Prof. B. Ramamurthi: The legend and his legacy

Neurosurgery in India is a post World War II development, resulting from the keen desire of the new rulers of independent India, that the country should keep up with all the modern advances in every field of medicine. Madras, (now called Chennai) has always been regarded a Mecca for medical sciences in the country and has boasted of many a great medical achievement. The Madras Medical College was started by the British in 1835, and is one of the oldest in the country. One of the greatest medical achievements of Madras has been the pioneering effort made to establish neurosciences in general, and neurosurgery in particular, as a separate and recognized medical specialty in the country. Prof B. Ramamurthi (Prof BRM or Chief as he was known) established organized Neurosurgery in Madras in 1950. Indian neurosurgery owes a great deal to him for the high standards of academic and clinical neurosurgery seen around the country today. He passed away on December 13th, 2003, at the age of 81 years, a living legend, leaving behind a legacy which all neurosurgeons in India must strive to follow, keep up and improve upon.

The legend at the beginning

“It was a cold winter night and daylight was just becoming visible when I entered the Neurosurgical department of the Newcastle General Hospital ............. I greeted her (the Sister in charge of the ward) and introduced myself as the new trainee............. He (Mr. G. F. Rowbotham) was known as Father for his father figure and for his pioneering efforts in neurosurgery in this region. The handsome man with a dignified gait and a smile on his face entered the wards and was deferentially greeted by the Sister and the house surgeons. He noticed me and said: ‘Hey, you are the newcomer’. I said ‘Yes, sir’. ‘Your name is Ramamurthi’ ‘Yes sir’ ‘...’.” Thus started the neurosurgical training of the person who established neurosurgery and neurosciences in Madras and gave shape to Indian Neurosurgery.¹

Prof B. Ramamurthi was born in 1922 on January 30th at Sirkali, a small town in South India where his father Capt. T.S. Balasubramaniam was an Assistant Surgeon in the Government Hospital. He was born into an illustrious family of scholars. His grandfather’s brother was Shri G. Subramanya Iyer, one of the founders of the English daily “The Hindu”, a freedom fighter and reformist, and the person who tabled the first resolution of the Indian National Congress. The second child and first son of his parents, Prof BRM had his schooling at the E R High School at Trichinopoly, from where many an eminent Indian has emerged. A rank holder at the school final examination, he was convinced by his father and his father’s friend to take up medicine as a career, rather than the Indian Civil Service. A brilliant student, he was awarded the Johnstone Gold medal for the Best Outgoing Student when he passed out of the Madras Medical College in 1943. He secured his Master of Surgery (M.S.) degree in 1947 and then his Fellowship to the Royal College of Edinburgh in a record six weeks. His tryst with destiny however, began a year earlier, when his surgical chief, Dr. N. S. Narasimha Iyer suggested that he take up neurosurgery as a specialization rather than thoracic surgery which was in vogue... “This is a new specialty unknown in India as yet. This has to be developed.”²

Two roads diverged in the woods and I
I took the one less traveled by
And that has made all the difference
(Stephen Girard)

The young Ramamurthi was selected by the Madras Government for training in Neurosurgery and he reached Newcastle on 2nd January 1949. He received his training under Mr G. F. Rowbotham at Newcastle, and then spent time with Prof. Geoffrey Jefferson at Manchester. He visited various centers in Europe including those of Prof. Kranyenbuhl at Zurich, Dr Edward Busch at Copenhagen, and Prof. Olivecrona at Stockholm. In 1950 Dr. Ramamurthi proceeded to the Montreal Neurological Institute and spent four months with Prof. Wilder Penfield. On completing his training he returned to Madras, bringing back with him the traditions of the British, American, Canadian and European schools of neurosurgery.

On October 24th 1950, on “Vijayadasami”, a particularly auspicious day in the Hindu calendar, Dr. Ramamurthi officially joined the Madras General Hospital and Madras Medical College as Assistant Surgeon in Neurosurgery and started organized neurosurgery at Madras. At that time there was only one other neurosurgical department in India, which had been started at Vellore, 150 km south of Madras, only a few months earlier; by Prof. Jacob Chandy. The most important task at that time was to convince the medical profession about the possibilities of neurosurgery. Against great odds and difficulties, Dr B. Ramamurthi built and developed the neurosurgical department, which later developed into the Institute of Neurology at the Government General Hospital, where he was the Professor and Head till his retirement in 1978. He has the unique distinction of establishing and heading one more center of excellence in the city of Madras, the Dr. A. Lakshmiapathi Neurosurgical Centre, at the Voluntary Health Services Hospital, which he established in 1978. Here, once again, he created out of almost nothing, in a charity hospital, a center of academic excellence and one of the first centers of National Board training in neurosurgery in the private sec-
neurological institutions have grown and prospered due to his help and advice.

Recognizing the need for establishing neurological sciences as a specialty, Dr. Ramanaruthi along with Drs. Jacob Chandy, S. T. Narasimhan, and Dr Balseg Singh started the Neurological Society of India (NSI) in 1951 at Madras. Thus Madras holds the distinct honor of being the birthplace of the premier neurosciences society of the country. Prof. BRM served as the first secretary of the society. He was also the founder-editor of the society’s official journal, Neurology India. He established neurosurgery on a firm footing in the country and for his service received numerous awards including the Padma Shri from the Government of India, and the coveted Dhanvantri Award. The Armed Forces of India conferred on him the honorary title of Brigadier in the Army. In 1989, he was the Hon. President of the WFNS, when the World Congress of Neurological Surgery was held at New Delhi, India. He was one of the rare few who were elected Fellow of all three Science Academies of India. He was at the time of his demise “the seniormost practicing neurosurgeon of the world” and the Professor and Head of the Dr. A. Lakshminipathi Neurosurgical Centre and Postgraduate Institute of Neurological Surgery.

Prof BRM’s life was a dedication to science and that was what made him a living legend. He lived and breathed neuroscience. One of his dreams was the establishment of an apex body for the coordination of brain research in the country. He strived for this for more than two decades, and his efforts bore fruit when the President of India formally inaugurated on December 16th, 2003, the National Brain Research Centre, at Manesar, near New Delhi. ‘Chief’ loved teaching and learning. He believed that knowledge was meant for sharing, and that age was no bar to learning. He believed that once a person thought that he knew everything, that was the beginning of the person’s mental degeneration. He was one of the few who would attend conferences, sitting in the front and taking notes from lectures of even the most junior of speakers. He would come back to the department, gather all assistants and residents in his room and go through his notes and comment on each of the papers. His eagerness to learn and keep abreast of development was seen clearly in the fact that in the 1980s, seeing the advantages of microsurgical techniques, he first re-learnt, practiced and then strongly advocated Microsurgery in Neurosurgery. He was as adept in the reading of CT and MRI scans, as he was with the X-rays, EEGs, pneumoencephalograms, ventriculograms and angiograms. He was ready to listen to and implement any new idea or approach to a problem, provided it was logical and made sense and above all did not harm the patient. He encouraged positive scientific debate and had a slogan on his office wall that read: “How do I make my students think?” It was this positive thrust that he provided to his juniors and colleagues that earned him the respect that he commanded. He was genuinely appreciative of juniors who achieved acclaim and encouraged and helped all those who wanted his help. Prof BRM was convinced that a uniform postgraduate education system was essential to maintain high standards of medical education in the country. This led him to be a force in the formation and development of the National Board of Examinations of which he was both president and vice-president for many years. His efforts and those of Prof. P. N. Tandon, led to the publishing of the first edition of the Textbook of Neurosurgery in 1980. The enthusiasm was the same during the three years of work that went into the publishing of the second edition of the Textbook in 1996. Even a month before his demise he was busy with the editing of the “Textbook of Operative Neurosurgery”. Chief’s only grouse was “do something to relieve me of my problems, I want to finish this book!” He had seemingly limitless energy for work, making it difficult for anyone younger than him to complain that they were tired. So also he was disciplined, for in his words “one must be precise to be a neurosurgeon” and for that precision he considered mental and physical discipline a must. He would never miss coming to the hospital or seeing patients. Even when he was unwell and unable to walk, he made ward rounds in a wheelchair! Chief was keenly interested in music and its effect on the brain, as he was in “Consciousness”. Actively involved in research involving biofeedback, magnetotherapy, he also worked on ‘language and the brain’. He did not limit his interests to neuroscience alone. He was avidly interested in Mathematics, History, Sanskrit and Vedic Literature and in Yoga. The Prof. B. Ramanaruthi Neurosciences Museum was established at the VHS Hospital on his 80th birthday, in 2002. He was hopeful that the museum would one day become the national museum of neuroscience, thus placing on record the efforts of those who strived to develop the specialty in the country. His involvement in social activities started from his college days when he joined the ‘Quit India’ movement in 1942 and was imprisoned for it. He was vocal and actively involved in movements against unjust laws affecting female epilepsy patients, and worked incessantly for the introduction of a law favoring the use of crash helmets. He was the Founder President of the Accident Victims Association, amongst many other things. His wife Dr Indira Ramanaruthi and he were philanthropists, and helped many individuals and institutions through their donations and charities. Chief loved living and enjoyed every moment of it. He loved his work and also his holidays. A month at his Kodikanal (hill station) home during summer, was when he caught up with old friends, golf, and reading. He enjoyed parties and the company of young people. When he was invited to attend the ACNS conference at Hong Kong, he was a little hesitant about traveling as he was not feeling well. It only took a suggestion from me, that we could travel together, and he made his plans. As his student and then his junior faculty, what inspired total devotion
to him was that he reciprocated our feelings, and always stood by us, no matter what. The most touching incident was in 2001, when after his cardiac bypass surgery, he embarked on a particularly grueling trip, first to Australia for the WFNS conference and then to San Diego, USA for the CNS meeting. He was planning to break journey at London for a few days on his return trip so that he could recuperate. I, however, needed him back earlier, as I was organizing the annual conference of the Skull Base Surgery Society of India. When I told him that I needed his presence here at Chennai and requested him to change his plans, he did so without any hesitation. He came back the night before the conference, and was there, tired after the long journey, but a tower of strength for me. How many senior professors would inconvenience themselves just because of a student’s request?

There were many who helped and guided him in his endeavors but the one person who needs special mention, who stood steadfast by his side no matter what, was his wife, Dr Mrs Indira Ramamurthi, a reputed gynecologist in her own right. We need to thank her for so generously sharing her husband with Neurosurgery and all of us.

The Legacy

Department of Neurosurgery, Government General Hospital

The department of neurosurgery at the Government General Hospital of Madras, was started with four beds in the Denison Surgical Ward, which were allotted by Prof. Col. Sangam Lal, then Professor of Surgery. The neurosurgical department was separated from the department of General Surgery three years later with the creation of the post of Lecturer in Neurosurgery. There were many amongst the staff of the surgical department who helped the young and enthusiastic Ramamurthi. Dr. S. T. Narasimhan was a pioneer who joined the department as an honorary assistant surgeon. He was a general surgeon who trained in neurology and neurosurgery at the New York Neurological Institute. He had returned to Madras in 1948 and had set up a neurosurgical nursing home and EEG laboratory in the private sector. Electroencephalography was the diagnostic tool until angiography became available. Ninety per cent of patients referred were blind and the mortality was above 35%. Plain X-rays and EEG were the tools of diagnosis. Cerebral angiography was introduced in 1952 and Drs. K. M. Pillai and M. G. Varadarajan were pioneer neuroradiologists who helped the growth of the emerging specialty. The operating rooms were made available after the general surgical lists were completed. An old DC motor was requisitioned from the surgical stores and a suction apparatus was assembled. Anesthesia was induced with ether after which the patients were intubated blindly. They were then maintained by nitrous oxide. Intravenous Pentothal and muscle relaxants were introduced by Dr. V. Rajagopal on his return from the United Kingdom in 1953.

This was the state of neurosurgery when it was started at the Madras General Hospital. Realizing the importance of recording and maintaining patient data, Dr. Ramamurthi made sure that detailed records were maintained for both inpatients and out patients and each was given a ‘NS’ reference number. The records were handwritten and often Dr. Ramamurthi’s wife and his father, both doctors, would pitch in and help. This made follow-up easy and helped in the conduct of clinical research in the years to come. Similarly, all positive X-rays and clinical material were photographed and then indexed for future reference. These practices, inducted early into Madras, are still being followed meticulously.

Growth of the Department and Neurosurgery

The department began growing and with increasing awareness of neurosurgery as a specialty by the medical fraternity and the public, it became possible to take up trainees. With better anesthesia, introduction of cerebral angiography and of urea (to reduce intracranial pressure), the results of surgery improved rapidly. In 1954 Dr. S. Balaprameshwara Rao joined the department and was the first to be trained in neurosurgery from Madras. Following his training period, he set up the neurosurgical departments at Vishakapatnam and Hyderabad, both of which have set standards for departments around the country. Dr. V. Balasubramaniam, a brilliant student and surgeon joined the department of neurosurgery and was later joined by Dr. M. Natarajan and Dr. S. Kalyanaraman. Dr. S. Kalyanaraman received his neurosurgical training under Prof. Sir Douglas Miller, the pioneer neurosurgeon of Australia, and Dr. Norman Dott at Edinburgh. At about the same time, Dr. Ramamurthi was able to enthuse Drs. G. Arjundas and K. Jagannathan to start and develop neurology as a specialty. With time the results of surgery became better, facilities increased and the number of assistants increased. With the help of Sir Douglas Miller, the pioneer neurosurgeon of Australia, the department was included in the Commonwealth Programme in 1956. Prof. Wilder Penfield visited the growing department in 1957 and was all praise for the work being done at the Madras General Hospital.

The common conditions seen in those early days were gliomas, pituitary adenomas, acoustic neuromas, spinal cord tumors and lumbar discs, in almost the same proportions as encountered in the Western countries. A lesion peculiar to developing countries that was commonly found was tuberculous meningitis, which formed between 25 to 30 per cent of the intracranial space-occupying lesions encountered. The results of the surgical excision of these lesions were good. The surgical complications of tuberculous meningitis presented a real challenge in the form of localized Tuberculous Arachnoiditis and Hydrocephalus. Cystercerosis was uncommon in Madras. Head injuries were increasingly cared for and were gradually becoming more serious and complicated with multi-trauma. Because of the pressure of work, spinal injuries were handed over to the orthopedic surgeon. Congenital hydrocephalus was treated...
by blind or open third ventriculostomy and by shunting the CSF into all available cavities in the body. Some third ventriculostomies were successful (Personal communication).

A strange fact observed was the paucity of aneurysms and of subarachnoid hemorrhage. While all other neurosurgical lesions were referred to the neurosurgeon, few subarachnoid hemorrhages and fewer aneurysms were seen. In fact, in the early years, more AV malformations were seen than were aneurysms. With training and experience gained at the Montreal Neurological Institute, surgery for epilepsy was started. Cortical localization helped in determining the area of excision. Temporal lobectomies were started only in the mid-sixties. By the early sixties, referral increased, early cases were seen, mortality reduced and neurosurgery was accepted by his colleagues and the public.

**The Madras School of Stereotaxy**

Stereotaxy was started at Madras in 1960 with the visit of Mr. Lawrence (Ticky) Walsh and Dr. Denis Williams, of the Queens Square Hospital, London. The three-week visit initiated and put on track the Stereotaxy programme of the Neurosurgical department which attained international acclaim. The neurosurgical team of Drs. V. Balasubramaniam, S. Kalyanaraman and T. S. Kamaka led by Dr. B. Ramamurthi were supported and helped by their neurologist counterparts Drs. G. Arjundas and K. Jagannathan. A large number of stereotactic procedures were performed and papers published. Surgeries were performed for involuntary movements, behavioural disorders, psychiatric disorders, epilepsy and spastic conditions apart from Parkinsonism. Dr. Ramamurthi became the Vice-President of the International Stereotactic Society and Dr. S. Kalyanaraman was awarded the Bhatnagar Award for his work on Stereotaxy.

**Head injury Ward**

Increasing referrals of head injured patients began interfering with elective neurosurgical work. With the rapidly increasing number of road traffic accidents and with the changing pattern of head injuries, including multitrauma, the management of head injuries required better facilities. In 1967, after representations to the Government of Madras, a separate Head Injury Ward was inaugurated—the first of its kind in the country. Mr. G. F. Rowbotham sent special greetings from Newcastle.

**The Madras Institute of Neurology — MIN**

The visit to Montreal and the organization of the Montreal Neurological Institute impressed Dr Ramamurthi so greatly that it became his dream to create a center at Madras which housed all the branches of neurosciences under one roof. This dream was realized in 1970. A donation of Rupees one hundred thousand from Dr A Lakshmipathi (father-in-law of Dr B Ramamurthi) gave the project the push it required and the dream was realized. Many important papers were published in international journals and were often quoted by others. Presentations were made at international meetings and Madras was noted for the high standard of clinical and surgical work performed. The twenty-fifth anniversary celebrations of the department, celebrated in 1975, were a high water mark of success, and were attended by more than 120 foreign neurologists and neurosurgeons.

Prof Ramamurthi retired from the government service and his post of Professor and Head of the Institute of Neurology in January 1978. He left behind a department which was known and recognized the world over for its excellence. Since then there have been many highly renowned neurosurgeons who have headed the department and continued the excellent work that Dr. Ramamurthi started.

**Dr. A. Lakshmipathi Neurosurgical Centre (ALNC)**

The Dr. A. Lakshmipathi Neurosurgical Centre, attached to the Voluntary Health Services Hospital (VHS), a charity hospital, was started in February 1978 by Dr. Ramamurthi following his retirement. Spread over 25 acres of land in the southern part of the city of Madras, the VHS was the brainchild of a brilliant physician, Dr. K. S. Sanjivi, a teacher of Dr. B. Ramamurthi. It was envisaged as a service outside the sphere of government influence, a hospital which would give quality medical care to all strata of society, poor or rich. It is of particular significance that this year is being celebrated as the Centenary Year of Dr. K. S. Sanjivi.

A generous donation from the trust fund of Dr. A. Lakshmipathi, father-in-law of Dr. Ramamurthi, provided the building to house the Dr. A. Lakshmipathi Neurosurgical Centre (ALNC), the second neurosurgical department to be started personally by Prof B Ramamurthi. The centre started with one operating room and thirty-five beds. In 1991, a new building was added to the existing neurosurgical block. The new building, named the “Prof. Dr. B. Ramamurthi Block”, houses the second operation theatre, and the neurosurgical library, apart from a fifteen-bedded general ward for female patients and a five-bedded intermediate care ward. In 2002 the “Prof. B. Ramamurthi Neurosciences Museum”, was also established here. In 1992 the department extended its services to a corporate hospital, Malar Hospitals, located two kilometers away. The department has grown to be one of the finest in the country, setting standards for other departments, in clinical services and academics. It has become a tertiary referral centre, for complex cranial and spinal cases. Having attended the early microsurgery workshop of Dr. Donaghy in 1969 at Burlington, and having over the years seen the advantages of microsurgery, Prof. BRM was vociferous about microsurgery. With his guidance and under his leadership, a young team, including Drs Ravi Ramamurthi, M. C. Vasudevan and myself, the department has focused on ‘Total Microsurgery’ as a concept. It has pioneered conducting annual Micro-
surgery Workshops with live surgical demonstrations. Within ten years of its inception, the ALNC became a training centre in Neurosurgery recognized by the National Board of Examinations, with its own residency programme. Continuing the emphasis on research, and with a great interest in spinal cord injury and malignant glioma, in 2003, Chief signed a memorandum of understanding with the National Brain Research Centre, for collaboration in research.

Prof. BRM was a living legend, a person who touched thousands of lives, who inspired hundreds of physicians and surgeons and helped millions. He has left behind a legacy which epitomizes his great work and his life, and a path for all of us to follow.

As his student and a person who has known him for long, all I can say is

“…You have touched another chord in my heart, the deepest of all and that is the mention of my teacher, my master, my hero, my ideal, —— If there has been anything achieved by me, by thoughts, or words, or deeds, ….., I lay no claim to it, it was his……In my opinion, not one stands so high in brilliance as that life which I saw with my own eyes, under whose shadow I have lived, at whose feet I have learnt everything ……”

K. Sridhar

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References