

# PAST PRESIDENTS 2000-2016



2000



2001



2002



2003



2004



2005



2006



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2008



2009



2010



2011



2012



2013



2014



2015



2016



1998



NEUROLOGICAL SOCIETY OF INDIA

*Editor: K. GANAPATHY*

# PAST PRESIDENTS 2000-2016



**NEUROLOGICAL SOCIETY OF INDIA**

*Editor:* **K. GANAPATHY**



## INTRODUCTION

I have been entrusted with the pleasant task of continuing the excellent work done by Prof. Rajshekaran Nair in the last century!! In 1999 a book on “Eminent Neuroscientists” was brought out, which gave the biography of all Presidents of the Neurological Society of India from 1952 to 1999. The general body of the NSI, at the Chennai meeting in December 2016, accepted my offer to bring out a second volume. This volume contains the **autobiographies of all Presidents of the NSI from 2000 to 2016** (due to an inadvertent error the NSI president in 1998 had not been featured earlier and hence this is also included as an addendum). Presidency of a professional National Society is the highest recognition from one’s peers. It is essential that posterity understands the trials and tribulations faced by each one of them and what they contributed to justify the confidence reposed in them by their colleagues. It is very difficult to talk about oneself. Some have preferred to write in the first tense, others in the third tense. Though the editor had initially suggested a general format, this just did not happen! It was subsequently felt that the individuality and diversity of each contributor would be best brought out, if they wrote as they wanted to. What one wants to share and how, is an individual trait and incidentally speaks volumes of the author.

All the contributors were initially trained in the BC era. They belong to the era of transition, starting with pneumo encephalograms and ventriculograms and ending with intraop MRI, intraop navigation and even robotic surgery. They have had the good fortune to have actually introduced hi-tech in their respective regions, at the same time not forgetting the very strong clinical neurology which still form part of their DNA. It was fascinating to realise that some of the past Presidents studied in school without electricity and were the first in their family to go to college. The one thing that stood out in all the narratives, was determination, refusal to take “No” for an answer and sheer passion. They believed in what they were doing. Almost none were born with a diamond spoon. In fact, it was adversity which brought out the best in them. I have learnt a lot from these real life experiences and hope all readers will do likewise.

The editor hopes that this tradition of recognising the contributions of Past Presidents of NSI will continue. This volume will hopefully inspire the

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younger generation. It was interesting to realise that Past Presidents of NSI do not retire! They continue to be super busy and it was indeed a formidable challenge to make them spend the necessary effort and time to write about themselves. Contributions varied from 2 to 30 pages! Following George Bernard Shaw's observation that "the reasonable man adapts himself to the world: the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man". I have not been reasonable!! I am thankful to all the past Presidents for their contributions and also for tolerating my incessant and continuous nagging.

During my tenure, as Secretary of NSI for 6 years and subsequently in all NSI activities, I was to a large extent assisted by my wife Vijayalakshmi. Now, even in my role as an editor, she continues to play a vital stellar role and I am immensely grateful to her. I am thankful to the Secretary Dr. V.P. Singh, the President Dr. Deepu Banerji , members of the Executive Committee and the general body of the NSI for authorising this publication and funding this project, and for making available the eBook at [www.neurosociety.com](http://www.neurosociety.com) also *pro bono*. I am thankful to Mr. Gopi Vijaya Kumar of Janatha Printing & Publishing Co. Pvt. Ltd., Chennai, for bringing out the volume.

Happy Reading!!



**K. Ganapathy**  
*Hon. Editor*

10<sup>th</sup> November 2017

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**Arjun Dev Sehgal, President NSI 2000**

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Dr. Arjun Dev Sehgal, one of the well known Neurosurgeons died on 20<sup>th</sup> May 2006 in Sir Ganga Ram Hospital from fulminant aggressive clear cell carcinoma of the lung. He bore his illness with great fortitude. His rather sudden departure from the field of active neurosurgery leaves a void which will be difficult to fill. His multifaceted personality and aura of positivity around him left an impact on all those who came in contact with him.

**Introduction and Family background:**

Dr. Arjun Dev Sehgal was born on 25<sup>th</sup> of December in 1930 at Sri Ganga Nagar, Rajasthan. During his earlier school days he decided that he would become a doctor as there were not enough doctors in the country especially in his home town. After finishing his education in govt. high school in Sri Ganga Nagar, he joined Dungar College, Bikaner for pre-medical. He



*Dr. Arjun Dev Sehgal &  
Dr. Mrs. Varsha Sehgal*

graduated from MGM Medical College Indore in 1957. He married Dr. Varsha Sehgal in 1961. He was blessed with two sons. Elder son Dr. Vivek Sehgal after graduation in India moved to the USA and got trained in Cleveland Clinic and obtained American Board Certification in Neuro Radiology. At present he is a well known Neuro-Radiologist settled in Chicago. Second son Dr. Gautam Sehgal after Medical Graduation also moved to USA and joined Yale University as a Research Fellow in Neurology. At present he is settled in India and is owner of two companies i.e. ADS Diagnostics and VED-MED which supplies medical equipments to various institutions.



### **Post Graduate Medical Education:**

Dr. Arjun Dev Sehgal desired to be trained in Neurosurgery. He joined Deconess Hospital in Cleveland, Ohio as an intern, though his primary objective was to become a neurosurgery resident at the Cleveland Clinic. Dr. Sehgal sought permission to attend Saturday Grand Rounds in Neurosurgery. Dr. Gardner, Chairman, Department of Neurosurgery was impressed enough to admit Dr Sehgal as the first non American to a Post Graduate programme in Neurosurgery. After completing five years in Neurosurgery he was accepted at Yale University for a fellowship. During his training he modified Dr. Gardner's operating chair and Gardner's skull clamp and his efforts were well appreciated. In view of his devotion, analytical mind and completion of American Board Certification in 1963, he was appointed as Consultant and Research Associate in Cleveland Clinic Hospital from 1963 to 1964.

In spite of a promising career in USA he came back to India in 1964 to settle in Delhi. He appeared for an interview to join the Indian army but did not like the way the army functioned! He joined G.B. Pant Hospital and was HOD of Neurosurgery from 1965 to 1968. He had full support of Prof. Baldev Singh eminent neurologist. Dr. Sehgal established himself as a competent neurosurgeon, building up a commendable practice. Everyone appreciated his clinical acumen, surgical skills and foresight to set up a neurosurgery practice that was regarded as one of the best in North India.

Finally Dr. Arjun Dev Sehgal joined Sir Ganga Ram Hospital in 1968 as a visiting consultant in the Department of Neurosurgery. He wanted to create an outstanding Department of Neurosciences in Northern India, to offer neurosurgical services to the affluent sector and also free services to the poor patients using the general beds including free ICU beds in Sir Ganga Ram Hospital. He was one of the founder members of the Board of Management which was created in 1976 to run the hospital. He became member of various committees. He made significant contribution as Joint Secretary Cum Treasurer and also as Chairman of the Medico-Legal Committee. His profound knowledge about legal matters was utilized by the management and doctors in other states. He established the 5 years DNB programme in Neurosurgery in Sir Ganga Ram Hospital.

**Achievements** included becoming President of Neurological Society of India, First President of Neuro-Trauma Society of India, President of Healthcare Foundation of India, President, Indian Society of Stereotactic and Functional Neurosurgery, Convener of American College of Surgeons India Section and President of the International College of Surgeons (India section). He upgraded and modernized the Medical Library of Sir Ganga Ram Hospital during this tenure.



*Felicitated by President of India  
APJ Abdul Kalam*



*A.D. Seghal & B. Ramamurthi at  
1st ISSFN*

He established a well recognized Seghal's Neurological Research Institute in Kailash Colony, New Delhi in 1969, fully equipped with EMG, EEG, modern operation theatre and 24x7 neurosurgical and neurological services. Set up the first CT scan and First MRI centre in Northern India at his Institute. Demonstrated that neurosurgeons and neurologists can join the private sector without fear. Developed Seghal's Stereotactic instrument, promoted use of intrathecal steroids and steroids in neurological disorders. Had many publications in National and International journals.

His benevolence was legendary. He offered jobs to young neurosurgeons at his institute and gave generous financial help to establish their careers. At Sir Ganga Ram Hospital he encouraged DNB students in Neurosurgery to participate in national conferences. He looked after their travel, stay and above all gave generous allowances for their entertainment at the conference venues. Because of his unparalleled interest in teaching programmes Department of Neurosciences meeting twice a week was well attended by all faculty members including Neuropathologists, Neuroradiologists and DNB students in Neurology and Neurosurgery. He

was very particular in conducting ward rounds and everyone had to be well dressed. Dr. Arjun Seghal was always immaculately dressed.

In Sir Ganga Ram Hospital, doctors with the help of the Management formed “Doctor’s Forum” and also created a large facility “Consultant Combine” where Doctors had the opportunity to relax and intermingle with other consultants. His enthusiasm and joy for life was boundless. At 11.00 sharp he visited “Consultant Combine”. All the consultants gathered around him to listen to his opinions, comments and criticism on various subjects including running of hospitals. He expressed his feelings openly. He always thought that coming to the “Consultant Combine” and expressing his views was a good “TENSION BUSTER”. He was a great organizer and hosted a NSI conference in 1995 at Ashok Hotel in Delhi. Delegates attending the conference were overwhelmed by the fabulous arrangements and the way they were looked after.

His achievements in Ganga Ram Hospital are laudable and exemplary. He strongly believed that for progress in neurosurgery, it is essential to have separate sub specialties. He created separate departments of Vascular Neurosurgery, Pediatric Neurosurgery and Neuro Spinal Surgery. He encouraged neurosurgeons’ to develop Stereotactic and Functional Neurosurgery, Epilepsy surgery, Minimal Access Endoscopic-surgery and Vascular Interventional Neuroradiology. As a Board Member created post of Neuropathologist and appointed late Dr. Subimal Roy, a well known neuropathologist from AIIMS, to that post. As Chairman of the Organ Transplant Committee he made sure that the donors and recipients were interviewed and their statements were videographed and documents scrutinized to avoid any illegal practices. Because of his towering personality and open hearted invitation many stalwarts in neurosurgery from USA, UK, Japan, Germany, Scotland, France, and Singapore visited the department. He was felicitated by Late President Dr. APJ Abdul Kalam for his outstanding contributions in the field of Medicine.

Dr. Arjun Dev Sehgal and Dr. Mrs. Varsha Seghal were keen travellers and managed to see practically the whole world. Dr. Varsha Seghal a well known Gynecologist and Obstetrician is full of energy and zest. She was the main force behind Dr. Arjun Seghal and managed the Seghal’s Neurological Institute well. After his untimely demise in 2006 she kept the institution functioning till Feb 2012 with the help of neurosurgeons and neurologists

close to him. He never forgot his roots and visited his home town Sri Ganga Nagar frequently to help people. He created ADS charitable trust and set-up a Diagnostic Centre with CT, Cardiac-Echo, Ultrasound and other lab facilities. He provided number of scholarships for women's upliftment.

The faculty of Neurosciences of Sir Ganga Ram Hospital and members of Delhi Neurological Association pay homage to this great man who really cared and shared everything with others deploying to sensitivity, dignity and pragmatic maturity. His dignified arrogance tinged with humility and humbleness and open hearted benevolence is worth remembering. To conclude, Dr. Arjun Dev Seghal was one of those rare human beings who needed no memorial. He lives in the hearts of those whose lives he touched. There could not be a better memorial to any human. "May God bless his soul". ■

**The editor is grateful to Col. S. Madan for contributing this article.**



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**M.C. Maheshwari, President NSI 2001**

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### **Introduction & Family Background:**

Dr. M.C. Maheshwari (MCM) was born in a rich Zamindari family in a village in Uttar Pradesh. His parents wanted to educate the children even though the general environment was not conducive. After some years the parents decided to move to Lucknow and desired that young Maheshwari become a doctor though he was primarily interested in mathematics and science. Joining King George's Medical College, Lucknow, MCM completed MBBS in 1961 and M.D. (Gen Medicine) in 1964. During his post-graduation he developed an interest in neurology. This led to formal training in the UK and USA. Having decided to settle down in India MCM returned and joined the All India Institute of Medical Sciences, New Delhi. Dr. Maheshwari's wife is a gynecologist. Both their children (one son and one daughter) are doctors.

### **Medical education:**

In his early years at AIIMS, MCM realized limitations of doing basic research in a clinical subject. Increasing clinical work led to emphasizing the clinical bed side approach and learning. Bed side learning resulted in revisiting Neuroanatomy and Neurophysiology books. This principle was implemented in D.M. training programme also. MCM realized that old Neurology (India) Journal volumes were not available even in the National Medical Library and AIIMS Library. Hence for the first time an abstract volume of Neurology (India) of the first 25 years was made available in all medical colleges, libraries and to all members of the NSI.

Initially Epilepsy programmes were very limited and MCM had reservations about the functioning of the India Epilepsy Association (IEA). The 18<sup>th</sup> International Epilepsy congress was held in India. This led to a stimulus for better epilepsy programmes in India. Money saved from the 18<sup>th</sup> International Epilepsy Congress resulted in increased activities of the

IEA. Neurology, Neurosurgery and its allied branches were gradually spreading all over India because of the need and foresight of a few visionaries. Clinical services were supplemented with academic excellence. AIIMS New Delhi contributed significantly in the training of neurologists and neurosurgeons from all parts of the country including the Armed Forces.

From his OPD experience, MCM realized that the public required reliable authentic knowledge, in simple terms, about their symptoms and health conditions. Close discussions with patients and allaying their fear and anxiety was as important as providing a prescription. The National Book Trust was persuaded to bring out inforatory books at affordable prices on common subjects like epilepsy, headache and stroke. In addition about 250 papers were published in National and International journals. Some of these papers were based on D.M. students dissertations. Dr. Maheshwari believes that the capacity to work is fixed. However in the beginning this capacity to work can be developed, enhanced or modified. If one works in life with the capacity one has, with honesty and sincerity, maximum satisfaction and peace of mind follows. He has followed this principle to the best of his capability.

His former residents who are now senior neurologists, are established practically in every state of India. MCM pointed out that his approach to life was to accept tasks which came in his way or was given to him. He always did his best to fulfill the task, without any bias or consideration. Immensely satisfied, at the end of his career he reiterated that he was never after positions in academic societies.

### **Academic achievements:**

Awarded the **Padma Shri in 2001**, Prof. Maheshwari retired the same year as Head of the Department of Neurology, Chief of Neuro Science Center and Dean of All India Institute of Medical Sciences, New Delhi

### **Reminiscences and Take Home Message:**

Medical sciences in general has witnessed great changes both in diagnostic and therapeutic areas in the last 40 to 50 years. Neurological sciences did not lack behind. There has been an all round development in the approach to neurological disorders including developmental and neurodegenerative

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diseases. These were earlier only part of academic discussions. Advances in neuroradiology and therapeutics have raised patients confidence in the management of neurological diseases. Immunological and genetic testing have opened new possibilities. While conceding the importance of documenting pathological processes in individual patients, it is stressed that clinical sense and experience should not be left aside, forgotten altogether or underestimated. An analytical approach to the patients' problems is very often most rewarding. For doctors, achieving patient contentment should be the primary objective.

While facilities for management of neurological disorders were spreading and extending all over the country, the need for development of a National Epilepsy center was felt. It was realized that all services, related to epilepsy, including social, educational and occupational besides medical and surgical should be included in such a dedicated epilepsy center. The National Epilepsy Centre should become the nodal point for the development of other regional centers and in the neighboring SAARC countries. Dr. Maheshwari laments that he could not complete this task.

Doctors should not be arrogant, should have helping attitude towards their patients and should exude ability and confidence to discuss problems with their patients. Doctors should be grateful to All Mighty God for having bestowed on them the opportunity, to help mankind. It is but natural to wish to be reborn, to correct or mend one's mistakes in this life. He is also grateful to his patients. ■



**Mathew Jacob Chandy, President NSI 2002**

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**Introduction and Family Background:**

I was born on 29<sup>th</sup> Dec 1943 to Dr. Jacob and Accama Chandy in the then British protectorate of Bahrain Islands. My father was working as an Assistant to Dr. Paul W. Harrison, a close friend and classmate of Dr. Harvey Cushing who had, by then, established Neurosurgery as a separate speciality. We returned to India in the summer of 1944 by boat in the thick of the War to my father's home town in Kottayam. My grandfather was then the Principal of a Theological College. My father had initially travelled to the American west coast by troop ship, zigzagging all the way, avoiding German U boats. The next five years in Kottayam was difficult. Overseas letters were rare but finally we received news that dad would be returning after completion of his training.



*With Father and Son*

**Schooling:**

I vividly remember dad returning home in a hand-drawn rickshaw wearing a checked Jacket in the summer of 1949. After visits to the extended family and other social functions, we went by steam train from Shornur in the then Travancore Cochin State to Katpadi near Vellore. We lived in the sprawling Medical College Campus in Bagayam in a duplex stone building and our neighbor was Dr Paul Brand of Leprosy and Hand Surgery fame. Since there was no English medium school in Vellore I was tutored at home and



learnt to speak English from my playmate Christopher Brand. After six months I was admitted to the Bishop Cotton School, Bangalore as a day scholar, living with friends as a paying guest. After about three years I was moved to the Madras Christian College High School where I spent the next six years as a boarder. I saw my dad sporadically during my school days. When I was in the last year of school, in 1959, he had single-handedly set up a multidisciplinary department of Neurosciences and the first Masters candidate was already in training.

My six years at school was enjoyable with many extracurricular activities including Music. My scholastic performance was just 'above average'. Pre University was at Loyola College and after a year, I joined the Christian Medical College in 1960. My father was by then Deputy Director of CMC. I did not do well in the first two years but, Medicine fascinated me and I got the gold medal in General Medicine and the Neurology prize. The dissertation for the Neurology prize was on Autonomic Pain.

My father by then was Principal of the College. I secured the 7<sup>th</sup> position in the MBBS final exam in the University and started my internship on a salary of one hundred rupees a month. Internship was extremely busy and I was very happy and thoroughly enjoyed it. During the internship posting in Surgery Unit 3 under Dr. L.B.M. Joseph, I developed an interest in surgery and I did not look back after that.



*In College*

After completion of internship my father gifted me a tour of the USA for four weeks. This took away the mad desire to fly away to the USA. The American Hospitals were even paying for travel at that time! As I had been selected as a sponsored candidate I had to work in a small Mission Hospital in Kanakkari on the Kottayam Kochi highway. After a year I decided that speciality practice in a Teaching Hospital was preferable to being a successful General Practitioner in a small Mission Hospital. The second year of my scholarship obligation was spent in the Anatomy Department as Instructor in Anatomy. My father was Principal and Head of Neurological Sciences and I knew he was having difficulty with the then Director of CMC, an Englishman on matters of Institutional policy.

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On May 12<sup>th</sup> 1969, I got married in the traditional style in Kottayam. Sushie, officially Elizabeth, came to live with me at my father's staff quarters in CMC. I was nearing completion of the year as instructor in Anatomy. In the meantime, I applied for General Surgery in Madras and joined MMC first Unit for post graduation under Prof. Atma Rama Rao in July 1969. My father retired from the CMC in January 1970 and moved to his home town in Kottayam I passed the MS (Gen. Surgery) exams in September of 1971. In Jan. 1972, I joined CMC for training in neurosurgery. I had been selected for neurosurgery residency at the Montreal Neurological Institute in 1969. My father knew about this. One day he casually mentioned that if I went abroad for neurosurgical training, it would not be helpful for his training programme in India. I dropped the Montreal plan and decided to train in India.

The training program in Vellore was for 24 months during which time I saw neither night or day, sun, wind or rain! The working hours was over eighteen hours a day punctuated by periods of time with Professors Abraham, Mathai and Taori, all close associates of my father. However, no quarter was given and no quarter was asked. My wife threatened to put up a signboard in front of our house "Boarding and Lodging". I hardly saw my daughter Anju during this period.



*With Wife and Children*

Training was intense and severe on both body and mind. Clinical examination and diagnosis took pride of place followed by pneumoencephalograms, ventriculograms and carotid stick angiography. Investigative procedures were long and arduous for both patient and doctor. They were invasive and occasionally life threatening. Choosing the correct investigation was a skill I learnt over a period of time. Elective surgery started in two theaters at eight in the morning followed by emergencies every night There was no navigation, drills, microscope, head clamps and most often only monopolar coagulation. The brain was angry and fearful at times but usually dancing, bathed in clear CSF. I was very fortunate to

be trained by two master neurosurgeons, Prof. Mathai, Surgical Neurologist and Prof. Jacob Abraham, Surgeon Scientist. The two master teachers had differing techniques and contrasting styles, nevertheless, trained by the same person, my father, Prof. Jacob Chandy.

Saturday mornings started with brain cutting post mortem sessions followed by radiology, interspersed with basic science lectures taken by one of the registrars. There were no didactic lectures in neurosurgery and we were the neuroradiologists of the time. By January of 1974, the training period was over and silence descended into our lives and we were given time off to prepare for the examinations. Incidentally, the first text book of Neurosurgery, Youmans 3 Volumes came to our library that month. The library of books brought by father from Montreal faded into the Archives. On the evening of the second day of my examination conducted by Professors Ramamurthi, Dayananda Rao, Natarajan and Mathai, my colleague S.K. Ramachandran Nair and I were informed that we had passed. We were now qualified but I realized that a long, difficult and winding road lay ahead. I first called my wife to congratulate her for her immense patience and then called Kottayam. I knew my father was waiting for my call.

It was the normal practice in those days to continue working in your training hospital to gain more exposure and experience in ones work. Two days after my results were announced I joined the Christian Medical College as Lecturer in Neurosurgery in April 1974. I was posted to work under Prof. Jacob Abraham who gave me a free hand and I started enjoying my work. It was during this period that I was enamored by the stereotactic work at the Institute of Neurology in Madras and was wondering if I should spend some time there with Prof. Ramamurthi and Prof. Kalyanaraman. I discussed this with my father when I went home for a holiday when, he in his assertive style said that any procedure which destroys brain will not last, go and learn how to preserve brain. Learn to use the operating microscope!

It is interesting to note that before father retired, he attended a conference in the US in 1968 when he heard Dr. Donague speak on the management of spinal tumors with the operating microscope. He immediately ordered for a microscope for his Department (Zieus OPMI 1). Sometime at the end 1974, I wheeled in the microscope into the theater for a lumbar

neurofibroma and what struck me was the ebb and flow of CSF and the sheer beauty of neural tissue under illumination and magnification. I closed the dura under magnification and literally ran to tell Prof Abraham what I did. “Ahhh” he said, so that’s why the third case got cancelled!! It was thought at that time that microscopic surgery was time consuming and therefore not appropriate.

By the middle of 1975 I started getting restless, a year had passed and there was no chance in sight for a study leave opportunity abroad. We were expecting our second child and the salary of six hundred rupees a month did not help. Two contrasting opportunities suddenly sprung up from nowhere. One was a scholarship to train with Prof. Christian Kristianson in Norway for two years where I had to be alone and couldn’t take the family and the other was a Government of India deputation to Iran to help in their Medical services. There comes a fork in road and which path will you take? I didn’t ask my father about this one. Kristianson was his friend and colleague in Montreal and I knew what he would say. I chose Iran, new country, new language, new culture, ancient civilization and importantly some money at last!

In September of 1975, I resigned from CMC Vellore and left for Iran, leaving my wife at her home in Trivandrum. There was a team from India from all specialties and the Iranaians welcomed us and we started off at the Olympic Village in Tehran for briefing and language classes. I was posted in the North Eastern city of Tabriz close to Baku in the USSR. We became Tabrizi. Suddenly, I was alone with no support systems. I spent about a year and a half setting up a provincial head injury program. My wife and Anju joined us and we had a smashing time dancing, partying and enjoying the music and Persian poetry not to mention the Iranian Vodka, which was famous. After a dinner party the guests would settle down for poetry reading and all would go “Wah Wah”. The food was out of this world starting with Tabrizi Kofta and we decided that this was the heaven we were looking for! My wife returned to India and we had our second daughter Tina in October of 1975.

Most of the Deans of medical schools and neurosurgery program Directors in the United states look for young men and women with diverse experience outside biological sciences. In India this is unheard of but the point is that this can be done after qualifications also. Looking back, the

Iran experience overall was fantastic and gave me a lot of energy for my future work. After a year and a half in Tabriz we moved to Gorgan on the Caspian coast. Life was exciting and just as we were considering staying on, a few stray incidents of political opposition and unrest in July of 1978 made us change our plans. We left Iran in early December of 1978 a few weeks before the arrival of Ayatullah Khomeini and the exit of Shah Reza Pahlavi.

The return from Iran should be a chapter in itself. We arrived at our family home to a big welcome in Kottayam and just as I was wondering what to do I received an invitation from the Montreal Neurological Hospital (MNH) to join as the first Penfield Fellow in Neurosurgery. I joined MNH in January 1979 and was posted under Prof. Theodore Rasmussen, the renowned Epilepsy Surgeon of Rasmussen's encephalitis fame. I realized that the workup and investigations for those patients scheduled for epilepsy surgery was so exhaustive that I would find it difficult to replicate this in Vellore and so I requested TR to transfer me to Prof. Gilles Bertrand who was doing microsurgery of the cervical and lumbar discs, brain tumors, pituitary tumors, and aneurysms I found my niche! I enjoyed learning the microsurgical anatomy of the Brain which I knew I could easily import and transfer to Vellore and to India.

Soon, the second fork in the road was upon me! I was offered a residency position to do the Canadian Fellowship after two years, followed by opportunity to settle and work in Canada. As I was wrestling with this offer, one day, I got a letter from my father who was in Vellore. The letter said he had carcinoma prostate with secondaries in the groin and that there was nothing to worry. This news was a body blow and changed everything. It changed my Canada plans and I decided to come back and work somewhere close to home. "All things happen for the good"? I visited the All India Institute, New Delhi, Chitra Institute in Trivandrum and finally decided to rejoin my Alma mater Christian Medical College in April of 1980.

Return to CMC, Vellore in 1980 was fortuitous. It happened as an act of destiny or of God's will. My father's illness brought me back from Montreal to Vellore little realizing the tremendous opportunities that lay before me. The years 1980–1990 was spent with Dr. Jacob Abraham with whose encouragement, I could learn, develop and teach microsurgery of

the brain and spinal cord that I learned at Montreal. Several techniques seen and learnt in Montreal were transferred to Vellore. These included surgery of Spinal Cord AVM's, intramedullary tumours and various approaches to deep seated tumors of the brain and transphenoidal pituitary surgery. I became Professor and Head of Neurosurgical Unit I on retirement of Dr. K.V. Mathai in 1986 and had a short stint in the U K to study cerebrovascular surgery before this.

Dr. Marcus Devanandan was kind enough to lend me his operating microscope with its camera to capture amazing pictures of the Microsurgical Anatomy for presentation at conferences and meetings. Anterior approaches to the spine, discectomy, median corpectomy and odontoidectomy were also started at this time. From 1990 the focus of my work changed after taking over the Headship of the Department on retirement of Prof. Jacob Abraham. Heading a Department entails awesome responsibilities. There was tremendous breakthrough in technology at that time. I decided to focus on several areas of development and knew that I had to choose and nurture junior staff to take on each of these responsibilities and develop them on their own. One has to delegate responsibility knowing that eventually one may not get direct recognition. Delegation of responsibility to the correct people eventually results in a multiplier effect for the Department elevating it to the next level.

Intraoperative Monitoring was such an area and Dr. Srinivas Babu, a pure Neuro physiologist, was encouraged to take up this additional responsibility. He did extremely well in developing this sub specialty and I am looking forward to his comprehensive text book on Intra Operating Monitoring. This, of course was in addition to his research activities and Doctorate training program. CMC has one of the best intraoperative monitoring programs.

After a visit to Pittsburgh for training in Skull Base Surgery, I realized that further progress in this area will not be possible without a strong dedicated Intensive Care Unit and also a dedicated Neuro Rehabilitation Unit. The usual way forward would have been to find an Anaesthetist or Internal Medicine Specialist to develop this area. However, I encouraged Dr. Mathew Joseph who reluctantly agreed and with his hard work and administrative skills started his Unit of Intensive Care and Traumatology, which is now recognized as a frontrunner in the country.

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In 1986, before Prof. Dr. Mathai retired he had been able to obtain a grant for a CUSA Carbon dioxide Laser and a BRW frame. We started using the CUSA and the Carbon dioxide Laser, however the BRW frame was in cold storage. When I visited the US, I persuaded my friends through the kind intervention of Dr. Schwartz, who knew my father well, to demonstrate the use of the BRW frame. On my return to Vellore together with Dr. Rajshekar, we did our first CT guided Stereotaxic Biopsy, sent the tissue to Dr. Sushil Chandi, who smeared the tissue and made a diagnosis of high grade Glioma, thereby starting Image guided Stereotactic surgery in India, and so also smear diagnosis of tissue.

I delegated Dr. Rajshekar to move Stereotaxy forward and he did an admirable job focusing on this area, which resulted in doing a large numbers of patients under local anesthesia in the Radiology block where I managed to get a room dedicated for Stereotactic Biopsy. There were a large number of publications on the use of Stereotaxy both for Biopsy and treatment. The use of the frame for Stereotactic Craniotomy for lesions in eloquent areas was also started.

Neuropathology in C.M.C was established in the Dept. of General Pathology by Dr. Sushil M. Chandi (No relation of mine), who had his training in Montreal and who came back to Vellore in 1977-78, after training under Prof. Dr. Matheison. From then on, all specimens from neurology and neurosurgery went to him for diagnosis. A successor to Dr. Chandi was required, I decided to encourage Dr. Geeta Chacko who had completed MD Pathology to go into Neuro Pathology. She then started the Department of Neuro Pathology, under Neurological Sciences but located in the Pathology block. I gave her ten years to become one of the leading Neuro Pathologists in India with a Doctorate Training Program. With hard and focused work Neuropathology was able to develop tremendously under her leadership without being under the shackles of General Pathology. The clinical output and explosion of knowledge in the field were been fully utilized and my wish came true.

CMC began to flirt with computerization in 1990. The Labs and clinical areas were all running on Hard copies. My colleague Dr. Philip Korula, Prof. of Plastic Surgery was experimenting and putting into place a CHIPS (Computerized Hospital Information Patient System) into CMC.

I suggested to him that the Neuro Department could be a Pilot project for this new system and after gentle persuasion managed to have the Administration, second a fresh IT professional to our Department to start Computerization. Mr. Ebenezer Sunder Raj then started the first LAN system for our Department which was later adapted to the whole hospital. All the neuro residents became experts with the LAN system which has since revolutionized Medical Records and documentation all over the country.

There were a large number of young patients coming to CMC with a few attacks of seizures, whose CT scan showed a solitary small lesion in the brain and going by the publications available at that time were considered to be a micro tuberculoma. One day while I was talking to Dr. Subhashini Prabhakar in her office about these Micro Tuberculomas, she suggested that biopsy was a necessity. Since we had started using the BRW frame for Biopsy, we decided to do a biopsy on a small series of patients. The biopsy result turned out to be “Focal Encephalitis” with no definite evidence of Tuberculosis. We then decided that a Stereotactic Craniotomy was necessary to remove the lesion. This was done by Dr. Shanker Gopinath and to our amazement it turned out to be Cysticercosis! This was published and we showed that these lesions, in the clinical setting was indeed *Cysticercus granuloma* and not Tuberculoma.

After a few months, Dr. Rajshekar returned from the U.S after his study leave and Dr. Jacob Abraham and I decided to request Dr. Rajshekar to continue to work on “Solitary Cysticercosis”. Ever since, Dr. Rajshekar has continued to work on this subject to elucidate the diagnostic and management protocols. He added epidemiological data to this study. The advances in focused radiation in the West with the advent of frame based stereotaxy made me have a series of discussions with the then administration in CMC who were in the process of getting a Leksell radiation equipment. We negotiated the software from Radionics Inc. and set up an X Knife unit for both Radiosurgery and Stereotactic Radiotherapy. We sent Dr. Rajshekar for training in this modality and X Knife treatment was started successfully. In a similar manner, areas of special interest were given to the juniors for study and development. The question remains, should I be a generalist or become a specialist? Looking at history the answer is obvious.



My unfinished task during my headship was in Neuroradiology, Neuro Anaesthetics and Neuro rehabilitation. However by this time I had a total of over 250 publications and a host of Memberships and Fellowships including the Fellowship of the National Academy of Medical Sciences and the Sangam Lal Medal for Surgeons. During this period I became the Hon. Secretary of the NSI and the Trustee and Secretary of the CMC Council and later the President of the NSI. My father, in the meantime, had turned ninety and parents were beginning to feel insecure as my brother and sister were overseas. I felt they needed me and so I moved to Vaikom, close to Kottayam, as Chief Neurosurgeon and Director of Medical Services in January of 2001. In early 2002, my second daughter was married in Kottayam. My son and wife continued to live in Vellore for his schooling.

These years were difficult for me working in the Marxist heartland but I could spend quality time with my parents at weekends. This gave them a great deal of security and comfort. I came back to Vellore every month and thus spent over four years in Vaikom doing general Neurosurgery. I was able to develop the Brain and Spine Center in Vaikom where patients came from all over Kerala and most of all give comfort and security to my parents in the evening of their lives.

It was on a holiday to Muscat that I met my old friend Dr. Pawar who had recently joined the Apollo group and had been appointed as the first Director Medical Services in the new hospital in Dhaka, Bangladesh. He invited me to start Neurosurgery and set up the Department of Neurosurgery. This was again a fork in the road. In the meantime, my son completed school and had got admission in the Christian Medical College. My wife resigned from CMC from her job as Chief Technologist in Electrophysiology and we moved to Dhaka in 2005. I was now 61 years old and little did I know that both of us were about to start our second careers in a Corporate Hospital. We finally gained some financial stability we never dreamt of. We decided to eventually settle down in Vellore for obvious reasons and grappled with the changes that we faced in Dhaka.

Work in a Corporate Hospital is challenging, in that, apart from the patients, their problems, the pathology and anatomy of the brain and spinal cord, most other matters are different. We gradually settled down in the new environment, reminding ourselves to be ethical, disciplined and consistent. Money should only be considered as a by-product of one's

conscience and empathy for patients. We came to Dhaka for a year and now even after completion of twelve years we enjoy our work. My parents in the meantime passed away and our home town Kottayam and our family home went into oblivion. My son did Diploma and MD in Anesthesia! I was initially astounded, but gradually realized he has his own mind



*Grandchildren with their Parents*

and good for him for that! He got married to Arunima who finished MD in psychiatry and they are both planning to work in CMC for the time being. Our daughter Anju is a Consultant Radiologist and her husband Santosh is a Consultant Neurosurgeon and they both work in Adelaide and have two children Tara who is in school and Adil who is doing Medicine. Tina is married to Vijay who is a Consultant Endodontist. Tina manages his private practice in Melbourne. God has been Merciful to us in spite of our frailties. We have several future plans and aspirations but we take every day on its own merit hoping for good health and God's Grace.

### **Addendum:**

*A trainee's view of his mentor – contributed by Dr. Ari George Chacko, postgraduate student from 1988 to 1993 at CMC Vellore. He worked with Dr. Mathew J. Chandy till the latter's retirement in 2001. Currently, Dr. Ari is Professor of Neurosurgery and Head Neurosurgery Unit 1 at CMC, Vellore*

I first met Dr. Mathew J. Chandy (MJC) in 1988 when I requested an interview with him in connection with working as a junior doctor in Neurosurgery. Although I knew of him as an undergraduate student, when he had taken a few classes for us, I had not formed an impression of him. I had barely sat down when he looked at me impassively and asked, "Do you smoke?". I had just stubbed a cigarette out in front of his office and the odour of smoke was obviously around me – there was no point in bluffing. I said that I did. "Smoking and neurosurgery do not go together". Over the next 3 decades I would hear many such dictums and questions

from my mentor, some related to neurosurgery and others related to life in general.

“You are going to operate on the patient, not on the MRI”. Dr. Mathew Chandy did ward rounds every morning at 0800 hrs beginning in the Neurosurgery ICU. His rounds were efficient, a combination of patient care and teaching. The emphasis on analyzing symptomatology and clinical findings and then deciding upon surgery based on this analysis superseded any findings on the MRI. We learned very quickly from him, how to look for postoperative complications and the importance of reassuring anxious patients. In my practice now, I realize how important these components of patient care are with reference to patient outcomes and satisfaction. The night before surgery is not the time to enumerate all the deathly complications that might be expected.

“What is the temperature of the operating room?”...Dr Mathew Chandy loves neurosurgery and operating. He is in his elements in the operation room. To keep the nurses, technicians and anesthetists alert and active he would constantly throw out such questions. Although the Department of Neurosurgery at Christian Medical College, Vellore acquired an operating microscope in the early 1970s, it was MJC who put it to regular use and introduced microneurosurgery into the department. His techniques were perfect – neat, quick, safe and effective. As a first year resident, I remember him taking a video session in the conference room that captured my imagination – he showed us Gardner’s procedure for Chiari I malformation – a procedure that has been discontinued since. Documentation through photographs and videos were his forte and I believe that he constantly improved on his techniques by watching his own videos. As residents we learned microneurosurgery on the job as 1<sup>st</sup> or 2<sup>nd</sup> assistants watching him closely. He would reprimand us quite strongly if we took our eyes off the operative field while accepting an instrument from the nurse. Helping ourselves to instruments from the nurses table would prompt a sarcastic remark – “Your nurse will never learn to assist you with microsurgery”. The nurse was to place the instrument perfectly in the surgeon’s hand ready to use without any adjustments – or “fiddling” as he called it. New nurses would tentatively wave an instrument in the vicinity of the surgeon’s hand expecting him to reach out and take it. “I do not have eyes at the tips of my fingers”, he would yell out sharply.

Dr. Mathew Chandy was constantly looking for ways to improve surgical techniques and wanted to learn new techniques right until he retired from Vellore. Many of us are comfortable with what we do and rarely venture into the unknown. In the early 1980s, he introduced microscopic transsphenoidal pituitary surgery at Vellore, having spent time watching Jules Hardy in Montreal, Canada. Jules Hardy is credited to be the first neurosurgeon to use the microscope for this procedure in 1965 and repopularized it in North America after it fell into disuse in 1929 when Harvey Cushing was unhappy with it. We were thus very fortunate at Vellore to have learned the technique literally from the horse's mouth. The other surgeries pioneered by MJC at Vellore, consequent to familiarity with the microscope, were anterior cervical discectomies, the supracerebellar-infratentorial and the occipital-transtentorial approaches to the posterior 3<sup>rd</sup> ventricle and radical excision of intramedullary tumors with excellent outcomes.

“Residents are like potted plants. Some require shade and less water, others need more sunshine”. He was a mean judge of character and would quickly assess the personality and skills of residents and junior consultants. Some required tough handling, others a more gentle approach. In general, his attitude leaned towards extracting the best out of an individual – a rare quality in mentors.

In a high volume center, complications are inevitable with complex surgeries. As a senior-resident I was posted as the primary surgeon on a case of cervical spondylotic myelopathy for which the plan was to do a cervical laminectomy in the sitting position. The patient was quadriplegic postoperatively and I was devastated. After hearing my presentation the next morning in the ICU, MJC turned away and went to the next bed without uttering a word. We continued the rounds and 5 patients down the line he turned to me and said, “Ari, there are two ways of dealing with this complication. One – run in the other direction and ignore it. Two – spend time with the patient, get close to him and follow his progress closely”. He did not ban me from the operating room, on the contrary he posted me on a similar case the next day – it is vital not to destroy the confidence of junior doctors.

“You owe me a manuscript”, MJC told me over the phone. He had asked me to search our database for incidentally detected pituitary adenomas

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several weeks earlier and was following up on my progress. The culture and discipline of publishing in peer-reviewed journals was drilled into us by MJC – and he was continually thinking of interesting things to research or write about. “You’ll get hooked when you see your name in print”.

“How many patients do you think you will cure in your lifetime?” MJC asked me unexpectedly one day on rounds when I was a junior consultant. “About 10,000?”, I whispered tentatively, having no clue. He laughed. I subsequently learned that 20 years previously, Dr. Jacob Abraham, MJC’s mentor, had asked him the same question and when MJC gave a number similar to mine Jacob Abraham scornfully told him, “You’ll be lucky if you cure 400 patients in your lifetime”. As neurosurgeons, we strut around believing that we are God’s gift to the human race – have we made any difference to the outcomes in high grade gliomas and severe traumatic brain injury? On the contrary, our Community Health colleagues can cure entire villages from malaria and malnutrition.

Dr. Mathew Chandy and I have kept in touch ever since he left CMC Vellore in 2001 and I still learn from him – he is still my mentor. A few months ago we were discussing the fear I sometimes feel rising within me while I am operating on particularly vascular tumors – was it something I should be concerned about or was this alright? He looked at me solemnly, “Jim Corbett in his book *Maneaters of Kumaon* said that he never lost his fear of the tiger”. ■


**Jagjit Singh Chopra, President NSI 2003**

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Jagjit Singh Chopra (JSC) was born on 15 June, 1935, in Lahore (now in Pakistan). His father was a medical practitioner in Lahore. Later his father had shifted his practice to Fazilka (Punjab). His father had the unique distinction of having served as a jailor as well, and had a street named after him in Fazilka. JSC had his early school education in Fazilka, He completed his medical education from Government Medical College, Patiala (Punjab University) in 1959. He proceeded to UK after one year house job at Rajindra Hospital, Patiala. He worked at the Royal Belfast Hospital for Sick Children, Belfast, and later in the departments of Medicine and Neurology, Royal Victoria Hospital, Belfast. He was trained under neurology stalwarts like Drs RS Allison, JHD Miller, LJ Hurwitz and MS Swallow. He passed the examination for Diploma in Child Health (DCH) from Royal College of Physicians, London, in 1962 and obtained MRCP (Edinburgh) with specialization in neurology in 1963. He was the youngest Indian to be awarded FRCP (Edinburgh) in 1969. During this period he was extensively involved in research on diabetic neuropathy, and was awarded PhD by the Queen's University, Belfast, in 1967. He worked as Registrar, and later Senior Registrar, at the Royal Victoria Hospital, Belfast. He also worked as a Consultant Physician in the Northern Ireland Health Services. It was during this period of his training at Belfast that I (Prof V K Kak) first met JSC in 1964.

It was during this period that JSC happened to meet his former teacher, Dr PN Chuttani, in an elevator in London. In the brief encounter, JSC expressed his desire to return to India. "Boy, go and pack your bags, I have given you the job" said Dr Chuttani to his bright student. That is how Dr JS Chopra joined the Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, in 1968, as Assistant Professor of Neurology, and gradually rose to become Professor of Neurology till his

superannuation in June 1995. Dr Chuttani also requested him to bring a good neurosurgeon. He recommended me and asked me to send an application. I also promptly received the appointment letter and joined PGIMER in 1969. Our association, which began in Belfast, flourished in Chandigarh!

JSC was deputed to Chandigarh Administration as the Founder Director-Principal of Government Medical College and Hospital, Chandigarh, with additional charge of the post of Secretary, Medical Education and Research, Chandigarh Administration, from 1991 to 1995. He planned the Medical College and Hospital on a modular basis. Today it is ranked 9th in the country! JSC started the DM (Neurology) training program at PGIMER, Chandigarh, and trained several superspecialists in neurology, most of whom are heading departments at various establishments in India and abroad. He also trained many specialists in neurology for the Armed Forces of India. He had the reputation of being a hard taskmaster, a strict disciplinarian, and an immaculate clinician. He retired in 1995 but continued as Professor Emeritus at PGIMER, Chandigarh. He was also selected as National Lecturer by University Grants Commission, and has lectured at various medical institutions across the country. The National Academy of Medical Sciences (India), New Delhi, also honored him with Emeritus Professorship.

JSC has contributed immensely in the field of neurosciences research and education. He has conducted research in muscle diseases, peripheral nerves, stroke and infections of the nervous system, and has guided over a dozen PhD theses. He has published nearly 250 scientific research papers in journals of national and international repute. He was Editor of the book *Neurology in Tropics* and Editor-in-Chief for *Text Book of Neurology, Neurology India*—a publication of the Neurological Society of India for six years, and *World Neurology*— a publication of World Federation of Neurology, from 1999 to 2009 (the only Asian to have received this distinct honor). He has written about 50 chapters in various books and monographs published in India and abroad.

JSC is the Founder President of Indian Academy of Neurology (1993-1994), and Past President of Neurological Society of India (2003). He was the first Indian neurologist to be selected as the Secretary General of a

World Congress of Neurology which was organized successfully at New Delhi in 1989. Dr. Chopra has the distinction of having been associated with World Federation of Neurology from 1985 till date in various capacities. He has been Member, Executive Committee



of International Federation of Clinical Neurophysiology, selected as Honorary Member of American Academy of Neurology and American Neurological Association, Member, London Medical Society, Association of British Neurologists, and Ulster Medical Society. He was elected Fellow of Medical Society of London and National Academy of Medical Sciences (India), New Delhi.

JSC has been a Member of Advisory Groups/Panels of Medical Education and Training of National Board of Examination, Indian Council of Medical Research (ICMR), NIHMANS, Bangalore, Indian Council of Child Welfare, Chandigarh, and department of Biotechnology, Government of India. He has been Member of several International Scientific Program Advisory Committees, Member of Medical Advisory Board, Charcot-Marie-Tooth Association, Upland, USA and Core Education Committee, XVII World Congress of Neurology, Bangkok, Thailand. He was nominated as a Senator to the Baba Farid University of Health Sciences, Faridkot, Punjab, by the Governor of Punjab.

Dr. Chopra has been the recipient of several awards and orations, including the Dr BC Roy National Award, 9th Amrut Modi Research Award, Pelipu Perindevi Suriya Award Pharmacological Society of India, MN Sen Oration Award ICMR, Life Time Achievement Award in Neurosciences, Madras Neuro Trust, Dr MS Sanjeev Rao Oration, Dr NK Gupta Oration, Dr RS Allison Oration Belfas UK, Baldev Singh Orations, NSI and National Academy of Medical Sciences, New Delhi, 3rd KEM Oration, Department of Neurology, Government Medical College Kota, Vishist Chikisha Gold Medal by Association of Chest Physicians of India, Award by Pan Arab Union of Neurological Societies, Emirates Medical





*With wife Amarjit*

Association and Emirates Neurological Society and Emirates League against Epilepsy, and Award from Pakistan Neurological Society and Epilepsy Association of Pakistan. He was awarded the Parman Patra by S Prakash Singh Badal, Chief Minister, Punjab in 2007, and **Padma Bhushan in 2008.**

JSC was happily married to Mrs Amarjit Chopra, who passed away last year.

They have two children - a daughter Dr Brinder Chopra who did MD in Clinical Biochemistry from Punjab University, and is currently working as Associate Professor of Biochemistry,

Gian Sagar Institute of Medical Sciences, Patiala. She is married to Dr Sukhpreet Singh, MS (General Surgery), and have two children. His son, Dr Harvin Chopra is trained in Radiodiagnosis - MD from Medical University of Innsbruck, Austria, and MD from MMU, Mullana, and is



*With children and grandchildren*



*With Prof. Kak*

currently working as Assistant Professor of Radiodiagnosis at MMU Medical College, Solan, HP. He is married to Natasha.

JSC was conferred the Lifetime Achievement Award by the World Federation of Neurology at its XXIII Meeting held in Kyoto, Japan, in September 2017. The award was received on his behalf by Prof Dhiraj Khurana, Professor of Neurology, PGIMER, Chandigarh, as Prof Chopra was unable to travel. He was felicitated and presented the award at a meeting organized on the occasion of World Stroke Day 2017 at Chandigarh. A number of his trainees travelled from all over the country on this occasion, and a larger number sent their messages from India and abroad. May God grant him a long life. ■



*The editor is grateful to Prof VK Kak former Treasurer, Past President, NSI and Former HoD Neurosurgery PGIMER Chandigarh & former Director-Principal of Government Medical College & Hospital, Chandigarh and former Secretary, Medical Education & Research, Chandigarh Administration for contributing this article as Prof Chopra is currently indisposed.*



**Subhash Ravindra Dharker, President NSI 2004**

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**Introduction:**

Born on 5<sup>th</sup> March 1946 Dr. S.R. Dharker (SRD) hails from an illustrious family of Gwalior, Madhya Pradesh. His grandfather was Inspector General of Police in Gwalior State and his father Prof. R.S. Dharker, an eminent and renowned neurosurgeon, started Neurosurgery in Gwalior in 1958 after completing two years training in Neurosurgery



*Prof. S.R. Dharker with father  
Prof. R.S. Dharker*

from CMC Vellore. Prof. R.S. Dharker was awarded Padma Shri in 1976. Dr. S.R. Dharker completed his initial schooling and college education at Gwalior. He was excited and elated when he was admitted to G.R. Medical College, Gwalior in 1963 for pursuing medical studies, as it was his childhood dream to become a doctor and particularly a surgeon.

**Family Background:**

SRD is the eldest amongst four siblings. On 24<sup>th</sup> December 1972, he married Mangala, a home maker and a constant pillar of support, who helped him balance his professional and personal life. They have two children, Vaidehi and Nachiket. Vaidehi is married to Mr. Amarish Pradhan, a Computer Engineer well placed in Pune. They have very charming sons Nikhil and Nishant. Dr. Nachiket has a PhD in Bioscience and is happily married to Dr. Poorva, who has a PhD in Biotechnology. The couple is blessed with a beautiful daughter Siyona.

### Undergraduate medical education:

SRD completed MBBS in December 1967 (It was the first batch of 4½ years), securing First position in all the three professional university examinations of Jiwaji University, Gwalior. He stood First in Anatomy, Pharmacology, Medical Jurisprudence, Surgery and Obstetrics & Gynaecology. He secured Distinction in Medical Jurisprudence.



*S.R. Dharker receiving Certificate for standing first in First Professional University Examination*

He received two Gold Medals, one for standing First in Final M.B.B.S University examination (awarded by Jiwaji University, Gwalior) and another for securing First position in Surgery. He used to play Cricket and Tennis during his school and college time.

### Postgraduate medical education and initial training:

After completing M.S. (General Surgery) in December 1971 in the first attempt, he joined CMC, Vellore, Tamil Nadu in January 1973 for M.Ch in Neurosurgery. He completed M.Ch Neurosurgery in April 1975 (First attempt). He got the inspiration of becoming a surgeon and particularly a neurosurgeon from his father, although his father never asked him to take surgery or neurosurgery and had left it to him to choose the specialty.



*S.R. Dharker's teachers: Prof. Jacob Abraham, Prof. K.V. Mathai and Prof. G.M. Taori*

In those days, two candidates were registered for the two year M.Ch course per year at CMC Vellore. There were two Neurosurgery units with a Professor in each unit and one Neurology unit with one Professor and a Lecturer. The Neurosurgery units were headed by Prof. K.V. Mathai and Prof. Jacob Abraham, while Neurology was headed by Prof. G.M. Taori. Dr P.T. Raman was Lecturer in Neurology. Thus registrars had direct and good

interaction with Professors. There used to be enriching discussions during ward rounds. Neuroradiology meetings were held twice a week and Neuropathology meetings once a week. In neuroradiology, registrars used to describe radiological findings and differential diagnosis. All the faculty members and registrars used to attend these meetings. Every Saturday, during seminars, registrars had to present some basic sciences topic in detail. Prof. Dharker's contemporary in neurosurgery was Dr. S.M. Panda. No one was registered in Neurology. His immediate seniors were Dr. Mathew Chandy and Dr. S.K. Ramchandra Nair. Dr. T.N. Shadangi was a year junior to him. His examiners for M.Ch Neurosurgery examination were Prof. B. Ramamurthi, Prof. K.V. Mathai, Prof. M. Natarajan and Prof. Balpameshwar Rao.



*S.R. Dharker and  
Prof. T.N. Shadangi with spouses*

During his training as a post graduate in Surgery in Gwalior, he cultivated values of hard work, sincerity, honesty and care for fellow human beings. These qualities were further strengthened during his training in CMC Vellore. All these helped him in building his future career. After obtaining M.Ch Neurosurgery degree, he joined the Department of Surgery and Neurosurgery, G.R. Medical College, Gwalior as a Lecturer. He further learned finer techniques in neurosurgery and gained valuable experience under his father in Gwalior. His father wanted him to join some other Medical College and establish himself on his own. Soon he got a couple of opportunities: one was an appointment as Associate Professor in Neurosurgery at Sri Chitra Thirunal Medical Center, Trivandrum and another as Reader and Head of Neurosurgery, S.M.S. Medical College, Jaipur. He chose to come to Jaipur and joined the Department of Neurosurgery at S.M.S. Medical College on 7<sup>th</sup> June 1978. Initially he was on deputation from Government of Madhya Pradesh as there was no neurosurgeon in Rajasthan after superannuation of Prof. M.G. Sarin in November 1977. Later on, in 1979 he was confirmed to the post of Associate Professor in Neurosurgery through Rajasthan Public Service

Commission. He was promoted to Professor of Neurosurgery on 25<sup>th</sup> September 1982. He was the lone faculty member for about four months attending both routine and emergency work. Right from day one he never felt that he was an outsider to this great institution. Due to his hard work, sincerity, discipline, and honesty he was accepted by all and got excellent support and co-operation from all quarters. Looking at his way of working, his registrars and nursing staff also worked sincerely and put in great efforts. He was lucky to have dedicated, hardworking, sincere and dependable registrars and nursing staff right from the very beginning. Dr. P.P.S. Mathur joined him in September 1978.

### **Training Overseas:**

Prof. Dharker was awarded Commonwealth Medical Fellowship for one year in 1983 for training in micro-neurosurgery under Prof. Sir Graham M. Teasdale in Southern General Hospital, Glasgow, Scotland. In Glasgow, he worked as a team member and got very good exposure in management of head injuries. Here he learned micro-neurosurgical techniques, microvascular and trans-sphenoidal pituitary surgery. He also learnt how to conduct research and was exposed to working in an experimental laboratory. In May 1988, he visited Prof. M.G. Yasargil's Department in Zurich,



*Prof. Dharker with  
Prof. M.G. Yasargil at  
his residence in Zurich*

Switzerland as an observer for a month. There he had the opportunity to learn Prof. Yasargil's surgical techniques, live as well as through videos. In 1992 he visited neurosurgical centers in Glasgow, Queens Square London, Newcastle Upon Tyne and Bristol as a Senior Commonwealth Medical Fellow. Micro neurosurgery and surgery for intracranial aneurysms and arterio-venous malformations were started in 1984 after his return from Glasgow, Scotland (Commonwealth Medical Fellowship). The first case of Pcom aneurysm was clipped, by borrowing an Indian operating microscope from the experimental surgery laboratory of the medical college and a bipolar electro cautery unit from Prof. V.K. Pande, Professor of Hand Surgery.

## **Development of Neurosurgery in Rajasthan:**

The Department of Neurosurgery got very good support from the Government of Rajasthan as well as from the local administration which helped in developing the department. In addition, the public and different societies used to extend help for developing the department and also contributed towards the day to day working, for patient care. The faculty also gradually increased from one person single unit, to twelve with three units. The department was soon well recognized nationally as well as internationally. Through his relentless efforts, dedication, perseverance and ability to bring everyone together, Dr. Dharker persuaded the people of Rajasthan to develop confidence in the department, for management of neurosurgical diseases. He persuaded the Government of Rajasthan to start and develop neurosurgery departments in the other five medical colleges of the State as well.

His zeal to take the Department of Neurosurgery of the S.M.S. Medical College to new heights did not stop here. With the support of the Government of Rajasthan and generous donors, he managed to set up a new state of the art Neurosurgery Complex which included four neurosurgery operation theatres and a 23 bedded ICU. Apart from procuring the latest equipment, he started a DSA and crush cytology lab in the theatre complex itself. He also transformed cerebral angiography, ventriculography, myelography etc. to sophisticated imaging studies with high end CT and MRI facilities, available 24/7.



*Honorable Chief Minister of Rajasthan  
Late Shri Bhairon Singh Shekhawat during  
ceremony of New Neurosurgery OT-ICU  
complex at SMS Hospital, Jaipur*

## **Establishing neurosurgical training in Rajasthan:**

Due to the high quality of work and increasing number of patients receiving treatment, the Department was soon recognized and approved by Medical Council of India and University of Rajasthan in 1985 to start the M.Ch Neurosurgery course. This was started in 1985 with two students per

year. H. Bagaria and V.R. Sardana were the first two residents. Till Dr. Dharkar's superannuation in 2006. 42 residents were registered and trained. In his constant endeavor to inspire his junior colleagues and students to sub specialize in neurosurgery, he sent R.S. Mittal and V.R. Sardana for training in trans-sphenoidal surgery, to Sir Prof. Graham Teasdale in Glasgow. Subsequently, other neurosurgeons also went abroad for advanced training and for expanding their horizons.

### **Contributions to Neurosurgery:**

Along with doing high quality work, he was also publishing his work in National and International journals and presenting papers regularly in National and International conferences. He has published 88 research papers, 14 of which are in International journals and read over 100 papers in National and International conferences. In addition he has written 12 chapters in Text books and Proceedings of workshops / seminars. Some papers have been quoted in chapters in Youman's Text book of Neurosurgery and in Neurosurgery by Wilkins and Rengachary.

Prof. Dharker has delivered Six Orations and several lectures in scientific meetings. He was one of the invited speakers at the World Federation of Neurological Surgeons Congress in Sydney Australia 2001, Marrakesh Morocco 2005, and Boston USA 2009, in 12<sup>th</sup> Asian Australasian Congress of Neurological Surgery in Nagoya Japan and Congress of Neurological Surgeons (USA) in New Orleans USA in 2009. He was also invited to deliver a lecture in Hannover Germany in 2000 in the Symposium "Neurosurgery Meets Millennium".

### **Administrative contributions:**

On 31<sup>st</sup> August 1999 he was appointed Principal and Controller of S.M.S. Medical College and attached hospitals. This was a good opportunity for him to at least partly repay the debts as this institution had provided him a platform for working and establishing himself. He was Dean, Faculty of Medicine, University of Rajasthan, Jaipur from 1999 to 2001. During his tenure as Principal for approximately six and half years, he



*Prof. S.R. Dharker and  
Prof. P.N. Tandon*



focused on developing all departments of Medical College and different hospitals by further improving the infrastructure facility in the existing space and also by making available additional space for improving patient care within the limited budget. College laboratories were also provided additional space and equipment. With the help of faculty members he could shift the college library to a new building. Due to his efforts, Medical College got



*Prof. Dharker with Dr. R.P. Sengupta and Prof. B.K. Misra*

permission to access books and journals from the National Medical Library, in 2001. Thus students and faculty could get access to many journals. By increasing the budget for library, number of journals could be retrieved and new journals and books were purchased. The space created by shifting the library was utilized in expansion of departments in the Medical College. With the help of faculty members, efforts were made to uplift the academic standards in the college and in attached hospitals. Efforts were also made to hold undergraduate and postgraduate examinations on time which in the past had often been delayed. Large number of National and International Neurosurgeons visited the department. Profs. B Ramamurthi, K.V. Mathai, P.N. Tandon, S.N. Bhagwati, A.K. Banerjee, V.S. Dave, V.K. Kak were some of the visitors. Others included Prof. William Sweet, M.G. Yasargil, Majid Samii, Sir Prof. G.M. Teasdale, Lyndsay Symon, James Ausman, Peter Jenneta, R.P. Sengupta, D. Long and S. Mullen. Dr. Dharker was examiner for M.Ch Neurosurgery in different universities including AIIMS, New Delhi, PGI Chandigarh, SGPGI, Lucknow, Bombay University and also for DNB Neurosurgery. He was inspector for the Medical Council of India and the National Board of Examinations for starting and recognizing neurosurgery courses in different Medical Colleges and hospitals.

### **Awards and Recognitions:**

Prof. Dharker was awarded several awards and certificates of recognition from Government of Rajasthan and different scientific societies and bodies. He was awarded Shri Chiranjee Lal Agarwal Memorial Award in 1994 by President of India and Merit Certificate by Government of Rajasthan in

1988. He is a member of several International and National Scientific Societies. He is also a Fellow of National Academy of Medical Sciences and an International Fellow of the American Association of Neurological Surgeons. Prof. Dharker was President of Neurological Society of India in 2004 and President of Skull Base Surgery Society of India from 2000 to 2002.



*Honorable President of India  
Late Shri S.D. Sharma awarding  
Shri Chiranjilal Memorial award  
to Prof. S.R. Dharker*

### **Conferences organized:**

The department of neurosurgery under his able mentorship organized many conferences. They included National symposium on C P Angle Tumours in February 1991, International symposium on Current Trends in Neurosurgery in February 1994, 46<sup>th</sup> National Conference of NSI in December 1997, WFNS Tumour Section Meeting in October 2004, 18<sup>th</sup> National Neurotrauma conference in August 2009, 59<sup>th</sup> National Conference of NSI in December 2010, 5<sup>th</sup> Asian Australasian Society of Neurological Surgeon's Neurotrauma Committee and 2<sup>nd</sup> WFNS Military Neurosurgeon's Meeting in October 2015.

He regularly organized Neurosurgical Camps in rural areas of Rajasthan and is Secretary of Neurosurgical Services and Research Society, Jaipur. Prof. Dharker has donated most of his personal books and journals to the Department of Neurosurgery, S.M.S. Medical College, Jaipur to start a departmental library. Prof. Dharker has also given all savings of W.F.N.S. Tumour Section Meeting 2004 and Neurosurgical Services and Research Society (approximately Rs. 25 Lakh) to the Principal S.M.S. Medical College, Jaipur for starting Experimental lab in the Department of Neurosurgery.

### **Association with NSI:**

Every scientific society needs office bearers to run it and he was lucky to serve NSI as President elect and then as President He also worked as one of the members of Neurotrauma committee of the NSI. He had given Rs. One Lakh) to NEUROLOGY INDIA from the conference savings. This was probably done for the first time in the history of NSI. NSI provided

a forum to present his work in conferences. In NSI conferences, CME and other meetings he got an opportunity to listen to national and international stalwarts, to interact personally with them, share experiences, enrich his knowledge and widen his horizons. In earlier days, such NSI conferences and educational meetings were of great help as junior consultants and residents were not able to attend international meetings outside India. Such exposures helped in developing one's personality as a whole.

### **Contribution to Neurosciences in India:**

Neuro-radiological investigations during pre-CT era used to be time consuming, required great skill to perform and needed high proficiency in interpretation and localizing the lesion. Sometimes it was difficult to accurately localize the intracranial and intraspinal lesions, as the investigations available during pre-CT era had some limitations as well. These investigations were invasive and painful. They were performed by neurosurgeons, neurologists or neuroradiologists. When CT Scans came into existence, those lesions which previously were not diagnosed, could now be diagnosed easily and accurately localized with good probability of histopathological diagnosis. Moreover, CT, MRI help a lot in decision making in surgery.

As different faculties of neurosciences are rapidly developing in our country and younger generation neurosurgeons are gaining more and more international exposure, they are more inclined to limit themselves to different subspecialties. This is definitely a good indication of development of Neurosciences and neurosurgery in particular in our country. Younger neurosurgeons today have better facilities to develop their surgical skills in the experimental laboratories. They have excellent access to different journals and books. Fiber dissection techniques and different surgical techniques have made neurosurgery much safer. Developments in the basic neurosciences have remarkably helped in better understanding of the disease process, their progression and management. Neurosurgery continues to be the most demanding and challenging amongst all faculties of medicine. Lots of developments have taken place over the past three to four decades in basic sciences, investigations, surgical techniques and management. With sub-specialties developing in neurosurgery, youngsters after qualifying have better opportunities. ■



**C.U. Velumurgendran, President NSI 2005**

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**Family History:**

Hailing from an illustrious family of Physicians it was no surprise that Dr. Velumurgendran became a doctor. His grandfather, Dr. C. Murugesan Mudhaliar, was the first Lecturer in the School of Indian Medicine, Kilpauk Medical College and was awarded the Vaidya Ratna National Award in 1933 by The Viceroy of India. His father, Dr. C. S. Uthamaroyan, Professor of Siddha, Vice Principal, Kilpauk Medical College became Principal of Palaiyamkottai Siddha College and was the first Director of Indian Medicine and first Professor of Siddha at Tamil University, Tanjore. Mother Mrs. Rajakantheshwari was responsible for bringing up all the children. Dr. CUV describes his wife



*With wife*



*With family*

Pattavarthini as “the all prevailing force”. Their three children - Dr. Krithika, MA, PhD (Psychology), Mrs. Jayashree, Master of Law and Dr. C.V. Shankar Ganesh, MS, MCh Neurosurgery are all well settled. The grandchildren Vibhu

Vignesh, Bharath Vignesh and Shruthi Ganesh all in school, are aspiring to become doctors.

### **Schooling, Medical Education and academic recognitions:**

Studied at Kellett High School, Triplicane, Intermediate at Loyola College, Nungambakkam. MBBS 1961, MD 1966, joined DM Neurology as per advise of Prof. Rathnavel Subramaniam. Obtained DM (Neurology) at Madras Medical College 1969.



In 1974-75, was trained in Clinical Neurology and Electrophysiology at Institute of Neurology, Queensquare, London through a WHO fellowship. In 2003, was awarded the DSc (Hon. Causa) from the Tamil Nadu Dr. MGR Medical University, FAMS and FRCP (Glasgow) in 2006, and a DSc from the Madras University in 2007.

### **Teaching experience:**

Has been Post Graduate and Undergraduate teacher for 36 years and continues to teach (Neurology, Neuro Surgery & Psychiatry). Has been PhD Guide (11 Students) from 1966 till now.

### **Research projects undertaken:**

Epilepsy scheme – PL480 (1970-1973), Department of Science and Technology, New Delhi – Cardiological changes in Neuro Degenerative diseases. (1976-1978) CSIR, New Delhi – Viral studies in Demyelination Diseases (1977-1979), ICMR – Stroke (1969-1972), ICMR – TB Meningitis (1972-1976), Glaxo Smith Kline Sodium Valproate Vs Lomatrixine (2002 - 2003), Aventis – Prevail – Stroke 2004 to 2006, Aventis & Quintiles – Chronic Spinal Cord Injury (CSCI) – 2005, Profess – Prevention Regimen for Secondary Stroke – 2005 onwards, Lifecell – Stemcell Research Correlation study for stroke patients – 2006-2007, CliniRx – Safinamide for neuropathic pain – 2007, CliniRx – Safinamide for Idiopathic Parkinson's Disease – 2007-2009, Pfizer – Reboxetine for Post Herpetic Neuralgia – 2007, Johnson & Johnson – Epilepsy –

2007-2010, Biogen – Multiple sclerosis – 2008-2010, CliniRx – Ralfinamide for neuropathic back pain – 2009-2010, Parexel – Cladribine for Multiple Sclerosis – 2009-2010, DRDO – The effect of Alpha feedback – 2012.

### **Academic positions, achievements and contributions:**

Professor Emeritus – The Tamil Nadu Dr. M.G.R. University - from 1999 to date. Honorary Professor - Sri Venkateshwara Institute of Medical Sciences, Tirupati – from 2002 to date. Formerly Professor of Neurology and Head of the Dept., Institute of Neurology, Madras Medical College & Govt. Gen. Hospital, Chennai. Present Designation – Chairman and Director of Neurology Department, Sri Ramachandra University, Porur, Chennai – from 2008 to date.

Member, Academic Senate Sri Ramachandra Medical College and Research Institute (Deemed University) (2003-2005). Member, Board of Studies, Madras University, The Tamil Nadu Dr. M.G.R. Medical University, Chennai, NIMHANS, Sri Ramachandra Medical College and Research Institute, Chennai (1999-2001). Selection Committee – Professor and Assistant Professor – Several Universities. Inspector - Indian Medical Council, The Tamil Nadu Dr. M.G.R. Medical University, Madras University, National Board of Examination. Examiner in Neurology, Neuro Surgery, Psychiatry for various universities. Has delivered several orations. Founder Fellow, Indian Academy of Neurology – 1990. Endowment Oration instituted in the name of Prof. C.U. Velmurugendran at Madras Medical College. Presented 150 papers in National & International meets. Published more than 70 papers in National & International meets. Contributed two books – Co-author, Diseases of the Spinal Cord-Clinical Medicine & Nervous system series edited by EMR. Critchley, A Eiser – Chapter Tropical diseases published by Springer London. Chaired Scientific Sessions in National & International conferences. Organised several regional and national conferences. Established 30 Endowment prizes mainly for science subjects in Hindu Educational Organizations, to enthuse children in science. Founder President, Association of Behavioural and Cognitive Neurology (1989), Founder Fellow, International Medical Sciences Academy (1985), Secretary, Indian Epilepsy Association, Tamil Nadu Chapter (25 years) (1970-1995), Governing Council Member, Indian Epilepsy Association (Central Body) (1997-2000), Vice President, Indian



*Awarded Padma Shri in  
January 2008*

Society of Headache (1998), Secretary, Indian Academy of Neurology (1991-1995), President, Indian Academy of Neurology (1999), President NSI (2005), Governing Council Member, Hindu Educational Organization (1978), Governing Council Member, Diabetic Research Centre, Chennai (1978-1984), Editor, Proceedings of the Institute of Neurology, Madras. Associate Editor – Neurology India, Editorial Board – Annals of Indian Academy of Neurology.

### **Championing Social Causes:**

Created a sheltered Workshop for Chronic Epileptic Patients. The only one available in the country, it gives training for chronic epileptic patients in handicrafts to get themselves self-employed while taking treatment. Member, Hindu Educational Organisation which maintains three schools and President, Hindu Senior Secondary School, President, Civic Exnora, Chepauk, which is responsible for maintenance of hygiene and green revolution. Pioneer in Public Media on Professional Specifics – Given 12 programmes in A.I.R., 16 programmes in TV, made Tamil Nadu Film Division make a film on Epilepsy. Write-ups in Paper & Periodicals more than 30. Distribution of booklets to public more than 10 formats (total 10,000 copies).

### **Lessons learnt as a Post Graduate:**

Art of Medicine and Neurology, patient care, courtesy to patients and colleagues, English accent, platform manners, discipline, modesty, art of presenting papers at National and International Conferences, leadership qualities which I imbibed from my teachers – Profs. B. Ramamurthi, K. Jagannathan, G. Arjundas, V. Balasubramaniam, S. Kalyanaraman and T. S. Kanaka. The authoritative way of talking, gentle behavior, kindness to patients and colleagues, humane nature, hard work - these qualities were already imbibed from Prof. Rathnavel Subramaniam during the MD Program.

### Illustrative cases:

Cognitive Neurology fascinated me right from my early days in Neurology. I had the opportunity to see a Phantom limb in 1968 in a patient with a parietal tumor. He was wearing socks over his shoes, as he was under the impression that there was another limb. In 1986, I met a patient with a parietal lobe tumor who was seeing a child in front of her, whose dimensions she could describe. After the tumor was removed, the child started to shrink in size and disappear. In 2000, a patient came with vague complaints of having left the sandals belonging to her right foot, in the canteen. She was later found to have a parietal lobe infarct.



### Contributions to Neurosciences:

Established DM Neurology course at Stanley Medical College 1976-85. Helped commence PhD programme in Neurology at Stanley Medical College (Neurology). Helped in starting Neurophysiology certificate course. Established Department of Neurology and a PhD programme at Sri Ramachandra Medical College.

### Activities with NSI:

Helped in conducting the 20<sup>th</sup> NSI Meeting (1970) in Chennai, was organizing secretary for the NSI conference in 1993, part of the Golden Jubilee Celebrations Committee NSI, was the President Elect, President and Past President of NSI during 2004-2006.

### Take Home Message:

*If you were to start life all over again now what would you do?* I enjoyed my stay as a student in Madras Medical College, and later enjoyed being an Assistant Professor, Professor and later Head of the Department of Neurology. Every moment was precious. If I had to relive, I would like to relive my life with my own teachers at Madras Medical College. ■





**Krishnan Ganapathy, President NSI 2006**

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**Introduction:**

It all started at 9 am on Wednesday Aug 3<sup>rd</sup> 1966. I was in my XI standard class. An attender mumbled something to the class teacher, who in turn asked me to meet the Headmaster. I was told that my elder brother, a 25 year old electrical engineer had been involved in a fatal two wheeler accident. Not yet sixteen, that moment I decided to become a doctor and save the world. The scene next shifts to Nov 7<sup>th</sup> 1972 midnight. I was a fourth year MBBS student preparing for my pathology exams. I received the news that my eldest brother, again riding a two wheeler (also not wearing a helmet) had been involved in a RTA. A year ago Prof. S Kalyanaraman had offered me Rs 60 per month to help him collect data for a Head Injury paper. I now requested his professional services. My brother was deeply comatose, with multiple injuries. I was told that he had a “Primary Brain Stem Injury”. That night, I decided to become a neurosurgeon. During the last 45 years, Prof SKR (as he is popularly known) has been a guide, mentor and an elder brother and an object of continuing hero worship.

**Family Background:**

Having lost two elder brothers and with another elder brother settled in the USA, I instinctively decided that I could not leave my devastated parents and so never went overseas for a job or specialised training. A few years later, my brother in law also passed away and I had to look after my elder sister, widowed very young, as she had no children. Even today I honestly believe that it was my parents and elder sister who “looked after me” till I was 55 (my father passed away when he was 94, my mother at 84 and my sister at 75). Living in a joint family with four generations in the nineteen eighties, was an incredible experience. The tremendous family support enabled me to be a guest at home and concentrate on neurosurgery.

To the best of my knowledge, I was the only Secretary of the NSI (for two terms) who was not employed in an academic institute. Most of my contemporaries know the stellar role played by my wife Vijayalakshmi who helped me bring out and post 24 newsletters to 2400 members without an office or departmental support, conduct the NSI elections from 1997 to 2002 and of course run the Society. My children “detest” medicine because I hardly spent any time with them. My son, a PhD from University of Chicago (best outgoing student in Mathematics from IIT Kanpur) is a staff engineer at Google HQ, Mountain View California. His wife is a chartered accountant. They have a daughter and a son. My daughter, an Electronic engineer, with two sons is now a home maker. My son in law is a software specialist at Tech Mahindra in Chennai.



*The President, with the world at his feet with Parents & siblings  
19/04/1952*



*With Family 2011*



*With grandchildren in 2015*

### **Undergraduate Medical Education:**

Awarded Louis Mathias Archbishop Memorial Gold Medal for best outgoing student in the Anglo-Indian high school examination 1966. Winner of numerous prizes, medals, cups and certificates throughout schooling period. Represented Madras Medical College in numerous inter collegiate debates, essay competitions, quiz programmes etc., and won many prizes. After seeing my performance in an intercollegiate drama

competition at the USIS, I was offered admission to BA dramatics course in Chicago! Awarded certificate of merit for highest mark in the University of Madras in Obstetrics and Gynecology and the RSRM Gold medal in Obstetrics and Gynecology. Awarded First Prize in the All India Essay competition for final year M.B.B.S. Students organised by the T.B. Association of India, (1973) for the essay “Differential diagnosis of Pulmonary Tuberculosis.” Awarded First Prize in the intercollegiate Science Quiz (Postgraduate level) in 1972.

I had submitted a “research project’ in the pre university class in 1968 and had obtained the National Science Talent award. This made me dabble in research, even as a II yr MBBS student and for the next four years got the I prize in Life Sciences, every year, from the Madras Science Association. While representing Tamilnadu at the National Science Fair in Delhi. Indira Gandhi visited my stall and I showed her white mice on whom I had done skin grafts. This was my first paper in a national journal - the Indian Journal of Medical Research. For a III yr MBBS student in 1971 this was unusual! I also produced a double headed chick by injecting pilocarpine in a fertilised egg For several years Prof B Ramamurthi addressed me as ‘Muttai Ganapathy’ (Muttai = egg in Tamil). At that time we had two introductory classes in Neurosurgery and Prof BRM personally took these classes. Needless to say I was inspired. I once went to IIT Madras to attend one of his lectures. I requested him for a lift to drop me in the main road. On learning that I was a medical student, he dropped me in my house. Like Prof SKR, he had a major influence in my growth and development.

### **Postgraduate medical education and initial training:**

In 1975 when I was selected for the second 5 year batch, there was no stipend for post graduates. As a resident there was very little time for even a modest “private practice” From 1976, Dr Kalyanaraman employed me as his assistant to look after his private patients admitted in Rama Rau Clinic in Chennai. In addition to Rs 500 a month initially, I was also paid for assisting him in surgery, initially as a second assistant and then as first assistant. Gradually he entrusted me with doing lumbar punctures, myelograms and even carotid angiograms for his private patients. There were no “special nurses” at that time and following a craniotomy I would be the “special duty doctor” for the individual patient. Considering that I was a neurosurgeon in training, it meant an outstanding level of care in a

small nursing home in the seventies. I would leave home at 5.15 am, take two buses, do rounds in the nursing home, review about 10 patients, make entries in the case records and reach the Institute of Neurology, Madras Medical College by 7.45 am. Dr Ramamurthi had only one assistant cum PG Dr Reginald (who was six years senior to me and taught me to do my first burr hole!) and me as a PG, to look after about 40 patients, many of them unconscious. A few weeks after I had just joined his unit, he wanted to know the Na level of a drowsy patient. I pointed out that the previous evening, I had to see 7 new patients, that I was personally looking after 20 patients and that it was impossible for me to go to the lab and get the results before rounds. Deploying terminology which would make a sailor blush, various other occupations were suggested for me!! I just managed to stop lacrimating. An hour later, I was asked to report to his room. I had started preparing to face the consequences. I was instead asked by his secretary to review a file marked “Multi Institutional Collaborative ICMR Project on Head Injuries” – “Principal Investigator Prof B Ramamurthi”. The staff sanctioned for this project included a Sr. Research Fellow. Knowing that I had dabbled in research projects, to my utter surprise Dr BRM offered me the post. With a twinkle in his eye, he asked, “Do you think you can look after my patients also?” For the next three years I held three positions concurrently – PG, SRF and Private Asst to Dr Kalyanaraman. I would be working almost 90 hours a week including most Sundays and sleeping at home four to five days a week. My research job included ensuring that the brain was collected during post mortem for detailed histological studies. Once on a holiday, I informed the mortuary attender that a “case” would be coming and that I must get the brain before *he* leaves. The relatives got to know of this and all hell broke loose!

Humour was ingrained in Prof Ramamurthi. At the “Kasi Yatra”, during my wedding, he told my father-in-law – “Sir, please give him your daughter, otherwise he will remain in Kasi and there will be no one to look after my patients”. Married on a Friday, I requested leave just for the weekend. “You are already married to neurosurgery and why do you want leave anyway”, was the reply. The Wednesday morning clinical meeting at the Institute of Neurology, Madras Medical College would start at 0730 hours. Once I entered at 0733. The rear door had been closed. On opening the front door I was told by the chief that I was 6 days 23 hours and 57 minutes too early

for the next meeting and was asked to go away. Cruel, some may say, but then we learnt to be obsessed with punctuality. He was at his very best in the operation theatre. On one occasion, while doing a particularly difficult ANF excision, he suddenly took off his gloves and sat on a stool chanting some Sanskrit slokas. There was pin drop silence and a palpable tension in the atmosphere. After a few minutes he looked at me and said, “Now will you kindly assist me normally. I am not accustomed to such brilliant assistance”. Time management was his forte. He always had something to read. He would thank Indian Airlines and the various government offices for providing him with unexpected time!

What made Dr. B. Ramamurthi so special? Medicine is replete with tales of the brave. There have been dozens of outstanding surgeons, scores of superb teachers and hundreds of brilliant diagnosticians. Several have made noteworthy contributions to research. A few are blessed with the gift of the gab and have even influenced public thinking. Others have truly been trail blazers. Adversity has brought out the best in them. The word impossible does not exist in their lexicon. The greater the difficulties the greater their determination to overcome them! A miniscule number are truly erudite – at home with Homer’s Iliad and the Bhagavad Gita. However for the same individual to possess every one of these exceptional attributes and more is something unique. This, in a nutshell was Prof. B. Ramamurthi. He will always be a hero and role model to those of us privileged to have been associated with him. Truly great men are neither born nor do they die. They visit the planet earth. The greatest compliment he paid me was when several decades later he once remarked “if only my grandson had been older, he would have been your son in law”.

On one occasion Dr Ramamurthi wanted an immediate carotid angiogram in an unconscious patient. I pointed out that there was no power in the angio room. He said “In 90 minutes I want to see the pictures in my room. Is that clear?” Using all the skills of clinical localisation, I deduced that this was a ‘local’ problem, in the angio room, went to the Govt General Hospital stores, got it opened, got the fuse, got a ladder and managed to have the fuse changed. The percutaneous direct angio revealed what I thought was a meningioma blush. Excited I went to his room 2 hours later. He looked at his watch, at the films and asked, “Why did you not loosen

the oily hair before doing the angio?” Crestfallen, I apologised. Years later I heard that he had related this story to several others though he never directly complimented me. On two other occasions I did an accidental direct vertebral angiogram. He would tell his Asst, “Ask Ganapathy to do the vertebral angio, but don’t tell him you want a vertebral angio, ask for a carotid angio”.

On one Diwali day we had seven mortalities in 17 hours. I was devastated but even more so when Dr Abdul Khader Sait, Asst Professor, insisted on going to the mortuary to see a body which had been removed before he could confirm death. My ego was bruised. After four years as a PG was I not capable of certifying death ? 40 years later I am not sure!!! The 4 weeks posting at CMC, Vellore in Oct 1979 was truly an eye opener. One Saturday morning during the neuroradiology session I was shown a series of pictures, myelograms, PEG, ventriculograms and angiograms. The “visiting PG” was then the guest of honour! and usually torn into bits. I described the findings but was unable to make a diagnosis. This went on for almost 20 minutes. I was feeling miserable, letting down the Institute of Neurology, MMC. Then Prof Jacob Abraham asked me how many years I had been a PG. I replied “Four years 9 months”. He remarked, “why are you taking so much time, why don’t you confidently say that all these images are normal”. Diagnosing pathology is easier than asserting that the image is normal!!

Dr T S Kanaka was at that time regarded a terror. Today she would have been reported to the SPCA and the National Human Rights Commission! Behind this extremely stern façade was a heart made of gold. Decades later we realised that what she taught us with her extraordinarily strict discipline had stood us in good stead. Prof V Balasubramaniam was the exact antithesis of BRM. Small built, diminutive, never ever wanting to be in the limelight he was erudition personified. He was indeed “Knowledge Incarnation”. Dr R Narayanan was pragmatic, worldly wise and would let us operate even when *we* did not have the confidence. Late Profs. K. Jaganathan and Krishnamoorthy Srinivas, G. Arjundas and Zaheer Ahmed Syed taught us the fundamentals of clinical neurology and ensured that we become surgical neurologists and not just neurosurgeons! They truly believed in Sir William Osler’s adage, “Listen, Listen, Listen – the patient

is telling you the diagnosis.” This approach indeed made a remarkable difference in our life.



*With SKR, Mrs. SKR and BRM  
at Panmujom, N.Korea/S.Korea border*

The relationship with Dr. Kalyanaraman was/is even more special. Professionally he has hand held me for decades and played a significant role in most of my “achievements”. Instrumental for encouraging me to register for a part time PhD, my active involvement in helping him bring out Neurology India and organising

the CME programmes stood me in good stead throughout my life. Now I realise that I am unconsciously aping him in many non-professional matters also. Such is the influence of a true Guru – who can forget his coming on Sundays at 7am just to take classes for us. In April 1980, I was shocked when I did not pass the M.S. (Neurosurgery) exam. I had never expected to fail. I met Dr SKR at his residence and told him that if after 5 years of very hard work I was still not considered suitable I would join govt service as an assistant surgeon and requested his help in getting a posting near Chennai. I had expected him to commiserate and sympathise with me, encouraging me and reassure me that in the next exam, in a few months I would qualify. Instead he commended me on an excellent decision. He pointed out that if I could not face a single major setback I could never ever be a good neurosurgeon. He then gave me a list of names (including some examiners!!) and pointed out that some who had not passed in the first attempt, later on had become President of NSI!! I accepted the challenge and the rest as they say is history!!

As DANS (Duty Assistant Neurosurgeon – I did this night duty for 15 years after my MS (Neuro), MNAMS (Neuro) and a PhD in Neurosurgery.) We would telephonically present the problem to the consultant. Whether it was midnight or 4 am, Prof SKR would patiently listen to the whole story, and clinical findings as if it was a presentation in a Grand Round. He would then ask “what do you want to do and why”. It was a teaching

session *par excellence* in a real life situation. This would happen several times in one night. I often wondered later who had done the duty!

During my MNAMS exam at KEM Mumbai in April 1981, I had CV anomaly as my long case. Diagnosing and managing specifics of CV anomalies was particularly difficult then. Prof Gajendra Sinh was one of the examiners. On being asked what I would do, I said, “I will refer the patient to you, Sir. While I have some idea of what to do, I have not operated on any patient. Your Presidential address to the NSI was on “85 cases of CV anomaly”. You have the maximum experience. I am interested in the patient’s welfare”. The facial expressions of all the examiners suggested that I had passed !

### **Association with NSI:**

The first NSI conference I attended was as a first year post graduate (general surgery posting) at Chandigarh in 1975. A group photograph of all the attendees was being arranged. I was late and was wondering how to go to the back. An elderly individual very rudely ordered me to go to the very back. Dr Ramamurthi reprimanding the individual and said “One day this boy will sit in the middle of the first row”. He obviously could spot dormant talent!!! For the next 33 years, I attended 30 NSI annual conferences and gradually made my presence felt, presenting papers at every conference. Awarded a special prize for the best poster “Post traumatic Giant Cystic Meningioma” at the 38th Annual Conference in Dec. 1988 at Chandigarh. Became Member, Executive Committee, 1990-92, Faculty Member, CME Programme on ten occasions. Co-convenor and Convenor CME Programme. Vice President in 2004, President-elect in 2005 and President in 2006 and ex-officio member of the World Federation of Neurosurgical Societies (India) Trust. On reaching emeritus status, I am now Member, Arbitration Committee, NSI and Editor, Monograph on Past Presidents!!

Actively assisted Dr Kalyanaraman from the very first CME programme held at Pune in 1978. Read hundreds of articles, made abstracts of them, corrected the proofs and re- corrected them. All this was in addition to the exacting work as a resident, as a SRF for ICMR and assisting Dr SKR in his voluminous private practice. There were no computers available then.



At the Cuttack conference Dr SKR, and I waited in the platform at 3 am as the train in which the books were sent was late. We got the books to the conference hall, unpacked dozens of cartons and ensured that at 7.30 am the books were available. For six years as “Local Associate Editor” I corrected most articles published in Neurology India. Dr Sudha Ramachandan and Dr Dharmarajan shared this responsibility. One day in the early eighties, Prof Ramamurthi called Prof SKR and asked him the recommended dose of Bromocriptine which had just been introduced. Dr SKR suggested that I would probably know as I was making abstracts. My wife answering a call from Dr BRM informed him that I was not available and sought details regarding the call. Dr BRM gave the details. My wife gave the answer immediately quoting the vol no, page no and authors from an article published in Surgical Neurology! By an incredible coincidence, she was correcting that particular abstract then!!

Dr M. Sambasivan and Dr A K Banerji persuaded me to stand for Secretary, NSI in 1996 though I did not have the slightest inclination at that time. Dr Sanathan Rath also supported them. Rather reluctantly I agreed. However on being elected unopposed (perhaps nobody wanted to do the arduous job then) I put my heart and soul into the job. Dr Mathew Chandy was taken aback when I stood outside his office at CMC, Vellore four months before I was to take over and requested him to explain my duties and responsibilities! At the very first conference when I was the Secretary (December 1997) I made a website for the society. **NSI was probably the first professional medical society in India to have its own website.** Persisted in attempts to introducing electronic voting and arranged for a few demonstrations but this did not pass muster with the then EC. Retrospectively, some of the ideas suggested were perhaps ahead of the time. Twenty years later it is most reassuring and fascinating to see how NSI is today embracing and deploying state of the art ICT (Information and Communication Technology).

I was probably the first Secretary of the NSI who was not working full time in an academic institution and thus did not have asst professors and postgraduates to fall back upon. In 1995, 15 years after qualifying as a neurosurgeon I had resigned from the Madras Medical Service in frustration when my student’s student was promoted (they were senior to me in government service!). Prof B S Das of NIMHANS always used to

refer to me as the world's senior most Asst Professor of Neurosurgery!! It is difficult for members in 2017 to understand how difficult it was to bring out a newsletter 20 years ago. With the enormous support of my wife we brought out a newsletter in time, every quarter for 6 years. The size content and looks was totally changed.

An abstract (No. 862) was published in the August 2002 issue of Neurosurgery. The paper had been accepted for a platform presentation at the 2002 Annual meeting of the Congress of Neurological Surgeons at Philadelphia, USA. The abstract stated - *Medical awareness among inpatients in India is very poor. Doctors in India do not help their patients. Shady, unethical practices of and advice provided by the medical fraternity in India leave patients confused. The Indian government does not care at all. This situation, compounded by economic conditions and socio-cultural beliefs makes it very hard to provide proper and ethical medical care. Taking umbrage, a two page rebuttal of every sentence in the 300 word abstract was sent by me to the Secretary and President of the CNS in the USA.* The paper was not presented. The rebuttal was printed in the newsletter of the Neurological Society of India and the writer apologised.

### Development of Stereotactic Radiosurgery:

Started the first Stereotactic Radiosurgery Unit in South Asia in May 1995 at the Apollo Speciality Hospitals Chennai and helped set up a few new



*1<sup>st</sup> Stereotactic Radiosurgery  
South Asia*



*Shifting patient 4km across Anna Salai,  
Chennai in heavy traffic with stereotactic  
frame after DSA in 1995*

radiosurgery units. There was no precedence. In Nov 1994, I remember asking Dr Prathap Reddy, Chairman, Apollo Hospitals, what I should do regarding import licence etc. In his characteristic way he replied, ‘Ganapathy, do not come to me for everything, You take decisions. I will support you. Does not matter if the decisions are wrong, so long as it is for the right reasons’. Total confidence in you from the boss does wonders to your morale. Setting up the first SRS unit in 1994-95 was indeed a great experience. Though I personally treated about 800 patients with cerebral AVMs, I was unable to extensively publish papers. Introducing an academic culture in a corporate hospital in the twentieth century was more than a challenge. It was almost impossible.

First neurosurgeon from South Asia to become a Member of the International Stereotactic Radiosurgery Society in 1996, the Cyberknife Society in 2008 and to be formally trained in Robotic Radiosurgery. Organised the national conference of the Indian Society for Stereotactic and Functional Neurosurgery in 2011 at Chennai and was elected President of ISSFN (2011 to 2013).



*Memento for Presidential Oration Indian Society for Stereotactic & Functional Neurosurgery*

### **Contribution to Neurosciences in India and overseas:**

Secretary General Asian Australasian Society of Neurological Surgery for two, four year terms 1995 to 2003. First Indian neurosurgeon to be elected to this post. Was a faculty member for several WFNS PG Education programmes, Member, World Federation of Neurosurgical Societies Radiosurgery Committee 2013-2017. However due to unexpected developments was not able to justify the latter position.

### **Academic achievements:**

Fellow, Madras Medical College 2010, Fellow, National Academy of Medical Sciences 2007, PhD in Neurosurgery from Madras University in

1990 for thesis “CT Numbers in Intracranial Space Occupying Lesions and its diagnostic significance” - Sixth Neurosurgeon in India to be awarded a PhD and first in Neuroimaging, Fellow, International College of Surgeons since 1987, Fellow, American College of Surgeons (only Neurosurgeon from India to be awarded FACS in 1986 and one of the youngest from India), MNAMS (Neurosurgery), Certified by the National Board of Examinations in Neurosurgery in April 1981 - third neurosurgeon in India, the only one in 1981 and the second in India to be certified in the first attempt. Awarded M.S (Neurosurgery) degree of the Madras University in Sep 1980 after five years of post-graduate training from April 1975 to April 1980 @ The Institute of Neurology, Madras Medical College. Awarded the M.B.B.S. Degree of the Madras University in January 1975.

Delivered 159 guest lectures overseas and 414 in India (mostly in Telemedicine), authored 76 papers in peer reviewed journals, 16 chapters in text books, 175 articles in magazines, newspapers. Personally organized three major national neurological conferences and played a major role in assisting in the organization of 17 national and international conferences. Supervised 9 dissertations including 2 PhD – examiner for PhD. Member of 23 National / International Committees at various times including Dept of Science and Technology and Dept of Bio Technology, Govt of India.

Teaching experience 35 years (1980 to 1995) M.Ch, MS, MBBS, DM and then DNB Neurosurgery from 1996 till 2014, PhD Guide and examiner The Tamil Nadu Dr. MGR Medical University and Anna University, External Mentor, MBA programme Harvard Business School, Ross School of Business, University of Michigan, Yale Institute of Management. Attended 3 courses at Indian Institute of Management, Ahmedabad even as a senior citizen. Emeritus Professor, The Tamil Nadu Dr. MGR Medical University from July 2016 onwards and formerly adjunct professor, IIT Madras and Anna University. Visiting professor four other universities. Examiner and Inspector, National Board of Examinations. Overseas External examiner in Neurosurgery to Universiti Sains, Malaysia and MRCS examiner Royal College of Surgeons, Edinburgh. In a 42 year span participated in 65 International conferences and 193 National Conferences dealing with neurosciences. Published 137 articles in Journals, Textbooks and Magazines.

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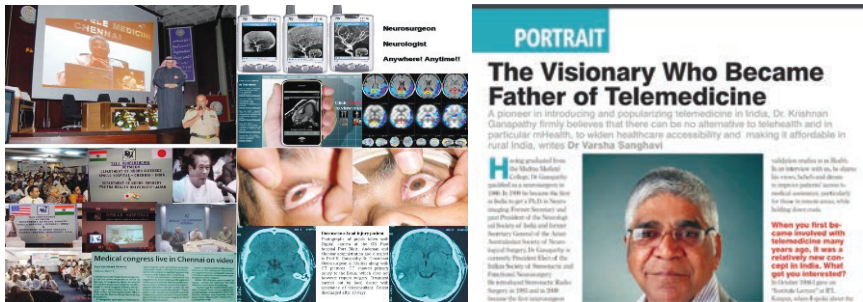
**Orations**

2<sup>nd</sup> Dr Sanathan Rath Oration “ Health care in 2025 – A Peep into the Future” Bhubaneswar Feb 2015 ; National Academy of Medical Sciences 2009 Achanta Lakshmipathi Oration Award Lucknow mHealth the Reinvention of Healthcare; 27th Dr Achanta Laxmipathi Oration delivered at Madras Medical College, Madras August 2008 – “ Telemedicine and Neurosciences”; A.D. Seghal Oration – “Telemedicine in Neurotrauma” on August 2006 at the 15th annual conference of the Neurotrauma Society of India. New Delhi; University of Madras Dr A L Mudaliar Endowment Oration – August 2002; International College of Surgeons, Indian Section, Dr H Karmakar Oration Award, 1999.

*Publications, Lectures delivered - Full details available on [www.kganapathy.com](http://www.kganapathy.com)*

**Development of Telemedicine:**

First in South Asia to start and develop Clinical Telemedicine (2000) Responsible for initiating Telemedicine in the Armed Forces of India. Member of 13 Hi-level Govt of India committees in telehealth. Member of 3 international committees in telehealth. Nationally and internationally recognized as one of the pioneers who played a major role in the growth and development of Clinical Telemedicine in India. Played an important role when the world’s first VSAT enabled village hospital was formally commissioned by Bill Clinton on March 24th 2000 at Aragonda in Andhra Pradesh. As Founder and Head of the largest and oldest telemedicine network in South Asia (Apollo Telemedicine Networking Foundation), have overseen over 127,000 teleconsultations in 25 different specialties

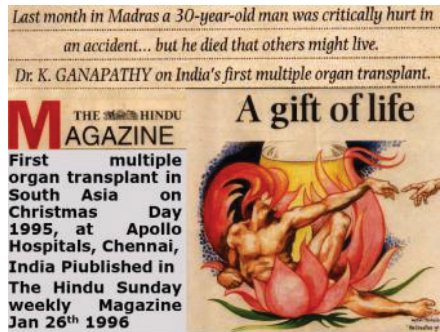


*Telemedicine and Neurosurgery*

particularly for suburban India. Featured as case study by Center for Health Market Innovations, Indian School of Business, Hyderabad, India. Singapore Government Technology Awards 2007 – Runner-Up Award for Project ‘VSAT Enabled Rural Telehealth in a Developing Country’. Elected **President, Telemedicine Society of India 2011.**

### Social Contributions:

- a. Cadaveric Organ Transplant:** Facilitated 1<sup>st</sup> multiple organ Transplant in South Asia on Dec 1995 & was an active crusader for first 10 years. Featured in documentary the “Gift of Life” produced by Films Division, Ministry of Information and Broadcasting, Government of India – *as the one responsible for facilitating the first multiple organ transplant in India on Dec 25th 1995.* Actively promoted the concept of brain death recognition from 1996 till about 2007 facilitating a large number of organ transplants in Chennai.
- b. Helmet Use:** Have been a relentless campaigner, for the last 42 years to make Helmets mandatory in Tamil Nadu. Measures have included being a co respondent filing a PIL on behalf of NSI and appearing before the Madras High court and getting a Government Order passed to enforce helmet use.
- c. Others:** Honorary Neurosurgical consultant to the Armed Forces of India for two terms of 3 years each and to the Madras branch of the Spastic Society of India from 1993 to 2008; delivered lectures to school children and college students to make them aware of medical sciences, helmet use; scores of popular medical lectures delivered at Rotary Clubs, Lions Clubs, Tamil Nadu Science Foundation, etc. Honorary visiting consultant to Madhuram Narayanan Center for exceptional children; several lectures given to parents of mentally challenged children.



*The Gift of Life: The Hindu,  
21 January 1996*

## Reminiscences and Take Home Message:

My philosophy has been and will continue to be to have “a little of everything”. I have been fortunate to have dabbled in academics, in organised neurosciences, to have a little private practice, to have started two new disciplines (Radiosurgery and Telemedicine), to have worked in public and corporate hospitals, to have treated the richest of the rich and the poorest of the poor and to have travelled extensively. Our membership has individual beacons of light. Through their personal efforts they have demonstrated to the outside world that the centers of excellence in neurosciences in India are truly world class. Today we should no longer talk of achieving world class in neurosciences. The world should talk of achieving India class. We should not *follow* high standards – we should *set them*. As a society we have commenced projecting our image overseas. “Made in India” is on its way to becoming a superbrand. The NSI can and must become a superbrand. Rome was not built in a day. We must never forget that we have to keep running to stay where we are. *Coming together is a beginning, staying together is progress, and working together is success*. The starting point of success is to move away from the comfort zone. Unhappiness alone makes one move. An innovator is one who does not know, that it cannot be done. An innovator is also the one, who sees what everyone sees, but thinks of what no one else thinks. We the members of NSI, truly have the potential to be great innovators.

Today, though we constitute less than 2.5% of the world’s neuroscientists we look after the neurological afflictions of every sixth human on this planet – thousand three hundred million people. Our activities should *not* be confined to just improving our individual professional competence. We are part of the community. *The community’s problems therefore are our problems*. It has been my privilege to have been an active member of the NSI. I once again place on record my gratitude to all of you who have been responsible for my personal growth and development. Looking back it has been a wonderful journey. Having been trained in the BC era I sincerely hope that technology will only be used as a means to an end and not an end by itself. Tender Loving Care should continue to be the neurosurgeon’s mantra. ■



**V.S. Mehta, President NSI 2007**

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**Introduction:**

Born to Sri. T.S. Mehta and Smt. Fateh Kumari, Mehta's schooling was in different schools of Jaipur. Passed M.B.B.S in 1972 and M.S. (Gen Surgery) in 1977 from S.M.S. Medical College, Jaipur. During MS Gen. Surgery training period, I had an opportunity to work with Prof. M.G. Sarin, Head of Neurosurgery at S.M.S. Medical College. My dissertation was on acute subdural haematoma and later I worked with Dr. Pramod Behani, (Father of Prof. Sanjay Behari), Neurosurgeon at SDMH Hospital,



*Happy Marriage Memories 1978*



*Holi with Family Members 1987*



*School Days*

Jaipur. Both were great neurosurgeons of their times. This kindled an interest in neurosurgery resulting in my joining the neurosurgery department at AIIMS as Research Associate in an ICMR Project on head injury in 1978 under Prof. P.N. Tandon. Continued as senior resident in Neurosurgery for M.Ch Neurosurgery in 1979. Passed M.Ch Neurosurgery in May 1981. Married Prabha and have two children, Vaibhav and Abhinav Mehta.



### **Neurosurgery at AIIMS – a summary:**

Six months before completing senior residency, was selected as adhoc faculty (Asst. Professor) in Aug 1981 at AIIMS and regularly selected/promoted to become Professor of Neurosurgery in 1992 at AIIMS and appointed as Head of the Dept. in 1994 after the voluntary retirement of Prof. Ravi Bhatia. Became Chief of the CN Centre after the retirement of Prof. M.C. Maheshwari in May 2001. I took voluntary retirement in 2006 and joined Paras Hospital in Gurugram, Haryana, as Director, Neurosciences and further elevated as Chairman, Neurosciences in 2016. Training in neurosurgery at AIIMS with Prof. P.N. Tandon and Prof. A.K. Banerjee was tough and required devotion and dedication.

### **Neurosurgery at AIIMS – the beginnings and progression:**

During my third year senior residency. I was asked to start operating on a patient with a large parietal convexity meningioma who had suddenly deteriorated. Dr. Banerji came to the OT some time later to join, only to find that I had already removed the tumor and was completing the surgery. His appreciation instilled confidence in me. A few weeks later, a 10 year old child with a large 3<sup>rd</sup> ventricular tumour had to be operated by me as an emergency. Post op CT confirmed total removal. This child with ependymoma came for a follow up for the next twenty years. My confidence further increased.

Prof. P.N. Tandon pointed out that I should specialize in an area others were not specializing in. In 1982, I was asked to assist Prof. Majid at an operative workshop in a case of Pan Brachial Plexus Injury. As there was a large pseudomeningocele, this was opened and closed. Following this I started looking for Brachial plexus injury cases. We did 2-3 cases in the first year, five cases in two years and 25 cases in 5 years. In 2006 we were doing about 80-100 cases of brachial plexus / year. A report on this got me the E-Merck Gold Medal at the NSI annual conference in 1985. Prof. A.K. Banerji initially popularized trans ethmoidal surgery for pituitary tumor with Prof. S.K. Kakkar. Head of ENT. After my return from Bristol, where I had spent a few weeks with Huw. B. Griffith in 1986, (on a Jack & Monika Travelling Fellowship), I started doing transnasal approach for pituitary tumors. This soon became popular in India.

Similarly, aneurysm surgery was a passion for many neurosurgeon but had significant mortality and morbidity. I also had a passion for aneurysm surgery. I was quite impressed seeing Prof. Vinko Dolenc approaching anterior circulation aneurysms by trans sylvian approach at a conference organized by Dr. A.N. Jha at P.D. Hinduja Hospital, Bombay. In addition I started advocating use of temporary clip as a routine rather than exception and I saw the results were better. I started operating on giant aneurysms regularly with excellent results.

During a WFNS course at Agra in late 1990s, Prof. A.K. Banerji asked me to speak on “Surgery for Brain Stem Gliomas”. I searched the literature available in the library and saw all old records of the Dept. I did not find any significant literature on surgery for Brain Stem Gliomas. Literature was about fractionated RT or unfractionated RT or aspiration of cystic lesions. Though the talk was on “Surgery for gliomas”, it was unconvincing, even for me. I decided to take this as a challenge and I started operating on brain stem gliomas. Initially all cases did well and this gave me lot of confidence in operating on these tumors. Now I have one of the largest series on surgery for Brain Stem Gliomas with excellent results. I gave my presidential oration in 2007 at Agra during the annual conference on “Surgery for Brain Stem Gliomas”.

Prof. A.K. Banerji popularized the use of microscope in neurosurgery in India, and also envisaged the importance of lab training for micro neurosurgery. He was the first to start the micro neurosurgery lab at AIIMS. I was the first to be trained by Prof. A.K. Banerji himself, in that lab and later I was in charge of that lab and many neurosurgeons took training in that lab including from neighboring countries. Now this lab is the most modernized lab being run by Prof. Ashish Suri. I was impressed by the annual micro neurosurgery workshop organized by Prof. B Ramamurthi / Ravi Ramamurthi for teaching younger neurosurgeons. I also started the micro neurosurgery conference annually combining with Neurosurgery annual oration in 1999. In the first year there were only 25 participants. In subsequent years it became the most popular CME in the country and there were more than 200 participants each year from all over the country and neighboring countries.

Prof. A.K. Banerji has sent the proposal for Gamma Knife before he retired in 1995, but it did not materialize. After I took over, I restarted the process

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and we were able to install the first Gamma Knife in a Public hospital in 1997. Similarly funds for the first intra operative MRI in a Public Hospital was sanctioned before I took voluntary retirement. In both these projects I had significant help from Dr. S.P. Agarwal, Director General of Health Services and as member of Governing Body of the Institute, who was my good friend and my batch mate in M.Ch Neurosurgery. A new CN Tower was sanctioned for the VVIPs and some more private wards by the efforts of the Director, Chief of CN Centre Prof. Venugopal. However as Chief of Neurosurgery I wanted more operation theatres and with lot of debate and discussions I was able to get four state of art operation theatres on the 7<sup>th</sup> floor of the New CN Tower. I served the Neurological Society of India as executive member, treasurer, President elect, President and past president continuously for 10 years from year 1999 to 2009.

### **Association with NSI:**

As an executive committee member, I wanted to find out the existing rules / regulations of the Society. Apparently the “Minutes” book was lost during the handing over from one secretary to another. It was decided to update the constitution and bye-laws. This was done under the Chairmanship of Prof.



*As President of Neurological Society of India during inauguration of Annual Conference 2007*

A.K. Banerji with me, K.Ganapathy, V.K. Khosla and Venkatraman as members of the committee. As an executive committee member, I realized that Secretary is over loaded with Society’s work whereas President elect has no work assigned to him. Therefore I proposed that President elect should be the Chairman of Scientific Committee for Annual NSI and should be the returning officer for the elections of the NSI which was accepted and implemented.

When I became treasurer, the financial status of the Society was not very good. I found that many members have not paid their dues. So I served

notices to all the members who had not paid their dues irrespective of their seniority. We also passed the rule that a percentage of the savings of the organizers of the annual conference should be given to NSI. I was able to increase the corpus of the Society from 44 Lakhs to little less than 1 Crore when I transferred this to the next treasurer Dr. Ravi Ramamurthi three years later. I wanted a mid term neuro conference dedicated to two or three sub-specialties by rotation. The first mid term neuro conference was organized by me in 2002. However it was discontinued subsequently. The President elect takes over as a President on the last day of the annual conference not getting an opportunity to tell the members his plans for the next one year, and what he expects from the members. Hence I proposed that the President elect should also be on the dais during the inauguration at the annual conference. During my Presidency I wanted to increase public awareness about neurological disorders by many ways including a public lecture during the annual conference. This was done at the Agra Conference but could not become a regular feature. To prevent loss of documents during changes, I wanted the Society to have a Permanent Office with a Permanent Secretariat. Mata Chanan Devi was persuaded to provide space. However the secretariat did not materialize.

### **Take Home Message:**

Do things which others are not doing. Do it persistently with success and dedication. Let others know by publishing / talking.

### **Awards & Recognitions**

E-Merck Gold Medal for best paper for year 1980 and 1985 at the annual conferences of Neurological Society of India, Jack and Monica Britton Traveling Fellowship to visit different Neurological Centers in United Kingdom in 1986, Senior Commonwealth Fellowship 1994, Visiting Consultant to Regional Neurosciences Centre Newcastle, U.K. in 1995, Indian



*Receiving Emerck Gold Medal 1980*



*Receiving Padmashri Award from  
Dr APJ Abdul Kalam in 2005*

Medical Association South Delhi Branch Special Award for excellence in academics, Awarded for best recruiting STICH Centre in Asia June 2003, Presidential Oration 2003 – Delhi Neurological Association, Fellow of National Academy of Medical Sciences 2003, **PADMA SHRI** 2005, Nominated as Founder Member of World Academy of Neurological Surgeons in 2005, Dr. Satyapal Aggarwal Memorial Annual Indian Medical Association (IMA),

Oration on “Brain Tumors Past, Present and Future”, Elected as a guest member of “The Japan Neurosurgical Society in 2006”, Keynote address in 6<sup>th</sup> Annual Meeting of Association of Neurosurgeons of China in 2006 at Beijing, Nominated as International Member of the Brazilian Academy of Neurosurgery in 2007, A.D. Sehgal Oration annual conference of Delhi, Neurological Association, A.D. Sehgal Oration at Neurotrauma Conference 2009 at Jaipur on “Brachial Plexus Injury”, Presidential oration annual conference of Indian Society of Cerebrovascular Surgery, S.P. Srivastava Memorial oration at its U.P. Conference 2010, Swasthya Bharat Samman by L.I.C. Zee News at Gurugram, Dave – Newton oration on at K.G.M.C., Lucknow, Teachers of Teachers award at Neurosciences AIIMS in



*Group photograph with King of Nepal on the occasion of 1st South  
Asian Neurosurgical Conference at Kathmandu 1999*

Recognition of years of loyal and dedicated services towards advancement of Neurosciences AIIMS, Indian Society of Peripheral Nerve Surgery awarded certificate of Appreciation in Recognition of outstanding contribution to the field of Brachial plexus and peripheral Nerve Surgery at



*With King of Nepal during 1st South Asian Neurological Conference at Kathmandu 1999*

5<sup>th</sup> annual Meeting of ISPNS, Received Guest of Honour award at Seven Decade Celebration of S.M.S. Medical College, Jaipur, 2016, Awarded “Lifetime Achievement Award” by Medgate Today Magazine, and by ASSOCHAM Meditravel, Awarded as “Legend in Neurology & neurosurgery in NCR Delhi in 2017” by Times Health Care Achievers for Delhi NCR, Winner of medical value Travel Specialist Hospital in Neurosciences on 2017 by FICCI.

### **Publications / Guest Lectures / Research:**

Published more than 180 papers/chapters in various International and National Scientific Journals/Books. Delivered more than 195 guest lectures at various International and National Forums. Involved in many International Multicentric Studies, Research in head injuries, Intra cerebral haematomas, Brachial plexus injuries, Genetic studies in Gliomas, Functional Neuro imaging etc.

### **Member of various prestigious National Institutes:**

Member of Academic Committee of Institute of Human Behavior & Allied Science, New Delhi 1998, Chairman Advisory Committee for Neurosurgery for National Board of Examination, New Delhi 2002, Chairman Human Ethics Committee of National Brain Research Center, Manesar 2002. Member of Executive Council of IHBAS, New Delhi 2003. Member of Governing Body of NBRC, Manesar 2003. Founder Trustee of Neurosciences Trust. Trustee of World Federation of Neurosurgical Societies (INDIA) Trust.

### **Associated with various National & International Scientific Journals:**

Editor of Progress in Clinical Neurosciences 1999-2002. Founder Editor of Journal of Neurology, Neurosurgery and Psychiatry (Ind. Ed) 2001. Associate Editor of Acta Neurochirurgica 2003. On Editorial Board of many important national journals.

### **Other Academic Activities:**

Member, Selection Committee for various faculty posts of Neurosurgery in various Institutes/UPSC. Given several talks on AIR / Doordarshan. Published Public Health related articles in news magazines/newspapers. External Examiner for various Universities for Neurosurgery examinations. Organized various National & International conferences / workshops / symposiums / seminars in Department.

### **Posts held in Professional Societies / Associations:**

President, Delhi Neurological Association 2002-2004. Executive Member of Neurosurgical Association of SAARC 2000-2002. President Cerebrovascular Society of India, 2008-2009. Member on the Constitution & By laws committee for the WFNS 2017. Member, Neurosurgical Association of SAARC. Life Member - Skull Base Society of India, Asian Congress of Neurological Surgeons, Indian Society of Cerebro Vascular Surgery.

### **Membership of the Technical Expert Groups and other Executive Posts:**

Chairman of Advisory Committee for Neurosurgery of National Board of Examination Neurosurgery 2002. Chairman Human Ethics Committee of National Brain Research Centre 2002. Member of Academic Committee of the Institute of Human Behaviour and Allied Sciences from 1998-2001, 2002-2005. Member, Expert Group of Xth Five Year Plan on non-Communicable diseases 2000 –2001. Member, UGC Committee to evaluate National Brain Research Centre for accreditation as a Deemed University 2002. Member of the Scientific Advisory Committee of National Brain Research Centre. Member, Governing Body of National Brain Research Centre 2003-2005. Special Invitee to Governing Body AIIMS 2003. Member of Executive Council of Institute of Human

Behavior and Allied Sciences from 2003-2005. Member – Project Review Committee in the field of Neurology, Mental, Orthopedic ICMR 2000,2003. Permanent Member, Global Advisory Committee, S.M.S. Medical College, Jaipur, 2006. On Board of Directors, PARAS Hospitals Gurugram. On Board of Directors, Institute of Neurosciences, Kolkata. ■





**Basant Kumar Misra, President NSI 2008**

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**Summary:**

Dr. Basant Kumar Misra, M.B.B.S, MS, MCh, DNB, born on 18<sup>th</sup> January 1953 completed his MBBS from VSS Medical College, Sambalpur University, Odisha. He was the best outgoing student and recipient of 3 University Gold Medals and the Pfizer Post Graduate Gold Medal during the MS (Gen Surgery) from Delhi University. He received his M.Ch. in Neurosurgery from AIIMS in 1983. Dr. Misra joined SCTIMST, Trivandrum as Lecturer in Neurosurgery in 1984. He was awarded the Commonwealth Medical Scholarship to UK in 1984 and was in the University of Edinburgh, from 1984-87. He returned back to SCTIMST and was there till 1995 as Additional Professor. As a Faculty in SCTIMST, Dr. Misra was instrumental in starting the postgraduate program in Neurosurgery and making the Department a Centre of Excellence. Dr. Misra took up a new assignment as Consultant, Department of Neurosurgery at P D Hinduja National Hospital (PDHNS), Mumbai in 1995 and continues to be the Head of the Department there. He started the post-graduate DNB in Neurosurgery at PDHNS. The department is the only center in India recognized as a World Federation of Neurosurgical Societies (WFNS) Post Graduate Training Centre. It is also the only centre in the private sector recognized as a Class I International Centre for Skull Base Surgery. Dr. Misra was appointed as Clinical Professor, Department of Neurosurgery, Macquarie University, NSW, Australia between 2012-2014, a rare honour for a Neurosurgeon practicing in India. He has also been Journal Reviewer to major international journals from USA, Europe and Australia. He has been a Visiting Professor to many institutions in India & abroad, notably: George Washington University, Johann Wolfgang Goethe-University, Germany, Royal Melbourne Hospital, Australia, Acibadem University, Turkey, National Taiwan University College of Medicine, and Himeji Heart & Brain Centre, Japan.

His peers consider him a gifted surgeon producing excellent results in surgery of vestibular schwannoma, cerebrovascular surgery, skull base surgery and minimally invasive surgery. He has many 'Firsts' to his credit - including image Guided Aneurysm Surgery and introducing Gamma Knife Radiosurgery in India, Awake Craniotomy and 'Key Hole' spine surgery.



*Visiting Professor in Germany*

### **Contributions to Indian Neurosurgery:**

Dr. Misra is credited with initiating co-operation with international organizations when he was the President of NSI. The first such interaction resulted in NSI being invited as a Guest Society to the Congress of Neurological Surgeons (CNS) conference in 2009, in New Orleans. President Abdul Kalam and Padma Vibhushan Professor P N Tandon represented NSI as Honoured Guest Speakers. Since then, the tradition of international co-operation is continuing. Dr. Misra also organized the successful Asian Congress of Neurological Surgeons conference in 2006 in Mumbai. This led to a decision to hold the 15<sup>th</sup> Congress of Asian Australasian Society of Neurological Surgery (AASNS) in India in 2019 – for the first time. Dr. Misra's passion is empowering young neurosurgeons of India. He conducts every year, highly sought after CMEs. He has also been instrumental in introducing many rising stars of Indian neurosurgery to the international scene thereby promoting Indian neurosurgery.

### **National & International Recognition:**

Dr. Misra is an acclaimed international leader and has been the President of Neurological Society India, Skull Base Surgery Society of India and the Cerebrovascular Society of India,. Currently he is the 2<sup>nd</sup> Vice President of the World Federation of Neurosurgical Societies after being Secretary of the WFNS (First Asian), President of Asian Australasian Society of Neurological Surgeons (First Indian), President of World Federation of Skull Base Societies (First Asian) and President of International

Conference of Cerebrovascular Societies (First Indian). In fact, no other neurosurgeon has held so many leading positions in organized neurosurgery. Dr. Misra is only the second Indian member of the American Academy of Neurological Surgery (Late Professor B Ramamurthi was the first). He has also been honoured with Membership of Japan Neurosurgical Society and World Academy of Neurological Surgeons. Recognized as ‘One of the World’s Top 16 Neurosurgeons that matter’ by Jo Lee Magazine, New York in 2015, Dr. Misra has brought glory to India.

### **Family Background:**

I, Basant Kumar Misra, was born on January 18, 1953, on “Basant Panchami” day (hence the name Basant), to Dr. Baidyanath Misra M.A., A.M., PhD and Smt. Basanti Misra, M.A. in Bhubaneswar, Odisha. Dr. Baidyanath Misra (BM) is a renowned Economist and was Professor & Head Department of Economics at Utkal University, Vani Vihar, Bhubaneswar. He retired as Vice chancellor of Orissa University of Agriculture and Technology and was also Deputy Chairman, State Planning Board of Odisha.



*BKM parents*

My mother, Basanti Misra, is a homemaker and took care of us, four children, the eldest daughter, Bijayalaxmi Tripathy (after marriage to Doctor Ajatsatru Tripathy an

Ophthalmologist), I am second and I have two younger brothers Jayant Misra, BE, MBA, currently Director of IMFAA, Bhubaneswar and the youngest Dr. Sukanta Misra MA, PhD, Prof of Economics and Dean at Texas State University, Lubbock, Texas, USA.

I got married to Sasmita Kar, M.A. on 1<sup>st</sup> February 1981. A very outdoor girl, with a passion in sports and an accomplished artist, she sacrificed her career to take care of the house. We have two handsome sons, Sarthak and Siddharth. Sarthak did his MBBS from BYL Nair Medical College, Mumbai, did a period of research at Harvard and a residency in psychiatry at St. Louis University, USA and is currently a Board-certified psychiatrist practicing near Boston. Siddharth did his B.E. and MBA from Mumbai and

went to work with a multinational bank in London. Currently, he is doing a second MBA at the prestigious Chicago Booth, Chicago. These two young gentlemen are our most prized possessions and would qualify as our greatest achievements.



*With wife*



*With sons*

### **Graduate and post graduate education:**

My early education was from Demonstration Multipurpose Higher Secondary School, Bhubaneswar, 1<sup>st</sup> Year BSc from BJB College Bhubaneswar and MBBS from VSS Medical College Burla, Sambalpur. I don't think, I can point out why I wanted to do Medicine but I distinctly remember I wanted to be a Neurosurgeon right from my school days! After finishing my MBBS, I left for Delhi for post graduate education. I did a house job at Safdarjung Hospital, Delhi and then got selected for Master of Surgery in Delhi University. After my MS in General surgery, I got selected for the M.Ch. in Neurosurgery at the prestigious All India Institute of Medical Sciences (AIIMS) along with dear friend Dr. Sudhir Pai, who had done his MS General Surgery from AIIMS. My neurosurgery Chief was Prof. P N Tandon, and the other teachers were Profs. AK Banerji (AKB), Brahm Prakash & R Bhatia. Prof. Brahm Prakash left AIIMS shortly after I joined, to head the Department of Neurosurgery at G B Pant Hospital, New Delhi. Needless to say, the foundation of my career, attitude, personality and approach to any problem was laid at AIIMS. We had the most remarkable department. Prof. P N Tandon (PNT), a legend, scientist, a teacher par excellence and inspiring speaker was always up-to-date (was not at all easy those days) with the recent literature. If there was one man who complimented PNT, it was AKB. While PNT dreamt big and stressed

on new research and advances, AKB emphasized sticking to basics and on the importance of clinical examination. His famous saying “Man Scan is better than Cat Scan” (there was no MRI then) influenced our training and our lifelong adherence to importance of clinical examination. Both of them were severe task masters and ran the department with strict discipline. Yet, they were always there if one needed support. I would like to make a special mention of Dr. VS Mehta (VSM), who was my senior as a resident first and became a lecturer during my last year of residency in AIIMS. Many of my initial operations and training was from VSM. VSM remains a truly dear friend, guide and well-wisher till date.

I completed my Neurosurgery Residency and passed my M.Ch. from AIIMS in 1983. There was no faculty position in AIIMS and I continued in the department as Senior Research Officer of ICMR and then moved to Sree Chitra Thirunal Institute of Medical sciences as a lecturer in early 1984 on the advice of my teachers. Looking back, neurosurgery residency at AIIMS was tough indeed. Most of us residents, during the first few months, had thought of quitting the department. While it was tough, it was not very difficult for me as I grew up, as a child, in a strict discipline of a Professor, my father. During my residency, there was a very tragic event: the first candidate of the 5-year neurosurgery residency programme at AIIMS, Prashant, about one-year junior to me, committed suicide. It was a watershed moment in the department of neurosurgery, AIIMS. I think it affected our teachers more than us, the residents. They started telling us to go to the room and not come on Sundays or on holidays when we were not on duty. Let me put on record, the training at AIIMS was tough but it was the best ever. I would not trade that training for anything in the world. How I wish, we have more such teachers and such departments today.

I joined SCTIMST in early 1984 and was selected by Director MS Valiathan to start microsurgery at SCTIMST. Dr. D Rout was Associate Professor and HOD of the department. Dr. Rout was a brilliant surgeon but there was no culture of microsurgery. Interestingly, the prototype contravas Zeiss microscope, one of its kind in India, was lying in the stores but was not used as there was some reservation about sterility issues and the microscope was not brought to the theatre. Thanks to Dr. Valiathan, I could start microsurgery at SCTIMST in 1984 and the rest, as they say, is history. I was already the winner of Commonwealth Scholarship before joining

SCTIMST and was preparing to leave for Edinburgh, UK, few months after joining SCTIMST Dr. Valiathan informed me that ‘there is no rule for leave which he can grant but also asked me to put in an application for extra ordinary leave without pay and said he would take it to the governing body’. There is no doubt in my mind that it was Dr. Valiathan who called the shots at SCTIMST and he granted me EOL. I went to UK in the 2<sup>nd</sup> half of 1984 to University of Edinburgh under Prof. James Douglas Miller (JDM). When JDM asked me what I would like to do and whether I would like to be in the regular Registrar duty, I informed him that I would do the regular Registrar duty and I would be interested in planning some research on cerebrovascular surgery. He was surprised with my answers as some of the previous commonwealth scholars did not want to do ‘on call’ and he thought neurosurgeons from India were not interested in research. Anyway, he was pleased on both counts and I was put on a project on CBF measurement in rats in an experimental model of carotid endarterectomy. On my first day in the lab, Mr. Anthony Bell (Tony), my senior explained to me the protocol: one has to expose the carotid artery in the rat, apply a temporary clamp, cut the carotid, re-anastomose and measure CBF after that, after putting electrodes in the rats’ brain. He also sympathetically added “BK, do not worry, you would kill a few rats to get a hang of it before you can micro-anastomose the carotid. Do not get disheartened”. He left me in the lab and came back about an hour later to see me measuring CBF in the brain. He was a little irritated as he thought I did not understand that CBF had to be done after micro-anastomosis of the carotid in the rat. What he did not know that I had already had a lot of experience at AIIMS in the lab with micro-anastomosis in rats (thanks to AKB) and I had already successfully done the rat carotid anastomosis in that animal and I was measuring CBF! Tony was both surprised and impressed though he did not show that but JDM was informed. My position changed dramatically from the next day in the department of neurosurgery, Western General hospital, Edinburgh. From a 1<sup>st</sup> year registrar, I became a fully paid, final year registrar and was also appointed as Research Lecturer in Neurosurgery by University of Edinburgh!

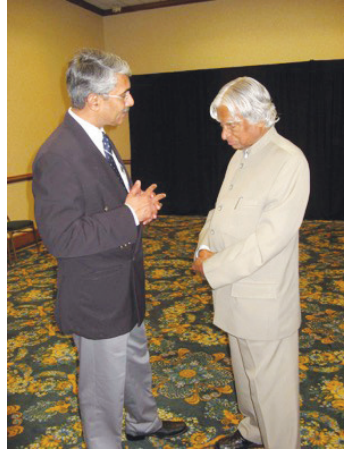
I came back to SCTIMST as Associate Professor in 1987, again to everybody’s great surprise, as JDM had invited me to stay back The next few years was career defining for me. Though I was interested in vascular

surgery, as Dr. Rout was also interested in this, I started developing Skull Base Surgery and probably became one of the first dedicated Skull Base Surgeons of India. I still kept doing vascular surgery and helping Dr. Rout in difficult cases. We did, for the first time in India, the high flow saphenous ECIC bypass for a giant ICA Aneurysms and also the first aneurysm (basilar trunk) surgery under cardiopulmonary bypass. Incidentally, both had successful outcomes. I was also responsible for doing all the acoustics from 1988 and presented my personal experience with 100 consecutive cases microsurgery of acoustic neuroma, in NSI meet in Chennai in 1993 with more than 30 per cent hearing preservation!

In 1995, I got selected as Professor of Neurosurgery at AIIMS. While waiting for the appointment order from AIIMS, I was offered a Consultant position at P. D. Hinduja National Hospital and Medical Research Center (PDHNS) in Mumbai. I joined PDHNS in November 1995 on a sabbatical from SCTIMST with a plan to join AIIMS later in that year. My family was still in Trivandrum. The appointment order from AIIMS was getting delayed and as the new academic year in schools were starting, the family joined me in Mumbai and my two sons got admitted to Bombay Scottish School, Mumbai. The appointment as Professor at AIIMS, the position for which I dreamed for years, finally came but only after my sons had joined school in Mumbai. I still wanted to move to Delhi. Two people influenced my decision to stay in Mumbai. My wife was very reluctant for me to leave the private sector and join AIIMS and did not share my enthusiasm of being a Professor at AIIMS. I was not sure what to do. Then, Prof. B Ramamurthi congratulated me on my appointment as Professor, 'as Head of Neurosurgery' at AIIMS. I corrected him that I was selected as Professor but not the Head. He was quick to advise me against joining AIIMS if I was not going to be Head. Anyway, after almost holding on to the offer from AIIMS for almost a year I declined and continued at PDHNS where I continue till date. The first two years at PDHNS was quite stressful as I was a complete outsider and the practice in Mumbai is significantly dominated by GP referral. Dr. PP Ashok, my batch mate during our residency in AIIMS, Consultant Neurologist at PDHNS was a great support and helped me to settle down in Mumbai. I was also fortunate to get tremendous support from the management and we became first in South Asia to install the Gamma Knife Radiosurgery Facility. We also acquired

Neuronavigation and Neuroendoscope system in early 1997 and became the best equipped Neurosurgery centre in the country. There was no looking back. I was trained at AIIMS and had tremendous experience at SCTIMST and now I had the best technology at PDHNNH! I was operating the same high-end cases as I was operating in the public sector though fewer in numbers. With better emoluments at my disposal and good clinical material under my belt I attended more and more international meetings, mainly skull base and cerebrovascular and got recognized. I also started the post graduate DNB program at PDHNNH, today one of the most sought-after program in India. The Department of Neurosurgery, PDHNNH became a WFNS accredited International post-graduate training center, the only such department in India.

I was also very active in organized neurosurgery. In 2000, we formed a new Society, Indian Society of Cerebrovascular Surgery. AKB was the President and I was the Secretary. I continued as Secretary for quite a few years and finally handed over to Dr. S N Mathuriya, once we were reasonably established. My first presidentship of a professional society was that of Skull Base Surgery Society of India in 2004. My first big international break also came around that time as I took over as President of Asian Congress of Neurological Surgery (ACNS). This



*BKM & President Kalam*

presidentship culminated in the highly successful ACNS in 2006 in Mumbai. ACNS 2006 was by far the most successful meetings of all the ACNS and was billed as the best neurosurgical event in India after the World Congress (1989) in Delhi. Elected in 2007, as President Elect of NSI, I was responsible for international cooperation. Our efforts bore fruit and NSI was invited as the Guest society to Congress of Neurological Surgeons (CNS) 2009 in New Orleans. It was a watershed moment for NSI. NSI returned the favour and CNS was invited as Guest society to NSI 2010 in Jaipur. This started the NSI-international collaboration and continues till today. 2009 was also a significant year for me, a Plenary talk



at CNS and invited Faculty at the World Congress, Boston to speak at the Marquee session “Master’s Symposium” at ‘Ether Dome’ where 10 top neurosurgeons of the world were chosen to speak!

My next level of leadership in the world stage started when I became Assistant Secretary, World Federation of Neurosurgical Societies (WFNS) in 2009 and subsequently Secretary, WFNS in 2013. I was elected as President of International Congress of Cerebrovascular Surgery (ICCVS) for 2 years in 2014 and culminated in the ICCVS 2016 meeting in Mumbai with Dr. Robert Spetzler as the Honorary President. I was also elected as the President of Asian Australasian Society of Neurological Surgery (AASNS) for 4 years in 2015.

In 2016, I got elected as President of World Federation of Skull Base Surgery Society (WFSBS) for 4 years and in 2017, I have again got elected as 2<sup>nd</sup> Vice President of WFNS after my for 4-year term as Secretary WFNS. No Neurosurgeon in the world can claim to a similar distinction! I hope I will continue to contribute and mentor many more young minds and continue to contribute as an ambassador of Indian Neurosurgery. ■



**V K Khosla, President, NSI 2009**

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**Family Background:**

Virender Kumar Khosla (VKK) was born in 1946 in the village of Shyam Chaurasi in Hoshiarpur district of Punjab. His father, G R Khosla, was unable to become a doctor due to a visual refractory error. After acquiring an MA, Khosla Sr. became a railway contractor. His mother, Shrimati Lajwanti, was an able homemaker. VKK's home town was in Apra in Jullundhar, where he often used to travel on a Tonga. VKK's father shifted to Vishakapatnam as he got a job there. VKK was the fifth of six siblings, both his brothers are engineers.



*Parents of VKK*

**Schooling and medical education:**

VKK completed his schooling at St. Aloysius High School in Vishakapatnam in 1962 and Pre- University (PUC) from Loyola College in Vijayawada in 1964. During his school days, he was given “double promotion” twice and so jumped two classes. He came third in the PUC exams. Joining Andhra Medical College in 1964, he completed internship in 1970 and MS in General Surgery in 1974. During his MBBS career, he was awarded medals for academic excellence. He joined Bokaro General Hospital for a short period in 1974/75 as a casualty medical officer. Frustrated, he decided to pursue a career in Neurosurgery because of his interest in surgery and the tough challenges this discipline demanded.

### **Professional Career:**

VKK was selected for neurosurgical training, both at PGI, Chandigarh as well as AIIMS, New Delhi. As PGI result was declared earlier he joined PGI as a senior resident in 1975 and was subsequently appointed lecturer in 1977. He rose through the ranks and was Head of the Department from 1992-1994 and from 1995 till his retirement, in 2008. Currently, he is working as Director, Fortis Hospital, Mohali.

He was one of the first neurosurgeons in India to do a formal fellowship in Skull Base Surgery under Dr. Hakuba and was awarded the Diploma in Skull Base Surgery by Osaka City Medical University, Japan. The true practice of skull base surgery was started in the early 1990s with the interest shown by VKK. Continuing this trend, new surgical techniques of tackling the skull base lesions have been published from the institute, from time to time. The use of microscope and microanastomosis, and the recent addition of endoscope, have improved the overall results of skull base surgeries.

### **Contributions to Spinal surgery:**

VKK played a key role in establishing and promoting anterior cervical surgeries not only in PGI but also at the national level. This approach was mastered and taken by him to a level of real art. In those days, cervical plating systems were not available. VKK perfected the art of modelling the bone grafts perfectly to fit the superior and inferior vertebrae, and if required, would fix the graft to the adjacent vertebrae with thin steel wires. It was not technically easy to drill holes in the vertebral bodies with hand held drills, but he had mastered the technique. He is extraordinarily meticulous in tissue handling and is a master craftsman.

In the 1980s and early 1990s, transoral odontoidectomy was also initiated by him. In those days, the department did not have a drill to start with. Removal of the odontoid was achieved with the help of ronguers and the Kerrison's punch, and the tip was often delivered by holding it with a Kocher's forceps. To get himself oriented for this surgery, he requested Dr. IJ Dewan, Head of the Anatomy Department, to allow him to conduct cadaveric dissections, to which the latter readily agreed. To open the jaws of the cadavers was, however, a monumental task in itself. Finally, the

cadaveric jaw had to be disarticulated and removed before access to the posterior pharyngeal wall could be achieved.

### **Contributions to Aneurysm Surgery:**

Dr. VK Khosla was keen to improve the management of aneurysmal subarachnoid hemorrhage, and because of his efforts, the awareness of this disease and the need for an early referral increased in North West India. However, aneurysm surgery really took off in early 1990 after VKK's return from Japan. There was only one old OPMI microscope, and there were only hand held retractors. In the late 1980s, the diagnosis of aneurysmal subarachnoid haemorrhage was often missed and referral was delayed. Due to the awareness campaigns carried out by the department spearheaded by VKK, especially among the medical community, there was an exponential growth of early diagnosis and referral of these cases, and at present, more than 400 cases of ruptured aneurysms reach the emergency services, the majority within 24 hours of ictus.

### **Academic Contributions:**

VKK can be credited with providing the impetus and laying the foundation for the development of subspecialties in the department. It is because of his efforts that, at present, all consultants, apart from performing routine neurosurgical work, have made a name for themselves, both nationally and internationally, in their chosen sub-specialties, within neurosurgery. He has published more than 120 papers in reputed international and national journals and has contributed 18 chapters to books. Some of his research areas are aneurysmal subarachnoid hemorrhage, vasospasm, traumatic brain and spine injury, pediatric head injury, cranio-vertebral junction anomalies etc. He also published a book "Brain Protection".

He was on the editorial board of Neurology India, Indian Journal of Pain, and Indian Journal of Neurotrauma. He has probably served the neurological society for a period longer than most of his peers. He was honorary treasurer for two consecutive terms from 1998 till 2003 and was honorary secretary from 2003 to 2005. He was elected President for 2008-2009. He also worked as honorary treasurer of The Indian Skull Base Surgery Society from 1996 to 1998.

He has delivered many orations including the Presidential Oration NSI Lucknow 2009, Vyageswarudu Oration at Medical College,

Vishakapatnam, Sh.Shurgveer Singh Oration, R.N.T. Medical College, Udaipur, the first Srinivas Endowment Oration at Tirupati Medical College, and the first Satyawati Endowment Oration, Andhra Medical College. An oration “ Prof V K Khosla Oration” has been started in his name at Jabalpur Medical College. He has been a visiting faculty/fellow at various international and national centers namely, Department of Neurosurgery, Osaka City Medical College, Japan; Nagoya University, Fugita Health University; AIIMS New Delhi; Nizam Institute of Medical Specialities, Hyderabad; RNT Medical College, Udaipur; Dayanand Medical College, Ludhiana; Christian Medical College, Ludhiana; Shurveer Singh Visiting Scientist at R.N.T. Medical College; International College of Surgeons - Honorary Fellowship for contributions in Neurosurgery. He was an examiner for MCh and DNB examinations at almost all major neurosurgical centers in the country. Scores of neurosurgeons trained by him are spread all over the country heading various prestigious departments. He was also the recipient of best paper / poster awards at various national and international conferences. He was awarded the Sugita fellowship in Nagoya and also spent two years, on deputation from PGI, in Bahrain (2005-2006).

### **Contributions to upgrading Department:**

An able administrator, he streamlined the present purchase policy in the department that facilitated the procedure for acquiring state of the art micro neurosurgical equipments of international standards. He was the driving force responsible for the start of neuro intervention in PGIMER and was instrumental in creating a separate 6 bedded neurosurgical intensive care unit (ICU) in 2001. He had the foresight to acquire the first Perfexion model of Gamma Knife in this part of Asia. The Advanced Trauma Centre in PGIMER was conceptualized by him, and he made great efforts to make it see the light of day. The ground work for the proposed Advanced Neurosciences Centre was also initiated by him. He always encouraged his junior faculty to subspecialize in their area of interest. VKK took great interest in teaching and training of residents and would spend hours taking bedside rounds during his non OT days. His Sunday ward rounds were a great learning experience for students. The present day system of daily morning meeting for all residents and consultants, where all the cases of

the previous 24 hours are discussed, was initiated by him. He superannuated in 2008.

### **Family:**

He is married to Dr Manjula an ophthalmologist who studied in RNTT medical college Udaipur. She retired as Head of the Department, General Hospital, Sector 16, Chandigarh and is at present engaged in social service.



*With Wife Manjula – Gen Next !*

The Khoslas have two sons – the elder, Siddharth, a B.Tech in Computer Science obtained a MBA from Stanford and is currently a partner in ERNST and Young, USA. Married to Rituthey have a son and a daughter. The younger son, Siddhanth also a B.Tech and MBA (FMS-Delhi) is a regional manager with Proctor & Gamble, Mumbai. He is married to Dimsy and they have a daughter. His interests and hobbies include listening to good music, poetry, watching sports and also video photography.

He is very regular in jogging and is also fond of cycling. In family functions and with close friends, he is the soul of any party with his songs, witticisms and a thorough jest for life. ■



**Sudesh Prabhakar, President NSI 2010**

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**Introduction:**

I was born in Jalandhar, Punjab in April 1949, two years after my parents migrated from Pakistan during partition of India. My parents had settled in Jalandhar after leaving fully furnished houses in Sialkot, Pakistan. They were looking after four younger brothers and one sister and were almost living hand to mouth. I stayed in various cities of Punjab till 1958, when my father was transferred to Chandigarh. The Chandigarh of late 1950s was all jungle with bushes all around. The monuments like central secretariat and Assembly Hall was only partially built. I remember having

played on the partially constructed 6<sup>th</sup> floor of central secretariat. A large number of senior bureaucrats and officials were going to the offices on cycles. There were hardly any cars. All the trees around various roads which are in full bloom now and give a characteristic green appearance to Chandigarh, were being planted at that time. I started my schooling from 5<sup>th</sup> class onwards from



*Schooling under Punjab University  
with merit*

D.A.V Higher Secondary School, Sector 8, Chandigarh. It was an interesting phase, as I had to study Hindi and English, where as in my formative years I had studied in only Punjabi. I picked up fast and was always amongst first 2 or 3 boys in the class. I was fourth in the Punjab University in 10<sup>th</sup> and second among the Medical batch in the 12<sup>th</sup> Class. At that time Punjab University was the only university for Punjab, Haryana and Himachal combined.

## **Graduation and Post-Graduation:**

I was first in the family to join a medical course, in 1966 at Medical College Rohtak (Punjab, now in Haryana). The experience in Rohtak was really great, which culminated in M.B.B.S degree in 1971. The post-graduation was again in an institute where everyone dreams to be there, that is, Post Graduate Institute of Medical Education & Research Chandigarh. The PG course at that time, in PGI was of four years i.e. one year house job and three years of M.D / M.S. I chose M.D Medicine just because I thought at that time, that a person with M.D can start his practice anywhere without needing an operation theatre or hospital.

We know that time flies, but it flies so fast that events that happened 50 years ago appear to have happened in the recent past. Using a retrospectroscope, I vividly remember the day of my entry to Postgraduate Institute of Medical Education And Research Chandigarh on 1<sup>st</sup> of January 1972. It was a dream fulfilled. I had a chance to see in person the doyens of Medicine, Surgery and basic Sciences (Dr. P.N Chhuttani, P.L Wahi, Dr. J.N Beri, Dr. Santokh Singh, Dr. Aikat), and learned the advances in various specialties. Two Clinico Pathological Conferences (CPCs), two clinical meetings and a mortality meeting, every week, were the hallmark of the PGI teaching program, which would start exactly at 8AM. The Director and the Dean would attend the meeting every day along with all junior and senior faculty members.

## **Introduction to Neurology:**

My introduction to Neurology started in 1973, when I was given my MD Medicine Thesis entitled “Studies on Blood Coagulation and Fibrinolysis in Young Hemiplegics”, with Dr J.S. Chopra. The 1975 Annual Conference of Neurological Society of India at Chandigarh, was a booster dose. The young Neurologists of that time discussed clinical neurology and clinical signs. Electrophysiology was in its infancy. Everyone was afraid of Dr Chopra. Two PG students, before me could not complete the thesis with him. I was forewarned. I, somehow stuck to the thesis. There were no computers at that time. Dr Chopra would make innumerable corrections and the whole material had to be typed again and again. I typed my thesis seven times.





*NSI 1988 Group Photo*

I joined DM Neurology course of PGI Chandigarh in 1976, being the first regular student to join the course after two army sponsored stalwarts Brig. BR Kumar and Brig. PVS Rana. Dr Wahi, the then Dean of PGI and Head of Internal Medicine, did not allow me to join Neurology after my MD (Medicine). He wanted me to do Senior Residency in Medicine before starting DM Neurology. He thought there was no scope for Neurology and by doing Senior residency in Medicine, I will be better prepared as a physician. There were no stroke registries or epidemiological studies. All research was on hospital based data. There were no MRI's or CT Scans. Interventional radiology did not exist and Neuroradiology was restricted to direct puncture carotid angiograms, pneumoencephalograms, myelograms and ventriculograms. The D.M Neurology training in PGI, Chandigarh was tough with teachers like Profs. D.R Gulati, JS Chopra, VK Kak and D. Rout. The teaching by Doctors B.B Sawhney, N.R.Rao and Chakravati, were in different style. There was no internet and we had to review the literature from volumes of Index Medicus and then try to get copy of the articles from various libraries in the country which would take even up to a month. Sometimes we had to visit the National Medical Library, Delhi to get one article. The time spent in rounds with all the consultants mentioned above was very difficult and demanding. The emphasis was on clinical Neurology and localisation. However once we were in the coffee room all the teachers were more than friends. Long coffee sessions, were in fact, informal teaching sessions in Neurology, Sociology and Political Science.



*IAN Presidential Oration 2014*

### **Contribution to Neurosciences:**

I have seen the growth of Neurology from the so called Dark Ages of Neurology to the present era. In this write up I will touch upon the growth of Neurological Sciences with special reference to work done by me along with my colleagues in PGI Chandigarh from 1978 to 2014, which is the golden

period of Neurology. Though there has been progress in various fields, I would be discussing my contribution in the advancements in Stroke, Motor Neuron Disease and Dementia.

From the Dark Ages of Neurology, when NSI had 200 members with less than 100 Neurologists, and Neurology was synonymous with “no treatment”, to the present period of gene therapy a lot has changed. The future is where Molecular Biology and experimental Neurology are guiding research and the management of neurological disorders, by more than 2000 Neurologists.

Stroke in young was the priority area of investigation at that time. PGI under Dr. J.S Chopra was one of the major centers doing work on Stroke in young. Stroke prevalence rate at that time was 127-200/ 100,000, with case fatality of 41% Stroke in young was reported in 15-35% of hospital data. Work was initiated to find out the etiology of Stroke in young by studying thousands of cases. We had a very good pathology department where majority of the patients who died, had to undergo autopsy. The learning from postmortem studies is something which was the highlight of PGI training.

In a necropsy study, by Dr. A.K. Banerjee, Intra cerebral hemorrhage was seen in 138 out of 362 cases, arterial thrombosis in 101, cerebral embolism in 89 & CVT in 34. 37% were <40yrs of age. Dr. Dalal from Bombay, questioned the reported high incidence of stroke in young in India. However, data from various centers suggested that stroke in young was a problem needing investigation. Vascular endothelial growth factors (VEGF) and Monocytochyme Attractant Protein 1 (MCPI) levels were

found to be unaltered in plaques of patients from north India. Using bubble technique on TCD, high prevalence of cases of patent foramina of Ovale was detected in young patients with stroke.

The management of stroke in 1970's consisted of direct carotid artery puncture followed by conservative measures. By 2014 IV tPA had become the treatment of choice in ischemic strokes. At PGI in a period of 42 months, 502 patients of acute ischemic stroke were seen. 347 were eligible for IV tPA, however, only 130 received tPA. Better experience, multidisciplinary approach and community awareness programmes have improved the rates of tPA infusion. Mechanical devices like Merci, Penumbra, Solitair, Trevo, Revive have become available and thrombectomies are being under taken.

### **From desk to bedside:**

I tried to bring in the concept of a good clinical research laboratory at PGI, Chandigarh. Clinical research always goes hand in hand with experimental research. With the help of the research team of Neurology research lab, a mouse model of Middle Cerebral Artery occlusion was created. This was later used to study role of stem cells in experimental stroke model. Neurology department of PGI, under Dr. S. Prabhakar was part of DBT sponsored multi-institutional study to investigate intravenous autologous bone marrow mononuclear stem cell therapy for ischemic stroke. It was concluded that, under the condition of 'Invest' trial BMSC is safe but ineffective in the treatment of moderately severe subacute ischemic stroke. Until ongoing or further randomized trials show efficacy, this treatment should not be used in clinical practice, and patient should not accept such therapy without question.

### **MOTOR NEURONE DISEASE**

Till recently there was nothing possible, once a diagnosis of MND was made. Lot of literature had emerged regarding aetiology of MND, which included exposure to environmental toxins and chemicals, infections by viruses, immune mediated damage, pre-mature ageing of Motor Neurons, loss of growth factors required to maintain survival of motor neurons and genetic susceptibility. Glutamate excitotoxicity is also know to contribute to motor neuron damage. Riluzole has been the main stay of treatment of

MND. It blocks the release of Glutamate from neurons and prolongs median survival by 2-3 months. The effect is better if started early. I started the study of “Role of autologous bone marrow derived stem cell therapy in management of patients with Motor Neuron Disease” in a pilot Study, at PGI Chandigarh. 10 patients of amyotrophic lateral sclerosis (ALS), according to revised El Escorial criteria were recruited to determine the efficacy of autologous bone marrow derived mononuclear cells in improving outcome.

The primary objective was to compare ALS functional rating scale (ALSFRS) score at baseline (time of first presentation) to that as on 3 months, 6 months, 9 months and 1 year after injection of mononuclear cells derived from patients’ bone marrow in the sub arachnoid space at L 2/3 or L 3/4 spinal level. There was a definite decrease in rate of progression of disease after stem cell transplant from the initial presentation. There was a worsening after an initial stable period of 6 to 7 months after stem cell transplant. In a second part of the study, 30 patients who were clinically definite/ lab supported ALS, were studied between March 2012 and November 2013. Two intrathecal injections of autologous bone marrow derived stem cells were given, 6 months apart. Three monthly follow up till six months after second injection death/PEG/ or ventilator support was done. ALS FRS scores were assessed at base line, 3 months and historically 6 months prior to enrollment. Follow up of 1 year revealed that 18 of 30 were alive without PEG/ventilatory support

There was no significant worsening in total ALS/FRS score, ALS-FRS Bulbar score, upper limb FRS score, lower limb FRS score and respiratory score. Patients remained stable for about a year after the two stem cell injections. There was no definitive improvement. A Biomarker development program in ALS was also initiated in the Research lab of Neurology Department, in collaboration with Dr. Akshay Anand.

## **DEMENTIA**

Prevalence of Dementia in Rural Indian population has been reported to be 3.39% - 8.4%. In Urban Population, it is 2.44 - 4.1% in West, 1.83% in North, 0.8% -1.28% in East and 3.6% in South. I was also involved in the study of Biomarkers for Alzheimer disease, Mild Cognitive Impairment, and vascular dementia. I always believed that Ayurvedic drugs like

BRAHMI, have lot of potential but have not been investigated scientifically. I studied the role of Brahmi (*Bacopa Monniera*) in the treatment of Dementia. In an experimental model of mouse the benefit was confirmed. This was later further studied as a double blind clinical trial in patients with Dementia, with promising results. Animal model was also developed with laser induced injury in mice and role of stem cells was studied

### **Conclusion:**

When I superannuated in April 2014, I was a satisfied person. I had developed a Department with strong foundation, where every individual was given due respect for his or her capabilities, and where the prospective students, preferred a DM training from PGI. I was able to mentor more than 120 D.M. students and around 10 PhD students, who are well settled in India and abroad. In my journey from a general physician, to a satisfied senior clinical neurologist and researcher, I have been ably supported by my wife Dr Indu Prabhakar, who entered my life in 1975 and still continues to push me to do my best. She has given me two sons, Dr Sharad, Associate Professor Orthopedics at PGI Chandigarh and Dr Anuj, Assistant Professor in Interventional Neuro-radiology at AIIMS, New Delhi, who are enjoying their lives with their spouses (Gynaecologist and Radiologist respectively) and their sons and daughter.

I have followed the path shown by the young neurologists of 1970s who later became the pillars of Neurology in India. ■



*Dr. Indu with Grandchildren*



**Vijendra Kumar Jain, President NSI 2011**

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**Introduction:**

Vijendra Kumar Jain (VKJ) was born in Meerut on 30<sup>th</sup> June 1953. His father who had a diploma in civil engineering from Roorkee, was at the time earning his living by giving tuitions to children. He had given up his government job in response to a call by Gandhiji in the freedom movement. That was a courageous decision indeed as Hukum Chand Jain had a large family. Vijendra



*Ammaji and Bauji*

was his eighth son; in all nine sons were born to Hukum Chand and Bishambri Devi. Later, Hukum Chand got employment in Roorkee University as an overseer and that is where Vijendra was raised.

Roorkee, a small town near Haridwar, was always famous for its university. Those who worked in the University, aspired to see their children study



*Malvika, Neera, Surabhi and VKJ*

there and become engineers. Hukum Chand, with his love for learning, instilled in his children, discipline and a desire to excel. He would get up before dawn, wake his sons up and make them sit around a study table. There the boys would sit, half-awake and longing to go back to their warm beds, but forced to pore over their books as their watchful father sat close by. Gradually, they would become more alert and before leaving for school they would have gone

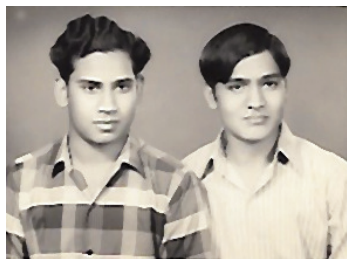
over their lessons well. In later years, V.K. Jain credited his parents and his brothers for his achievements. He recalled how his mother uncomplainingly managed the large family with limited means. She made her boys give utmost respect to their father, which helped him to channelize their energies positively. Of the nine boys, six went on to become engineers and three doctors.

### **Schooling:**

Vijendra used to walk three kilometres every day to reach his primary school, Primary Pathshala number 8. The lessons were in Hindi and the students sat on the floor. One teacher was assigned one class and he taught all the subjects. It was a good system as the teacher got to know his students well and was able to teach holistically. Admission to class 6 was dependent on a competitive exam conducted by Government Inter College. After successfully clearing the exam, Vijendra pursued the rest of his schooling at this institution. Vijendra enjoyed commuting to school. On the way, were large trees laden with fruits. The young boy became adept at climbing mango, mulberry and guava trees etc. He knew the trees that had good strong branches and those that didn't. Throughout school, Vijendra stood at the top of his class and more often than not was the class monitor. In class 9, the students were asked to choose between maths and biology streams. Vijendra chose maths as he planned to become an engineer from Roorkee University. However, destiny had planned otherwise. A student with whom Vijendra was always in competition had opted for biology. This classmate challenged Vijendra to do as well in biology as he did in maths. Since Vijendra wanted to prove to his competitor that he could do equally well in any subject, he switched over to biology in class XI. He stood first in class XI, but more importantly, and rather fortuitously, set himself on the road to becoming a doctor rather than an engineer. Studies and games were the only two things that occupied Vijendra's attention at that time. When he would return from school, he would put down his school bag and run to the sports field to join other boys who played basketball with him. They would play till the sun went down and Vijendra would get back home hoping that he would not be scolded for staying out till dusk. However, he became good at the game and was selected in the college team. At one point he was selected to play at the state level but that dream had to be given up in favour of studies.

## Undergraduate medical education:

After completing Intermediate from GIC, Vijendra sat for the Medical College entrance examination. He was selected at both Allahabad Medical College and King George Medical College, Lucknow and ranked seventh



*At KGMC*

in the KGMC entrance exam. The young man chose to study at KGMC as the grand building of the college had a huge impact on him. It seemed like a hallowed portal to enter which would be a dream come true. Classes began and Vijendra eagerly took his place in the huge classroom. But to his dismay, he understood very little from the lectures as they were in English. Till then

his medium of instruction had been Hindi. Here was an unforeseen challenge. With his customary doggedness, Vijendra set about resolving this problem. Fortunately for him, KGMC had a system wherein the college issued the timetable of the entire year in advance. Students thus knew the topic of every lecture at the beginning of the academic year. Vijendra used this timetable to prepare for every lecture on his own. Before going to the lecture theatre he would read the topic in his textbook. The lecture would then be like a revision of the material that he already knew. This strategy worked well for him and he completed M.B.B.S in the first attempt. When in 1975, the Chief Minister of U.P. Hemvati Nandan Bahuguna, came to KGMC for its convocation, he pinned 'Colour' on the lapel of Vijendra Kumar Jain. 'Colour' was awarded to the student who excelled in both studies and sports. In addition to being a good student, Vijendra had excelled in basketball and other sports.

## Postgraduation:

After completing MBBS, VKJ took admission in M.S. General Surgery at KGMC. In the second year of this course, residents were posted to one of three specialities - plastic surgery, CTVS (cardio-thoraco vascular surgery) and neurosurgery. When VKJ was assigned neurosurgery, his heart sank. All the residents saw this branch as a depressing one, in which there was high rate of mortality and very little surgical experience to be gained. The most that one could expect to do then were investigations such as myelograms and angiograms. Added to this was the fact that the CNS had



always been a hard nut to crack for most students and few fancied getting lost in its labyrinths.

However, VKJ decided to make the best of his posting and learn as much as he could. One day, a patient with aphasia and right hemiplegia was brought on a stretcher. He had a chronic subdural hematoma and was operated on the same day. When he was taken out of the OT, he thanked VKJ with folded hands. Two burr holes had been made to drain out the haematoma and that had made all the difference. This transformation seemed like a miracle to the young doctor and changed his opinion about neurosurgery. A branch of surgery that had seemed to be full of doom and gloom now shone as a magic wand. It had the power to make the blind see, the dumb speak, and the lame walk! At that moment VKJ was hooked by neurosurgery. He felt that though it required hard work and was quite challenging, it gave miraculous results that were very rewarding for the neurosurgeon.

VKJ now knew that neurosurgery was his chosen field and he put his heart and soul into learning as much as he could from this posting. He was lucky to be given a chance to place shunts and operate on chronic SDH. What really inspired and motivated him most was the dedication and attitude of the whole neurosurgery team – Prof VS Dave, D K Chhabra, A K Singh and SC Tandon. Dr Chhabra spent all his waking hours in the hospital with indefatigable energy. Neurosurgery was his entire life. Dr Dave was extremely meticulous in all he did and expected everyone to do the same. He would seriously ask the residents for their opinions and instilled in them self-respect.

The neurosurgery posting came to an end and VKJ was back in the general surgery routine when Dr Chhabra persuaded him to join the new five year course in Neurosurgery offered at NIMHANS. VKJ was taken aback. He had already completed one and a half years of MS and was not mentally prepared to leave the course midway. It would be wiser to apply for M.Ch. in KGMC after completing MS. However, Dr Chhabra, Dr Tandon and Dr Singh refused to take no for an answer and almost pushed him to go to the interview. They were convinced that it was the premier institute for neurosurgery at that time. They bought him a train ticket and friends escorted him to the railway station to make sure that he boarded the train!

NIMHANS admitted Vijendra Jain to its five year MCh course. Giving up his half completed M.S. course at KGMC he reached Bangalore on 7/7/77.

### **Neurosurgical training at NIMHANS:**

In Bangalore the problem of language again cropped up. To communicate with patients it was important to know Kannada. VKJ set about learning it. Fortunately Kannada is similar to Sanskrit which he had studied in school. He wrote down ten Kannada words in a notebook every day and memorized them with their meanings. Interacting with patients helped and before long he was able to speak and understand the language well. In NIMHANS the world revolved around neurosciences so there was a lot, that a neurosurgeon in training could absorb and learn. It was a world without CT and MRI Scans. Neurosurgery residents worked as neuro-radiologists doing angiograms, ventriculograms, pneumo encephalograms and myelograms for all patients.

A patient who came to the ER with altered sensorium and with presentation of raised intra-cranial pressure (without localization) would be investigated by doing right carotid angiogram. When evidence of hydrocephalus was demonstrated the patient would be taken to the OT, a right frontal burr hole made and taken back to the radiology department for a ventriculogram. If this revealed a posterior fossa tumour the patient would be taken back to the OT for a ventriculoperitoneal shunt. The entire procedure, was the responsibility of the neurosurgery resident on duty.

For all neurosurgery residents, the days were packed with a really gruelling schedule. Every day there was a class session, eg., Preoperative discussion, a group discussion, a pathology slide session, brain cutting session, mortality meeting or a combined neurology and neurosurgery seminar. The rigorous training at NIMHANS was something that VKJ prizes. He says, "NIMHANS taught me how to arrive at decisions through a process of logical reasoning and testing one's thought processes in discussions with one's peers." The academic schedule and clinical duties did not leave much time for recreation or rest. VKJ felt lucky in not having any family duties or obligations to fulfill as his family lived far away in North India. Once a year he would take three weeks off to visit his parents in Roorkee.

After completing M.Ch, VKJ joined NIMHANS as a faculty member and was soon made the chief of a unit. He thus got ample opportunity to do all kinds of complicated surgery – vascular surgery, C.P. Angle tumour, Ventricular tumours, etc. In those days, aneurysm surgery was considered very challenging and difficult and therefore very few surgeons performed it in India. In NIMHANS however, Prof B.S. Das and VKJ did it with fair results. In time, the department got bipolar coagulation, microscopes, CT scan machine and many other advanced tools that improved surgical results considerably. In 1983, Vijendra Jain married Neera, an M. Phil. in English literature from Delhi University. A daughter was born to them in 1985, the year in which VKJ got a chance to go to Fujita Gakuen Health University in Japan on a year-long fellowship. This was a golden chance for him, given his interest in aneurysms. He left for Japan leaving behind a newborn daughter. Soon, however, his family joined him in a small apartment in Toyoake, Japan. Those were exciting days for the family. A new country with a new culture brought surprises and friendships at every turn.

### **Neurosurgical Fellowship in Japan:**

Before settling into work in the department, VKJ had to once again surmount the language barrier. This time the challenge was the Japanese language. Once again he set about learning a new language to be able to communicate with patients and once again he was successful. In Japan, VKJ worked under the guidance of Prof. Kano, who has facilitated many Indian neurosurgeons to learn and work in Japan. Dr Sano was an international authority in aneurysms and AVMs and VKJ felt privileged to work with him. In one day he would sometimes assist Dr Sano in four aneurysm surgeries while in NIMHANS only ten to fifteen aneurysms reached the hospital in a year. Apart from surgery VKJ also did experimental work in Japan. It was there that he learnt and practiced vascular anastomosis in rats. Before the fellowship was over, he was allowed to independently operate aneurysms and do STA-MCA anastomosis. He learnt fine surgical skills and Japanese work ethics. He was immensely impressed with the punctuality, hard work and caring of Japanese doctors. Respect and obedience for seniors was deeply ingrained in the Japanese system. This facilitated smooth functioning of their institutions. VKJ returned to India resolving that he would try to emulate and impart these qualities in his country.

## Neurosurgery at SGPGI:

On returning to India in 1986, VKJ was invited to join a new Institute that was being developed in Lucknow. This involved working with Dr Chhabra to build a department from the drawing board stage. The functioning of the department had to be planned, equipment procured and systems put in place. VKJ joined SGPGI in 1987 and moved into a beautiful type 5 bungalow with his wife and two daughters, Malvika and Surabhi. The family would spend a wonderful seventeen years in that house. They would enjoy campus life, play, swim, entertain friends, neurosurgery residents,



*Annual party with the residents at home in SGPGI*

visiting neurosurgeons and Japanese guests. Two things set the department of Neurosurgery at SGPGI off to a great start. Right from the beginning the department had equipment of very high quality and also had the support of the department of Neurosurgery, Nagoya University, Japan. Headed by the legendary neurosurgeon, Professor Sujita, the department

of neurosurgery, Japan, formed a close bond with the department at SGPGI. Nine Japanese neurosurgeons visited the department for a period of two to four months each from Nagoya university. The famous professor Y. Suzuki was the first one to visit and later he made it a point to come to Lucknow every time he visited India.

Enthusiasm among the faculty members rose further when the department got a state-of-the-art operating microscope and started micro-neurosurgery work which was not being done anywhere else in Uttar Pradesh. The department laid emphasis on early surgery for aneurysmal SAH and preservation of seventh nerve in C.P. Angle surgery. CV Junction surgery, sellar and parasellar tumour surgery, pediatric neurosurgery and skull base surgery. These sub specialities were divided among the department surgeons to a large extent. The quality of service soon came to be recognized in UP and its neighbouring states, as a result of which the department became deluged with patients.

### **Teaching at SGPGI:**

The M.Ch. Neurosurgery course was started in SGPGI in 1989. VKJ drew upon his experience of teaching M.Ch. students at NIMHANS. His idea of teaching was to stimulate the students to acquire learning. He wanted them to feel like consultants and therefore asked them to present cases as if they were the decision makers for treatment. Then he would ask them questions as if he was trying to learn from them. They were encouraged to formulate their own concepts and not feel that the consultant's words were gospel truth. The consultants would give their opinion later. VKJ was known for questioning the residents for minute details of patient's history and examination. He liked things to be crystal clear and there was little that escaped him. It was difficult to fool him with half-baked knowledge and though the residents sometimes resented the cross-questioning at that time they were grateful for it later. VKJ wanted the residents to be so sure of their line of thought that at one time he even asked them to write their tentative operation notes before the actual surgery. The purpose was that they should be able to visualize in their minds, every step of the surgery beforehand. The teaching aspect of the work at SGPGI was precious to VKJ. He saw his students as the best of the best and felt that he learnt as much from them as they may have learnt from him. Through their presentations and discussions they stimulated his mind. He always regarded his M.Ch students as his greatest wealth and they numbered nearly a hundred.

### **Surgery at SGPGI:**

VKJ's chief characteristic as a surgeon was his courage to take up challenges. He welcomed difficulties and sought to overcome them. Which is why, perhaps, he became known as a surgeon for difficult cases. VKJ's expertise was in the triple As – Aneurysms, AADs and Acoustic schwannoma. His work on CV Junction anomalies has been internationally recognized and published. VKJ himself credits his success in this area to his ability to visualize the anatomy of the area three-dimensionally. In 1986, he described an entity that he called "benign sub-arachnoid haemorrhage". This entity was usually called SAH of unknown etiology. When he visited Japan, as a visiting professor, he was pleasantly surprised to find the term benign SAH in use there. Yet another area of expertise was

C.P. Angle Tumours. He was able to save the seventh nerve in approximately 80% cases.

### **Post SGPGI:**

In 2010, VKJ took voluntary retirement from SGPGI. He felt that life had begun to stagnate. The department was not getting more equipment and seemed to have reached a static level. His salary had also reached the highest level with no more yearly increments. He did not aspire to become the Director of the Institute as that was mainly an administrative job. He therefore left SGPGI to join Sir Ganga Ram Hospital in Delhi. Two years later he shifted to Max Superspeciality Hospital, Saket.

### **Conferences and Societies:**

From the beginning, VKJ used to attend and present papers at NSI conferences. As new subspecialty societies came into being, he also got involved with those. He was one of the founding members of Neurotrauma Society, Cerebrovascular Surgery Society, and Skull Base Surgery Society. He became a member of Paediatric Neurosurgery Society also. As he used to attend conferences of all the societies and was also popular among the members he went on to become the President of Skull Base Surgery Society of India, Indian Society of Cerebrovascular Surgery, Neuro Trauma Society of India, and Neurological Society of India. He was also a founding member and Vice President of Asian Congress of Neurosurgery which was started by Prof. Kano of Japan. He arranged three Indo-Japanese conferences in association with Prof. Kano. Later, another Japan-India Neurosurgery society was created at the initiative of Prof Suzuki for which conferences are held once in two years alternatively in India and Japan. VKJ was also elected as Vice-President of Asian Australasian Society of Neurological Surgeons for a period of four years and took part in teaching programmes organized by the society in various countries. In 1990, he had organized the first meeting of neuroscientists of Uttar Pradesh at SGPGI when a society was formed for Uttar Pradesh and later he was elected the President of U.P. Neuro Science Society.

VKJ's main academic contribution in conferences and lectures in India and abroad has been in surgery on aneurysms, surgery of CP angle tumors, and surgery of CV Junction anomalies. He described a unique technique of creating an artificial arch of atlas for posterior fusion in those cases of

atlanto-axial dislocation in which the arch of atlas was assimilated with the occiput and was not available for sublaminar wiring. The instrumentation for fixation of CV Junction was not available in India those days. He also did many transoral surgeries for fixed AAD and demonstrated the surgical technique in many operative workshops in India. VKJ, however, wryly says, “Although, I have written many papers, delivered many lectures and done many surgeries for CV Junction Anomalies, it still remains somewhat of a mystery to me. The same rule cannot be applied to all cases.”



*As NSI President with  
APJ Kalam and Prof PN Tandon*

As President of NSI, VKJ was involved in making some changes in the constitution of the society and in starting various academic programmes for DNB and MCh students on behalf of the society in India with the help of the Executive Committee. He regarded it as great luck that he got to deliver his Presidential oration at NIMHANS, Bangalore, his alma mater.

### **The Present:**

Now, VKJ operates at Max Hospital, Saket in Delhi. His first love continues to be challenging surgery. Both his daughters have an MBA and are happy pursuing their chosen careers. They chose their life partners and are leading very independent lives. VKJ’s wife, Neera, works as an editor and writer of children’s books. ■



### **Keki Turel, President NSI 2012**

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### **Introduction:**

World War II was just concluding when I was born. Our parents started married life from scratch with nothing to support them except their undying commitment to succeed and do the best for us. They built a strong family of four sons and one daughter. Both mom and dad were from highly respected orthodox families of priests. My father rose from a humble sewing machine salesman-cum-mechanic to an ethical businessman and Chairman of a prestigious Bank.



*Father Edulji and Mother Jalu*

### **Schooling:**

Despite our meager financial resources, we went to the best schools, best colleges, participated in all the Boy Scout camping trips and never had to work to get these privileges. I was the oldest of five siblings, and a 'second father' to the others, in charge of disciplining and guiding them, whilst we worked hard at making two ends meet. We moved to a low-income group chawl, with a tiny room and sleeping in the open passage and used common toilet shared by over fifty families. It was here as a 6 ½ year old, curious and shy but determined boy that I was lured into life-long vegetarianism by an amputee lady who spoke stories of Hindu mythology. No playground, no radio or TV. My schooling was at St. Xavier's. Dad would give us 4 annas each, totaling one rupee amongst us for transport and 'lunch'. As a leader of my brothers, one hungry afternoon we approached the proprietor of a Madras Café near the school to share a Thali priced at Rs. 1 amongst 4 of us. He kindly gestured us to occupy a



remote corner of his restaurant (not to be noticed by other guests), as we ate 'unlimited' food from one Thali, bonding us brothers even more.



*KT as a Scout with Jawaharlal Nehru*

I eventually became a troop leader in school scouts to be a part of Indian Contingent in a World Jamboree in 1961. Due to SSC exams, I could not make the journey and by sheer serendipity, the plane carrying our Indian boys crashed. I was destined to live, a fact borne by my survival through numerous accidents in my later years.

School fees and camps were all subsidized and college and medical university were supported by Parsee Scholarships. I was eventually ordained a priest even conducted some ceremonies. In my later years at school, I joined a cricket club at Parsi Gymkhana, playing with Sunil Gavaskar and



*KT escaping from a major accident*



*Ordained as a priest*

Milind Rege. As my father was a sewing machine mechanic, we got to use our hands and I thought I would be an Engineer. I studied a book on Palmistry and understood that I was destined to be a doctor and due to my mechanical skills, a surgeon. Entry to the medical college was easy and straightforward. I chose Grant Medical College (GMC), as I could indulge in socials, games and parties (represented GMC at Cricket and also Boxing, which I gave up after realizing it could damage

my cerebral faculties). Most of us end up finding partners for ourselves from within the Parsi colony where I stayed, as I too did. Slim, fair, tall and pretty, she was still at the high school when I first met her during my medical school days, and later mentored her, goading her to do PG in Psychology.

### **The lure of Surgical Neurology:**

In the final year, we were taught Neurology by Dr. N.H Wadia, who enthralled us with his lectures and rounds and a field that seemed a bug bear to most, appeared to me as an endearing and engrossing subject. Instead of dividing my love between Neurology and Surgery, I got them wedded to the logical field of Neurological Surgery. I was the first student to register for a direct 5 year PG course.



*With Mentors Neurologist N H Wadia (L) and Neurosurgeon Gajendrasinh*

There was no formal or structured residency program and we still followed the conventional two 6-monthly house surgeon posts following by Registrarship of 2 years. This would train us for 3 years for a 5-year course. It was therefore decided that I would do 6-monthly posts as a House Surgeon in General surgery, Urology, Plastic, Orthopedics, Neurology and allied field of Radiology and Pathology followed by 2 years as a Registrar. However, I managed to spend another 2 years as Registrar in Neurosurgery, a year each at KEM and Nair Hospital. This was early seventies, in the pre CT era, when clinical diagnosis reigned supreme and final diagnosis depended heavily on cerebral angiography and ventriculography. We became experts at puncturing the carotid in the neck with both hands, whether it was the right or left of the neck.

Working in different institutions with a variety of teachers was an advantage as they themselves were trained in vastly different centres abroad. There have been some unforgettable incidents and no amount of hard work seemed to be enough. As residents we had to assume the role

of a doctor, nurse, errand-boy, clerk, attendant, advisor, pacifier, etc. At J.J, we had 2 units, each having surgery on alternate days, emergencies on the other 3 days and an OPD once a week. Often we were tied up in surgery all days of the week, doing planned cases on alternate days and emergency trauma, hemorrhage and shunts on other days. The job demanded supreme physical and mental fitness and balance, and whilst hard work was a necessity, diet and sleep were a luxury. Though we participated in all teaching activities including attending autopsies and brain-cutting sessions with the legendary Darab Dastur, the monthly 2<sup>nd</sup> Saturday afternoon meetings of all neurosciences held in rotation amongst 3 public hospitals was an absolutely regular feature. However there was no time, nor emphasis on publishing papers, though record keeping was strictly adhered to. The only noteworthy publication was preparing the thesis on a subject given by the teacher, usually a retrospective study of cases of a particular disease entity.

M.Ch exams was the culmination of the effort of five gruelling years. The only text book then was the newly-published, extremely readable book by a British Neurosurgeon, Northfield. Youmans (3 volumes) had just come on the scene but I could afford to buy only one of its 3 volumes. We had two examiners from Mumbai, and two from the rest of India. I cannot forget the superficially intimidating Prof PN Tandon screaming at the slightest deviation from what he thought was right. If I quoted a particular reference in the literature, he would call for the original reference and was fair in accepting that even if it had not come to his reading. The examination was a rigorous experience, one full day per candidate.

Three of four brothers had planned to get married at the same time, and all were waiting for my exams to get over. We all got married in January 1975. A long uncertain life lay ahead. I joined Dr. SN Bhagwati (SNB) as his clinical assistant for a year at Bombay Hospital as a stop-gap arrangement, and used the time to communicate with a handful of departments in Europe, UK, and USA. SNB had arranged for me to work at Atkinson Morely in UK where he had trained. Using the opportunity of a free air ticket given to my brother for garment export, a 10 USD/ day grant from my father, and a Euorail pass, I took off on an 8 week tour study trip to various European Hospitals.

Everything was so different. The rich-poor gap was so obvious that my conviction to stay back in India to serve my own people got even stronger. My last stop was London, and the most comfortable location for a variety of reasons (language, food, relatives, many Indians), but not for permanent settlement. Returning to Mumbai and on suggestion of SNB and along with the Registrar and supported by the Research Society of GMC and J.J, we conducted a research project on “An Autopsy Study of the incidence of Intracranial Aneurysms and abnormalities of the Circle of Willis” on over 1,000 consecutive autopsies. In Feb. 1976, I also undertook specialized training in Stereotactic Surgery at a Workshop conducted at the Institute of Neurology in Madras.

Photography had been a part and passion of my life. Years ago I had my own solo photography exhibition at a prominent art gallery in South Bombay.



*KT- the professional photographer*

### **Hon. position in Govt. Hospitals, Mumbai:**

The honorary positions in public hospitals opened up in 1977 and after a short stint at Nair, I joined my alma mater J.J Hospital which I served till 1993. Private practice was allowed but of the few where high-level neurosurgery could be done, none would accept me then. I did private cases in Breach Candy and also introduced neurosurgery at a relatively less known Masina hospital collecting funds from private donors to buy few sets of instruments. Working at government hospitals with virtually no formal ICUs and poor help, I had to do almost everything solo, including record-keeping and subsequent participation/presentation in various meetings and conferences in India and abroad. In the earlier years, income was limited and raising a family whilst pursuing academics was tough. The conditions were even worse outside metropolitan cities and that goaded me to create awareness of this subject outside Mumbai and other less developed countries outside India. I made bi-monthly visits to my hometown Surat, where in entire south Gujarat there was no neuro specialist. My visits were eagerly awaited. From the late seventies to the early eighties, I travelled by overnight trains in second class compartments.

There was no salary in the government hospital, but the work there was its own reward. I spent almost all days of the week working long hours, honing my surgical skills. This stood me in good stead over my future career. The late 1970s saw a rush of patients from Middle East and Africa thronging to Mumbai for expert medical treatment. I started making trips to a few Gulf states establishing direct connections with health ministries. This resulted in a large practice from the Middle East.

### **Lure of Microneurosurgery:**

It was in the late seventies after visits by Prof. Hans Pia and Grote at KEM and later by another young German Biemer at Tata Memorial that I got my first exposure and inspiration to start microneurosurgery. I taught myself by operating on white mice under a primitive laboratory microscope made by an Andhra company. Much later we were fortunate to get Zeiss OPMI 6 and my formal journey in microsurgery commenced. Prof Majid Samii visited India (Delhi and Bombay) in 1982. I followed him very keenly at both places and seeing his revolutionary work on the Brain and Peripheral Nerves humbled me and within a couple of months of his visit, I was already in his Hannover clinic. This completely changed my perspective in Neurosurgery and I felt as if I was reborn. Prof Samii urged me to stay with him for a longer period. Formalities had to be completed to enable me to work in Germany and I joined his department in 1983. With Prof Samii, I co-ordinated and co-moderated the world's first ever "Teleconference in support of Medicine" on May 15, 1984. Twenty neurosurgical centers from all continents of the world were connected to our center in Hannover from where the conference was conducted. The theme of the conference was "Management of Acoustic Neurinoma". We wrote a lot and I almost completed writing a volume on peripheral nerve surgery - a subject I have never been exposed to in India. I was in the meantime summoned by the Ministry of Health in Mumbai to rejoin my position at J.J or lose it forever.

### **Return to India:**

Coming back to India, and working with others not exposed to microsurgery was frustrating requiring patience and perseverance. I had a record of operating 26-27 hours non-stop without a break on three occasions. My assisting staff and anesthetists would often get exhausted and some even complained, suggesting doing surgery in stages. With my ENT colleagues, we conducted a Skull Base Workshop and Live surgery

in Pondicherry in 1987, the first of its kind in India. Along with my Plastic surgery colleagues we did Microsurgery Training and Live Workshops in 1988-89 in Mumbai. The good word of microsurgery had started spreading steadily to various centers in India. I promoted microsurgery by continuous education through slides and video recording of every operative procedure amounting to over 15,000 operations and hundreds and thousands of slides and videos. This is an ongoing effort that I still pursue, through lectures and cadaveric and live demonstration spread all over India and 60 countries worldwide. A seventeen-year-old commercial sex worker was dying of AIDS, and was referred to me with post TB Meningitic hydrocephalus. It was J.J hospital's first-ever encounter with such a patient and there was fear, apprehension and a tendency of the staff to avoid treating her. I had to take the lead in organizing safety measures for the team and perform the first ever such operation on a patient suffering from AIDS in 1989.

### **Spine Surgery:**

I had a special interest in Spine surgery and did my first ACDF as a resident in 1974, carefully co-relating symptoms and signs with clinical radiology whilst preparing a paper on Cervical Canal Stenosis. I realized this entity to be easily diagnosed by viewing 3 lines in the sagittal view: 1. Posterior Vertebral bodyline 2. Facet joint line 3. Spinolaminar line. Normally these 3 lines are easily separately seen. In canal stenosis, the 2<sup>nd</sup> and 3<sup>rd</sup> lines overlap. This was unequivocally seen in every patient with this entity. This was presented at an 'International Seminar on Cervical Spine' in NIMHANS wherein the legendary Ralph Cloward appreciated this observation. This was eventually published as Turel's Sign of Cervical Canal Stenosis. We also discovered the 'oblique lie' of facet joints on plain X-rays of Lumbar Canal Stenosis. Yet another original contribution was a "management-based Algorithm" for the treatment of Congenital Atlanto Axial Dislocation (CAAD) and presented as an Invitation Guest Lecture with several illustrative cases and film at the 10<sup>th</sup> JCNS in Tokyo in March 1990. Having a mechanical engineering family background, it was a second nature for me to develop new surgical instruments or modify the existing designs developing several such instruments, one of which has been accepted by and its prototype made by Asculap.

In fact, some of the earliest spinal implants for stabilizing patients with trauma and de-generation were conducted in the early 90s. Thanks to a

strong physique and a determinant and perseverate mind, I had performed many surgeries for brain and spine tumors lasting well over 16 hours. Teaching has been a passion for me and have presented papers at National and International conferences. I have now given over 600 lectures, TV shows, operative procedures and workshops in more than 60 countries across the world. Such participation has helped attract international attention and recognition conferring Presidentship of the Asian Oceanian Skull Base Society (AOSBS) 1997-99, Bombay Neurosciences Association (BNA) 2007, MASSIN 2007-11, Academia Eurasiana Neurochirurgica (AEN) 2008-10, Neurological Society of India 2011-12, International Conference on Complications in Neurosurgery (ICCN) 2017. Landmark conferences were organized as President of AOSBS in 1999 and AEN in 2010.

The fiftieth Golden Jubilee Conference of NSI was also another landmark wherein a 28- minute edited film of “The development of Neuroscience in India” was shown at this inaugural ceremony. This film was made by my personal team of filmmakers who visited 20 leading centers and did live recording of the doyens of Neurosciences in our country including the likes of Jacob Chandy, B Ramamurthi, A Bagchi, PN Tandon, NH Wadia, etc. Several illustrious past office bearers of NSI (Presidents and Secretaries), who attended the meeting were honored.

New innovations and ideas and successful approaches and procedures often appear to project surgeons’ vanity. I organized the first International Conference on Complications in Neurosurgery, a 3- day event which highlighted anticipation, prevention and management of

Complications and an open forum of our failures and what we learnt from them. This truly unique educational initiative has attracted international attention and interest. ■



*With Wife, Sons Burgese, Mazda & his wife  
and 2 granddaughters at Burgese’s  
wedding in New York - 2016*



**Chandrashekhar Eknath Deopujari**  
**President NSI, 2013**

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### Introduction:

I was born in Sausar, a small town near Nagpur, capital of the erstwhile state of CP & Berar on 31<sup>st</sup> August, 1954. This day happened to be one of the biggest festivals in the region, the birthday of Lord Ganesh or Ganesh *Chaturthi*. This is celebrated with great fanfare with installation of the Ganesh idols in many Marathi households as well as public places as initiated by Bal Gangadhar Tilak during the freedom struggle to aggregate and energize the youth in Maharashtra. Primary education was in the ancestral house in Sausar Municipal School, many a times under the



*In ancestral house in Sausar  
 just before going to school*

trees and secondary education was also in a Government school with evenings devoted to outdoor sports. After matriculation (10<sup>th</sup> Standard), I moved to Nagpur and joined the M M College of Science which was well known for its discipline, and studied for the pre-university biology course and passed with merit. A decent score in BSc part I (pre-medical year) enabled me to get admission in the Nagpur based Government Medical College. No other qualifying or entrance exams existed in those days.

### Family Background:

The State of CP & Berar eventually got divided between Madhya Pradesh and Maharashtra during the reorganization of states in 1960 and Sausar became part of M.P. However, all the family links of both the parents were in Nagpur, the nearest big city which happened to become a part of Maharashtra. My father was a General Medical Doctor (RMP) and was a



busy family practitioner while mother was a homemaker and also shared the responsibility of looking after our ancestral farms. By the end of general surgery residency, I was married to Rajshree Chaturvedi, a colleague resident who was pursuing her MD in Anesthesia.



*With Rajshree, soon after our marriage*

### **Undergraduate Medical Education:**

Ragging was a big nuisance in those times and the first year of college was very difficult. However, the clinical subjects in later years made the medical school more interesting. Towards the end of MBBS, I decided to join a surgical specialty because of some very good teachers, notably Prof. Vikram Marwah, Prof. M.L.Gandhe and the dashing young assistant professor Dr. V.K. Diwekar who had rejoined the department after his return with FRCS from UK, where he trained in cardiovascular surgery. His teaching made a big impact on our young minds and a desire to do a specialty course flourished thereafter. This was also strengthened by Prof. Gandhe who was my official guide for the Master of Surgery course.

Unfortunately, Dr. Diwekar developed a cervical intramedullary tumor which resulted in quadriparesis. While he strived to work with this handicap, he boosted me to take up neurosurgery as a career which was not so popular then in Nagpur. His encouragement largely shaped the further course of my career as he also introduced me to Prof. SN Bhagwati who became my mentor in Neurosurgery from 1981. I secured admission at the Grant Medical College & Sir J.J. Group of Hospitals on the basis of a good performance at M.S. (General Surgery) examination. Dr. G. M. Taori, senior neurologist in Nagpur was a family friend and convinced my parents to allow me to join neurosurgery.

### **Postgraduate medical education and initial training:**

Neurosurgical residency involved not only clerking the patients but also to do a lot of lab investigations in the ward. The most interesting was the radiology work. With no in house CT scan, we had to do Ultrasound to detect brain shifts, direct carotid puncture angiography, Pneumoencephalography (PEG) and Ventriculography regularly and help

radiologists to do myelography. Mumbai residents were not very charitable towards outside residents and one had to constantly prove himself while going through the grind. Microsurgery had just started in the unit. This transition period in neurosurgery is therefore imprinted in our minds.

I completed my thesis (for MCh) on evaluation of trauma patients by the newly introduced Glasgow Coma Scale and its correlation with clinical outcome. MCh examination was conducted at the B Y L Nair hospital with Dr. Umesh Vengasarkar as the convener and P S Ramani as the second internal examiner. We had never interacted with them as there were very few academic activities in the city at that time and it was almost 4 external examiners for us. Prof. V K Kak and P Narenthran were our official external examiners. It was a pleasant surprise for me to sail through and get my MCh degree.

Though Dr. Bhagwati got me to work as an Associate at the Bombay Hospital for a short period of time after my M.Ch he encouraged me to do further training abroad. I managed to secure a neurosurgical training post at Newcastle upon Tyne in England and left Mumbai within a year. Rajshree had joined GMC and JJ hospital in Mumbai as lecturer during this time and we were blessed with a daughter (Aditi).

### **Neurosurgical training in England:**

England was a completely new experience. Several images of England are imprinted in mind while learning the nursery rhymes and reading stories during childhood. But what hit me first was the weather during the Christmas week on joining work there. The warm hospitality of the hospital colleagues as well as my brother in law's family (who were working in the adjacent hospital) made it easier. This really gave us a chance to live as a family together for the first time after the long years of residency and living in hostels.

Training at the general hospital in Newcastle upon Tyne was extremely satisfying with all the equipment and facilities one craved during one's residency in India being available and ready to be used. I was blessed with very good seniors who not only accepted me readily but pushed me to work harder by allotting more work as well as several teaching assignments for the local residents. In a way, this was my chance to learn contemporary neurosurgery in an extremely good setting, comprising all neurosciences

branches with big names like John Foster in Neurology and Hankinson in Neurosurgery, apart from my immediate seniors Drs. Sengupta, Kalbag, Peter Crawford and David Mendelow.

Microsurgery practice was the biggest gain and aneurysm surgery was the icing on the cake. As I was drafted to a senior cadre of residents due to my prior training in India, a large share of surgical work came my way and helped me to develop surgical skills as well as help the juniors. In New Castle, though not so well known, cervical and lumbar spinal surgeries were frequent and this gave a chance to learn micro discectomies. Surgery for spinal lipomas was also frequently practiced (by Dr. Lassman) and this gave me confidence in performing minimally invasive spine surgery as well as complicated cases like Tethered Cord Syndrome which were not so well described in literature at that time.

It also opened a research opportunity for me at the University to study CBF (cerebral blood flow) with the newly introduced transcranial Doppler. I had an opportunity to present this work in the CME program of the NSI annual conference. I also collaborated with the radiology department for a study on myelography to broaden my knowledge and also published the same. We also wrote about Microvascular decompression for cranial rhizopathies which was a favorite operation of R P Sengupta but was not accepted well and hardly practiced in England.

### **Neurosurgical training in the USA:**

Towards the end of my 3<sup>rd</sup> year in Newcastle, a clinical fellowship opportunity in microvascular neurosurgery, supported by Mr. Sengupta, came to me at the Henry Ford Hospital headed by Dr. James Ausman. This afforded not only an opportunity to observe the American way of neurosurgery but also gave an impetus to develop critical reading and writing skills. Plethora of vascular surgery including various revascularization procedures were performed every week and was a specialty of the department. This opened my eyes to the various surgical possibilities to treat ischemic cerebrovascular disease. A very active interventional department also meant controversies and aggressive discussions. This fellowship also involved 2 days in the laboratory to develop proficiency in micro dissection and anastomosis and easy availability of cadaver brains in Detroit made it possible to collaborate in

anatomical studies. This helped me to write up again on cerebral blood flow by the NIR technique (in a Cat ischemia model), anatomy of the posterior communicating artery (in cadaveric injected specimens) and two clinical papers on carotid endarterectomy and role of revascularization in giant aneurysms. The work of Dr. James Ausman, Ghaus Malik and Fernando Diaz was really impressive and contributed immensely to refine my own surgical techniques.

A brief return to the United Kingdom to complete my thesis on transcranial Doppler and cerebral blood flow studies in aneurysmal sub arachnoid hemorrhage helped me to get a Masters degree at the Newcastle University. Though opportunities were available in UK as well as USA, a firm resolve to return to India made earlier prevailed after completing the various tasks undertaken.

**Return to India** was exciting for the opportunity to be with the family and old friends though difficulties were faced with initial appointment as pool officer at the Nagpur Medical College Superspeciality hospital (as earlier planned) as well as at the newly opened Central India Institute. This brought me back to Mumbai as I was offered the opportunity to work with Dr. Sanat Bhagwati at the Bombay Hospital as an Associate consultant. Those 3-4 years went well to adapt to the Indian conditions and get more acquainted with the tumors and pediatric surgery which was more frequently practiced.

Two opportunities came in 1995 which changed the scope of my work because of accepting a senior consultant post at the Hinduja Hospital as well as Associate Professor post at the Wadia Children's Hospital. This also allowed me to take a 3 months break to train in pediatric neurosurgery at the Hospital for Sick Children in Toronto with Harold Hoffman. I enjoyed the challenge and opportunity to start pediatric neurosurgery service at the Wadia Children's Hospital. Hinduja Hospital was more involved in vascular neurosurgery which gave me an opportunity to serve many patients with Aneurysms and AVMs. It also opened the door to endoscopic transnasal surgery for pituitary tumors with my senior ENT colleague Dr. M.V.Kirtane. The introduction of Gamma knife radiosurgery was a first in India and gave me an opportunity to learn the principles of radiation physics and serve several patients with this new treatment modality.

Another important association formed at Hinduja Hospital with my pediatric neurology colleague Vrajesh Udani, encouraged me to train in pediatric epilepsy surgery at Miami Children Hospital. In 2000, I had an opportunity to shift back to Bombay Hospital as a teaching faculty when the University sanctioned the MCh course and I was offered an Associate Professor position with a separate unit with two trainees. I had the fortune to have a good colleague in Dr. Rajan Shah as my associate and we were able to develop a very busy unit dealing with vascular surgery and brain tumors.

As I had started working with the newly acquired gadgets, I felt the need to train further in endoscopy and refine my work in pediatric hydrocephalus and pituitary surgery. During the transit period from Hinduja to Bombay Hospital I took this opportunity to learn minimally invasive surgery with the use of navigation and endoscopic surgery with Dr. Axel Perneckzy in Germany. It has been extremely useful to treat children with hydrocephalus and cysts and opened the door for creating an endoscopic skull base unit with the enthusiasm and efforts of my new ENT colleague Dr. Nishit Shah. Our work has continued in the same fashion over the last 17 years. Dr. Rajan Shah left our group in 2011 and two other younger colleagues joined me. Presently I work with a group of two younger colleagues, Drs. Vikram Karmarkar and Chandan Mohanty and head the department after Dr. Turel retired from academic unit in 2010. We conduct 2 workshops every year, the Ginde oration with a theme based program on various aspects of neurosurgery and a second workshop dedicated to Skullbase endoscopy with Neurosurgery and ENT participation. A galaxy of international neurosurgeons including Madjid Samii and Gazi Yasargil have graced these programs.

### **Association with NSI:**

As Prof. Bhagwati was in the Executive Committee of the Neurological Society of India (NSI), my induction into the society happened during my second year of residency at the J J Hospital when I attended the NSI conference at Cuttack in 1982. It was a wonderful experience to see all the Indian neurosurgery giants and a great learning opportunity (in absence of the many CMEs we have today). I have since considered these meetings to be a rich resource of knowledge about Indian neurosurgery. I became a full member when I passed my exam in 1983 and presented my first award

paper at the Madurai meeting the same year (1983) on “Immunotherapy for recurrent gliomas”. During my stay in U.K, I also had an opportunity to participate in the 1986 NSI meeting of Delhi where I presented my work on cerebral blood flow (CBF) in subarachnoid hemorrhage.

On return from overseas training, the big event of the World Congress (WFNS1989) was being arranged and I was roped in by Prof. Bhagwati to organize the satellite meeting of ISPN (International Society for Pediatric Neurosurgery) as a post congress program. This was a great experience to interact with many pioneers in the field of neurosurgery and it also gave us an impetus to consider specialized training. This was soon followed by formation of Indian Society for Pediatric Neurosurgery. I became a founder member at the behest of Prof. Bhagwati and was entrusted with the job of secretary after 3 years. I decided to host the 10<sup>th</sup> annual meeting of the society which was an enjoyable experience with a good international faculty and over 150 delegates. This was my first experience of working in organized neurosurgery and served the pediatric society till 2009 when I finished my term as President.

A critical remark by colleagues about NSI made me feel that I should probably join the organization and see how it worked. I applied for the post of executive committee member in the year 2006. I was elected to the committee at the conference in Vizag but came to know about it only a couple of months later as I could not attend the meeting that year. Thereafter I tried to understand the functioning of the Society and hoped to contribute. I successfully brought about some reforms during my tenure as Treasurer, to be in line with the new regulations. I was ably supported by Prof. Rajshekhar (Secretary) and rest of the committee. Another contribution I consider important was the starting of education courses in neurosurgery for senior residents twice a year. There is great disparity in teaching across the country, especially for DNB students and the course will give them an idea about the preparation required. I was greatly helped by Prof. Rajshekhar and Banerji, who shared the same vision and helped to design and run the courses. We could get unrestricted academic grant from the industry which made the courses self-sustaining. Over the years, this has become more refined with inputs from our members as well as students and considered the flagship activity of the society. Prof. Rajshekhar mooted the idea of a “foundation course” for beginners in neurosurgery which has been

added to the “instructional course” since 2014 and has become an equally popular activity. Senior members of society have supported the activity by devoting their time and energy to organize and participate in these courses

I had the fortune of being elected President for the year 2012-13. The NSI meeting in 2013 was held in Mumbai and I had the unique honor of being President of the meeting in my own working city. We created two new programs for “private practice neurosurgeons” and “young neurosurgeons” during that meeting which have now become very popular and regular activity during the annual NSI meetings. Public awareness program of the meeting on head injury awareness (heads we win) was beautifully conducted by our colleague neuropsychologist, Dr. Urvashi Shah and was attended by several celebrities and was received very well by the members and the audience. A film made for the occasion by us has become a resource for several public awareness programs. Thereafter, I gave the presidential oration on “organized neurosurgery in India” based on the history of the society so far and its future role in light of its existence as a comprehensive neurosciences organization. This meeting also hosted the “Congress of Neurological Surgeons (CNS)” and the “Pan Arab Neurosurgical Society” as guest societies. The only regret was the demise of Prof. Sanat Bhagwati during the conference.

I also served as the Convener of the “NSI Instructional courses” from 2011-2014. We formed a more formal “Education Board” in 2014 to co-ordinate all such activities and Prof. Rajshekhar took over as convener. We realized that the young neurosurgeons after qualifying have very few learning opportunities. Dr. Rajshekhar and V.P. Singh initiated “the young neurosurgeons mid year course” to fill up this lacuna. I had the privilege to be the course director for the first such NSI course held in Coorg with the theme of Pediatric Neurosurgery.

### **Contribution to Neurosciences in India and overseas:**

I became a member of the *International Society for Pediatric neurosurgery (ISPN)* in 1998 as I was impressed by their CME courses in India and encouragement from many senior members to attend and present. I was drafted first in their education courses as a teacher and later in the Executive board (in 2005) as a member of nominating committee. I later chaired the liaison and education committees. This gave me opportunity to

conduct educational courses all over the world for next 3 years and it was very gratifying to see the hunger of learning in many developing countries. I had the privilege of hosting the Annual meeting of ISPN in 2011 at Goa which was one of the best attended meetings of the society. Over 400 international and 150 Indian neurosurgeons participated in the meeting with special courses on hydrocephalus, epilepsy surgery and Neurooncology. It was a pleasure working with this group with honest discussions. I was nominated the president of the ISPN for 2014-15 and had the honour of delivering the presidential oration in Turkey during the 2015 meeting. I chose to address the society with some glimpses from the past Indian history and learning possibilities in India (Published in annual issue of Childs Nervous System, 2016)

*International Society for Pituitary surgery (ISPS)* has been a small forum of neuroscientists involved in this area and attracted me because of my interest in the field. It has also been easy to attend their meetings as they are organized near the venue of some other big meetings. I managed to attend and present at these meetings, notably in Agra, Vienna, Sonoma Valley and then was given the responsibility along with Deepu Banerjee to host one. We organized this in 2013 at Mumbai as a preconference event to the NSICON. A galaxy of specialists in this field attended the meeting with good scientific contribution.



*After receiving the President's Medallion at the Valedictory function in NSICON Delhi 2012*

Due my interest in neuroendoscopy, I have also been attending and presenting at the meetings of *International Federation of Neuroendoscopy (IFNE)* since 2000. During one of these meetings in Germany, I was invited to join the executive board and have served the organization till 2013. I had the opportunity to host the 6<sup>th</sup> world congress of neuroendoscopy in 2013 which was conducted at Mumbai and attended by over 150 international and 100 Indian neurosurgeons. Soon thereafter the Indian group founded



the Indian Society of Neuroendoscopy and I was nominated its first president. This small group has since flourished and is very active in various workshops I have had the opportunity to teach regularly at courses locally as well as at the WFNS meeting in Rome, AANS and CNS meetings on several occasions and also in Nepal, Pakistan, Germany and Russia. I have been recently given the task of committee chairman by World Federation of Neurosurgical Societies (WFNS) for Neuroendoscopy and Neuroendocrine committee.

Apart from these organizational activities, I have been an invited speaker at the Romanian society of Neurosurgery, Korean Society of Pediatric Neurosurgery, Japanese Society of Neuroendoscopy, Nepalese society, Bangladesh society, Asian Australasian Society of Neurosurgery and the American Association of Neurological surgeons. I have been the Iftekhar Ali Raja orator of Pakistan society of Neurosurgeons in Lahore. During my presidency of the Bombay Neurosciences Association, I have cherished the honour of releasing the last Neurology book by Prof. N.H.Wadia.

It has been a very busy but satisfying life filled with neurosurgical work which continues to be challenging. My wife, Rajshree is a busy anesthetist at the local Jaslok hospital and pursues her special interest in neuroanesthesia. Though it has made it easier for them to understand, it has always been difficult to give enough time to family. My daughter has probably kept away from medicine for this reason and is presently making a career in India after graduating in Environmental studies and working in USA for a few years.

Training young neurosurgeons who are becoming increasingly more knowledgeable is a big challenge. My recent appointment as Convener of Neurosurgical Fellowship program in the Maharashtra Health University has given me an opportunity to formally start super specialty courses and am also helping to expand more neurosurgery departments within the state. I am looking forward to that challenge.

The four people who followed me as NSI Presidents aptly represent my vision for NSI in future very well. Dr. Rajshekhar is one of the most academically accomplished neurosurgeon from the prestigious CMC, Vellore. B.S. Sharma is a very pragmatic neurosurgeon from the biggest neurosurgical centers in the country, viz., AIIMS, New Delhi ready to

venture into a private medical college. R.C. Mishra is a completely private practicing neurosurgeon from Agra & Deepu Banerji is in a new age corporate setup in India. NSI has not only been relevant to all these four sectors of neurosurgery in the country, it has also given them a chance to create platform for expression in various new activities created during the NSI Annual conference as well as other activities during the year. I hope NSI will remain a forum for sharing academic achievements with your fellow members, sharing technical knowledge, developing friendships and also guiding its members to fulfill their demands from organized neurosurgery.

If I had a chance to relieve the situation, the major changes I will seek will be in the training. I was lucky to have training in busy Government Medical Colleges followed by opportunity to train abroad before I settled into an institution which gave me a chance to pursue teaching and other academic activities as well as allow a decent earning through private practice. But we owe it to the new generation to allow them all kinds of learning during their residency and fellowships. We have many centers with specialized interest and fellowships will soon become a major part of training for young people interested in academic career. NSI can probably facilitate that. With so much information being readily available, we have to find different methods of teaching and examining them. I would look at a less personalized approach in teaching but still maintaining the personal touch by the senior faculty to get the right message across to the young generation. ■



**Vedantam Rajshekhar, President NSI 2014**

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**Family background and Schooling:**

Dr. Rajshekhar (R) was born in erstwhile Madras to Col. Vedantam Krishna Mohan (Retd.) and Mrs. Vedantam Padmavathi (nee Mallela), who belonged to Guntur and Krishna districts of Andhra Pradesh. His mother taught R self-confidence and thriftiness. His father was the Training Officer (Registrar) in Armed Forces Medical College (AFMC), Pune for 4 years, known for his uprightness, principles and discipline.



*Parents Col. V.K. Mohan & Mrs. Padmavathy*

R's younger brother Ravishankar is an Orthopedic Spine surgeon settled in the United States. Rajshekhar's

wife Rupa, also studied in Christian Medical College, Vellore. She is presently Professor of ENT and Head of the Rhinology Unit in the same



*At the age of 3*



*11<sup>th</sup> grade ISC class of Hutchings High School, Pune 1972*



*Fergusson College, Pune 1974*



*Rajshekhar &  
Dr. Rupa at their wedding*

college. She has been a pillar of strength over the past three decades, supporting him in his career choice and patiently accepting his frequent absences from home due to long hours in the hospital or on out of town assignments. She also taught him the nuances of nasal endoscopy and both of them frequently partner for skull base surgeries. R's son, Aditya Vedantam,

graduated as the best outgoing MBBS Student from CMC, Vellore. Aditya is presently doing his neurosurgical residency at the Baylor College of Medicine in Houston, Texas, probably inspired by the father. R's schooling was spread over 5 schools in Machilipatnam, Hyderabad, Lucknow, Jabalpur and Pune. He completed his Indian School Certificate examination from Hutchings High School, Pune where he was elected the Head Boy of the school for 1973. Being underage he joined the first year of the B.Sc. course (Pre-professional) in Fergusson College, Pune. The exposure to the practice of medicine and a medical college environment at AFMC, Pune during his school days, probably played a role in his decision to pursue medicine.

### **Decision to become a neurosurgeon:**

Dr. Rajshekhar's decision to become a neurosurgeon had its origins in a naïve, if not outright "foolish", fascination that he developed for the subject even as he applied for the MBBS course. On a whim he wrote in his "autobiography" submitted to CMC during the admission process, that his ultimate goal was to become a neurosurgeon. Although he achieved his goal and he is happy with his career choice, he would not advise anyone to embark on such an arduous journey without performing due diligence. Dr. Rajshekhar's desire to pursue a neurosurgical career, however, gained traction when he was exposed to neuroanatomy and neurophysiology in his second year MBBS. The unambiguous correlation between structure and function of the nervous system appealed to his way of thinking and his approach to problems. Exposure to clinical neurology from the third year, made him feel that there was an almost mathematical precision of adding up clinical symptoms and signs to arrive at a diagnosis. He believes that clinical neurology is amongst the most objective of all the clinical sciences.

Undoubtedly, it was late Prof. K V Mathai's teaching of clinical neurology that strengthened Dr. Rajshekhar's resolve to become a neurosurgeon. Prof. Mathai's brilliance as a clinician, patience with students and succinct but elegant analysis of the symptoms and signs made him want, more than ever, to be a neurosurgeon and more specifically be *his* student. After R finished internship in 1982 he applied and was selected for the recently re-introduced 5 year M.Ch. Neurosurgery course. Dr. G. Shankar Prakash, who had already worked in the department for one year as a non-post graduate trainee was the other candidate chosen for the course.

### **Neurosurgical residency – the first three years:**

The first year of the 5 year course was spent in General Surgery and Orthopedics and Dr. Rajshekhar entered the portals of the neurosurgery department in March 1983. On his first day at work Prof. Mathai asked him whether he was married and when he replied in the negative, Prof. Mathai advised him to inform his future wife that she would be his second wife! Dr. Rajshekhar quickly realized what he meant by that, when he saw the punishing work schedule that Prof. Mathai kept.

The department in those days was poorly staffed. Dr. Zakir Hussain from Assam was in the first year of his 3 year M.Ch. course. He along with Dr. Rakesh Naithani (recently qualified) would be in the OR four days of the week. Prof. Mathai, Dr. Rajshekhar and a house surgeon would do rounds and Prof. Mathai would then join the other two in the OR. Dr. Rajshekhar, along with the house surgeon, was expected to handle all the emergencies and complete the ward work and perform the invasive investigations such as carotid angiograms and myelograms in the afternoon. In a sense, he was thrown in the deep end of the pool. CMC hospital did not have an in-house CT scan till 1985. Hence, in Dr. Rajshekhar's first two years of residency, neurosurgical residents at CMC were expected to perform direct puncture angiography, contrast ventriculography and myelography and the odd pneumoencephalography, for all emergency cases. Realizing that interpretation of these images was critical, led to reading the two volume Taveras book on Neuroradiology. This knowledge stood him in good stead over the years and he is glad that he went through *this* process, rather than directly be exposed to CT and MR.

In the OR, procedures such as burr hole evacuation of chronic subdural hematoma and ventriculo-atrial shunt surgery were frequently performed with only one scrub nurse assisting. The scrub nurses had seen more neurosurgery and were a valuable source of guidance. A dissertation on the prognostic significance of somato-sensory evoked potentials on a spinal cord injury model in monkeys was completed during the third year anticipating time constraints later. Prof. Jacob Abraham, who had an animal lab in the department, was his guide.

### **Neurosurgical residency – the final two years:**

The final two years of residency were spent in acquiring increasing surgical skills. He remembers assisting in the removal of a giant vestibular schwannoma that started at 730 am and ended at 2 am the next day with a break for the only meal of the day at 10 pm. During this period, the department acquired the ultrasonic aspirator and the laser and a CT scanner in 1985. He was one of the first neurosurgical residents exposed to an operating microscope throughout his/her training programme. He qualified in March 1987.

Dr. Rajshekhar was fortunate to train in the first neurosurgical department in the country. It had a legacy of dedicated and committed service, training neurosurgeons to serve in different parts of the country and very importantly, research. Meticulous record keeping was also a strength of the department, with discharge summaries of all patients since April 1949. During one's residency, one tends to imitate the style and mannerisms of one's teachers. Prof. Mathai continued to inspire him with *his* meticulousness in the OR and outside. *His* legendary dedication to patients and students were worthy of emulation but as Dr. Rajshekhar confesses, he finds it difficult to follow this. Dr. Rajshekhar continues to practice and teach many of Prof. Mathai's surgical techniques. Prof. Mathai was a patient surgeon and frequently quipped that a neurosurgeon does not watch the clock in the OR but the calendar. *He* also felt that one should not expect any kudos for doing one's duty and frequently commented that it was also *his* duty to teach how to live a fulfilling life.

Prof. Abraham was a contrast to Prof. Mathai in the OR, he being a quick but adept surgeon whose philosophy was to get the tumour out before the anesthetic "poisons" got to the patient. What he meant was, of course, not

to waste any time in the OR. Dr. Rajshekhar is similarly impatient in the OR and wants to get the job done and get out as soon as possible. Prof. Abraham was also a keen researcher and kept abreast of neurosurgical literature. He taught Dr. Rajshekhar the importance of research in an academic neurosurgical practice and was a stickler for scientific integrity. Prof. Mathew Chandy was keen on introducing modern neurosurgical techniques in the department and Dr. Rajshekhar was one of the beneficiaries. Dr. Rajshekhar also learnt to keep records of all individual surgeries and contribute to organized neurosurgery and start the Indian Society of Stereotactic and Functional Neurosurgery.

### **Career in Neurosurgery:**

Dr. Rajshekhar joined the Department of Neurological Sciences in his alma mater as soon as he finished his M.Ch. course in April 1987 and has remained there since then. He became a Professor in April 1996 and also has been Head of Neurosurgery Unit 2 since then. The Department of Neurological Sciences at CMC has a rotating headship of the multidisciplinary department and Dr. Rajshekhar finished his term as Head of the Department of Neurological Sciences from 2002 to 2006.

### **Overseas training:**

Prof. Jacob Abraham was generous in arranging a one and half year fellowship for Dr. Rajshekhar at Dartmouth Medical School in Hanover, New Hampshire, USA from 1989 to 1991. The most valuable skill that Dr. Rajshekhar acquired during his stint at Hanover was the importance of an academic neurosurgical career. Dr. Richard Saunders at Dartmouth also introduced Dr. Rajshekhar to the technique of uninstrumented corpectomy for CSM, which he has used successfully in over 500 patients over the past 25 years. He has gone on to teach this technique

### **Contributions to neurosciences**

*Training of neurosurgeons:* Since 1987, Dr. Rajshekhar has been involved in the training of over 70 neurosurgeons. He has been an examiner at most of the national institutes such as AIIMS, NIMHANS, Sri Chitra Thirunal Institute, several universities and for the National Board of Examinations. He considers his most significant contributions in service and training to be the introduction of protocol driven management of most common

neurosurgical conditions and emphasizing the importance of clinical audits as a learning tool.

*Development of sub-specialities and techniques:* The department at CMC had acquired a Brown Roberts Wells stereotactic frame and system in 1986 just before Dr. Rajshekhar finished his training. As soon as he joined the faculty he was offered the opportunity to develop stereotactic surgery in the department. He gladly accepted the challenge and thus began his interest in Stereotactic and Functional Neurosurgery. Since his department at CMC was the first department in the country to acquire a CT guided stereotactic system, it gave him the opportunity to explore the use of this new modality and also to publish several articles in this sub speciality. His continued interest in this field led to the installation of a linear accelerator based radiosurgery system (X Knife) in CMC in June 1995, one of the first in the country.

Other techniques that he has helped develop in his department include un-instrumented central corpectomy for cervical spondylotic myelopathy (CSM) in 1992, cranial endoscopy in 1997, endoscopic pituitary surgery in 2002 and surgical protocols for spinal dysraphism in 2008.

### ***Patient management***

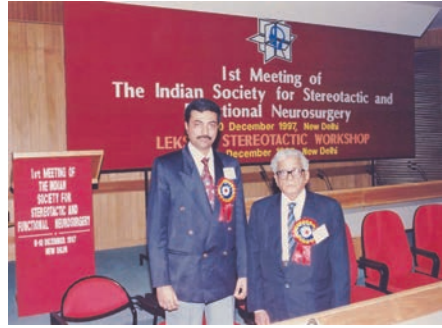
Dr. Rajshekhar derives the greatest satisfaction in knowing that he has contributed to rationalizing the management of patients with a Solitary Cysticercus Granuloma (SCG). He was part of the team that identified this entity as a distinct form of neurocysticercosis (NCC) for the first time in the world in 1989 and since then he has been involved in several research projects on NCC. NCC is generally not considered to be a neurosurgical disease and less than a handful of neurosurgeons worldwide have been involved in researching this disease. He followed in the footsteps of Prof. Mathai who researched a “non-neurosurgical” disease and did a community based survey of epilepsy in Vellore district in 1967 – the first such survey in the country. He was not concerned that this was a neurological problem and not a neurosurgical one.

### ***Organized neurosurgery***

Encouraged by Dr. Mathew Chandy, he went on to become the Founder-Secretary of the Indian Society of Stereotactic and Functional



Neurosurgery which was formed at the NSI annual conference in Bangalore in 1994. Dr. V. Balasubramanian was the first President of this Society. Besides, the leadership role in the Neurological Society of India which is documented below, Dr. Rajshekhar was the President of the Indian Society for Neuro-oncology (2015). He is also the Chairman of the WFNS Radiosurgery Committee (2014-2017).



*With Dr. V. Balasubramanian*

### *Clinical research*

Dr. Rajshekhar has tried to fulfill his role as an academic neurosurgeon by performing several clinical studies most of which were not funded. A few of these studies which have had a significant impact on patient care are those pertaining to CNS tuberculosis, stereotactic surgery, CSM and hyponatremia in neurosurgical patients. If he were to quantify the impact of his work in terms of number of patients benefited, then it would undoubtedly be his work in the field of NCC. The Indian Council of Medical Research (ICMR) recognized his scientific contributions in the field of NCC by awarding him one of their highest honours, the Basanti Devi Amirchand Award for the year 2009. He also received the Rev. L. F. Yeddanapalli Award for Research from CMC, Vellore in 1999. He became a Fellow of the Indian Academy of Medical Sciences in 2009. The Indian Academy of Sciences (IASc), Bangalore awarded him the Fellowship in 2012.

### *Orations and invited talks*

Of several invited talks that he has given all over the country and overseas, some of the orations that he cherishes are the Prof. B Ramamurthi Oration of the Madras Institute of Neurology and the inaugural Suraiya Khanum Oration of the University of Cape Town, South Africa. In his earlier orations, starting in 2006, Dr. Rajshekhar would focus his talk on a specific area of neurosurgery that he had worked on, such as CSM. In the more recent orations and talks where he could choose the topic of his talk, he has

been spreading the message of importance of clinical research, clinical audits, learning from complications and more philosophical aspects of neurosurgery and medicine.

### **Role of NSI in his life**

Dr. Rajshekhar was in different leadership roles of NSI for nearly 12 years: as Executive Committee (EC) member (2005-2008), Honorary Secretary (2009-2011), convener for the Continuing Medical Education (CME) program of NSI (2005-2008), President Elect in 2013, President in 2014 and recently as first Chairman of the newly formed Neurosurgery Board of Education (2015-2017). He would like to acknowledge the role of Prof. R N Bhattacharya (former Professor of Neurosurgery at Sri Chitra) in getting him involved in NSI activities. Dr. Bhattacharya persuaded him to apply for the post of EC member in 2004. As the Secretary of NSI, Dr. Rajshekhar was instrumental in initiating and consolidating a web-based approach to NSI activities. This included the introduction of online submission of abstracts for the annual conference for the first time in 2010. Nearly 13 years earlier, Prof. K Ganapathy had been far-sighted enough to realize the potential of the Internet in the efficient running of the Society and had started a website for the Society. But the initiative had not moved forward due to various reasons. Along with Dr. C E Deopujari, Dr. Rajshekhar was closely involved in the introduction and running of the extremely popular NSI Instructional Course and the Foundation Course. These courses have been held every 6 months without a break for the past 6 years. Dr. Rajshekhar also spearheaded the group in NSI that negotiated a Memorandum of Understanding with the Congress of Neurological Surgeons (CNS). This historic MoU was signed by him (on behalf of NSI) and Dr. Daniel Resnick (then President of CNS) in Boston in October 2014.

Working for NSI helps in enhancing a neurosurgeon's life in many ways. Dr. Rajshekhar specially remembers the many friendships that have resulted from his activities in NSI for over 10 years. He also would like to acknowledge the role of NSI in building his skills of negotiation, team building and delegation of work. It also provides a platform to interact and meet neurosurgeons from all over the country and the world. Because of his role in NSI, Dr. Rajshekhar was fortunate to meet and interact with

several eminent men and women such as the late President Abdul Kalam and His Holiness the Dalai Lama. Finally, dealing with difficult issues in NSI such as the court case in 2009 also helped build his character, especially resilience.



*Greeting His Holiness the Dalai Lama at Annual Conference of NSI Lucknow 2009*

Dr. Rajshekhar takes special pride and joy in the fact that in spite of the many challenges that have

confronted NSI in the past decade the Society continues to thrive. The Society journal *Neurology India* under the guidance of innovative, dedicated and hard working editors (Drs. Atul Goel, J M K Murthy and Sanjay Behari) is improving its impact factor every year. It is amongst the top 3 Indian medical journals on impact factor scores. NSI remains the premier organization representing neurosurgeons of our country and he remains confident that the present leadership will guide the Society to greater achievements in the future.

### **Adjusting to newer technologies**

Dr. Rajshekhar was fortunate to have had almost his entire training in the CT era and his surgical training was entirely with the operating microscope. So he did not require much adjustment later in his career to these techniques. However, techniques constantly evolve and he had to re-train himself in several new techniques. One of the sub-specialities that he had to learn from scratch was stereotactic and functional neurosurgery, especially CT guided stereotactic surgery. The introduction of stereotactic radiosurgery also involved a lot of reading, training and learning as it was relatively a young speciality in the early 1990s.

The other significant technology that has become popular in recent years is the use of endoscope which he was introduced to, in 1996. Starting with intra-ventricular procedures he has graduated to using it for pituitary tumour surgery since 2002. Similarly, he has had to train himself to use neuro-navigation in the past 4 years or so. Adjusting to newer technologies and techniques is never easy especially as one becomes older. Being in an

academic environment with a large patient load with wide range of pathology mitigates this arduous process.

### **Personally witnessed changes in neurosciences**

Neurosurgical anesthesia and Neuro-critical care and the introduction of check lists such as the WHO Surgical Safety Checklist have contributed to provide better outcomes. The almost complete negation of clinical evaluation in favour of neuro-imaging and other tests is disturbing. He hopes that teachers will continue to impart clinical skill to their trainees so that future generations of neurosurgeons remember that there are patients behind the computer icons seen on their screens.

### **Reminiscences**

Some of the happiest memories include those spent with family and friends. The trips that stand out are those which included his wife, Dr. Rupa Vedantam and the spouses of other neurosurgeons, particularly in Aurangabad, Rome and Prague.

### **Take Home message**

If he were to do it again, Dr. Rajshekhar would not change a thing in his life. He is grateful to God and all his teachers for giving him the opportunity to study, train and work in a nurturing environment provided by CMC, Vellore. A piece of advice for the younger colleagues and trainees in neurosurgery – Dr. Rajshekhar would encourage everyone to make the best use of all the opportunities provided in their lives and have passion for their work. Aiming for excellence is possible to anyone willing to work hard. Striving to do the best that one can possibly do is in itself a form of excellence. ■



**Bhawani Shanker Sharma, President NSI 2015**

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**Family history:**

Born on 10/10/1953 in town Bhusawar, Dist Bharatpur, Rajasthan, located in the interior of Jaipur-Agra high way. Father - Late Shri Rajori Lal Sharma, a school teacher. Mother – Late Smt Kasturi Devi, Housewife. Second of four brothers, studied in Govt. Secondary School. Have 2 sons both managers in USA & Dubai. One 1½ years old grandson. Children never wanted to become a doctor and got dissuaded by my extremely busy schedule in hospital and home during residency and neurosurgical career, while they were growing up.

**Schooling:**

No electricity was available in my house during my school days, used to study with lamp and in street light. Stood first and topped entrance test for admission to science biology in class 9<sup>th</sup>. In the school, received awards in extracurricular activities, essay writing and drama. In secondary board examination got distinction in physics and chemistry. As no further schooling was available in my own town, moved to Jobner where elder brother was studying in Agriculture College. Passed 11th class from Govt. higher secondary school with distinction in physics and chemistry. Moved to Maharaja's College, Jaipur, passed 1<sup>st</sup> year three year degree course in first division.

**Medical Schooling:**

Had a fascination for knowing and studying the structure and function of the human body and how diseases occur and how they can be treated. Always wanted to become a doctor and doctors always impressed me. My feeling was that to serve humanity via this profession, is the best thing I could do. Got selected in Rajasthan premedical test, passed all MBBS professional examinations in first attempt from RNT Medical College,

Udaipur, Rajasthan. While doing anatomical dissection in anaesthetized frogs in secondary school, I used to like the challenge of dissection and preservation of normal structures. I had strong liking to become a surgeon. I felt that a surgeon develops skills to correct with his own hands, so I opted for surgery in post graduation and passed MS general surgery in the first attempt from the same college. Selected as Civil Assistant Surgeon by Rajasthan Public Service Commission and joined primary health centre (PHC) of my own village. Served population of that area and earned good reputation. Though private practice was allowed, never did it.

### **Struggle period:**

Meanwhile, got married (arranged marriage) with Mithilesh, MA, Sociology, April, 1980 during surgery residency. I appeared in RPSC interview for the post of lecturer in general surgery and was not selected because I had no publications. I had not published even my thesis work. This taught me a lesson that for academic job one has to have publications. This incident stimulated me to work hard in order to pursue an academic surgical career. After working for 1 year at the PHC, one day I realised that I was not operating because no facilities were available at a PHC. I decided to study further and went to CMC Vellore and started working as a registrar in Urology. As my father had retired, and brothers were still studying, and as a M.Ch Urology student, I had a meagre salary of 800 rupees per month I left and came to Delhi in search of a job. I joined GB Pant hospital as a Senior Resident in neurosurgery. Earlier, I had no exposure to neurosurgery at all. While working in neurosurgery because of challenges in diagnosis and special surgical skills, I started liking it and decided to become a neurosurgeon. Because there was shortage of neurosurgeons, I could foresee good scope and opportunities. Meanwhile PGI Chandigarh M.Ch admission advertisement appeared, I got selected and joined PGIMER, Chandigarh, July 1982.

### **Neurosurgery Residency:**

In the first 6 months, while working at PGI, on one occasion, I decided to give up neurosurgery, because of the very tough life and difficult working conditions, but my family and friends, persuaded and encouraged me to continue. Started working still harder and passed M.Ch in 1984 in the first attempt. My wife tolerated hard times well and encouraged me throughout.



After passing M.Ch, I had six permanent job offers but opted for an adhoc lecture job at PGIMER, Chandigarh. I really enjoyed learning decision making and operating major cases independently. Hard work at this time really paid me dividends later. My mentor, guide and teacher Prof. V.K. Kak infused academic work culture and always encouraged me to learn new techniques. Dr. Derek Gorden from Belfast (where Prof. Kak was trained) visited PGIMER, Chandigarh and on ward rounds he was impressed by my dedication, hard work and results. This opened one new gate and he offered me a job as registrar in neurosurgery.

### **Overseas and further training:**

Under overseas doctors training scheme of Royal College of Surgeons of England, worked at Royal Victoria hospital, Belfast for 2 years (1/1/1991 to 31/12/1992). Though I had a permanent registration with the General Medical Council, London, I returned back to my parent institute as that job was one of the best available in India. Worked in various faculty positions at PGI Chandigarh for 15 years and got selected as Professor of Neurosurgery at AIIMS, New Delhi in 2000. Time to time during my career, I obtained short term trainings in microvascular surgery (Nagoya, Japan), skull base surgery and Endoscopic surgery in Japan (Nagoya, Osaka, Matsumoto) and Germany. I was always active at a national level in promoting the development and growth of subspecialties in neurosurgery and became an active member of nearly all neurosurgical societies including the Asian Congress of Neurological Surgeons, Association of Spine Surgeons of India, Indian Society of Stereotactic and Functional

Neurosurgery and Indian Society of Pediatric Neurosurgery. Area of interest included skull base, vascular surgery and endoneurosurgery.

### **Contributions at AIIMS:**

Headed Department of Neurosurgery at AIIMS, New Delhi for about 7 years and started neurotrauma services at new state-of-art JPNA Trauma centre with facilities of micro dialysis, collaborative international studies, mobile CT scanner and O-arm facilities, started new operation theatres in CN Tower, faculty increased from 7 to 26, upgraded Gamma knife to Perfection model, obtained a dedicated MRI for gamma knife centre and intraoperative MRI (Brain suite). Formed a Centre of Excellence for epilepsy, Surgical skills training lab and Central cadaver training facility Equipped operation theatres with High-end Pentero/ OH-6 Leica operating microscope, Midas Rex drill, CUSA with bone scalpel, Radiofrequency diathermy, O-arm, Image guidance (neuronavigation), Intraoperative neuromonitoring, 3D endoscope and Robot (ROSA) Started PGDF in spinal surgery, epilepsy and functional neurosurgery, skull base, cerebrovascular neurosurgery and paediatric neurosurgery.

### **Contribution to Neurosciences:**



*With Colleagues*

Learnt, practiced, mastered and developed Skull base surgery – microscopic and endoscopic, Endoscopic cranial and spinal surgery, Minimally invasive cranial key hole surgery, Minimally invasive spine surgery, STA-MCA and EC-IC bypass, Endoscopic controlled clipping of anterior circulation aneurysms. Learnt and practiced and metamorphosed from conventional cranial approaches to complex skull base approaches to



minimally invasive approaches using high end operating microscopes and 3D endoscopes. Intra op MRI (brain suite) in brain tumors craniotomy and 'O' arm in spinal instrumentation. Endoscopy (3D), image guidance and robot in minimally invasive neurosurgery. Witnessed phenomenal growth and advancement in imaging from direct carotid and vertebral puncture angiography, ventriculography, pneumoencephalography and myelography to CT, MRI, advanced sequences in MRI, PET, MEG. Used yellow fluorescein for glioma surgery and ICG in vascular neurosurgery.

### **Academic contributions:**

Publications – 450, Books edited – 4, Research projects – 10, Multicentric studies – 2, Thesis guided > 50, Editorial / scientific board of World Neurosurgery, Child Nervous System, Neurosurgery, Neurology India and British J. of Neurosurgery. Visiting Faculty in Australia, Austria, Bahrain, Canada, Czech



Republic, England, France, Germany, Hungary, Ireland, Japan, Kuwait, Nepal, Oman, Singapore, South Korea, Taiwan, Thailand, UAE, Vietnam. 25 special talks given abroad invited guest lectures/ plenary session/ Symposium/ keynote Awards Travelling fellowship - young neurosurgeon, Nagoya, Japan, Fellowship in skull base and cerebrovascular surgery, Osaka, Japan, Dr. SV Singh Best scientist award, RNT Medical College, Udaipur, Appreciation of services by Vice President of India, Oration in own name "Prof. B.S. Sharma Oration" at NSCB Medical College, Jabalpur, every alternate year.

### **Office-bearer:**

Executive Committee member CME, Convener, Secretary, and President – NSI, Secretary and President – Skull Base Surgery Society of India, Treasurer, Secretary and President – Cerebrovascular Society of India, President, Neurotrauma Society of India, President – Delhi Neurological Association, President - Indian Society of Peripheral Nerve Surgery (ISPN), President - Neuroendoscopy Society of India.

### Contribution to NSI:

Promoted educational activities and surgical skills learning for young members and residents of society. Worked as officer and executive of NSI and was associated with facilitation of international membership, collaboration with other neurosurgical societies abroad, friendship meetings with international neurosurgical societies, NSI education course initiative and mock exams for DNB & M.Ch. residents. This helped in improving neurosurgery education in the country and international projection of self, AIIMS and Indian neurosurgery.

### Orations delivered:

Sheikh Abdullah oration, SMS Medical College, Jaipur, Dr Shurvir Singh oration, RNT Medical College, Jaipur, Dave-Newton oration, KGMC, Lucknow, Dr VK Kak oration, NSCB Medical College, Jabalpur and Sh RL Swarankar oration, MGUMST, Jaipur besides 7 Presidential orations.

### Regular faculty:

Chair, AASNS, education committee & participation in education courses 3-4 times a year in Asian countries, Endoscopic fellowship programme at NSCB Medical College, Jabalpur, Surgical skill training lab AIIMS, Central cadaver dissection facility trauma centre, AIIMS, Demonstrated micro and endoscopic live surgery in workshops at VHS, Chennai, AIIMS, New Delhi, Hinduja Hospital, Mumbai, Tata Memorial Hospital, Mumbai, National Medical College, Kolkata, NSCB Medical College, Jabalpur, SN Medical College, Jodhpur and SGPGI, Lucknow.

### Way of life :

Strongly believe in philosophy of middle path in life and keeping balance in family and professional spheres of life, in Neurosurgery career, strong parental/family support is required throughout.

Always critically analyse complications / mortality and take a lesson for future.



*With Family*

Believe in regular meditation to keep stress away in day to day life. Help and encourage younger colleagues. Strongly believe in team work, have straight forward thinking and do not like polarization or politics while working within a group. Do not believe in retirement – Neurosurgeons are always hard working and they must continue to deliver in one way or another, i.e., teach/ write a book/ and serve community as long as they can. I would certainly like to become a neurosurgeon again, if given opportunity, at a high volume academic centre well equipped with advanced and modern gadgets. ■

**Ramesh Chandra Mishra, President NSI 2016**

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**Introduction:**

I was born on 12<sup>th</sup> February the day of Mahashivratri in 1954. I prefer to acknowledge each auspicious Mahashivratri as my new year of Life. My father Shri Tribhuwan Pati Mishra completed schooling, which my mother Kewala Devi did not. I am the eldest among my siblings. My father a Sarpanch, was the only one who knew English in the nearby 12 villages. There was no road or electricity in my village (in the district of Jaunpur in eastern Uttar Pradesh) till 1976. I studied in the village school till 12<sup>th</sup> standard doing my homework with light from a kerosene oil powered earthen pot. I thought that electricity was meant for the Physics lab only. I still got high marks in the board examination. I belong to a family where agriculture was the main source of income. We used to get light for our microscope in the Biology lab by keeping the reflecting mirror, towards the window. Scarcity and non development were the hurdles of life but the primary mission never got diluted. Today, I am compelled to question, whether the extent of facilities provided for better living, matter in education and acquiring knowledge.

After passing the twelfth standard with distinction, I moved to Allahabad University for further studies. For the first time I came to know that one can become a doctor after appearing for a specific examination! The purpose of revealing all the hardships here, is to emphasize my conviction that hardship and scarcity may not always be a curse. To a certain extent, it could be a boon up as they make one capable of cultivating and nurturing a strong personality. A better neurosurgeon could be the result.

During my B.Sc. in Biology / Chemistry I wanted to be a university teacher. All my teachers were endowed with knowledge, which they were ready to share. This created an unforgettable atmosphere for academic

excellence and character building. In 1972, I was selected (6<sup>th</sup> rank in entrance exam) to the GSVM Medical College, Kanpur, as was expected by my classmates.

### **Undergraduate and Postgraduate Medical Education:**

Due to major economic constraints I was expected to manage my livelihood and study simultaneously. With so many helping hands I recovered from the initial despondency. My continuing academic excellence (7 honors out of 10 subjects) also helped. The grit and determination learnt during childhood and adolescence played a very important role in my career and helped me face repeated challenges. I became an intern in GSVM Medical College in 1977. I quickly learnt to become useful to my colleagues, seniors, residents, teachers and consultants. This can only happen if one has a keen desire to learn. If you wish to become like your teacher you have to assimilate, continuously the art and science of medical subjects.

I became a valued and dependable colleague to my teachers and they also kept on raising the bar during my house job in 1978 and as a resident, demonstrator and Registrar from 1979 to 1981. I remember my MS Gen Surgery examination of 2<sup>nd</sup> March 1981 when my examiner stopped asking questions as I had answered all questions correctly. I was declared Master of Surgery in 1981 March and was short listed for a faculty position in General Surgery in July 1981.



*MBBS Final year 1976*

Most certainly I had become a doctor to uplift the financial status of my family. A teaching job in a Medical College would not have served the purpose. My parents' patience was wearing out. In search of quick money, I went to Delhi to get a job in a Gulf country. During this time I got a senior residency in Neuro Surgery in August 1981. For a brief period, I had to choose between a senior residency in neurosurgery and a lectureship in General Surgery. Prof. Tara Chand, an excellent teacher and general surgeon had told me "if you want four hours of standing (while operating) and 40% operative mortality, go and join

Neurosurgery”. Professor of Medicine G N Vajpeyi, a compassionate physician who used to console a grieving family by saying “I am doing some Mantra for you, you will be alright” advised me “Go to the west you will bloom. Do not have tubular vision. Go and see the world”. I touched his feet and came back to my hostel room thinking over his last words. “Go and see the world”. I packed my meagre belongings; resigned in the morning from general surgery without meeting my beloved teacher Prof. Tara Chand and left for G B Pant Hospital, Delhi, to join as senior resident in neurosurgery with zero exposure in neurosurgery during my general surgery residency. Till then my only exposure was to see, greet and meet Prof. D K Chhabra, an eminent neurosurgeon of Lucknow, when he visited Kanpur to pacify the ego of some VIP head injury patient in our ward. Subsequently he would either declare those patients pre-terminal or advice to shift them to Lucknow to his Department of Neurosurgery at King George Medical College.

My sole aim in G B Pant was to get a foothold to explore the possibility of going abroad to a Gulf country. As I was getting good exposure in neurosurgery I even thought of making this a career. I was now seeing in the ward, patients seen in the medical OPD – with complaints like tingling, numbness or visual disturbance. I became convinced that neurosurgery could be a different and challenging branch of medicine. The very first successful direct carotid puncture angiogram, the mainstay of decision making in those days in neurosurgery added to the conviction. CT era dawned in 1983/84 at G B Pant Hospital.

Every now and then senior residents were joining and leaving the dept in those days. I became the first one to stay. These small events laid the foundation of neurosurgery in me. Somewhere in Nov 81, I was to sign a contract for work in Libya, and then came that fateful night. A patient with a classical lucid interval following trauma, came in a very bad shape. Angiogram at 11PM showed large extradural Temporal Hematoma. Patient was deteriorating fast and passed into impending respiratory arrest. I proceeded to operate while the consultant was on his way, past midnight. By the time he arrived I was able to evacuate a large clot. He came, stood by me, guided me through and praised me for my decision making, approach and execution. Post surgery I happily retired to the doctors duty room. At 6:30 am when I went to the common ICU shared with Cardiac

Surgery, I saw the patient sitting on the bed. I could see appreciation in the eyes of cardiac colleagues. After my duty was over for the day (for few hours only) I came back as I was the only single senior resident. I wrote an inland letter to my father requesting him to allow me to further my career in neurosurgery. By that time I had decided not to sign any contract with Gulf countries. Thus began my neurosurgery career.

### **Neurosurgical training :**

In 1982 I got selected as first M Ch student in G B Pant Hospital under Prof. Brahm Prakash. I was engaged in developing protocols for beginning of the degree course in Neurosurgery and the department itself. It helped tremendously in my career. During my M.Ch days, I remember how Prof Brahm Prakash worked hard to expand the neurosurgery program in GB Pant hospital and how much he cared for the students. He never took formal attendance of senior residents and house staff. Senior residents were expected to train house staff. He informed the director that the senior residents work is their attendance. He once remarked, “My job is not only to train you but to ensure that you are well settled in life”.

During that period, Prof A K Singh, a newly joined lecturer, impressed me a lot. His humane approach, innovativeness and a grounded personality continues to be inspiring. He never failed to take us to coffee house after rounds but never spared us for any follies during our ward and OT activities. He differentiated his leadership obligations and interpersonal relationships. Once a colleague, very close to Prof AK Singh, removed sutures without wearing gloves. Dr Singh reprimanded him conveying the importance of asepsis to all residents in no uncertain terms.

My senior residency was over on 30<sup>th</sup> June 1985 and I was accommodated as pool officer till 19<sup>th</sup> September 1985. After leaving GB Pant Hospital I joined as a Lecturer in SCTIMST, Trivandrum. Due to personal reasons I had to leave and joined S N Medical College, Agra as lecturer. Being the first qualified specialist in the region it was a challenge to start neurological services.

### **Starting Neurosurgery in Agra:**

Accustomed to an organized neurosurgical department at G B Pant Hospital, Delhi and SCTIMST, Trivandrum it was even more difficult. I had been forewarned about difficulties in starting a neurosurgery unit in a

general surgery department. I started working and acquiring equipments and instruments. The first surgery done by me was on 2<sup>nd</sup> June 1986. It was a Post CSOM Brain abscess. Patient became unconscious in the ENT OPD with impending respiratory arrest. I took the patient to the general surgery floor. There was no CT or even an X-Ray. As Temporal abscess was the commonest I tapped the brain through a classically placed burr hole. I encountered CSF under pressure. It indicated hydrocephalus due to Posterior fossa abscess. A drill hole in the Retro auricular Retromastoid region resulted in tapping 10 ml of pus which gave the all needed reprieve to the patient. He underwent excision subsequently. Post operatively he walked out of the ward. The news spread like wild fire, thus establishing neurosurgery among medicos and paramedics. Excision of Post Fossa abscess with a smooth post op recovery emboldened me to start neurosurgery,

Neurosurgical patients in Agra and adjacent areas had hitherto no help. A 40-year old female symptomatic for 8 years had been bedridden for 5 months due to quadriplegia. In Agra as I was my own radiologist I recollected how the radiologist in GB Pant Hospital had done a myelogram and did the procedure, A C2 intradural extramedullary compression was revealed. Post operatively she was able to walk The media highlighted that she had 350 papers from different consultants. For the first time it was shown that neurosurgery is a branch of medicine which could offer survival with good quality of life. I also had a brief fellowship in Tubingen University Germany in 1990 under Europa India Foundation. I worked on Transcranial Doppler under guidance of Prof Earnst Grotte from May to July 1990.

It is now 3 decades of continuous nurturing of the subject with a mission. The choice of easy going life had receded. It was hardship, but rewarded by every moment, with so many days and years gone by. My journey in this direction had another dimension too. It was to popularize the subject among budding medicos. On this front too I have no dissatisfaction. Today there are almost four dozen neurosurgeons from S N Medical College. Patient centric transparent approach was my main mantra. As I had no one to share with, discuss or get guidance from (no telemedicine in those days), I always resorted to books. Several times I took x-rays and investigations to GB Pant Hospital and got a second opinion from Prof A K Singh. I was



doing all types of surgery and was enjoying this. Private practice provided financial comfort as well.

Prof. A.K. Banerjee always encouraged development of a specialty in peripheral regions. Whenever some patient went to AIIMS New Delhi he always convinced the patient that treatment was available at Agra. My teacher's teacher encouraged me to organize two WFNS courses in Agra in 1993 and in

1999 - on Gliomas and Post Fossa tumors. From patient care, teaching in a medical college and doing private practice, I was now getting recognized beyond Agra. This led to the national neurotrauma conference in 2002, Neurological Society of India meeting in 2007, Indo-Canadian CME 2000 and WFNS/AASNS course in 2010.



Simultaneously, I started taking interest in professional bodies too. I was elected as President UP Neurosurgical Society, EC Member Indian Society of Pediatric Neurosurgery, President Neurotrauma Society of India and various positions in Neurological Society of India. I have no words to post my heartfelt thanks to the

members of NSI in their faith in me by making me secretary of NSI from 2012 to 2014 and President 2015-16. The whole narrative can be summarized to, "Struggle is not always frustrating. It can bear fruits of delight too, depends what strategy one makes and what measures one adopts". I can gleefully look back at the rise of neurology in general and neurosurgical care in particular, for the population at large in over three decades.

My wife Amita Mishra is truly a homemaker and is providing the necessary support. My son Dr Shashwat Mishra (1982) got his MBBS entrance in



*With PM Narendra Modi  
during his Agra Visit 2014*

AIIMS ranked one, in August 1999. He got selected with rank one again in his PG entrance examination of AIIMS Delhi. He preferred 6 year course of neurosurgery and got his M.Ch certificate in 2011. He did his fellowship for USA for one year. Presently he is working as Assistant Professor Neurosurgery in AIIMS Delhi. I remember his two sentences. When I asked his future program during his internship he told me that he would prefer to stay here. Despite his 3 year assignment in very renowned department of Pediatric Neurosurgery at

Chicago USA, he wrote to me that “I visualize nothing more than AIIMS to learn here. Better I do not waste time and come back”. And he came back to search for positions in India. He stayed as Assistant Professor at R M L Postgraduate Medical Institute, Lucknow, from where he applied and got selected in AIIMS, Delhi on 19<sup>th</sup> May 2014. During these upheavals he, most convincingly told me that he preferred to go to academics over private practice. And so he did. My daughter-in-law Dr Deepika, MD, is Assistant Professor in Oral Pathology in same institute. We are all blessed with grandson Tatsat (7) and Advait (2). They are those where I cling for my future. My younger daughter Dr Aditi Mishra (1986) is MD in Pediatric Medicine and is finishing her senior residency in Post Graduate institute and super specialty hospital in Pediatric Medicine, an autonomous institution of UP Govt., in Noida. My son-in-law Dr Abhishek, MD, is pursuing his career as intensivist. Both wish to go for private practice. ■



*With Sadguru Jaggi Vasudev*

**Vijay Kumar Kak, President, NSI 1998**

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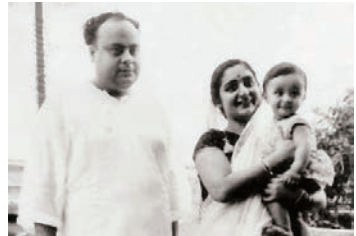
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*“I know history will be kind to me, for I intend to write it myself”*

– Winston Churchill

Vijay Kumar Kak (VKK) was born on 15<sup>th</sup> October 1938, in Saharanpur, UP (then United Provinces of Agra and Oudh, now Uttar Pradesh), in a family of good lineage. His grandfather Pandit Bishan Nath Kak had been bestowed the title of ‘Rai Saheb’ by the then British Government, and his maternal grandfather Pandit Brij Narain Chakbast was a lawyer and a nationalist Urdu poet of repute. VKK was the eldest of three siblings, two brothers and a sister. He was afflicted with polio during the first year of his life, but that did not prove to be a deterrent at any stage. He was awarded the first prize at the Mussoorie Baby Show, much to the delight of the family.



*VKK with his happy parents*

His early schooling was in DAV institutions at Muzaffarnagar, Kanpur and Allahabad (all in UP), and he made it a habit of always topping his class.

**Education and Training:**

VKK joined SN Medical College, Agra, in 1955 and graduated in 1960, with distinctions in seven subjects, several gold medals, and obtained the first position in all the three professional examinations. He was awarded the Chancellor’s Medal for being the best student in the Faculty of Medicine at Agra University. He obtained MS (Surgery) from the same college in 1963 under the able guidance of Profs. SP Srivastava and AN Razdan. He then proceeded to the UK for higher training in neurosurgery, and worked under Alex Taylor, Colin Gleadhill and Derek Gordon at Royal Victoria Hospital, Belfast. He also pursued and obtained FRCS (Eng) and

FRCS (Edin), both in 1967, while working at Belfast. While working as a senior registrar at Belfast, his chief Mr Taylor offered to get him an appointment as a faculty member in the USA. However, Prof B Ramamurthi advised him to return and serve his own country. Through Dr JS Chopra who was also in Belfast, VKK was appointed as neurosurgeon at PGI Chandigarh. One of his most prized 'trainee' was Dr HA Crockard, whom VKK taught to do his first burr hole.

### **The PGI Days – Tears, Toil and Turmoil:**

VKK joined PGIMER, Chandigarh, in August 1969, as Assistant Professor of Neurosurgery, and retired in October 1998 as a Senior Professor, as well as acting Medical Superintendent. VKK was deputed first to Libya (1975-1978) and later to Bahrain (1992-1994). He was the Medical Superintendent of the Nehru Hospital during 1994-1995. During this time, he had read all rules related to hospital administration and knew them better than many veterans. He continues to be with PGI as an Emeritus Professor.

Prof Gulati had been working single-handed at PGI since 1963, and looking after Neurology as well, until Prof Chopra joined in 1968. He was hardly allowed to proceed on vacations, and one of the first things Dr Gulati did after VKK's joining was to take a much earned respite. In September 1969, VKK operated on the father of the then Maharani of Patiala, for a chronic subdural hematoma. The Maharani, who was then an MP, was extremely grateful.

The early days were very exacting. There was shortage of everything – ventilators, anaesthetic agents, instruments, diathermy, hemostatic substances, beds, and even junior staff for assistance. The only investigations available for diagnosis were x-rays, percutaneous angiograms, ventriculograms, pneumoencephalograms and myelograms. The problems were gradually approached on all fronts, and soon a regular M.Ch training programme became operational – the earlier candidates included Dr KC Pani, Dr D Rout and Col TK Roy, and thereafter there was a regular stream. These gave the much needed additional committed staff. The Saturday morning Neurology/Neurosurgery rounds were also started by VKK with active participation of Dr. Chopra and other neurology faculty, radiologists, and later Prof IJ Dewan, the well known

neuroanatomist. VKK also initiated a combined clinicopathologic round, held in the Pathology department with neuroradiologists and neurologists.

With his far-sighted vision, the department started stereotactic services for various indications including Parkinson's disease, dystonias, drug addiction, behavioral changes, etc. He used the old McKinney frame, and stereotaxy, in those days, was performed on ventriculography-based measurements with the help of a stereotactic atlas. He started transsphenoidal surgery for pituitary tumors and transoral surgery. Thus, a close collaboration was established between endocrinologists, ear, nose, throat surgeons, and neurosurgeons, which still continues today. VKK initiated surgical clipping of aneurysms in the early 1980s. Owing to his rapport with Prof PN Wahi, Director-General of Indian Council of Medical Research (ICMR), VKK could get PGIMER included in the ICMR-sponsored "Collaborative Epidemiological Study on Spontaneous Subarachnoid Haemorrhage in India" during a 3-year period from 1972 to 1974. Autopsy studies were conducted by Prof AK Banerjee. VKK also supervised a PhD thesis on the dissection of circle of Willis of 1000 human brains and found an incidence of incidental aneurysms in 1% of them. This was another proof that aneurysms are not rare in India.

Twelve beds in the emergency were allocated to neurosurgery in 1978 – later increased to a full-fledged trauma ward. In spite of the workload of unlimited trauma being referred to PGI, the department steadily progressed in the fields of teaching and training of residents, patient care and research. Residents were prodded to present papers and publish results of their work in national and international meetings/journals. Most of his trainees rose to eminent positions, both nationally as well as internationally – some doing better than their teachers. Both the departments of neurosurgery and neurology laid emphasis on clinical neurology and the residents had to undergo a very strict training schedule. This paid off in their examinations, where none of the internal examiners had to ask the external examiners to alter their assessments. This was alluded to recently, in September 2017, by Prof Sunil Pandya, who was delivering the 12<sup>th</sup> DR Gulati Oration. VKK was instrumental in getting several equipments including the first blood gas analyzer, the first image intensifier, radiofrequency generator, Leksell stereotactic frame and transoral set. He assembled and installed the Carl Zeiss operating microscope himself, upon his return from Libya in 1978

## Academic Achievements:

VKK was a gifted neurosurgeon and excelled in applying sound principles of general surgery to his operative skills. He was instrumental in improving surgical results for both brain tumors and spinal disorders. VKK was also



*Lifetime Achievement Award in Madras*

active in research activities and the department started contributing publications and presentations nationally and internationally. VKK delivered several orations. He received the Lifetime Achievement Award of NSI in 2013, and of the Madras Neuroscience Institute in 2016.

He served as the President of Neurological Society of India, Indian Society of Pediatric Neurosurgery, Indian Society for Cerebrovascular Surgery, Chandigarh Surgical Society, and Association of Neurosurgeons of North-West Zone, among others. He was elected as a Fellow of the Indian Academy of Medical Sciences in 1983, and was also the recipient of Dr. BC Roy National Award (1985). He was also an honorary consultant to the Armed Forces. An Oration in his name was started in 2015 at NSCB Medical College, Jabalpur, by his former student Prof YR Yadav, and another one is being started at the Indian Society for Cerebrovascular Surgery from 2018.

## VKK – The Man:

Apart from being a brilliant surgeon, his major contribution to the department and to the speciality of Neurosurgery was ‘pushing his students to their limits to hone their surgical skills and become leaders in their own right.’ Like Prof Gulati, VKK was a hard taskmaster and was fond of saying that “real diamonds can only emerge from raw residents when one repeatedly cuts and polishes them so that the finished product shines brilliantly.” Those who trained under him still revere him as a teacher par excellence and are intensely loyal to him. He was gifted a special plaque engraved with the names of his students from the Armed Forces, which he

cherishes over the numerous awards he received during his illustrious career. Prof Kak had the vision to perceive that his colleagues needed training at specialized centers abroad to broaden their horizon, and he ensured that consultants from his department visited centres in Japan and UK.



### Neurological Society of India:

Prof Kak had been actively involved in the affairs of the Society. He has been regularly attending the annual meetings, participating in CMEs, and has served on various committees. He was Treasurer from 1982-1989, Secretary from 1990-1991, Vice-President in 1997 and President in 1998. Prof Kak was actively involved in organizing the IX International Congress of Neurosurgery and the XIV World Congress of Neurology – both held in 1989 in New Delhi.

### GMCH, Chandigarh – A Challenging Assignment:

VKK was appointed the Director-Principal of Government Medical College and Hospital (GMCH), Chandigarh and Secretary, Medical Education and Research, Chandigarh administration, in 1995. There were formidable initial challenges with deadlines to be met. Three aims were to recruit faculty as per MCI requirements, conduct final examinations on schedule, and get college recognition from MCI. All three were met successfully. The college had to be recognized by the MCI following a court order from the Punjab and Haryana High Court and the Apex Court – probably the only medical college to be recognised thus! VKK was instrumental in setting up a state of the art medical college which has since made rapid progress. It has now full- fledged postgraduate courses and an eminent faculty. He retired from GMCH in 2000. This college is currently ranked at No. 9 amongst Government Medical Colleges in the country! Last year, the college celebrated its silver jubilee. VKK was conferred Distinguished Fellowship of the Institution of Hospital Engineers (London) in recognition of his expertise in the planning and construction of GMCH.

## Family and Vocations:

Prof Kak was married to Anuradha Vatal, a doctor, in 1963.

They have three children – two daughters and a son. Madhvi, the elder daughter, and her husband Ajay, a rheumatologist, are settled in Portland, Oregon, USA. They have three children and the eldest has entered the medical school in Portland. The younger daughter Jaya is in-charge of the Neuro ICU at Medanta Hospital, Gurgaon. Her husband runs a concern there. They have two daughters. The son Anurag is working with Lafarge-Holcim Company and is currently posted in Zurich, Switzerland, along with his wife and two children.



*Marriage in 1963*



*50<sup>th</sup> Wedding Anniversary*



*With children and grandchildren - 2011*

Prof Kak played table tennis at PGI and GMCH also. A sportsman, he also plays bridge, and chess, winning championships at PGI and GMCH. He likes to listen to Indian classical and instrumental music in his leisure time. He continues to provide consultation to his patients, who have great faith in him. He particularly likes the company of his grandchildren.



**Further reading:**

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