation in the sequence of development might have resulted in the variations in vascularity to compensate these improper sequences, to adopt normal physiological function coordination to keep these organs active.

This study of variations in the arterial supply of prostate gland will certainly help the clinicians, urosurgeons and radiologists; because benign hypertrophy of prostate is quite common after age of fifty and in India second leading cause of cancer death is prostate cancer.

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By- Rajendra.R Professor and Head, Dept. of Anatomy

arterial system certainly depends on haemodynamic factors. The angle of branching varies between 70 to 90⁰ . the bifurcation of common iliac artery should be 75⁰. If the degree is more or less than 75⁰ leads to variation in the arterial pattern to maintain the haemodynamic pressure. (c) Differential growth in common iliac artery might have resulted in variations in the arterial pattern. (d) Constant arterial supply is partly morphogenetic and partly mechanical convenience. (e) Slight variation in size and shape in prostate gland might have resulted in variation in arterial pattern. (f) Evolutionary persistence of arterial pattern may appear mechanically disadvantageous hence these could variation. (g) Functionally connected structures inevitably make simultaneous demand on the circulation and from the main source. (h) Developmentally prostate is dual in origin. Fibro muscular part is mesodermal and glandular part is endodermal, develop at different



PREVALENCE OF COMPARATIVE STUDY OF METOPISM IN NORTH AND SOUTH INDIAN CRANIA

Metopism" is complete incidence or presence of metopic suture in frontal bone of the crania (Metopan is a Greek word= fore head). It is a complete suture between eminences of frontal bone, which develops from two membranous centre of ossification. Before two years of age the frontal bone is always divided by metopic suture. This suture always obliterates with anterior frontanalle¹. This was also observed in lower animals crania (Homoerectus)². In olden days it was a belief that persistence of metopism is a sign of intelligence. Because its presence related to growth of frontal lobes of brain (as frontal lobe of brain is treated as lobe of intelligency). On the otherhand, persistence of metopism is associated with so many congenital anomolies³.

It is observed that, North Indian male crania had 2.35% and female crania had 1.99% of prevalence of metopism, while in south Indian male crania had 3.85% and female crania had 3.49% of metopism. It clearly indicates that, male crania of both North and South India have more prevalence of metopism than female crania. There is no literature in English to justify these results but it is observed in the mouse that oestrogen harmone plays a vital role in early closure of suture⁴. Hence female crania might have least number of metopism. The prevalence of more metopism in male crania than female crania was also observed in Libaneese populations⁵.

It is also observed that , the crania having metopism is devoid or absence of wormian (sutural) bones. It clearly indicates that, persistence of metopism contemplates the function of wormian bones, which provides extra space for growth of the brain.

This study of sexual dimorphism of metopism appears to be quite new study because no such study was found till date. However this study will be more important to medico- legal experts, anthropologist and anatomist to differentiate north Indian crania with south Indian crania of both sexes.



By Dr. Makandar UK, Associate professor in Anatomy, AIMS

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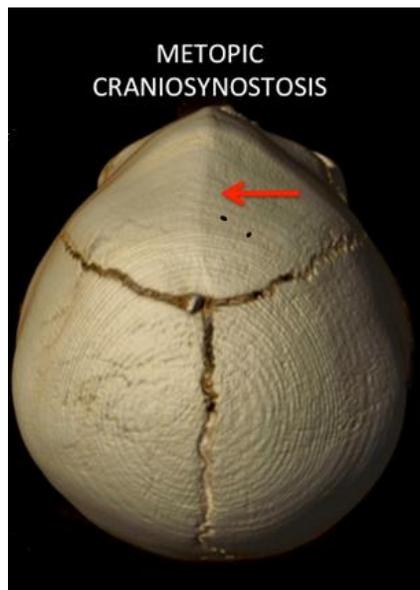
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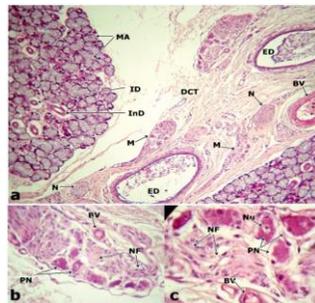
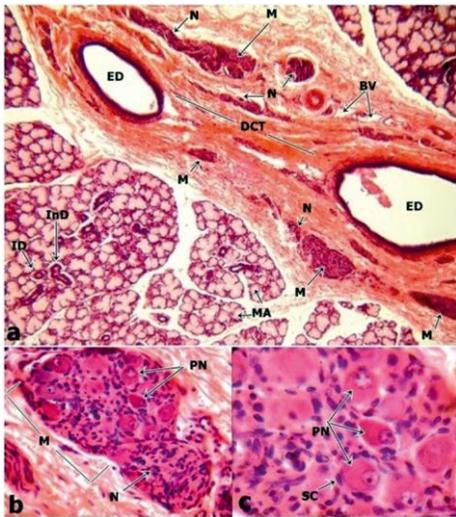


Langley's ganglion in the sublingual gland of dog

By Surendra M, Professor of Anatomy

Introduction: Langley's ganglion is considered as a subsidiary ganglion of the cranial parasympathetic submandibular ganglion; occasionally present near the hilum of the submandibular salivary gland of man. Functionally the Langley's ganglion represents the small cell station, where unrelayed preganglionic parasympathetic fibers from the submandibular ganglion ultimately synapse and resulting post ganglionic secretomotor fibers innervate principally the mixed salivary glands namely the submandibular and sublingual salivary glands. The Langley's ganglion related to the sublingual gland in man is not reported. However in some lower mammals this ganglion is noticed associated with the sublingual gland.

Objectives: The presence of the Langley's ganglion in the sublingual gland (ganglion sublinguale) of dogs is not amply documented in the literature. Therefore an attempt was made to study the histology of this ganglion including its distribution in the sections and the morphology of its neurons. An Embryological explanation and factors probably responsible for the formation of this occasional neuronal congregation are also discussed.



Material and methods: Serial sections of major salivary glands namely parotid, submandibular and sublingual glands of the dog (*Canis lupus familiaris*), prepared by using standard paraffin technique were studied using light microscopy.

Results

A few histological sections of the sublingual salivary gland of dog presented small collections of parasympathetic neuronal soma mainly around the point of entry of blood vessels and nerves and also in the connective tissue stroma of the gland. However such types of nerve cell clusters were not noticed in the sections of the submandibular and parotid glands of the same.

Conclusion

The glands of the mouth are distinctive characteristics of mammals, the only animals that chew their food. The major salivary glands secrete in response to parasympathetic activity which is induced by physical, chemical and psychological stimuli. An elaborate control mechanism exists which regulates the secretion from these glands.

As in the case of enteric nervous system it appears that the genes play an important role in the migration of neurons derived from the cranial neural crest; to reach their final locations and colonize to form cranial parasympathetic ganglia of autonomic nervous system. The failure of expression of these factors results in arrested neurotaxis and formation of intramural, decentralized ganglia due to inability of neural crest cells to cluster into aggregates as we observed in our investigation.

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Recent Publications in the Department

Asharani SK, Tejaswi HL, Rajendra R, Surendra M. Study of nasal index among students of tertiary medical care institute in Southern India. *International Journal of Anatomy and Research* 2015; 3(4):1675-9.

List of Papers presented in state/ national/ international conferences by the faculty



Dr. Tejaswi H L,
Assistant professor

Presented a paper on Study Habits And Resource Usage With Learning Success In Histology – A Correlative Study & Correlation Between Quality Of Dissection And Student Outcome In Gross Anatomy Learning in **17KCA CON**, SSMC, Tumkur, Karnataka on 26/09/2015.

Dr. Thejeshwari H G
Assistant Professor

Study Of The Level At Which The Sacral Hiatus Opens In South Indian Population . Presented oral presentation in **17KCA CON**, SSMC, Tumkur, Karnataka on 26/09/2015.

Dr. Asharani S K
Assistant Professor

Presented a paper on Study Of Nasal Index Among Students Of South India And North India & Resin Cast Of Cat Bony Labyrinth in **17KCA CON**, SSMC, Tumkur, Karnataka on 26/09/2015.

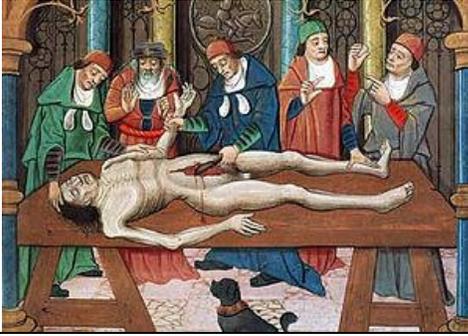


Dr. Ajay N
Assistant Professor

Presented a paper on Morphological Variations Of Superior Articular Facets Of First Cervical Vertebra, Morphological Variations Of Pars Triangularis; Hemispheric Differences & Morphometric Analysis Of Vertebral Artery Groove Of First Cervical Vertebra in **17KCA CON**, SSMC, Tumkur, Karnataka on 26/09/2015.



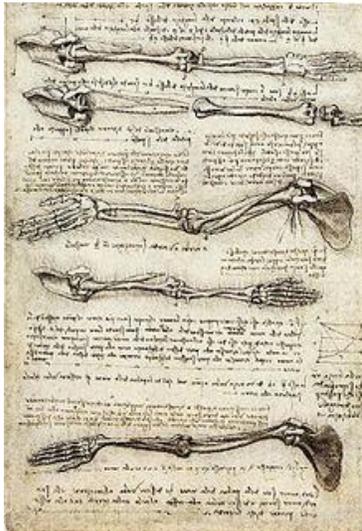
History of Anatomy



Dissection of a cadaver, 15th century painting



Mondino de Luzzi's *Anathomia*, 1541



Anatomical study of the arm, by [Leonardo da Vinci](#), c. 1510



Image of muscular anatomy from *De humani corporis fabrica* by [Andreas Vesalius](#), 1543



Muscular figure in allegorical pose by [Juan Valverde de Amusco](#), 1559



The Anatomy Lesson of Dr. Nicolaes Tulp, by [Rembrandt](#), 1632