

History of Neurosurgery Neurosurgical Giants and Indian Neurosurgery

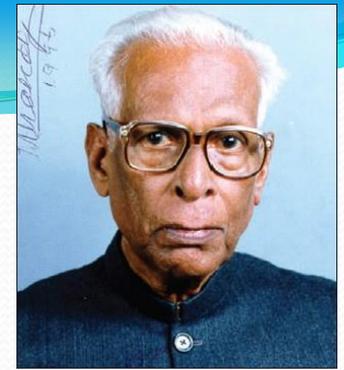
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New Delhi



Harvey Williams Cushing

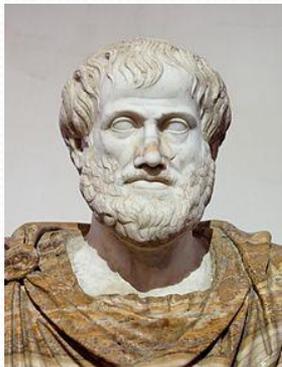
Background

Dr.(Prof.) Jacob Chandy

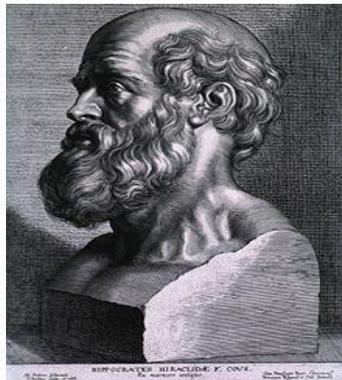


“Only the man who knows exactly the art and science of the past and present is competent to aid in its progress in the future”

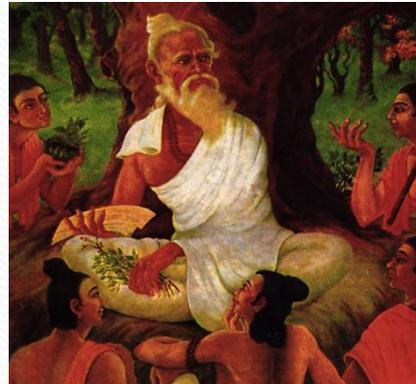
(Christian Albert Theodor Billroth)



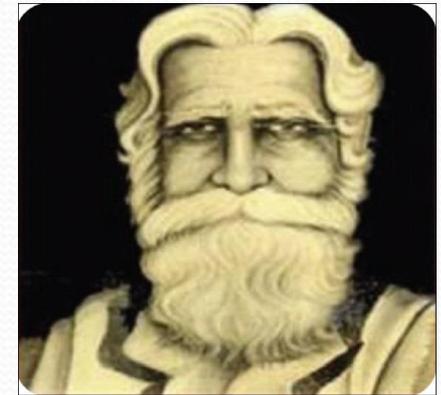
Aristotle



Hippocrates

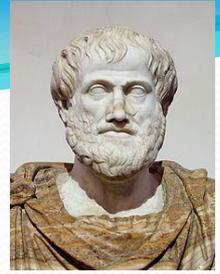


Jivaka



Sushruta

Brain(Introduction)



- The brain was not always held in high regard.
- The **Greek philosopher, Aristotle**, thought the heart, not the brain, was the location of intelligence and thought.
- The ancient Egyptians also did not think much of the brain.
- In fact, when creating a mummy, the Egyptians scooped out the brain through the nostrils and threw it away.
- However, the heart and other internal organs were removed carefully and preserved.
- These organs were then placed back into the body or into jars that were set next to the body.



Brain

- Nevertheless, the ancient Egyptians are responsible for the oldest written record using the word "brain" and have provided the first written accounts of the anatomy of the brain, the "Meninges" (coverings of the brain) and cerebrospinal fluid.
- The word "brain" appears on an ancient paper-like document (a "papyrus") called the Edwin Smith Surgical Papyrus.
- This document was written around the year 1700 BC, but is based on texts that go back to about 3000 BC.
- This document is considered to be the first medical document in the history of mankind.
- It is possible that the papyrus was written by the great Egyptian physician named Imhotep.

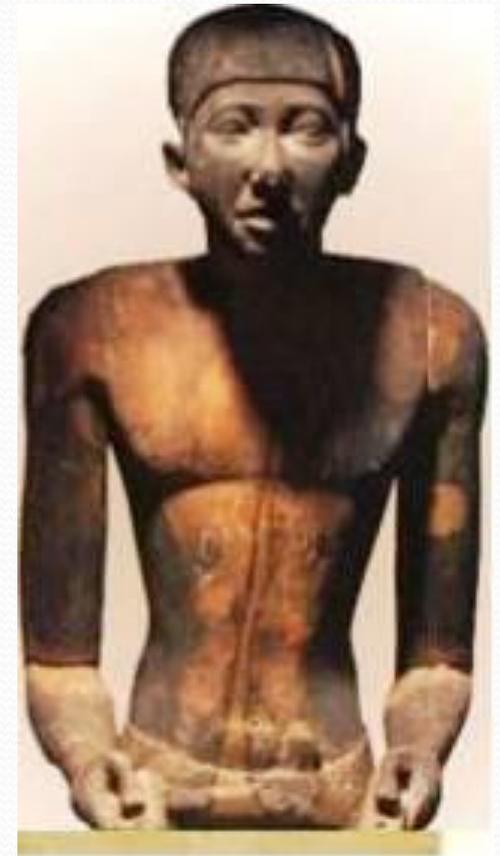
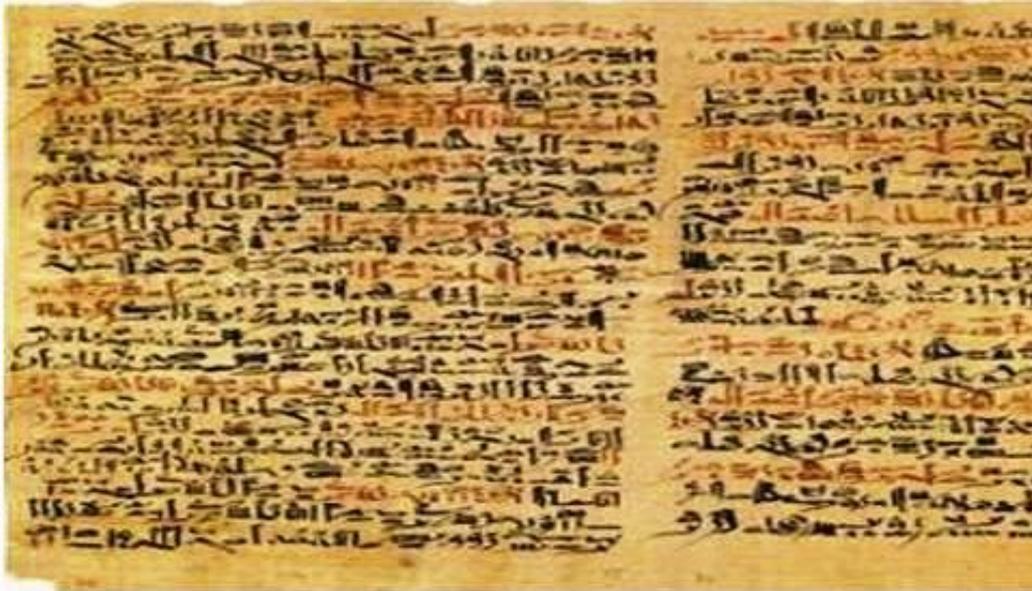
Bronze statue of Imhotep



The start was here

In Egypt

- The Egyptian Imhotep (2667-2648) is the first physician in history.
- To him, Edwin Smith Papyrus, the oldest paper was attributed.
- It is the 1ST Surgical textbook that differentiate between medicine and magic.
- He is considered the father of medicine.
- Besides, He was an architect and a priest.



THE UNIVERSITY OF CHICAGO
ORIENTAL INSTITUTE PUBLICATIONS
VOLUME IV

THE EDWIN SMITH SURGICAL POPYRUS

PUBLISHED IN FACSIMILE AND HIEROGLYPHIC TRANSLITERATION WITH TRANSLATION AND COMMENTARY
IN TWO VOLUMES

BY
JAMES HENRY BREASTED

VOLUME TWO
FACSIMILE PLATES AND
LINE FOR LINE HIEROGLYPHIC
TRANSLITERATION

THE UNIVERSITY OF CHICAGO PRESS
CHICAGO, ILLINOIS



Case 4. A head wound with damage to the plates of the skull (2,2 - 11)

Title

Practices for a gaping wound in his head, which has penetrated to the bone and split his skull.

Examination and Prognosis

If you treat a man for a gaping wound in his head, which has penetrated to the bone and split his skull, you have to probe his wound. Should you find something there uneven under your fingers, should he be very much in pain at it, and should the swelling that is on it be high, while he bleeds from his nostrils and his ears, suffers stiffness in his neck, and is unable to look at his arms and his chest, then you say about him: "One who has a gaping wound in his head, which has penetrated to the bone and split his skull, while he bleeds from his nostrils and his ears and suffers stiffness in his neck: an ailment I will fight with."

Treatment

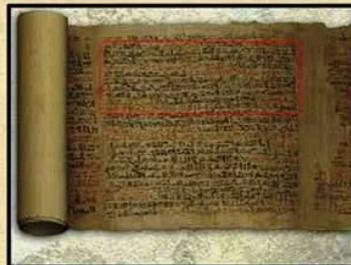
Since you find that man with his skull split, you should not bandage him. He is to be put down on his bed until the time of his injury passes. Sitting is his treatment, with two supports of brick made for him, until you learn that he arrives at a turning point. You have to put oil on his head and soften his neck and shoulders with it. You should do likewise for any man you find with his skull split.

Explanations

As for "which has split his skull," it is the pushing away of one plate of his skull from another, while the pieces stay in the flesh of his head and do not fall down.

As for "the swelling on it is high," it means that the bloating that is on that split is great and lifted upward.

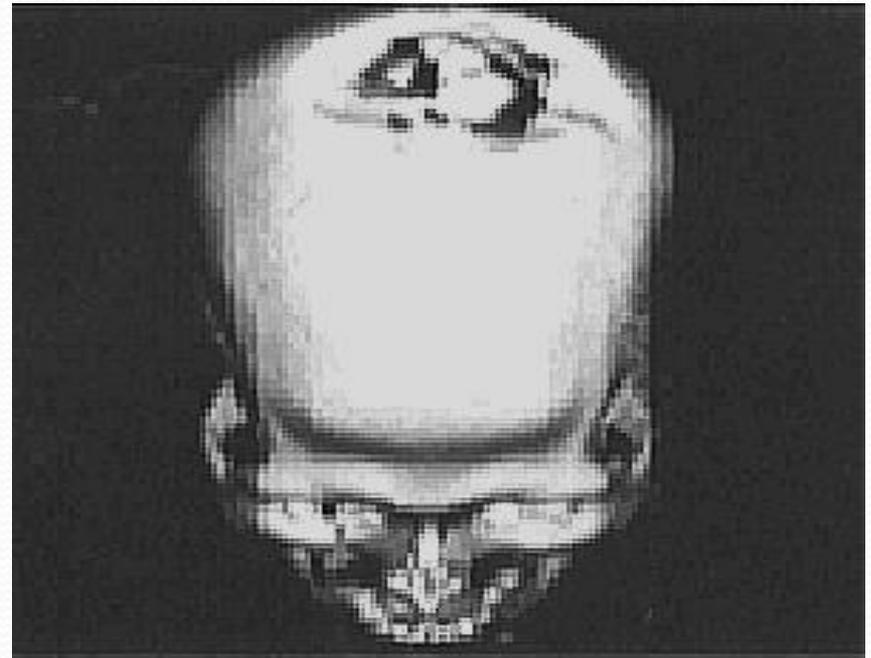
As for "you learn that he arrives at a turning point," it is to say you learn that he will die or until he has revived, since it is "an ailment I will fight with."



Neurosurgery

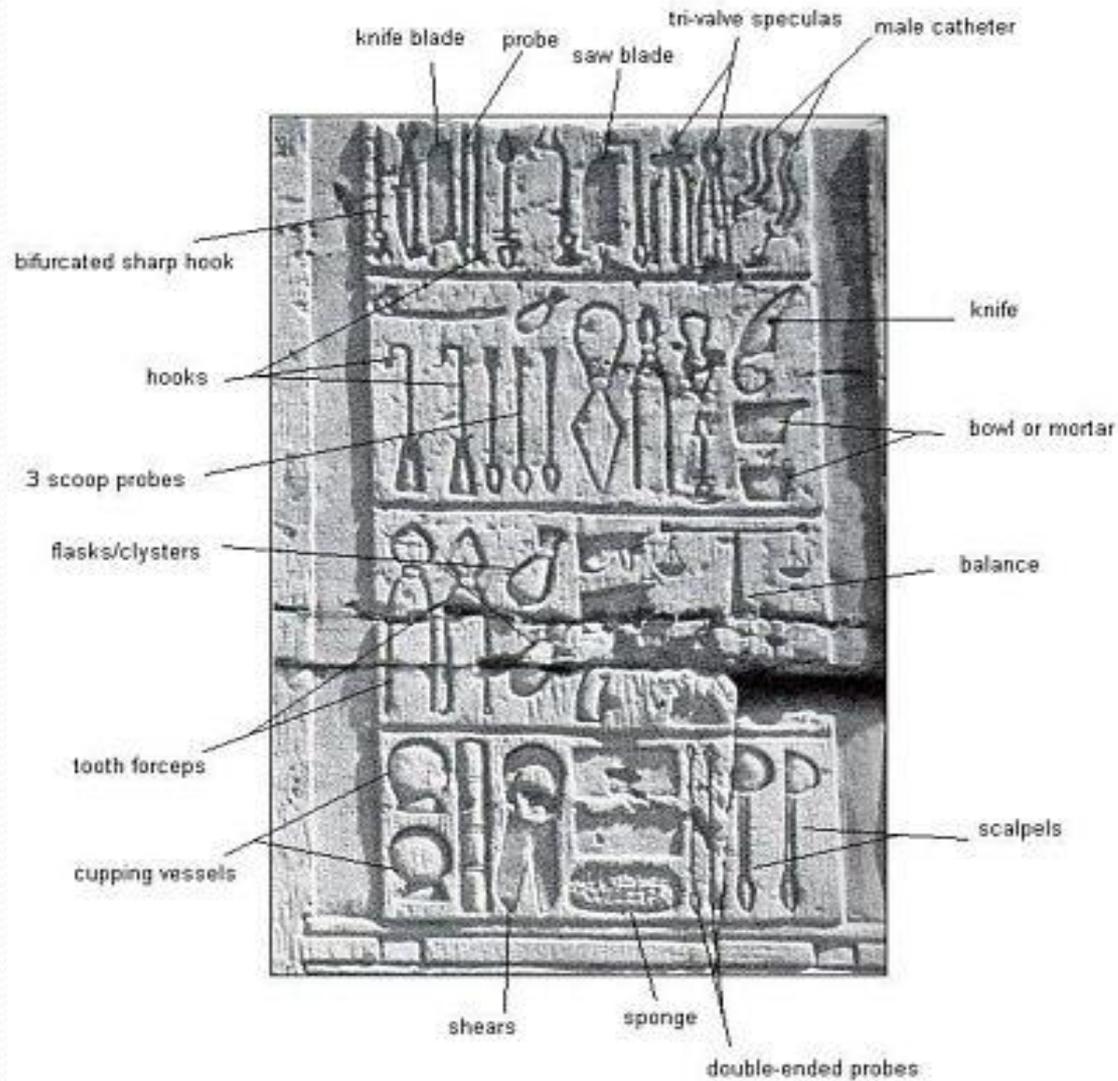
1700 B.C.- Edwin Smith (surgical Papyrus)

The first use of "neuro" words in recorded history
"Father of Medicine"



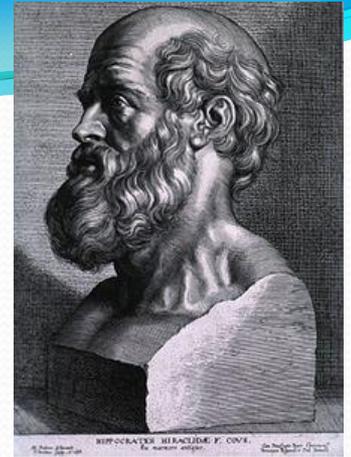
Circa 5100 B.C.--Ensisheim, France

Ancient instruments



Hippocrates

- Hippocrates of Kos (460 –370 BC), was a Greek Physician of the Age of Pericle, and is considered one of the most outstanding figures in the history of medicine.
- He is referred to as the father of western medicine.
- Hippocrates is commonly portrayed as the paragon of the ancient physician, credited with coining the Hippocratic Oath, still relevant and in use today.
- He is also credited with greatly advancing the systematic study of clinical medicine, summing up the medical knowledge of previous schools, and prescribing practices for physicians through the Hippocratic Corpus and other works.



History of Neurosurgery

- Dr Greenblatt proposes two basic premises which lead to the subdivision of the history of neurosurgery into three epochs.
- The first premise is that the development of neurosurgery depended upon three technological advances: cerebral localization theory, antiseptic/aseptic techniques, and anaesthesia, both general and local.
- The second premise is that neurosurgery fulfills the definition of a distinct profession.
- The three technological advances have continued to evolve, but neurosurgical practice has also changed enormously and more rapidly in relatively recent times as a result of the operating microscope and the phenomenal advances in imaging.

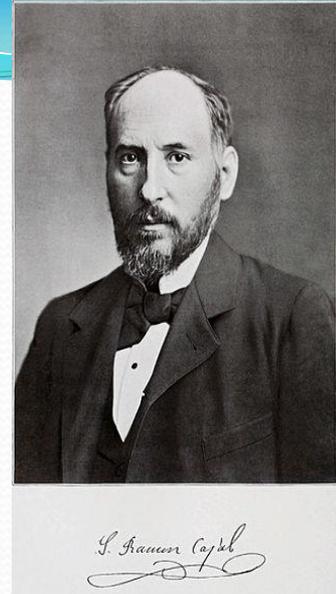
History of Neurosurgery

The three epochs are:

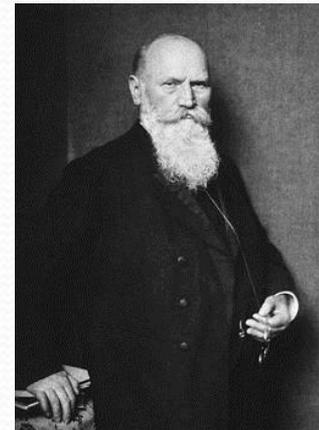
- Premodern (1879)
 - Premodern is before Macewen, 1879, i.e. before the tenets of the first premise were combined into practice. (*when all 3 tenets used in practice.*)
- Gestational(1879–1919)
 - Gestational refers to the period of transition into a distinct profession.(*transition into distinct profession.*)
- Modern
 - Modern is after Cushing, 1919, with the realization of the second premise. (*develops into distinct profession.*)
- It might be argued that there is a fourth epoch: Contemporary Neurosurgery (present day, operative microscope, imaging advances, GKS).

Neurosurgery

- Camillo Golgi: *Nerve network doctrine(1883)*
- Cajal: *Neuron theory*
- Waldeyer: *Coined 'Neuron' for independent nerve unit*
- Berger : *introduced EEG(1929)*
- Foerster & Altenburger: *1st described EEG(1935)*



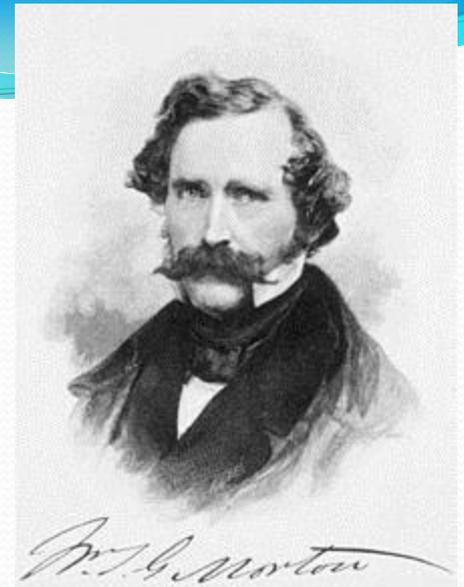
- Cajal: Neuron theory



Waldeyer

William T. G. Morton

- Born: 9, August 1819
Charlton, Massachusetts
- Died: July 1868 (aged 48)
New York City
- Nationality: United States
- Fields: Dentistry
- Known for: Ether for surgical operation
- Influences: Charles T. Jackson
Horace Wells



William T. G. Morton



Replica of the inhaler used by William T. G. Morton in 1846 in the first public demonstration of surgery using ether

Ernst von Bergmann (Dec 16, 1836-March 25, 1907)

- German surgeon and author of a classic work on cranial surgery, *Die Chirurgische Behandlung der Hirnkrankheiten* (1888; “The Surgical Treatment of Brain Disorders”).
- Bergmann was educated at Dorpat, where he was professor of surgery from 1871 to 1878.
- In addition to his contributions to cranial surgery, Bergmann is noted for introducing steam sterilization of instruments and dressings (1886), and in 1891 he introduced aseptic methods to the practice of surgery.



Ernst von Bergmann

Pierre Paul Broca

- Paul Pierre Broca, brilliant French surgeon and anthropologist, was born in Sainte-Foy-la-Grande, in 1824.
- Broca studied Medicine in Paris.
- He became very early a professor of surgical pathology at the University of Paris and a noted medical researcher in many areas.
- As a superb brain anatomist, he made important contributions to the understanding of the limbic system, rhinencephalon.
- He arrived at this discovery by studying the brains of aphasic patients.



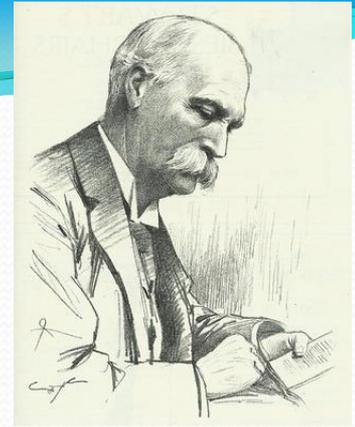
Pierre Paul Broca

- But the field of study where Broca became famous and a towering figure in the history of medicine and the neurosciences, was his discovery of the speech center (now known as the Broca's area or the third convolution of the frontal lobe).
- Broca was also a pioneer in the study of physical anthropology.
- He described for the first time trephined skulls from the Neolithic.
- He was very interested in the relation between anatomical features of the brain and mental capabilities, such as intelligence.

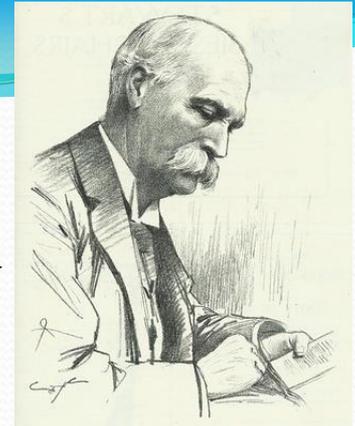


Sir William Macewen

- William Macewen (1848-1924) was a Scottish surgeon who was a pioneer in modern brain surgery.
- He also contributed to the first development of bone graft surgery, the surgical treatment of hernia and of pneumonectomy.
- Macewen was born in Rothesay (Isle of Bute, Scotland) in June 22, 1848, and got his medical degree in 1872 at the University of Glasgow.
- He was greatly influenced by his former teacher of surgery, the great Lord Joseph Lister (1827-1912), who revolutionized surgery by developing antiseptics, by the use of phenol, thus decreasing drastically the enormous mortality of surgical patients due to infections.



Sir William Macewen



- Macewen demonstrated in 1876 that it was possible to use a precise clinical examination to determine the possible site of a tumor or lesion in the brain, by observing its effects on the side and extension of alterations in motor and sensory functions.
- Thus, in 1876 he diagnosed an abscess in the frontal lobe of a boy, but the family refused permission to operate. When the patient died his diagnosis and localization were found to be correct.
- Another important contribution by Macewen to modern surgery was the technique of endotracheal anaesthesia with the help of orotracheal intubation, which he described in 1880, and still in use today

Neurosurgical Giants

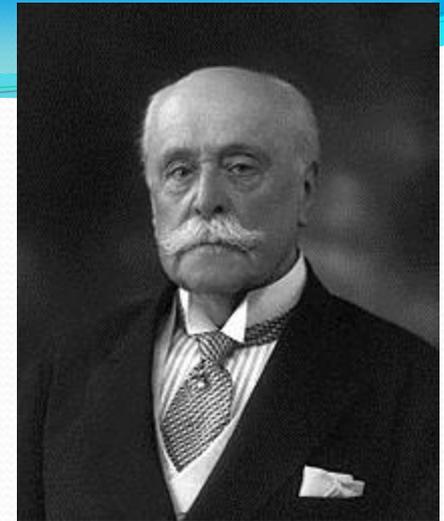
Francesco Durante (1844-1934)

- Durante- Conheim theory:
 - *genesis of tumors from enclosed embryonic rests*
- General surgery:
 - *Cure of surgical TB with iodo-iodurate*
 - *Cuneiform resection of knee articulation*
 - *Partial/ total astragalectomy*
 - *First arterial suture*
- Osteoplastic flap.
- Hypophysectomy by pharyngeal approach
- He was one of the first surgeons in Italy and in the world to successfully remove brain tumors (Olfactory groove meningioma) in 1884.



William H. Bennett

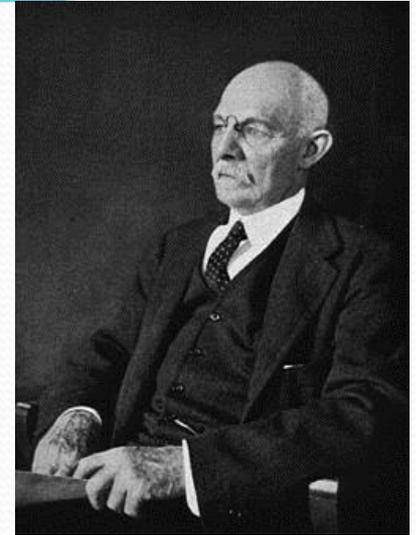
- Sir William Henry Bennett (1852 – 24 December 1931) was a British surgeon.
- His most important contribution to medical science was a paper in which he introduced the *surgical procedure of posterior rhizotomy for the relief of spasmodic pain in a lower extremity.*
- He was knighted as a Knight Commander of the Royal Victorian Order (KCVO) in July 1901.



Neurosurgical Giants

William Halsted

- ‘Asepsis’ practice.
- Rubber glove.
- Surgical technique:
 - Gentle dissection.
 - Fine silk ligature to secure vessels “only”.
 - Sealing wound with silver foil.
 - Avoidance of drainage and frequent dressing.
- Cocaine as local anaesthetic agent- ‘truncal block’



Neurosurgical Giants

Sir Victor Horsley (1857-1916)



Immortalized in surgical history for the introduction of "antiseptic wax". Sir Victor Horsley played a pivotal role in shaping the face of standard neurosurgical practice. His contributions include

1. Experimental research:

- Electrical stimulation of motor area in rhesus monkey for localization (1888).
- Horsley's cortical map Surface markings for the underlying cortex Epilepsy.
- Motor function of internal capsule.
- Cerebral edema.
- Artificial respiration.

Sir Victor Horsley (1857-1916)



2. Contributions in Forms of treatment

- Acceptable operative mortality .
- Antiseptic technique.
- Smooth anaesthesia- preferred chloroform over ether.
- Excision of gasserian ganglion in *trigeminal neuralgia*.
- Significance of *papilledema* in raised ICP.
- Decompression to save eyesight in *raised ICP* (1887).
- Removed spinal neoplasm.
- Decompressive laminectomy for *potts spine*.
- Decompressive craniectomy for *microcephaly*.
- Secondary debridement - infected craniocerebral wound.
- Lumbar Drain to decrease ICP.

Sir Victor Horsley (1857-1916)



Surgical craft

- Dexterity - speed of operating.
- Small vessel hemorrhage- hot saline douches.
- Bone bleed- '*bone wax*'.
- Use of muscle to control bleed.
- Curved skin incision.
- 1st surgery for focal epilepsy (1886).
- Retrogasserian neurotomy - *tic douloureux* (1890).

Sir Victor Horsley (1857-1916)



- A tireless scientist, he was a significant player in discovering the cure for myxedema and the eradication of rabies from England
- He invented the Horsley-Clarke stereotactic frame.
- As a pathologist, Horsley performed research on bacteria and edema and founded the Journal of Pathology.
- He is the founder of modern Neurological Surgery.
- He was awarded as 'First specialized surgical neurologist'.

Neurosurgical Giants

Harvey Williams Cushing

(April 8, 1869- October 7, 1939)



- He is the first American neurosurgeon.
- He is known as Father of modern Neurosurgery.
- W S Halsted & William Osler were his teachers.
- Ernest Amory Codman: 1st anaesthetic , “Ether Chart”.
- First to map human cerebral cortex with faradic stimulation in conscious patients.
- first operation for acromegaly (March 1909).
- small silver clip (Cushing’s clip) (1910).

Neurosurgical Giants

Harvey Williams Cushing

(April 8, 1869- October 7, 1939)



- Introduced suction to deal with blood in deep recesses of brain.
- Described Cushing's law & Cushing's triad.
- With Dr William Bovie: electric coagulation (1926).
- Defined acoustic neuroma & syndrome of CPA.
- Syndromes & Clinical entities:
 - Cushing's Syndrome
 - Rokitansky Cushing Ulcer
 - Neurath-Cushing syndrome
 - Cushing's symphalangism

Neurosurgical Giants

Harvey Williams Cushing

(April 8, 1869- October 7, 1939)



- Standardisation of Surgical techniques.
- Compressing scalp for hemostasis.
- Waxing the bone edges.
- Hemostatic clips.
- Electrocautery, motor driven suction.
- Classified brain tumors with Percival Bailey.
- Exp with cocain nerve blocks.
- Coined ' regional anaesthesia'.
- Medical Historian: Biographer of Sir William Osler (Pulitzer, 1926).

Neurosurgical Giants

Walter Edwards Dandy



- April 6, 1886-April 19, 1946.
- With Kenneth Blackfan, established modern concept of circulation of CSF and hydrocephalus.
- Developed choroid plexectomy, third ventriculostomy and catheterisation of aqueduct of Sylvius.
- First to discover pneumoperitoneum.
- Ventriculography in 1918.
- Exposed & resected pineal tumor.

Neurosurgical Giants

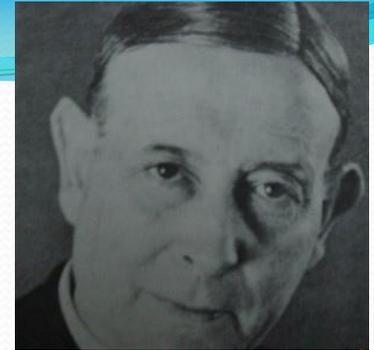
Walter Edwards Dandy



- 1917, Removed 1st acoustic neuroma completely.
- Pioneer in Surgery of AVM and intracranial aneurysm.
- Clipped aneurysmal neck.
- Treatment of Meniere's disease by sectioning of VIII CN.
- First to section IX CN (Glossopharyngeal) intracranially for neuralgia.
- Sectioned sensory root of CN V for tic douloureux.

Neurosurgical Giants

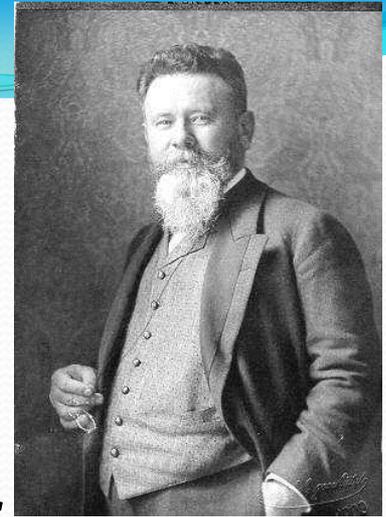
Antonio Egas moniz



- Portuguese neurologist, Lisbon: 1874-1955.
- 1927-Cerebral angiography & encephalography.
(Nominated for nobel prize, 1928).
- Founder of neuroradiology.
- 1935- Prefrontal leucotomy for schizophrenia (Nobel prize, 1949).
- Coined term – psychosurgery.

Neurosurgical Giants

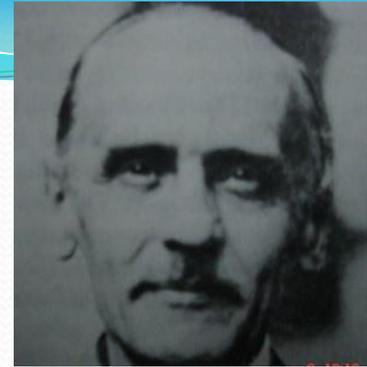
Fedor Krause (1856- 1937)



- Father of German surgical neurology.
- Extensively used radiography for diagnosis.
- ‘Modified’ Preganglionic resection of CN V- trigeminal neuralgia.
- Transfrontal craniotomy for pituitary tumors.
- Acoustic neuromas-sitting position.
- Posterior fossa craniectomy.
- Suprasellar subtentorial approach to pineal gland & posterior third ventricle.

Neurosurgical Giants

Otfrid Foerster (1873- 1941)

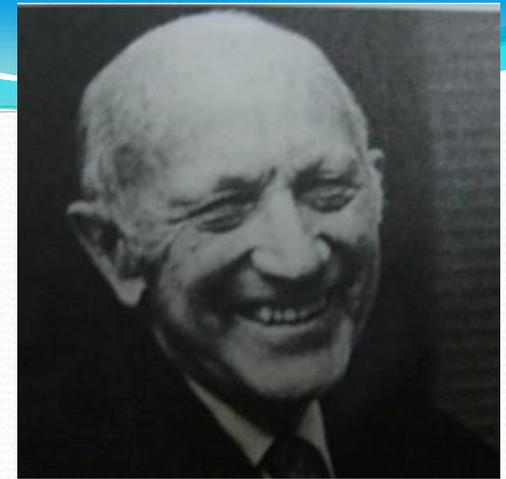


- Foerster's operation: Posterior rhizotomy for the treatment of spasticity.
- Defined dermatomal borders.
- Anterolateral cordotomy for pains.
- Successful removal of intramedullary tumor.
- Surgery for post traumatic epilepsy.
- With Altenburger: 1st EEG of brain tumor.
- Hyperventilation to evoke seizure.
- Coined psychomotor epilepsy.

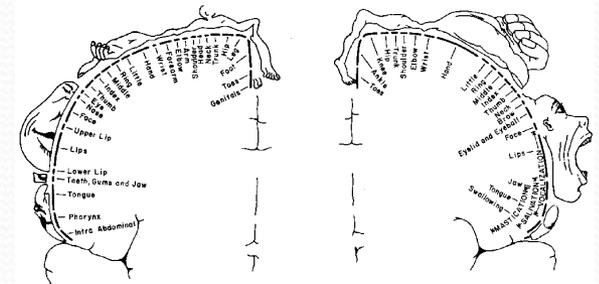
Neurosurgical Giants

Wilder Graves Penfield

1891- 1976

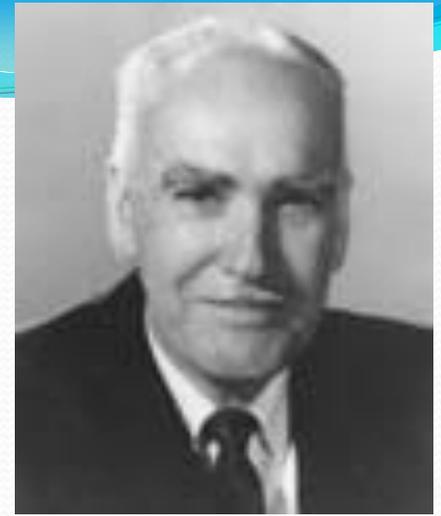


- “Greatest living canadian”.
- Centrencephalic theory of generalised epilepsy.
- t/t of seizures by destroying originating nerve cells.
- ‘Penfield dissector’.
- “Montreal neurological institute”.
- Explained Deja vu in temporal lobe epilepsy.
- Penfield’s homunculus.



Neurosurgical Giants

Arthur Earl Walker

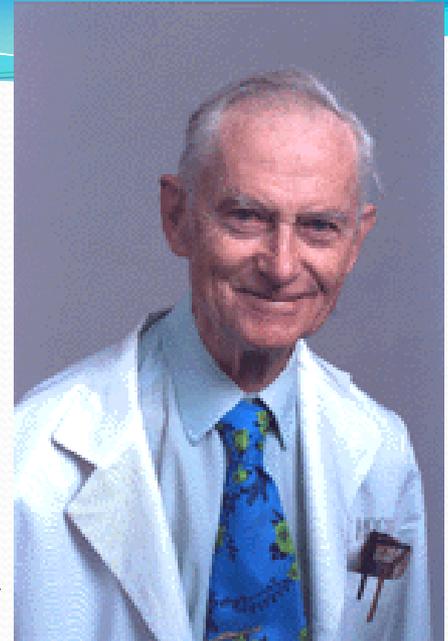


- 1907- 1995.
- An American neurosurgeon.
- Topical application of penicillin.
- Stereotactic and functional neurosurgery.
- Post traumatic epilepsy.
- Anatomic studies on thalamic systems.
- Dandy-Walker syndrome.

Neurosurgical Giants

William H Sweet

- With Gordon Brownell- PET.
- Boron Neutron Capture therapy for brain tumors.
- Pituitary stalk section –diabetic retinopathy
- Percutaneous thermal rhizotomy.
- Radiofrequency lesioning of ganglion Trigeminal neuralgia.
- Hypothermia during neurosurgical operations.
- First carotid bifurcation reconstruction.
- Editor of “Operative Neurosurgical Techniques: Indications, Methods and Results”.



Neurosurgical Giants

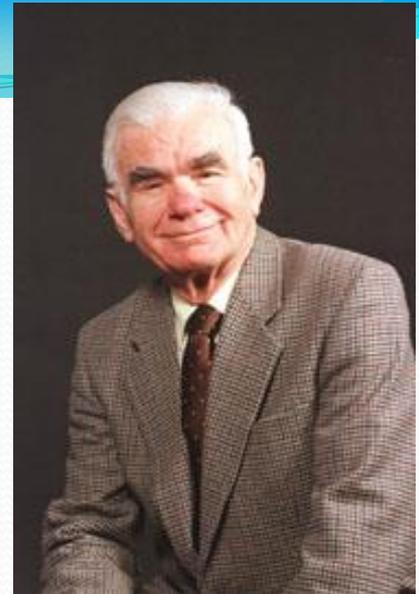
Irwing S Cooper

- Pioneer in functional neurosurgery.
- Parkinson Disease.
- Ligated anterior choroidal artery to control tremor and rigidity.
- Chemopallidectomy and Cryothalamectomy.
- Electrical stimulatation of Cerebellum/ Thalamus to treat spasticity.

Neurosurgical Giants

Mahmud Gazi Yasargil

- Turkish.
- Greatest 20th century neurosurgeon.
- Founder of micro neurosurgery.
- 1967: first cerebral vascular bypass under microscope.
- Invented:
 - floating microscope.
 - self retaining adjustable retractor.
 - microsurgical instruments.
 - Ergonomic aneurysm clips and appliers.
 - Leyla retractor (1977)



Neurosurgical Giants

Albert Rhoton Jr



- University of florida.
- Fatherly figure for microscopic neurosurgery.
- Brain anatomy - microsurgical perspective.
- Microneurosurgical techniques.

Neurosurgical Giants

- Herbert Olivercrona- *AVM, parasagittal meningioma.*
- Norman McOmish Dott- *aneurysm, facial pain.*
- Sir Geoffrey Jefferson- *atlas #.*
- Charles Harrison Frazier
 - *subtemporal approach (tic douloureux), cordotomy.*
- Charles Albert Elsberg- *spinal cord surgery.*
- James Clark White- *ANS, chronic pain, neuroprotection.*
- William Jason Mixter-*herniated PIVD ,spinal injuries.*
- William William Keen Jr.-*Suture duramater to decrease CSF leak.*

Neurosurgical Giants

- Max Minor Peet- *pineal gland, sensory root (gasserian ganglion) division, 50% dextrose in raised ICP, arterial HTN (B/L splanchnic section), favored local anaesthesia*
- Kenneth G Mckenzie- *TCS, clips, skull tongs*
- Gerard Guiot- *hypothermia in NS, pituitary tumors (TNTS), thalamus, stereotaxic frame, parasagittal approach*
- Paul C Bucy- *premotor cortex, oligodendroglioma*
- Alfred W Adson- *nerve regeneration, sympathectomy (PVD), ANS, upright position, vertical incision*
- 1910, Oscar Hirsch- *Trans-septal approach to pituitary*
- 1932, W Gayle Crutchfield- *skeletal traction for cervical spine fractures*
- 1952, Irving Cooper- *Chemo-pallidectomy for parkinsonism*

Neurosurgical Giants

Howard Christian Naffziger-

*SDH, CSF spaces, pineal shift, occipital flap, fascial fringe closure, depressed skull fracture, orbital decompression in exophthalmos, scalenus anterior syndrome (Naffziger syndrome),
B/L jugular compression test (Naffziger's test).*

Murray Falconer- *amygdalohippocampectomy, skin incisions.*

Lars Leksell- *stereotaxy, radiosurgery, Leksell rongeurs,
recanalisation of cerebral aqueduct in atresia*

Frank Henderson Mayfield

Jules Hardy- *microscopic transeptal approach*

Madjid Samii- *microscopic nerve repair, cp angle tumors.*

Neuroendoscopy

- 1879, Max Nitze- *1st Endoscope.*
- 1910, L' Espinasse- *1st Neurosurgical Endoscope.*
- 1922, Walter Dandy- *Fulguration of choroid plexus.
Endoscopic choroid plexectomy.*
- 1923, Mixer- *1st ETV using urethroscope.*

Neuroradiology

- 1895, Wilhelm Conrad Rontgen : *X rays*.
- 1901, Oppenheim : *Cranial Roentgenology*.
- Walter Dandy: *Ventriculography*.
- Arthur Schuller: *Father of modern Neuro-radiology*.
- 1947, George Moore: *Radionuclide imaging*.
- 1960s, Lars Leksell: Stereotactic Frame and *GKS*.

Microneurosurgery

1892; 'microsurgery' - neurologic pathway, amphibia.

1950s: William Lougheed in lab

1957: Theodore Kurze & William House-*acoustic neuroma.*

1960: Julius Jacobson- *1st microvascular neurosurgery*
MCA embolectomy.

1962: Jules Hardy, *Microscopic TNTS.*

1964: Robert Rand, *Microscopic Aneurysm Surgery.*

1967: M. Gazi Yasargil, *1st EC-IC bypass.*

1967: Peter Jannetta & Rand, *CN. V decompression.*

Neurosurgical Society

Society of Neurological surgeons

- Started in 1920
- Founders:
 - Harvey Cushing (President)
 - Ernest Sachs (Secretary Treasurer)
 - Charles H Frazier
 - Edward Archibald



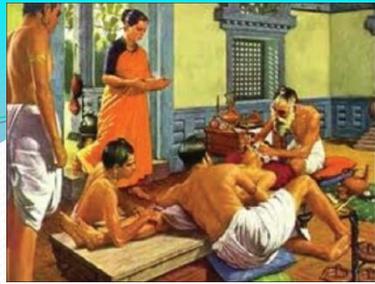
THE SOCIETY OF NEUROLOGICAL SURGEONS

Neurosurgical Society



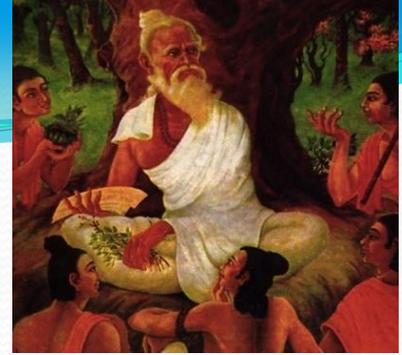
World Federation of Neurological Society

- World Federation of Neurological Society was founded in 1955.
- Brain child of Dr. William B Scoville, Connecticut.
- Sir Geoffrey Jefferson, England (President).
- First congress in 1957



Indian Neurosurgery

Legend and History



1. Hindu mythology-
Ganesha: First recipient of head transplant.
2. Sushruta- *'Sushruta Samhita'*
3. *'Jivaka'*- *Personal physician of Lord Buddha who Removed intracranial tumors through trephine hole.*
 - 2 drugs- *'sammohini'* and *'sanjivini'*.
 - Neurology flourished before birth of Christ.
 - *Yoga*- means to realize one's true self.

History of Indian Neurology

- The first account of a neurosurgical procedure in India is of a *transsphenoidal hypophysectomy* in 1935, which was performed by Lt. Col. Frederick Jasper Anderson.
- The first Neurological training facility was established in 1948 when the Director of Christian Medical College, Vellore extended an invitation to *Dr. Jacob Chandy* to start the Department of Neurosurgery at the college.
- In 1950, *Dr. B Ramamurthi* initiated the second neurosurgery at Government General Hospital in Madras.
- In 1951, the third neurosurgery department was initiated at Seth GS Medical College, Mumbai.

Indian Neurosurgery

- The history of neurology in India is divided into two periods:
 - Ancient and
 - Modern.
- The ancient period dates back to the mid-second millennium Before Christ (B.C.) during the creation of the Ayurvedic Indian system of Medicine, which detailed descriptions of neurological disorders called Vata Vyadhi.
- The early 20th century witnessed the birth of modern Indian medicine with the onset of formal physician training at the nation's first allopathic medical colleges located in Madras (1835), Calcutta (1835) and Mumbai (1848).
- In 1951, physicians across the field of neurology and neurosurgery united to create the Neurological Society of India (NSI).

Indian Neurosurgery

Legend and History

(Pre- Independence)

- 1935, Col Anderson- *Trans-sphenoidal Hypophysectomy*
- Bombay:
 - Ardeshir P Bacha, GV Deshmukh,
 - RN Cooper, AV Baliga
- Madras:
 - NS Narasimhan, CP Vishwanatha Menon,
 - U Mohan Rao
- Amritsar: Col R Mirajkar, Baldev Singh
- Bangalore: Bala krishna Rao

Indian Neurosurgery

Legend and History

(Post Independence)

- Dr. Jacob Chandy: *(1949, 1st Neurosciences Dept. at Christian Medical College, Vellore).*
- Dr. Ram Ginde : *(1953, Neurosurgery Dept. at Seth GS Medical College & KEM Hospital, Bombay)*
- Dr. Narasimhan : *(1948, Private NSx and EEG clinic (Madras))*
- Dr. B. Ramamurthi: *(1950, Neurosurgery Dept. at Madras Medical College
Later became Institute of Neurology)*
- Dr. Baldev Singh: *Founder of Modern Neurology in India.*

Indian Neurosurgery

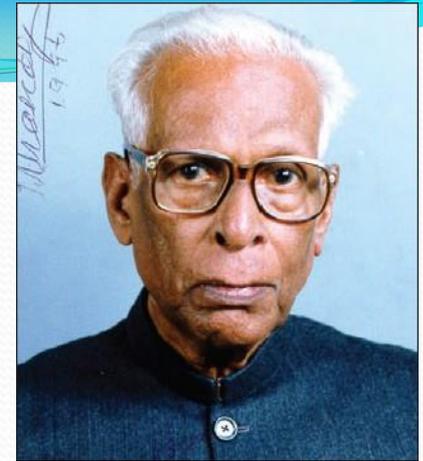
Other Leaders

- ❖ Col. Ray: 1st Indian Army Neurosurgeon
- ❖ R N Chatterjee, Calcutta (1955)
- ❖ Victor Rao, Delhi (1956)
- ❖ Balaparameswara Rao, Vishakapatnam (1956)
- ❖ Dayanand Rao, Hyderabad (1957)
- ❖ Homi Dastur, Bombay (1958)
- ❖ R M Varma, Bangalore (1958)
- ❖ P N Tandon, Lucknow (1961); AIIMS
- ❖ Desraj Gulati, Chandigarh (1962)

Dr. Jacob Chandy

Pioneer neurosurgeon of India.

- Dr. Jacob Chandy, who passed away in 2007 at the age of 97, was born into a deeply religious Christian family in Kerala, South India.
- After obtaining his medical education at the Madras Medical College, Madras, he came to work with Dr Paul Harrison, a renowned medical missionary, in the Gulf state of Bahrain.
- He received his neurosurgical training at the Montreal Neurological Institute with Wilder Penfield and in Chicago with Theodore Rasmussen.
- At Harrison's urging, Dr. Chandy decided to return to India after completing his training to work at the Christian Medical College in Vellore.

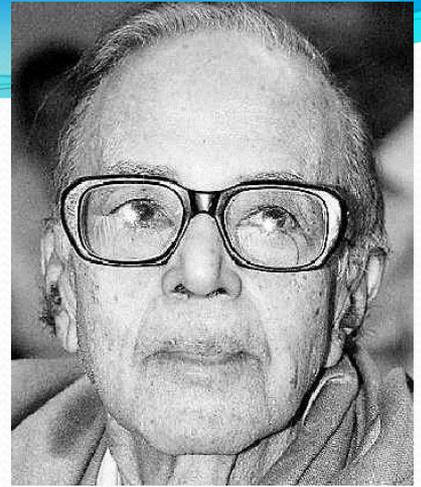


Dr. Jacob Chandy

Pioneer neurosurgeon of India.

- He initiated the first neurosurgical training program in India at the Christian Medical College, with a distinct North American neurosurgical tradition in 1949.
- As the Principal (Dean) of the Christian Medical College, Chandy displayed his skills as a medical educator and administrator.
- In this role, he was instrumental in starting specialty training programs in several other medical and surgical disciplines.

Prof. Balasubramaniam Ramamurthi (1922–2003)



- October 24, 1950 started the neurosurgical service at the Government General Hospital, Chennai.
- December 8, 1951 - Neurological Society of India-
(founder Secretary).
- First editor of Neurology India.
- 1970, Institute of Neurology.
- Established 1st comprehensive neurosciences center, South Asia.

Neurological Society of India

(Premier society of

Neurosurgeons, Neurologists and allied neuroscientists)

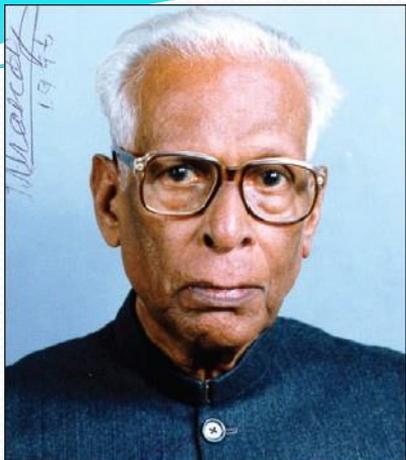
- In the year 1951 four young men, conceptualised, created and constituted India's first ever neurological society. Dr. Jacob Chandy, Dr. B. Ramamurthi, Dr. S.T. Narasimhan and Dr. Baldev Singh brought all the disciplines associated with the science of neurology under one roof and into the forefront with the Neurological Society of India.

Indian Neurosurgery

Neurological Society of India

(8th December, 1951)

- Founder President: Dr .Jacob Chandy
 - Founder Treasurer: Dr. Baldev Singh, Dr.S T Narasimhan
 - Founder Secretary: Dr.B. Ramamurthy
-
- 1st Meeting: Hyderabad, 1952; 32 members
 - 1953: Journal of *Neurological Society of India*(NSI)
(Neurology India).
 - 1974: Started CME.
 - 1985: Progress in Clinical Neurosciences.
 - NSx subsection: member of WFNS.



Dr.(Prof.) Jacob Chandy



Dr. Balasubramaniam Ramamurthi



Dr. Narasimham ST

Dr. S.T. Narasimhan



Dr. Baldev Singh

Other Indian Societies

- *Neurological Society Of India*
- *Neurotrauma Society Of India*
- *Cerebrovascular Society Of India*
- *Skull Base Society Of India*
- *Indian Society Of Pediatric Neurosurgery*
- *Indian Academy Of Neurology*

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Thanks !



4/3/2012



Thank you