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MCNS TIMES

"Official newsletter of Mid-west chapter of neurological surgeons"

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"President's Message"

Dr Dattaprasanna Katikar
President MCNS

Respected teachers, seniors and colleagues, Wishing you all a very " Shubh Deepavali" This is the third issue of our newsletter; I will congratulate Dr Sudheer Ambekar for his hard work. I feel logical conclusion of our newsletter should be starting our own journal. I fully understand it is a huge task requiring real hard work. First few years for any journal are very critical. Unless we get good articles there will be difficulty in getting the journal indexed and unless our journal gets indexed there will be difficulty in getting good articles. We have many stalwarts with us as our teachers and seniors, we have now more than 350 life members doing excellent work. With guidance and help from them we may be able to achieve excellent journal getting published. This journal will provide opportunity for us to present our work. We are also working on getting MCNS ethical committee in place, which will help us to get clearance for our research projects. MCNSCON 2023, Mumbai was a huge success, great preperations are going on for MCNSCON 2024, Latur. I am sure MCNSCON 2024 will have a large gathering with great academic content. Wishing you all a great festive season.

With warm regards,

Dr. Dattaprasanna Katikar

"Secretary's Message"

Dr. Milind Dunakhe
Secretary MCNS

Dear MCNS Members, Greetings of the Festival seasons Hope you're in the pink of the health and wealth This is the third issue of the MCNS Times getting published on time, I thank all the authors for their support and the editor Dr. Ambekar. As of now we have to appeal for the article repeatedly and after continuous follow ups we are able to receive them, of course the respected authors are submitting from their busy schedules, I just want to suggest that please send the maximum number of articles you have, so we can have sufficient numbers of articles for future publications. Our MCNS society is taking the shape by regular academic activities and hope this will be a prominent organisation in the field of Neurosurgery soon. Our MCNS 2023 Mumbai Organising Committee has donated to society 30 lacs rupees along with 5 lacs rupees to Bombay Neurosciences Association BNA , these are the highest amount received by Society till now and is the best service to Neurosurgery fraternity by team MCNS 2023, I congratulate them and thank them from the Society. Our Annual Meeting is in Latur and organisers are taking their best efforts to make this event successful, I appeal for the maximum possible support for the scientific sessions. Looking forward you all in Latur, Thank you

Dr. Milind Dunakhe

"From the Editor"

Dr. Sudheer Ambekar
Editor MCNS

From the editor,

I thank all the MCNS members who have made the newsletter a possibility. The current issue includes technical notes from the experts followed by interesting case reports. I again request all the members to continue to contribute to the newsletter. I also request the members to send us your comments about the articles that are being published and feedback on how to improve in the forthcoming issues.

See you all in Latur for the MCNS conference!

Dr. Sudheer Ambekar
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CONTENTS

“We thank Dr. Sachin Borkar, Professor of Neurosurgery, AIIMS, New Delhi for his contribution of the cover photo”

“Congenital Craniosynostosis - A personal Viewpoint. 1991 to Date”

Dr. Uday Andar
Director Neurosciences and clinical services MRR Childrens Hospital
Head, Pediatric Neurosurgery, Wadia Childrens Hospital
Visiting Neurosurgeon – HN Reliance Hospital,
Lilavati Hospital, Bhatia Hospital, SRCC Hospital, Mumbai

The management of Craniosynostosis has evolved over the last so many years just as most other sub-specialties in neurosurgery have. The most significant being, better understanding of the craniofacial skeletal growth and the various driving forces that promote or demote its growth, especially the genetic markers and association of FGFR1, FGFR2, FGFR3 &TWIST etc.

Many would consider Prof. Paul Tessier as the father of modern craniofacial surgery. His single-minded dedication to this specialty and imaginative surgical procedures brought a great change in the way craniofacial surgery is looked upon today.

“Craniofacial Surgery for malformation is a strange and esoteric world. This is not a surgery for the occasional practitioner but for committed specialists.” **- Paul Tessier**

It is strongly recommended that a Craniofacial Unit ideally has the following specialists in the care and management of these children who have serious interest in Craniofacial Disease:- Peds.Neurosurgeon, Plastic Maxillofacial Surgeon, Geneticist, Opthalmologist, ENT surgeon, Peds orthodontist, Peds Anaesthetist, Peds Intensive care Specialist, Psychological Counsellor, Rehab Unit.

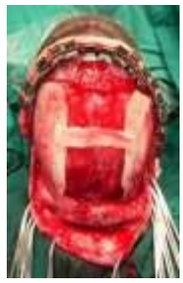
“The earlier the better is a sound maxim for severe craniostenosis but is nonsense for most other craniofacial malformations.” **- Paul Tessier**

Every small, deformed head is not Craniosynostosis. Must recognize it as PRIMARY and not secondary to Immature Brain Growth and Microcephaly.In single suture stenosis – the most rampant is the Sagittal Synostosis, followed by Uni coronal and Uni lambdoid.

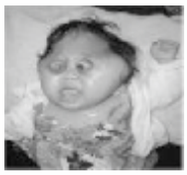
In Sagittal Synostosis the surgery is usually done before 6 months of age, but can be done even later, by modifying the procedure.

Before six months – Endoscopic – sutural cutting and placement of Springs along the cut edges, or Open Modified Remodeling.

Open Modified Remodeling can be done at any age up to 4 years, some even older. Open the Sagittal, both coronals and Lambdoids, make green stick fractures on the temporals base and hold them apart with a middle strut like shown. This corrects the frontal bossing and the posterior keel.

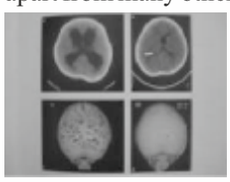


In Syndromic Craniostenosis, there are various associated factors which influence the timing of surgery and type of surgery to be undertaken. Most of these children 75% - 80% have raised ICP and therefore demand early intervention. However, the causes of Raised ICP can be many, apart from early sutural closure, and therefore must be treated as per problem at presentation.

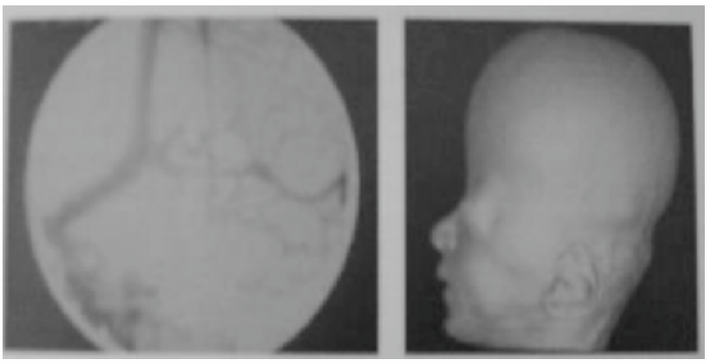


Frontal Advancement is the singular correction which contributes the maximum in giving the final cosmetic outcome to the child and should be done after one is reasonably certain that all raised ICP issues have been suitably addressed, also, at an age which will minimize recurrence. In our experience we normally do it beyond 11-12 months.

If there is Hydrocephalous, please put in a VP Shunt preferably the Programable one, at an appropriate time as clinically indicated. Papilloedema is a good clinical indicator of raised ICP in children apart from many others and we follow this regularly.



If there is a Small Posterior Fossa with Cerebellar tonsillar herniation and Compression and compromise of Transverse Sinus, there can be high Intracranial Venous Pressure, Anomalous Venous Channels with Intra diploeic venous sinus and anomalous veins draining large areas of the cortex via per-osseous emissary veins and their interruption during surgery can lead to uncontrolled Cerebral Oedema. Circle and skirt these venous channels and carefully avoid them during surgery. Preop MRA/MRV or DSA preop may be required in very high suspects.



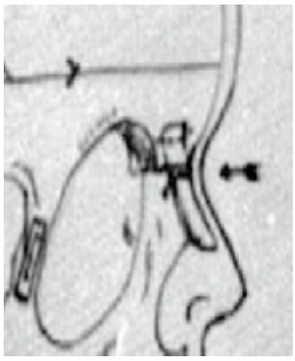
Will benefit with a Posterior Vault Expansion with Foramen Magnum Decompression, when the child is below 11 months. There have been instances when this procedure has also resolved hydrocephalous.

Choanal Atresia and Upper Airway compromise due to Adenoid Tonsillar Infection with consequent CO2 retention and raised ICP. This will need ENT intervention for adenotonsillectomy and placement of airway grommets when the child is below 12 months, sometimes in very severe cases, even tracheostomy may be needed.

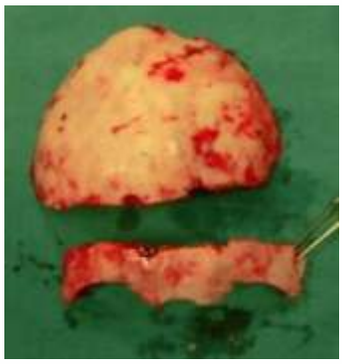
Some of the syndromic children especially Crouzon's can have Optic Canal narrowing and visual compromise and may need Optic canal decompression, done endoscopically. This problem though can present much later in life and can happen even after Frontal Advancement.

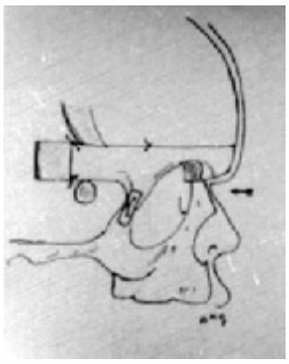
As I have said earlier Frontal Advancement alone is not the answer to all the problems of raised pressure, but the most important one for Cosmetic appearance.

There is a set procedure described for this surgery, the most important being the carving out of the Frontal Bando which also includes the anterior part of the roof of both the orbits.



Frontal Bando with strut (our unit's contribution) gives a nice shape to the nose

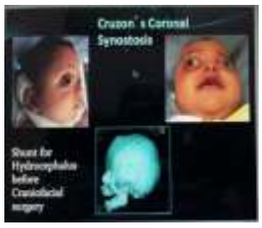




Without strut nasion depression is very noticeable

Finally, surgical correction of syndromic synostosis is a long-drawn process. Can start at 6 months and continue till 18 years to 20 years of age.

VP shunt at 7 months, Frontal Advancement at 15 months, RED Frame Full Face advancement at 18 years



At 7 months
VP Shunt

At 17 years
unhappy with looks

RED frame
applied 4months

FINAL Appearance

In our experience we have many such long-term cases with good results. It's a test of patience for the patient and their families and can be a bit expensive as well.

Chiari formation: Atlantoaxial instability is the cause

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(Bombay Hospital Institute of Medical Sciences, Mumbai.)
Chairman, Academy for Advancing Neurosurgery,
(K.J. Somaiya Medical College and Hospital)

The entity of Chiari formation was described by Hans Chiari in 1891.1,2 Since then the subject has been evaluated elaborately by several authors. However, it may only be correct to state that confusion in the understanding of pathogenesis and nature of anomaly, significance of associated abnormal soft tissue and bone anomalies and more importantly the treatment of the entity has not been resolved. The number of described treatment patterns are a testimony to the inadequacy of the understanding. The general consensus is that uncal herniation and tonsillar herniation are both similar in their pathogenesis wherein a part of the temporal brain or the cerebellum respectively are pushed out of their compartment through a hiatus or hole into the adjoining body compartment. In the process of herniation, there is congestion of space and compromise of the neural structures in the vicinity that leads to neurological symptoms or deficits. The factor that causes the push of the tonsils in case of Chiari malformation is unclear. However, presence of an increased volume of cerebellar mass, smaller volume of the posterior cranial fossa bone compartment or a combination of both these factors have generally been agreed to be the possible cause.

The general understanding is that the addition of the tonsillar volume in the foramen magnum limits the space for the neural structures that are compressed and result in related symptoms. Foramen magnum decompression is an established and a gold standard form of treatment. The operation is aimed at increasing the volume of foramen magnum such that the neural structures can function 'freely'. The technique of performing foramen magnum decompression has wide variations. The need for doing C1 laminectomy, C2 laminectomy, opening the dura, dural grafting, reconstruction of the bone, arachnoid dissection around the tonsils or tonsillar resection is still being debated. In 1998, we hypothesised that posterior cranial fossa is 'tight' in cases with basilar invagination and Chiari malformation. Based on this concept, we hypothesized that only bone decompression should be done and opening of the dura is unnecessary.3 It may only be correct to infer that the last word regarding nature of treatment and the method of its execution is not yet said.

Chiari formation is frequently associated with musculoskeletal abnormalities of basilar invagination or neural abnormalities of syringomyelia.3,4 More often, Chiari formation is not associated with any bone or soft tissue anomaly. It is difficult to comprehend if Chiari formation that is associated with or without these abnormalities are different forms or different faces of the same disease.

In the year 2014, we introduced a concept that Chiari formation is not a primary problem, nor it is related to congenital malformation or embryonic dysgenesis.5,6 It was identified that Chiari formation is a secondary and a natural protective response to atlantoaxial instability. Essentially it means that Chiari formation is a protective natural process and is a result of manifest or potential atlantoaxial instability. Chiari is a formation wherein the tonsils are positioned in the craniovertebral junction as a protective cushion or an airbag designed to prevent compression of critical neural structures from getting pinched or compressed between bones.5 Chiari is a formation and not a malformation.7 It is a result of remarkable ability of the nature to protect the human body in the face of instability of most crucial atlantoaxial joint and from the most dangerous bone odontoid process.

Essentially it means that Chiari malformation indicates the presence of atlantoaxial instability. It also means that atlantoaxial stabilization is the treatment in such cases. (Figures 1,2) It was identified that foramen magnum decompression may be counter-productive surgical procedure. We had earlier suggested that improvement in the clinical condition following foramen magnum decompression is like relief to the person after the full air bag is deflated following a car accident. Although, there is an immediate relief from symptoms, the person loses his airbag, and the whole process is counter effective in the long run. It was also speculated that the pain and stiffness of the suboccipital muscles following foramen magnum decompression may by itself result in stabilization of the neck and the atlantoaxial joint and improvement in the symptoms.

Atlantoaxial joint is the most mobile joint of the body. The flat and round articular surfaces allow unrestricted circumferential movements. Whilst the joint structure allows wide ranged movements it subjects it to an exaggerated risk of instability. For

several decades, analysis of abnormal alteration of atlantodental interval on dynamic radiographs with the head in flexion and in extension was the sole parameter of determining atlantoaxial instability. Indentation of the neural structures by the tip of the odontoid process was another indicator of presence of atlantoaxial instability. Analysis of the facetal alignment on neutral head position and assessment of bones during surgery by manual manipulation is a novel way to evaluate atlantoaxial instability.8 In type 1 instability the facet of atlas is dislocated anterior to the facet of axis. In this type of dislocation, the atlantodental interval is increased and there are evidences of dural and neural compression by the odontoid process. Such a type of atlantoaxial instability is more often associated with acute neurological symptoms and only infrequently are associated with a chronic neurological issue like that of Chiari formation and syringomyelia. Type 2 dislocation is when the facet of atlas is dislocated posterior to the facet of axis. In such a dislocation, the atlantodental interval may not be affected or abnormally altered. Type 3 dislocation is when the facets of atlas and axis are in alignment. In such cases, the diagnosis of atlantoaxial instability is made by a high degree of clinical suspicion. understanding of the subject and operative experience. Type 2 and 3 atlantoaxial dislocations, wherein there is no compression of either the dural tube or the neural structures are labelled as central or axial atlantoaxial instability. Such instability is usually associated with more chronic forms of atlantoaxial instability. In cases with Chiari formation, central or axial instability is a more common finding.9

Chiari formation is frequently associated with a number of musculoskeletal and neural abnormalities. Basilar invagination is a frequent accompaniment. Short head, short neck, short spine, torticollis, Klippel Feil bone abnormalities, platybasia, assimilation of atlas, C2-3 fusion, bifid posterior arch of atlas are hallmarks of basilar invagination. In the year 2009 we speculated that all these bone abnormalities associated with basilar invagination are secondary and protective formations to counter, stall and delay the effects of atlantoaxial instability and from the potential injury to the neural structures by the odontoid process.10 It was identified that atlantoaxial fixation results in postoperative reversal of all musculoskeletal abnormalities. 10 This fact suggests that apart from atlantoaxial instability, there is no other pathological event, and the secondary musculoskeletal and neural abnormalities are protective responses and are not embryonic disorders as has been widely understood and are different faces of manifestation of the common point of genesis. All these secondary events are manifestly or potentially reversible following atlantoaxial fixation.11,12 Pain in the nape of neck, particularly on coughing is a common presenting symptom of Chiari formation. Our observation is that this symptom is related to unstable craniovertebral and the phenomenon of 'pain' and restriction of neck movements are naturally protective. The symptoms are chronic and relentlessly progressive. They are initially mild but are ultimately disabling and eventually 'killing'. Pain in the neck and shoulders, tingling and numbness paraesthesia and weakness in hands, stiffness of legs and gait affection are relatively early symptoms. Voice alteration, breathlessness and sleep apnoea signal a late stage of progression.

Chiari formation and syringomyelia are both neural manifestation of atlantoaxial instability that may be manifest or may only be potential. Such instability is recognised by nature, before it can be radiologically demonstrated or confirmed. The very fact that the symptoms improve in the immediate postoperative period and the recovery process is sustained following atlantoaxial stabilization without any kind of foramen magnum decompression confirms this impression. The recovery from all major symptoms in the immediate postoperative phase following atlantoaxial fixation is clear indicator of instability being the cause of disability. Recovery in voice and breathing pattern gives an immediate relief and a feeling of acquiring a 'new life'. Moreover, there is a potential for tonsillar herniation to regress and syrinx cavity to reduce following atlantoaxial fixation. Improvement in clinical symptoms in patients who have failed foramen magnum decompression is also suggestive of the fact that atlantoaxial instability is the cause and Chiari formation and syringomyelia are a protective natural response. Our consistent and gratifying clinical results over the last 15 years in more than 500 consecutive patients are suggestive of the fact that atlantoaxial instability is the cause and atlantoaxial stabilization is the treatment of Chiari formation.13,14 Foramen magnum decompression in the presence of unstable craniovertebral junction can only have negative clinical implications.

We identified that in cases with Chiari formation there is excessive CSF content within the spinal cord (syringomyelia) or outside the spinal cord (external syringomyelia).15 - 17 Similarly, there excessive or more than normal amount of CSF within the brainstem (syringobulbia) or around the brainstem (external syringobulbia). The posterior cranial fossa is not only not tight but has excessive amount of CSF. The superior vermis is atrophied along with other parts of the cerebellum.18 However, the tonsils by themselves are 'solid' and do not have any sulci or suggestion of excessive water content.

Basilar invagination is commonly associated with short neck and

torticollis. It is also associated with shortening of clivus and platybasia. Both these events make the head 'short'.19 Our studies conclude that there is anteroposterior elongation of the posterior cranial fossa and vertical reduction in its size.15 Similarly, there is anteroposterior enlargement of spinal canal dimension and vertical reduction in the height of entire spinal column, or there is short spine and short body height. The spinal canal size increases, but the neural girth dimensions' decrease. The result is that the extraneural space is occupied by CSF. This CSF may be inside the cord (syringomyelia) and may be outside the cord (external syringomyelia) giving an appearance of atrophy of the cord. The increase in transverse dimension and decrease in vertical dimension of the spine and increase in the water content of the posterior cranial fossa and spinal canal are probably attempts of nature to reduce the entire length of the spinal cord, make it float in an excessive pool of CSF and limit the stretch of the cord on the odontoid process.

The extent of basilar invagination and angulation of the odontoid process are determinant of presence of external or internal syrinx.17 All these manoeuvres are unique natural games designed to stall, limit or delay the neurological deficits related to atlantoaxial instability.

References:

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3. Goel A, Bhatjiwale M, Desai K.Basilar invagination: a study based on 190 surgically treated patients .J Neurosurg. 1998;88(6):962-8

4. Goel A. Treatment of basilar invagination by atlantoaxial joint distraction and direct lateral mass fixation. J Neurosurg Spine 2004;1:281-6

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Figure Legends:

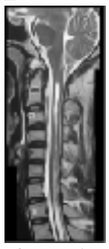


Figure 1a:
T2 weighted sagittal MRI showing Chiari formation and syringomyelia

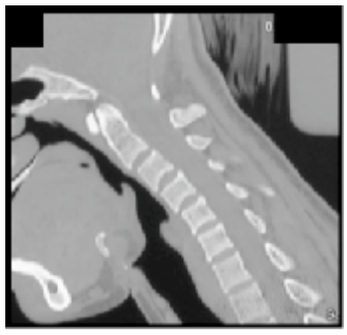


Figure 1b:
Sagittal CT scan showing no evidence of any bone abnormality in the craniovertebral junction.

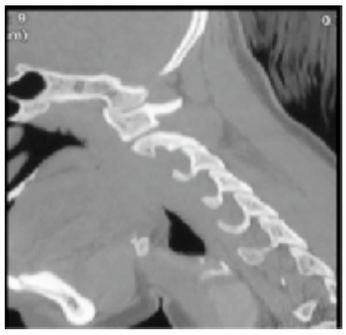


Figure 1c:
Sagittal CT scan with the cuts passing through the facets showing Type 3 facetal instability.

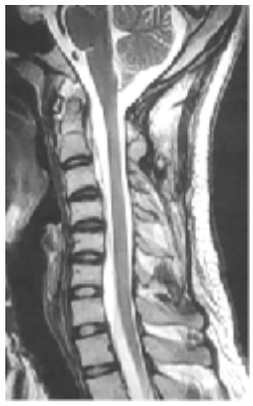


Figure 1d:
Post-operative sagittal MRI showing resolution of the Chiari formation and syringomyelia.

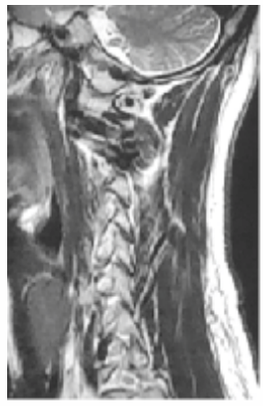


Figure 1e:
Post-operative MRI showing the atlantoaxial fixation.

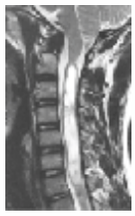


Figure 2a:
T2 weighted sagittal MRI image showing Chiari formation and syringomyelia.

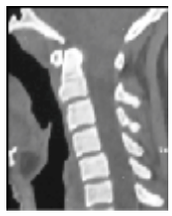


Figure 2b:
Sagittal CT scan showing no evidence of any bone abnormality in the craniovertebral junction.

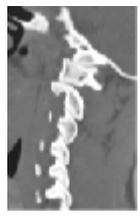


Figure 2c:
Sagittal CT scan with the cuts passing through the facets showing Type 2 facetal instability.

Figure 2d:
Post-operative sagittal MRI showing regression of the Chiari formation and syringomyelia.

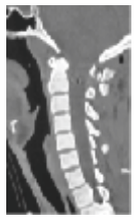


Figure 2e:
Post-operative sagittal CT image showing no bone decompression.

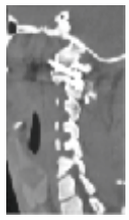


Figure 2f:
Post-operative CT image showing the implants.

Intrafalcine epidermoid - a rare case

Dr. Akshay Hawaldar

Dr. Akshay Hawaldar, Dr. Amol Degaonkar,
Dr. Dattaprasanna B Katikar.
BINIT hospital, Solapur and
Markanday Sahakari Rugnalaya, Solapur

ABSTRACT: -

Intra cranial epidermoid tumors are benign rare developmental tumors that arise due to dysembryogenesis, with usual location at off midline or paramedian area. Their usual location is at cerebellopontine angle followed by paraseller and prepontine region. Other intracranial locations are less common.

We present, a rare case of intra cranial epidermoid in young male patient, which was exactly in midline, situated in between two leaflets of falx cerebelli.

KEY WORDS:- Intracranial epidermoid, falxcerebelli

INTRODUCTION:-

Epidermoid tumors are benign, slow growing congenital extra axial lesions. They comprise 0.2% -1.8% of primary intracranial tumors. [1,2,3] They are most commonly located in cerebellopontine angle, followed by suprasellar cisterns, prepontine area. Other locations include sylvian fissure, brain stem, intraventricular, pineal, intradiploic space of skull, spinal cord [1,2]

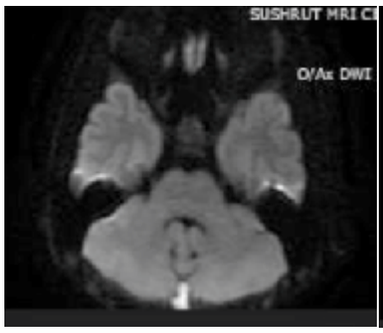
During the time of closure of neural tube, between third and fifth week of fetal life, some epithelial inclusions which have formed, later give rise to epidermoid. [3,4].

Here, authors have reported intracranial epidermoid tumor with its very unusual location within falx cerebelli. We have gone through all case of reports and locations of intracranial epidermoid tumors, and this location has not been reported yet. Because of its unique location, this tumor was amenable for complete resection and hence cure from disease.

CASE REPORT:-

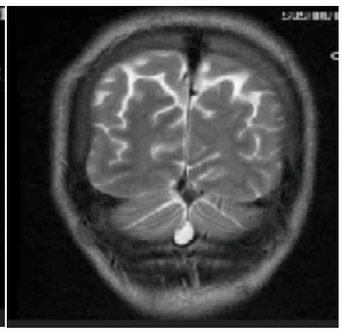
Seventeen years old boy, presented with a few months history of headache and giddiness. There were no signs of raised intracranial tension. MRI brain revealed a lesion in posterior fossa inter hemispheric region, in between two lobes of cerebellum as shown in following figures (Figure –A, B). The lesion was well defined, hypointense of T1 and hyperintense on T2 weighted images with restricted diffusion on diffusion weighted images, suggesting epidermoid.

Figure - A



Axial diffusion image

Figure - B



Coronal T2 image

Patient was operated in prone position under general anesthesia, sub occipital craniectomy was done. After opening dura, surprisingly there was no tumor seen, but the falx cerebelli was seen bulky. When it was opened it revealed epidermoid within it. The tumor was excised along with falx cerebelli totally. Surgery was uneventful. Post operatively patient had occipital headache and neck pain. CSF studies showed feature of clinical meningitis, which subsided over a week's time.

DISCUSSION:-

Epidermoid tumors are developmental slow growing lesions that result from embryonic displacement of ectoderm into the meninges, ventricles or rarely into parenchyma of brain. During the 3rd to 5th week of embryonic life, during the process of formation of neural tube, if surrounding ectoderm does not separate from neural ectoderm completely, nests of these cells may be entrapped along with neural ectoderm. These cell nests later grow within central nervous system, resulting in formation of spectrum of lesions, viz epidermoids, dermoids, dermal sinuses [3, 4].

These lining epidermoid cells desquamate in closed cavity and as keratin, cholesterol and desquamated cells accumulate, the lesion grows and becomes symptomatic either due to mass effect and/or rupture. [1]

Epidermoids are most commonly located at cerebellopontine angle followed by suprasellar cistern, prepontine area. Other sites being the sylvian fissure, brainstem region, pineal region, petrous apex, intra ventricular location. [1, 3, 4]

Radiologically, epidermoids are seen as extra axial lesions, associated in relation with basal cisterns, growing along the CSF

spaces, encasing vessels and nerves. On CT Scan epidermoid appear as hypodense lesion with attenuation similar to or lower than that of CSF. Occasional calcification or saponified fat contents may be seen as hypodensities in about 10-25% of cases. [4]

On T1 weighted images, epidermoid appears hypointense to isointense to grey mater. On T2 weighted images, the lesion is hyper intensive to grey matter and similar to that of CSF.

Diffuse weighted images show restricted diffusion making the lesion hyperintense.

FLAIR images show heterogenous intensity compared to grey matter and hyperintense to CSF.

CISS sequence shows heterogenous with hypointense and hyper intense areas.

These slow growing, epidermoids are known to recure during long term follow up, especially when partially removed. However, as the risk of recurrence is low for small residues it is better to try to achieve total excision safety and if not possible, leave behind small residues which are attached to vital structure [4].

Here we are reporting epidermoid in falx cerebelli, which has not been reported before. In our case, due to its rare and unique location within falx cerebelli, we were able to completely excise epidermoid along with both leaflets of falx cerebelli which assured no recurrence.

CONCLUSION:

The infratentorial interhemispheric midline epidermoids are rare lesions. To the best of our knowledge, ours is probably the first reported case of intra falx cerebellum epidermoid. Due to its unusual location, we were able to completely excise the epidermoid along with falx cerebellum, ensuring no recurrence.

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Langerhans cell histiocytosis

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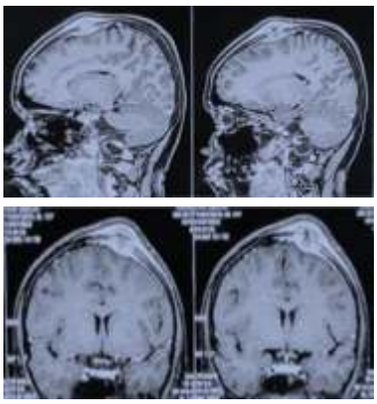
Clinical history: A 12 year old boy presented with blunt trauma.

MRI:

- T1 isointense, T2 hyperintense heterogeneously enhancing biconvex lesion of size 25x19x27 in left anterior parietal bone in paramedian location just posterior to coronal suture.
- Subtle peripheral restricted diffusion noted.
- The lesion is displacing dura and abutting left frontal lobe without contiguous involvement or significant vasogenic edema.



Intraoperative images:

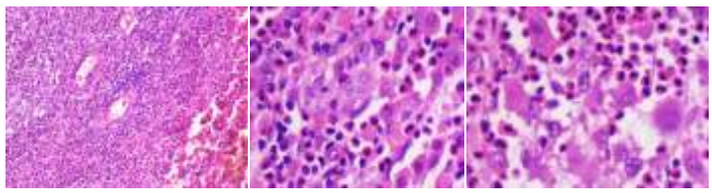
Gross examination:

Received multiple, irregular, grey-white, firm, tissue pieces aggregating to 4x3x0.8 cm. Cut-section reveals grey-white areas. Semicircular bone piece measuring 4x1x1 cm. (Decalcification)

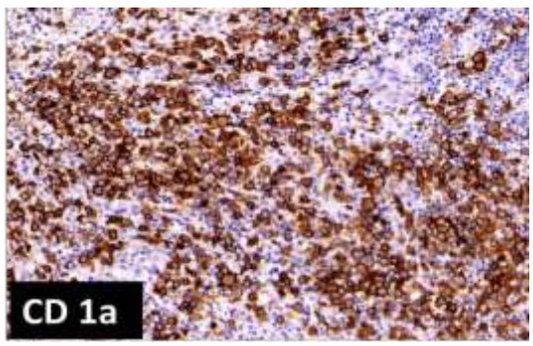
Histopathology:

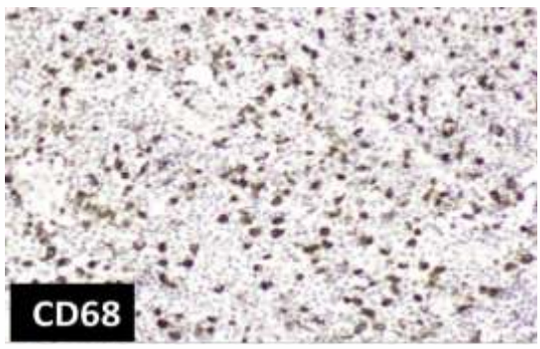
- Fibrocollagenous tissue showing infiltration by oval to elongated cells having reniform or cleaved nuclei with abundant, pale eosinophilic cytoplasm.
- Some cells have irregular & elongated nuclei with prominent nuclear grooves & folds, fine chromatin & indistinct nucleoli. Occasional multinucleated cell are noted.
- The fibrocollagenous tissue shows abundant aggregate of eosinophils with perivascular concentration of eosinophils, lymphocytes & plasma cells is noted.
- Areas of hemorrhages +.
- Infiltration into bony trabeculae+

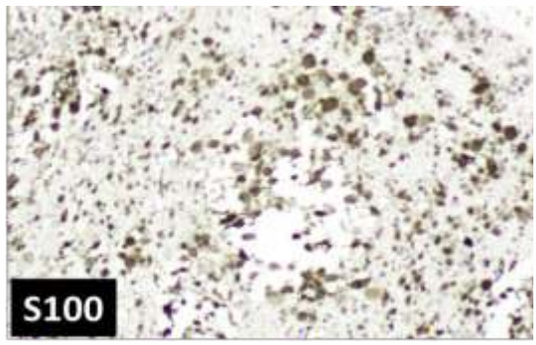
Microphotographs:



Immunohistochemistry reveals –
CD1A, CD68, S100 - positive.
Ki-67 proliferation index (MIB1) is 15-18%.







Diagnosis:

Langerhans cell histiocytosis - Left parietal paramedian posterior cranial bony lesion.

Langerhans cell histiocytosis

Definition:

Langerhans cell histiocytosis of the CNS or the meninges is a clonal proliferation of Langerhans-type cells manifesting in the CNS or the meninges, with or without systemic lesions, which pathologically corresponds to its counterparts occurring elsewhere.

Epidemiology:

Common in childhood. (age<15 years), M : F = 1:2

Localization:

Most common CNS involvement cranio-facial bone and skull base (56%), with or without soft tissue extension. Intracranial, extra-axial masses are also common, particularly in the hypothalamic-pituitary region, meninges (30%), and choroid plexus (6%). A leukoencephalopathy-like pattern, with or without dentate nucleus or basal ganglia neurodegeneration (36%).

Clinical features:

Patients with circumscribed tumour lesions experience acute or subacute, nonspecific and/or location-dependent neurological symptoms. Patients with neurodegenerative-like lesions present with a chronic and slowly progressing neurological pattern combining cerebellar syndrome, pyramidal tract signs, pseudobulbar palsy, and/or neuropsychiatric symptoms.

MRI:

- Tumour-like lesions are characterized by one or multiple masses.
- T1WI images – hypointense
- T2WI- hyperintense
- Gadolinium infusion – contrast enhancement.

Diagnostic molecular pathology:

- BRAF p.V600E in 50 % cases. (IHC)
- MAP2K1 mutations in 25%. (phosphorylated ERK – on IHC)
- NRAS, KRAS, and PIK3CA mutations have been reported in single cases.

Prognosis and prediction:

- Tumour-like lesions are sensitive to conventional anti-tumour treatments including vinblastine or cladribine and, in cases with an actionable target, to molecular targeted therapies (i.e. MAPK signalling pathway inhibitors), allowing a high tumour response rate and a favourable prognosis.
- In contrast, neuro degenerative lesions are resistant or poorly sensitive to multiple therapeutic strategies, including radiotherapy, differentiating agents, immunosuppressive drugs, cytotoxic chemotherapies, and molecular targeted drugs.
- Neurological symptoms tend to worsen slowly over decades.

“History of Department of Neurosurgery at SSH and GMC, Nagpur”

DR PRAMOD J. GIRI

Department of Neurosurgery, SSH & GMC , Nagpur

Current HOD: Prof. Dr. Pramod J. Giri

History:

The Dept. Of Neurosurgery, SSH & GMC, Nagpur was established in 1997 almost 50 years after the college started. The founding Head of Department was Prof. Anil M. Bhole. He was a General Surgeon (M.S Gen Surg) and was handed the charge of HOD post of Neurosurgery due to his specific enthusiasm for Neurosurgical procedures..He worked wth Dr Bhattacharya at Srichitra Institute Trivendram His team included Dr. Hemant Deshpande and Dr. Shyam Babhulkar as Consultants. Dr. Deshpande and Dr. Babhulkar were qualified Neurosurgeons (M.Ch NS) and they started the basic Neurosurgical procedures in the Department for the first time. This was the first Department of Neurosurgery in a State Government Hopsital in Vidarbha region. In June 2000, Dr. Sameer Paltewar (M.Ch Neurosurgery) joined the department and served as Assitant Proff till May 2002. He has started doing all the Neurosurgical procedures and was later joined by Dr. Chandrashekhar Pakhmode (M.Ch Neurosurgery) .This duo has lifted the status of the department to some extent as A Specialized Neurosurgical Centre..Dr Pakhmode has joined in 2001 as a Lecturer and served as an HOD from 2002 till 2006. Dr. Ajay Kurve (M.Ch Neurosurgery) joined in 2005 and served as a succeeding HOD till 2007. Dr. Pavitra Patnaik (M.Ch Neurosurgery) joined the department in July 2006 as an Assitant Professor. He became the HOD in 2007 after Dr. Kurve and continued to lead the dept till 2010. Till this time the department was ruinning like a Unit and formal facilitation for the namesake . Dr. Pramod Giri (M.Ch Neurosurgery) joined the department in 2007 January as a Medical officer and later he cleared the MPSC exam to become Asst Prof and HOD in 2010. Dr. Under Dr. Giri's leadership and tutelage, the department has progressed from being a locally popular to a National level Neurosurgical facility.All the Ots become Modular, the Neurosurgical Armamentarium was made available and the Post op management was improved with well equipped Recovery with 24 hrs Resident Doctor.The Trauma Buiding was became the addition in 2016 to facilitate the management of Head injury patients.The first organ Donation of GMC also happened in this Operation theatre only. The first awake craniotomy in Govt setup in Nagpur was done by Dr. Giri in 2017 marking the beginning of modern neurosurgical era in Vidarbha Region..There are lot many examples of First for the Department and especially the addition of Human Tail Case in BBC highlighted the department a lot. The current department comprises of Prof. Dr. Pramod J. Giri (H.O.D),Dr. Pavitra Patnaik (Asso. Prof), Dr. Sanjog Gajbhiye (Asst. Prof), Dr. Sunil Gajbare (Asst. Prof) and post M.Ch Senior Residents (as per availability of posts). Dr. Pramod Giri is also credited with training around 40 senior residents (Post M.Ch) under his guidance till now. These senior residents are now successful neurosurgeons in their specific regions in academic as well as corporate setups.

Academic and other Achievements:

The Dept of Neurosurgery, SSH & GMC, Nagpur has conducted many national level conferences and workshops. The INDSPN conference (Indian society of Paediatric Neurosurgery) was organized by this Department in 2001. The NSICON was conducted in 2017. A live operative workshop on craniovertebral junction anomalies was successfully organized in 2018 with National level faculties visiting the department. Dr. Pramod J. Giri was nominated on the Board of Education from Central Zone in the Neurological Society of India (NSI) in 2022. Since then under Dr. Giri's leadership, the dept has conducted 2 National workshops namely Microvascular Anastomosis workshop in 2022 and Cadaveric Cervical and Lumbar (Minimal Invasive spine) Workshop in 2023. The Dept also conducted a National level Foundational and Observational Course under NSI which was guided by around 40 eminent Stalwart Neurousrugeons, many of them are the HODs of National Institutes and around 60 M.Ch pursuing neurosurgeon trainees from all over India.

“History of Department of Neurosurgery at SSH and GMC, Nagpur”

Clinical Work:

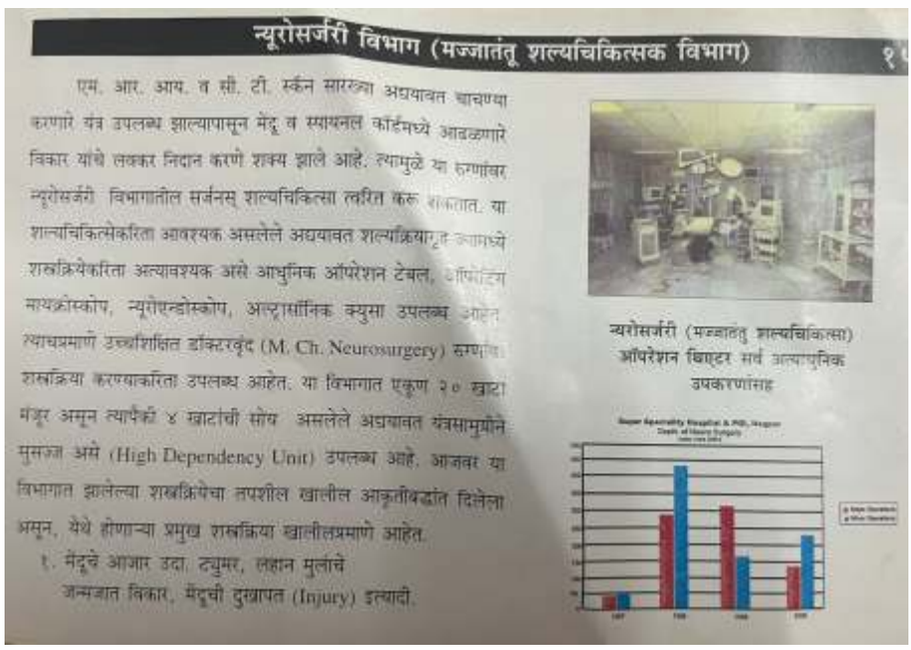
Currently there are 42 beds in Neurosurgery ward, 3 beds in Neurosurgery ICU. The Dept operates around 750 – 800 elective cases in Neurousurgery annually and around 400-450 cases in Neurotrauma OT annually and the figure compares to any National Insitute. During Covid 19 Pandemic the Assistant professors and Senior residents worked as Covid Team leaders as well as managed the routine and trauma Neurosurgery cases. There are around 700-800 admissions in elective Neurosurgery cases and 600-650 admissions in Neurotrauma. The Neurotrauma Dept in TCC and Neurosurgery Dept in SSH, GMC, Nagpur functions together as one single department facilitating exposure of all cases to all the Faculty. Dr. Pramod Giri has presented the papers in National(NSICON) as well as International Conferences (British Neurological Society). The department is providing entire spectrum of basic and advanced Neurosurgeries to the patients. (Microvascular Aneurysm clipping, Skull Base tumours microscopic and Neuroendoscopic procedures, Awake Craniotomies, Minimal Invasive spine procedures, Open Spinal instrumentations, Paediatric Neursurgery procedures, emergency decompressive craniectomies, etc)

Neuroanesthesia Team:

Currently the Anesthesia team is headed by Prof. Dr. Fatima Lulu Valli. The rest of the team comprises of Dr. Pankaj Bhople (Asso. Prof), Dr. Shilpa Jaiswal (D.M Neuroanesthesia) and Senior and junior residents on rotational basis.

AIM:

The major step towards the Development of any Institutional Department is having PostGradute Training Facility and the Inspection For 4 Seats of MCh Neurosurgery by NMC is happened this Year 2023 . The result is expected soon and it will become the first to have 4 MCh seats in Maharashtra.


न्यूरोसर्जरी विभाग (मज्जातंतू शल्यचिकित्सक विभाग)

एम. आर. आय. व सी. टी. स्कॅन सारख्या अद्ययावत चाचण्या करणारे यंत्र उपलब्ध झाल्यापासून मेंदू व स्पायनल कॉर्डमध्ये आढळणारे विकार यांचे लवकर निदान करणे शक्य झाले आहे. त्यामुळे या रुग्णांवर न्यूरोसर्जरी विभागातील सर्जनस् शल्यचिकित्सा त्वरित करू शकतात. या शल्यचिकित्सेकरिता आवश्यक असलेले अद्ययावत शल्यक्रियागृह त्यामध्ये शस्त्रक्रियेकरिता अत्यावश्यक असे आधुनिक ऑपरेशन टेबल, ऑपरेटिंग मायक्रोस्कोप, न्यूरोएन्डोस्कोप, अल्ट्रासॉनिक क्युसा उपलब्ध आहेत. त्याचप्रमाणे उच्चशिक्षित डॉक्टरवृंद (M. Ch. Neurosurgery) रुग्णांवर शस्त्रक्रिया करण्याकरिता उपलब्ध आहेत. या विभागात एकूण २० खाटा मंजूर असून त्यापैकी ४ खाटांची सोय असलेले अद्ययावत यंत्रसामुग्रीने सुसज्ज असे (High Dependency Unit) उपलब्ध आहे. आजवर या विभागात झालेल्या शस्त्रक्रियेचा तपशील खालील आकृतीबंधात दिलेला असून, येथे होणाऱ्या प्रमुख शस्त्रक्रिया खालीलप्रमाणे आहेत.

१. मेंदूचे आजार उदा. ट्युमर, लहान मुलांचे जन्मजात विकार, मेंदूची दुखापत (Injury) इत्यादी.

न्यूरोसर्जरी (मज्जातंतु शल्यचिकित्सा) ऑपरेशन थिएटर सर्व अत्याधुनिक उपकरणांसह

Intraoperative neuromonitoring in cerebellopontine angle mass excision in a pregnant patient - a case report

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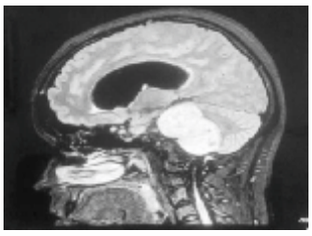
Dr. Raghavendra Ramdasi, Consultant, Department of Neurosurgery, Jaslok Hospital and Research Centre, Mumbai.

Intraoperative neurophysiological monitoring (IONM) is essential for monitoring the integrity of neural pathways, as well as in detection of new onset neurodeficits. However, not much is known about the efficacy and safety of neurophysiological monitoring in pregnant patients. We present a case report of a 28 year old female with 20 weeks of gestation. She came with chief complaints of blurring of vision in right eye progressively involving the left eye. It was associated with loss of hearing in the left ear with difficulty in walking. On MRI brain there was a well-defined extracranial lesion of size 4.2*3.5*3.8 cm in the right cerebellopontine(CP)angle involving the lower cranial nerve, extending in the jugular foramen superiorly extending up to the parapontine cistern and inferiorly upto the foramen Magnum causing mass effect on the fourth ventricle. The fourth ventricle was compressed with mild dilatation of the lateral ventricle with mild periventricular ooze.



MANAGEMENT

The patient was scheduled for retromastoid craniotomy with excision of tumour under general anaesthesia with intraoperative neurophysiological monitoring. A multidisciplinary team approach involving the neuroanesthesiology, neurosurgeons, neurophysiologists and obstetrician was adopted in the perioperative management of the patient. The patient received intramuscular administration of Injection Hydroxyprogestrone was given to avoid preterm labour. The patient was induced with Injection Propofol (2mg/kg) and Injection Fentanyl (2 mcg/kg) intravenously. Tracheal intubation was facilitated with Injection Rocuronium (0.6mcg/kg) using rapid sequence intubation with CMac videolaryngoscope. Scapl block was given post induction. The patient was then placed in left lateral position. Maintenance of anaesthesia was done by Injection Fentanyl infusion (1 mcg/kg/hr),Injection Propofol infusion (2 mcg/kg/hr) ,TCI Schneider model 2mcg/ml and Injection Ketamine infusion(0.5mg/kg/hr).We avoided the use of transcranial motor evoked potentials in (TcMEPs) in intraoperative neurophysiological monitoring to avoid the risk of preterm labor as it was a precious pregnancy with pre-viable fetus. Instead, somatosensory evoked potentials (SSEPs) and facial electromyography (EMGs) were monitored. Brainstem auditory evoked potentials (BAEP) were also not used as the patient had sensorineural hearing loss (SNHL) Continuous fetal heart rate monitoring was achieved using the ECHO probe placed in the left umbilical fossa. Cardiotocograhy was carried out for monitoring both fetal heart rate and uterine contractions. Right external ventricular drain was placed prior to the excision of the tumor. Patient was extubated at the end of the procedure with no new onset of sensory or motor deficits. Injection Duvadilan infusion was started in the immediate postoperative period.

DISCUSSION.

It is important to choose an anesthetic equipment that does not interfere with IONM, and is safe in both the mother and fetus. It is recommended to avoid bolus doses of the intravenous agents as they can cause maternal hypotension and impair uteroplacental perfusion. TcMEPs can be used in IONM in case of viable fetus. However, there is not much data available about the safety of TcMEPs in case of pre-viable fetus. SSEPs are safe to be used during pregnancy as there is only localised stimulation of the peripheral nerves. Intraoperative electronic fetal monitoring is recommended in a viable fetus. In presence of pre-viable fetus (<24-28 weeks),it is sufficient to ascertain fetal heart rate monitoring using Doppler pre and post the procedure.

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Rewire your brain: understand basics of money management.

Mrs. Labdhi Mehta

Some years ago I had the privilege of interacting with a bunch of young doctors when one of them proudly told me that he has no insurance and does not see the need for it. Another one mentioned that he was collecting money in his bank account to buy a house someday. These conversations made me wonder why some the most brilliant minds don't think about money and how it can work for them. **Let's change that today and talk about the basic building blocks of personal finance and how they can help you build financial stability.**

We start with discussing about income. As surgeons your income starts much later as compared to most other professionals, however, on the upside it does not have to stop at 60 years. This income is used to meet the regular household d expenses like utility bills, grocery bills, transportation expenses, school fees, going out for movie or dinner, annual holiday etc. But the key is to consistently save some amount of income every month for meeting those expenses which are big ticket and cannot be met with regular income like buying a car, putting a down payment on a house or a clinic, paying for children's higher education, etc. You can decide either to set aside a fixed amount per month or a fixed percentage of the income for the future. 20% of Income is a good benchmark for savings every month. **Remember, Income is what you earn but Wealth can be built from what you Save!**

Next we need to understand that just saving that amount every month is not enough as inflation will erode the value of money over time. (Inflation is the general increase of price and it is what makes people say “humare zamane mein bus ki ticket toh ek rupaiye ki thi”.) So keeping money in your banks savings account or in the form of cash at home is actually harmful for your financial health. Just think that you have a medical drug at home which can treat a medical condition, but you leave it in the drawer and not use it. One, it will not help you get better and two it will expire with time. Similarly, if you have Rs. 1 lakh lying in your cupboard today and the general inflation rate is 5%, in just 5 years the value of that Rs. 1 lakh will drop to Rs. 80,000. **The only way to safeguard from inflation is by investing.**

Investing is buying any asset (thing of value) with the objective of generating returns. When it comes to investing, there are so many options available in the market, just like how there are so many different doctors out there. So how does one decide? When one has a fracture of the leg, he needs an orthopedic surgeon, a cardiovascular surgeon is no good even though he is very skilled. Just like doctors come with different training, skill sets and specialty, assets too, come with different combinations of return, risk, liquidity and holding period. Ask yourself the following questions to be able to select the most suitable asset. What are you investing for? How long do you want to invest for? How much risk can you take and do you want to take? How quickly will you need your money?

The choice of investment should be based on its ability to generate income which is in line with your financial goals.

	Type of Return	**Return+ Potential**	**Risk**	**Liquidity***	**Recommended Holding Period**
Bank Fixed Deposits	Regular Interest	Low	Low	High	Dependent on Tenure of FD
Corporate Deposits or Bonds or Debt Mutual Funds	Regular Interest	Low to Medium	Low to Medium	Low	Dependent on Tenure of Bond
Gold	Appreciation	Medium	Medium	High	Cyclical
Real Estate	Regular Rent and Appreciation	Medium to High	Medium	Low	Long
Equity Shares or Equity Mutual Funds	Dividend and Appreciation	High	High	High	Medium to Long

+Return Potential is how much your money can grow with this investment.
*Liquidity is how fast you can convert the asset to cash when needed

For short term goals, Fixed Deposits and Bonds and Debt Mutual Funds are great options as their value will not fluctuate too much and it will generate predictable returns but for all your long-term goals investment in Equity is critical. This is because equity has the potential to generate positive inflation adjusted returns over the long term. **Equity in the short term can be Risky, but avoiding equity can be risky in the long term.**

When it comes to selecting the equity shares or mutual funds or any other financial product, it is recommended that you don't go with "tips". What to buy, when to buy, at what price to buy, when to exit requires knowledge of the economy, industries, companies, and market sentiments. So one option is to study and keep updated or the other option is use an Expert. Mutual Funds are experts at managing portfolios of stocks and bonds and Registered Financial Advisors can help you build your plan and select the right product. **So "No google diagnosis and treatment" mantra for investments too.**

And lastly you know that your skill and training makes you, your biggest asset. You are going to be generating income for you and your family over your working life which is for say about 35 years. So naturally, the first and foremost is the need to protect yourself. Financially, this is not difficult to do this. All you have to do it ensure that you have adequate Professional Indemnity Insurance, Health and Life Insurance. This will be your security and once you have this in place you will be able to work without a worry.

A few things to note while buying Insurance:

1. For Professional Indemnity choose the cover based on the type of your practice and coverage limits required. Preferable to get your own even if the hospital covers you.

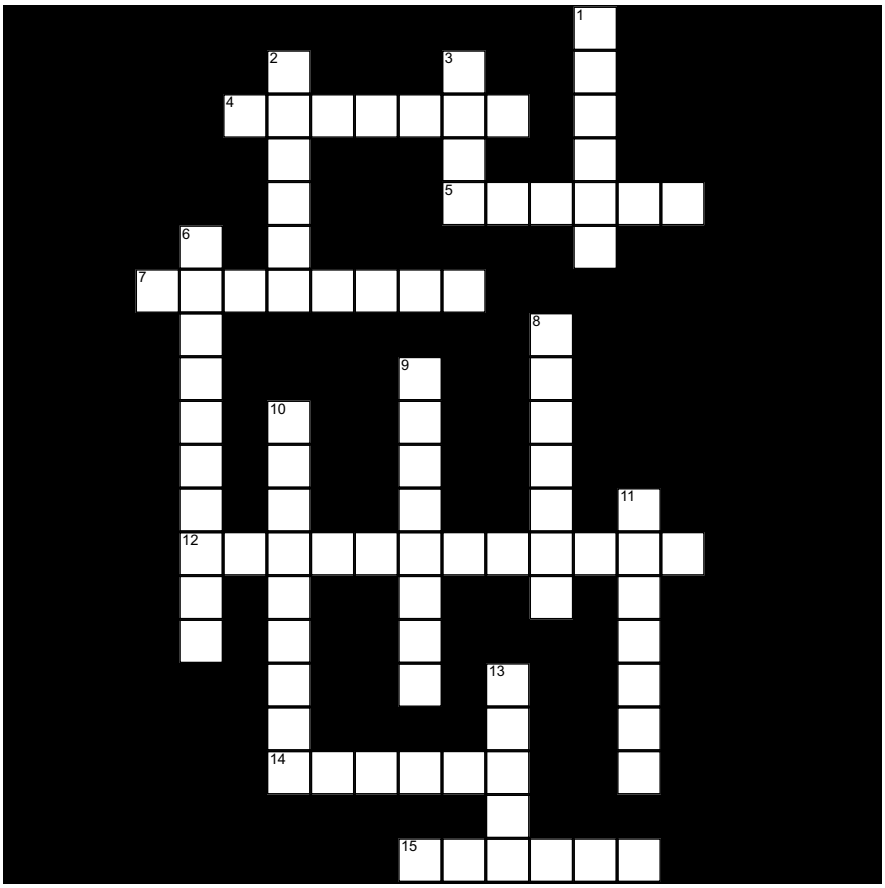
2. For health insurance pick a policy for the whole family and pick the one that suits your requirement the most based on the Terms & Conditions

3. For life Insurance get a basic term plan with a sum assured which is about 10-15 times your annual income and to ensure adequate coverage over your peak earning years keep adding to the sum assured every 5 years based on increased income.

4. Remember, the premium amount is dependent on age and health – so the younger you start the less you pay for the same coverage.

You all are highly qualified people who earn well, have money to invest and want do so securely and optimally. Take charge! You have the Potential to be Great Investors.

Labdhi Mehta is an engineer and holds a master's degree in management. She has worked in products and wealth management areas in HDFC Bank and Merrill Lynch. She is currently associated with CIEL in the content development role.



Across

4. PERIVASCULAR SPACES

5. FOUNDED THE DEPARTMENT OF NEUROSURGERY AT AIIMS, NEW DELHI

7. HE WAS HONOURED AS 'THE MAN OF THE CENTURY 1950-2000' BY THE JOURNAL OF NEUROSURGERY

12. SURGICAL PROCEDURE IN WHICH A HOLE IS CREATED IN THE SKULL BY REMOVAL OF A CIRCULAR PIECE OF BONE

14. HE STARTED THE DEPARTMENT OF NEUROSURGERY AT KEM HOSPITAL IN 1957

15. DESCRIBED EXCISION OF GASSERIAN GANGLION TO RELIEVE TRIGEMINAL NEURALGIA

Down

1. STARTED THE DEPARTMENT OF NEUROLOGY AND NEUROSURGERY AT CMC VELLORE

2. PHYSICIAN TO LORD BUDDHA WHO PERFORMED TREPHINATION AND REMOVAL OF INTRACRANIAL MASS

3. TUBERCULOSIS OF SPINE

6. FATHER OF NEUROSURGERY IN INDIA

8. FATHER OF INDIAN SURGERY

9. AMERICAN-CANADIAN NEUROSURGEON WHO CONTRIBUTED TO MAPPING OF CORTICAL HOMUNCULUS

10. THE NEUROLOGICAL SOCIETY OF INDIA WAS INAGURATED IN THIS CITY IN 1951

11. FIRST SURGEON TO USE INTRAOPERATIVE ELECTRICAL STIMULATION OF CORTEX FOR LOCALIZATION OF EPILEPTIC FOCI

13. INDIAN NEUROSURGEON WHO DESCRIBED SUBTHALAMIC NUCLEUS LESIONING FOR PARKINSON'S DISEASE

Answers

1.CHANDY
2. JIVIKA
3. POTT
4. VIRCHOW
5. TANDON
6. RAMAMURTHI
7. YASARGIL
8. SUSRUTA
9. PENFIELD
10. HYDERABAD
11. HORSLEY
12. TREPHINATION
13. VARMA
14. DASTUR
15. KRAUSE

Upcoming Conferences

Neurosurgery Cadaveric Workshop and 16th Prof. DR Gulati Oration	23rd - 24th Nov, 2023	Gamma Knife Centre, PGIMER Chandigarh	Email: neurosurgerypgi@gmail.com drmanjultripathi@gmail.com Phone: +91-172-2756699
NSICON 2023	13th - 17th December 2023	Mayfair Convention Centre and Lagoon, Bhubaneshwar, Orissa	Prof. M M Dhir Website: https://nsicon2023.org
Annual conference of Indian Society of Peripheral Nerve Surgery (ISPNSCON)	12th - 14th January 2024	All India Institute of Medical Sciences, Raipur	Dr. Anil Kumar Sharma, Email: dr.anilsharma02@gmail.com; ispnscon2024@gmail.com Website: www.ispnscon2024raipur.com Mob.: 9902629505
14th Maharashtra Chapter of Neurological Surgeons (MCNS) conference	23rd - 25th February, 2024	Hotel Grand Sarovar, Latur Maharashtra	Conference Secretariat: Dr. Hanumant Kinikar SAHYADRI ACCIDENT & NEURO CARE CENTRE PVT.LTD. Beside Bandhkam Bhawan, Rajiv Gandhi Chowk, Ausa Road, Latur. Ph. 02382-200666, Mob.: 7709145698 Email: hkkinikar@gmail.com
Jaipur ICRAN 2024 Recent Advances in Neurotraumatology	29th Feb - 3rd Mar, 2024	Hotel Clarks Amer Jaipur	Prof. V D Sinha Organising President Mob. No.: + 91-9829052320 53, Mozi Colony, Pradhan Marg, Malviya Nagar, Jaipur, Rajasthan 302017 E-mail: icranjaipur2024@gmail.com Website: www.icran2024.com
NESICON 2024	28th - 31st March 2024	Hotel Taj Land's End, Bandra, Mumbai	Dr. Jayesh Sardhana Email: Nesicon2024@gmail.com Mob.: 9696472794
5th NoALCON (Noble Art of Lesioning)	17th - 19th May 2024	NIMHANS Convention Centre, Bengaluru	Dr. Sharan Srinivas WWW.NOBLEARTOFLESIONING.COM
12th AIIMS Annual Spine Workshop 2024 (Pre conf. Cadaver workshop)	28th - 31st August 2024	Department of Neurosurgery, AIIMS, New Delhi.	Dr Deepak Agrawal Email: drdeepak@gmail.com Dr Dattaraj Sawarkar Email: dattaraja@gmail.com Conf Mail: info@spinecon.in Website - www.spinecon.in
NSSA Spine 2024	19th - 22nd September 2024	Hyderabad	Dr Savitr Sastri Email: savitr@gmail.com Mob.: +91 9618325364