



**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. Padmavathi*

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.

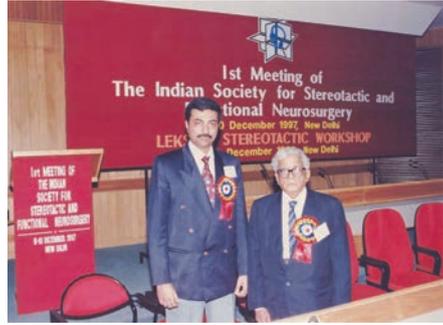
### ***Patient management***

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. ■