

Prof S. N. Bhagawati.

President, Neurological Society of India 1989-1991.

Born on 17th December, 1928, I had primary and secondary schooling in Bombay and participated in the Quit India Movement of 1942 and was jailed for a week as young lad of 13.

After having done the premedical at Elphinstone College joined Seth G. S. Medical College in 1947. From early age I had great fascination for medical profession as it allowed one the freedom of practice, enabling one to serve the people the way he liked. I had a bright scholastic career and graduated in 1952, bagging Lord Sandhurst Gold Medal for Pathology. During this period I was actively involved in student movement and was the leader behind establishment of a cooperative store at the Medical College. I was always fascinated by surgery, possibly the influence of having known a great surgeon like Dr. A. V. Baliga. I took up the registration for M. S. in General surgery and did the first house job with Dr. Ram Ginde. The dedication of Dr. Ginde to his profession, his clinical acumen, his operative skill, his untiring enthusiasm, his pursuit of excellence and the compassion for the patients made a deep impression on me and I decided to take up the challenging career of Neurosurgery. That was the time when we had to operate on general surgical cases in the morning followed by neurosurgical cases which often went on till midnight. This pioneering work of Dr. Ginde was rewarding and satisfying though that meant hard work for me for nearly 18 hours a day.

I was lucky in having subsequent house job with Dr. Katrak and Dr. Dholakia in Orthopaedics and with Dr. S. G. Joshi in ENT department. Though they were giving honorary services to the institution, their devotion to their duties, their desire to teach and affection for their patients was overwhelming. Subsequently I joined as Registrar in Surgery and worked with Dr. K. G. Munsif and Dr. A. V. Baliga, surgeons of great repute and erudite teachers. Work with these giants created an everlasting impression on me and I became more determined to take up Neurosurgery, a challenging speciality that was just being introduced in the country, I was ready to put in any amount of hard work that was necessary to become a proficient neurosurgeon and serve our people. The joy that one got in treating these poor patients at the KEM Hospital, the innocent patients who always remained grateful to you can never be compared with that from treating affluent people who often felt that they had "bought" your services. The joy one experienced in seeing a sick child recover to normality or a despondent wife lit up with hopes of a normal life with a husband who went home after a successful treatment for brain tumour was exhilarating.

It was in September of 1956, after having obtained M. S. in Gen Surgery of the Bombay University, I thought of going abroad for further training in neurosurgery. I had initially planned to go to Montreal Neurological Institute, then mecca of neurosurgery and work with Drs. Penfield and Cone. Whilst awaiting Dr. Ginde's return from abroad, knowing that Dr. H. M. Dastur was being trained in U. K, I enquired him as to how good a training programme he was having. To my great surprise I received a reply offering me the job of a Senior House Surgeon at the Atkinson Morley's Hospital, a branch of St. George's Hospital, London that housed the departments of Neurosurgery, Neurology and Psychiatry.

I immediately accepted the offer ascertaining from Mr. Wylie McKissock that it was not necessary for me to have FRCS for my full training in neurosurgery - M. S. of Bombay University was a good enough academic qualification for me. This was really a turning point in my career as this was an excellent training centre that dealt with nearly 2000 neurosurgical patients a year. Those were the days when one had to rely mainly on air study - ventriculography or pneumo-encephalography to localise the tumour. Arteriography was used mainly to investigate cases of subarachnoid haemorrhage by direct carotid or vertebral punctures. It began to be used for detection of neoplasms only towards the end of my training. We had world's best neuro-radiologists at our institution- Dr. James Bull and Mr. McKissock himself. It was then obvious that the neurosurgeon had to be a good neuro-radiologist to be able to locate the tumour and

perform craniotomy at the right place. This training for over 4 years stood me in good stead subsequently on my return to the country in 1962. Correct interpretation of air study helped both Dr. H. M. Dastur and me in having hardly any wrong exposure.

During this period I was exposed to a lot of cases of subarachnoid haemorrhage. One used to have over 500 cases of SAH admitted to the institution per annum and nearly 250 cases of aneurysm were operated upon. The institution was a major contributor for the Cooperative Study on Aneurysms that were conducted then. A trial on the management of intracerebral haematomas was also conducted then. This had shown that evacuation of these haematomas was of no value in comatose patients and that surgery was worthwhile only when the haematoma was acting as a space occupying lesion. Evacuation of cerebellar haematoma, however, was almost mandatory unless very small in size. Continuation of this practice has stood the test of time and unnecessary surgery on many of these hypertensive haemorrhages is being avoided in most of the centres in the country.

I was involved in the setting up of stereotaxic surgery in 1958 by Mr. Walsh at the Atkinson's Morley's Hospital with the use of Leksell's frame. A fair number of patients with Parkinson's disease were subjected to pallidotomy to start with and thalamotomy of VL nucleus subsequently as the latter seemed to be more effective in controlling contralateral tremors. On my return to Bombay, I continued the practice of stereotaxic surgery, doing thalamotomies for Parkinson's Disease from 1963 onwards. This received a further fillip when commonwealth team visited Madras and Bombay to develop stereotaxic surgery in 1964. This was the time when I could arrange with an engineer working with my brother to go to Madras to Dr. Ramamurthi's set up, have the detailed drawings of Leksell's frame and have it duplicated at a meagre cost of Rs. 10,000/- only. Over the course of next few years these frames were supplied at cost to seven centres of the country, thus promoting the practice of stereotaxic surgery. People were so appreciative of this effort that they almost labelled it as "Bhagwati frame".

After finishing my training in London towards the end of 1960, I had the opportunity to work as a Research fellow in paediatric Neurosurgery at Children's Memorial Hospital, Chicago from January 1961 to June 1962. This interest was kindled by Mr. Kenneth Till, consultant neurosurgeon from Hospital for Sick Children at Great Ormond Street. Mr. Till used to come to A. M. H. once a week. This was another area of interest that I developed further on my return to the country when I had a long liaison with Dr. P. M. Udani at the J. J. Group of Hospitals in doing both routine paediatric neurosurgery as well as a lot of academic work on neurotuberculosis with him and Dr. Darab K. Dastur.

On return to Bombay in July of 1962, I was fortunate in getting an attachment to the Bombay Hospital as a full-time honorary consultant and as Honorary Asst. Prof. of Neurosurgery at the Grant Medical College and J. J. Group of Hospitals from October of 1962. I took up this type of attachment at the Bombay Hospital as I was convinced that this was the only way one could develop the speciality in the institution. This was a symbiotic process whereby both the consultant and the institution progressed further. I was quite in favour of this type of attachment even though it precluded me from getting attachments to other private institutions. As a student at KEM Hospital, I had seen how well Tata Memorial Hospital for Cancer had developed with all their surgeons practicing only at that institution. I took up the appointment as the J. J. Group of Hospitals, a teaching institution to wet my academic appetite. This meant that I would spend several hours every morning at the J. J. Hospital and then spend the afternoon and evenings to see and treat the patients at Bombay Hospital. This system of an honorary attachment at a teaching institution with a practising private attachment had been working well for several decades in Bombay.

When I returned to Bombay, we were only 3 practising neurosurgeons besides Dr. Ginde and Dr. H. M. Dastur as a full time Professor at KEM Hospital. Dr. Gajendra Singh had started work at J. J. hospital after a brief training at CMC Vellore in 1958 and Dr. V. G. Daftary similarly at Nair Hospital in 1959 after a brief stint at Newcastle. Dr. H. M. Dastur had

established himself as a proficient neurosurgeon by then with a reasonably good support from a well established neurology unit headed by Dr. E. P. Bharucha. The neurosurgical unit at J. J. Hospital was considered almost as a surgical arm of well run neurology unit of Dr: N. H. Wadia till Dr. Ginde was appointed with a second neurosurgical unit in mid 1961. Dr. V. S. Dave was appointed as Hon. Asst. Prof of Neurosurgery at the same time as I was. The work continued to increase with referrals from all over the state and soon 45 neurological beds were found to be inadequate. Therefore head injury patients were treated in general surgical beds unless they required intensive neurosurgical care.

Soon a dedicated operation theatre was allotted and the units started operating on alternate days.

Neurotuberculosis was very prevalent then with intracranial tuberculomas forming almost 20% -25%vo of all space occupying lesions. Tubercular meningitis with its disastrous manifestation was very common in children and one used to see a lot of cases lying in a comatose decerebrate state in the paediatric wards. The autopsy studies carried out by Dr. Darab Dastur on this children had shown the-occurrence of thick basal exudate, ischemic changes in the territory of vessels encased by the exudate, varying degree of hydrocealus and multiple tuberculomas. The exudate often blocked the basar cistems and prevented the CSF from circulating over the cerebral cortex; at times the exudate prevented the absorption of the CSF by the arachnoid villi; exudate at times blocked the foramina of Luschka and Majendie with dilatation of fourth ventricle also. These autopsy findings and manifestations of raised intracranial pressure prompted us to perform ventriculography on these patients. Those in whom CSF was under pressure had insertion of ventriculo-atrial shunt with beneficial results. Shunt could be inserted even when the disease was active. This work was initially reported by me in the Journal of Neurosurgery and the world Congress of Neurosurgery in 1967' Soon it caught on and insertion of shunt became a common, procedure in most of the centres of the country. Many of these children showed improvement in hemiparesis, speech and vision after shunt insertion. ventriculo-atrial shunt was abandoned in seventies in favour of ventriculoperitoneal shunt as shunt infection, septicemia, pulmonary embolism and hypertension were frequent complication. Also one needed to lengthen VA shunts with the growth of the child.

with the advent of CT Scanner, one could study the morphology and pathophysiology of neurotuberculosis better. Many of the tuberculomas could be diagnosed on imaging and could be treated purely medically. They could be monitored more readily both clinically as well as by imaging and surgery was required only when raised intracranial pressure. impending loss of vision or doubtful or mistaken diagnosis were present. A paper on this was presented to the International Society for Paediatric Surgery in 1989 and this approach was popularised.

Then came the CT disappearing lesions which were thought to be tiny tuberculomas to start with. However, as majority of them tended to disappear on their own within 6-8 weeks, the notion was popularised that they should be treated only with antiepileptics to start with. Subsequent work at CMC Vellore showed that most of them were of infective origin, mostly a result of neurocysticercosis. With the advent of MRI in 1990,a cysticercal lesion could be identified more easily and most of these lesions now are treated only with antiepileptics.

I had started the use of magnifying loop nearly 40 years ago and have encouraged several people to do so. This magnification of the tissues has always been useful in the dissection of tumours of vital neuro-vascular structures. This has enabled me to have total excision of even huge acoustic nerve tumours ever since I began my career here. Surgical microscope was obtained in early eighties, soon after Drs. Pia and Grote conducted their workshops in Delhi and Bombay and its use was encouraged both at the Bombay Hospital and J. J. Hospitals. C arm TV was made available and transphenoidal surgery was commenced in mid eighties. Anterior cervical microdissectomies and anterior fusion were also introduced then.

I have believed in spreading education, in updating the knowledge of both the postgraduate students as well as consultants and have organized several Continuing Medical Education (CME) programmes since early eighties. I had the first CME with Drs. Pia and Grote in 1980, with Prof Samii, Dr. Sengupta and Dr. Bates in 1982 and subsequently with Drs. Sengupta, Willian Sweet and Gholkar. A real insight into skull base surgery approaches became possible when Drs. Samii and subsequently Drs. Laligam Sekhar and Chandra Sen spent sometime with us. To promote it further Skull Base Surgery Society was inducted in 1995 and registered in 1997 .Its first annual conference was held in Delhi from 25th to 27th September of this year.

Having had a special interest in paediatric neurosurgery, I became a member of International Society for Paediatric Neurosurgery (ISPN) in 1974 and have presented papers on congenital AAD, shunts and shunt problems in tubercular meningities, medical treatment of intracranial tuberculomas, management of optic pathway gliomas and brainstem gliomas. In October 1989, I was the Organising Chairman of its annual meeting that was held in Bombay soon after the World Congress in Delhi got over. This well organised meeting acted as an impetus to start the Indian Society for Paediatric Neurosurgery the same year and since then every year, a one day meeting is held. Subjects that have been covered are craniopharyngioma, infra-tentorial tumours, supratentorial tumours, spinal dystrophism, cranio-cerebral trauma and craniofacial surgery. CME programmes sponsored by ISPN, WHNS Trust (India) and Bombay Hospital have been organised in 1992, 1994 and 1996 at the Bombay Hospital with a guest international faculty each time. Now a 3 year CME programmes has been organised to cover the whole subject of paediatric neurosurgery, the first part having been organised in November of 1997 and the second part will be held in Calcutta towards the end of October 1998. with this interest that one has shown in organising these teaching programmes and the scientific contribution made over the years, I was elected President of the International society for paediatric Neurosurgery in I 996. This year three of our young neurosurgeons received full scholarship to attend the annual meeting in Sidney, Australia. These activities have acted as a stimulus to quite a few people to practise mainly paediatric neurosurgery. First unit of its kind is now established at Bai Jerbai Wadia Hospital for Children.

Though a fair amount of stereotactic surgery was practised in sixties and seventies when thalamotomies, amygdalotomies. hypothalamotomy, cingulotomy, etc. were practised, there was a lull with the advent of L. Dopa. CT guided stereoraxic surgery was used mainly to have biopsies of deep seated lesions or lesions located in eloquent areas. Now there is a resurgence of pallidotomy and thalamotomy and a month ago we have ventured to implant "Deep Brain Stimulating Electrodes', in STN (Sub thalamic nucleus) for Parkinson's Disease in patients in whom the disease has progressed despite L. Dopa, who have a lot of "on and off, phenomena, who have marked drug induced dyskinesia and who are markedly disabled during the off period.

Possibly because the Neurological Society of India had relatively few members for many years, same persons continued as office bearers of the society for several terms for nearly two decades. The office bearers were nominated by the Executive Committee and approved by voice vote by the General Body. It was only after the annual meeting at Poona in 1977 that the democratic process of inviting applications for the vacant posts and election by ballot has come into being. This has lead to a greater participation by members in the affairs of the Society. Both during my tenure as treasurer in 1 978- I 980 and Secretary in 1981 - 1983 of the Society further encouragement was given to the postgraduates to participate in the annual conferences, utilising the Travelling Fellowships and Visiting Fellowships. Unfortunately, of late this enthusiasm is on the wane. I was fortunate in being the President of NSI in 1989 when the world congresses of Neurosurgery and Neurology were held in India in Delhi. The hosting of these conferences was an eye opener to the neurosurgeons from abroad - they were astounded by our organising abilities, our hospitality and the academic content of our contribution. Also we were able to save a fair amount of money which has been deposited in WFNS Trust (India) and XVI world congress of Neurology Trust. The fund of WFNS Trust (India) is being utilised to organise CMEs in the country so that maximum number of people can derive benefit from the same. Almost half a dozen CMEs are now

organised with its help every year. Besides starting Dr. Ginde Oration at the NSI, I have also got a similar oration organised to commemorate Dr. Ginde's contribution at the Bombay Hospital. Every year a neurosurgeon of international repute is invited to deliver the oration. Thereafter for 1 r/Z days live demonstration of intricate surgical procedures is held. Nearly 80-90 neurosurgeons from all over the country attend it.

Bombay seems to have maintained its position as a pace setter in medicine. Most of the institutions, barring a few public hospitals, have their own CT Scanner, MRI Scanners and DSA machines with capabilities of good interventional radiology. Hinduja Hospital has had Gamma Knife For over 18 months; Jaslok Hospital and Bombay Hospital will be having linear accelerators and X knife in the next few months. Surgery for epilepsy, subdural mapping, etc. is to start both at Hinduja Hospital and Bombay Hospital in the near future. Dr. Darab Dastur has maintained his academic interest and is the Director, Department of Neuropathology and Applied Biology Research unit at the Bombay Hospital which continues to have good academic output. There certainly has been a tremendous progress in neurosciences in the city of Bombay in the last 30 years.