

Brief sketch of my life

To recall and recount events and episodes from the rich mosaic of memories of bygone period of one's life, is a daunting task. Hence I crave the indulgence of the reader if the narrative appears fragmented and disorganised. I fervently hope that it would be a tapestry with many coloured threads and designs.

Childhood

I, Mandavilli Gourie-Devi, eldest of 5 children was born on 13 December 1938 in Anakapalle Andhra Pradesh, a small bustling town 25 km south of Visakhapatnam famous for Jaggery and guava fruits. Girls in Arya Vysya community were usually married young. I was blessed with educated parents, grandfather and uncle (famous Korukonda family) who actively took part in freedom struggle and also in social activities Hence I enjoyed unfettered freedom to pursue studies and could realize my full potential, cherished desires and dreams. As the child of engineer in All India Radio, a job which entailed frequent transfers, I had an unique opportunity of obtaining school education in different cities in the country, in learning different languages and absorbing the varied hues of diversity from Trichy and Madras in South. Delhi and Jullundur in North, and Calcutta and Guwahati in East. This childhood experience enabled quick adaptation to the local milieu in later professional life.

In the high school at Madras and Intermediate Sciences at Ankapalle, I had secured first rank Inspired by maternal uncle's dedicated service to the poor with pulmonary tuberculosis, I entered medical profession in 1956. Andhra Medical College, King George Hospital and the ladies' hostel became my home for the next 6 years.

Medical Education

Having bagged gold medals and prizes in pharmacology, pathology, medicine and declared as the best outgoing student, I opted for postgraduate course in pathology, as I had been awarded the prize for pathology by Andhra Medical College and gold medal by Andhra University. In a couple of weeks, I changed my field under protest and with regret, to internal medicine under the strong influence of the then professor of medicine, Dr. Kodandaramaiah and Dr. Raghunathan and my own father who argued that since I was awarded the coveted prize in Medicine, I should become a physician. The love for pathology remained with me for long and 11 years later I had the fulfillment of being exposed to muscle and nerve pathology at New Castle General Hospital, New Castle upon Tyne and Royal Free Hospital, London, respectively.

After pursuing the course for a couple of months at Andhra Medical College, I moved to All India Institute of Medical Sciences, New Delhi in July 1962 as I was successful in getting admission to the same course at this prestigious institute. The rigorous and taxing clinical work and academic schedule, long hours of work, the excellent bed side clinics and the strict discipline of Dr. K. L. Wig, Professor of Medicine and the integrated learning methods were the brick and mortar for my firm grounding in medicine.

Interest in Neurology

During this period from 1962 to 1964 while pursuing MD course in Internal medicine, I was fortunate to have been taught clinical neurology by Dr. James H. Austin, Visiting Professor in Neurology, who is known for signal contributions to the field metachromatic leucodystrophy. My interest in neurology was kindled and further fortified when Dr. Baldev Singh, father of Neurology, called affectionately as "Papa Neuron", joined as Professor of Neurology in 1965. I left the department of medicine and joined as registrar in Neurology in 1965 and subsequently pursued DM Course in Neurology (1966-1968) under the tutelage of Prof. Baldev Singh. Dr. Virmani stimulated my interest in muscle disorders and epilepsy. Prof. P. N. Tondon and Dr. A. K. Banerjee were a strong force teaching and training us in Neurosurgery. Under their influence at one stage, I even seriously considered doing M. Ch Neurosurgery, which mercifully I did not pursue. Prof. Baldev Singh was much more than a teacher to me, he was my mentor, and philosopher who instilled courage and determination in my moments of despair and dejection not only during this period, but for years to come, when I would unburden my problems and seek his guidance.

Professional Career

It was a proud moment when I completed DM in Neurology in 1968 as the first batch of DM students and left the portals of All India Institute of Medical Sciences to find my future as Assistant Professor of Neurology, Osmania Medical College, Hyderabad. Working with Prof. M. Veeraraghava Reddy, Dr. B. Dayananda Rao and Dr. D. Raja Reddy of Neurosurgery department and Dr. Kakaria Subba Rao, Department of Radiology, as a multidisciplinary team was an enriching experience. Two important publications, both appearing in Indian literature for the first time were Vein of Galen Malformation and lumbar canal stenosis. During this period from 1968 to 1970 at Hyderabad, I could continue research in

cortisol metabolism in intracranial hypertension at the National Institute of Nutrition(NIN). My interest in cortisol metabolism was based on the research work I had done earlier during DM course determining alteration of cortisol metabolism in clinical and experimental epilepsy. Dr. C. Gopalan, Director of NIN, almost made me choose a career of scientist and join NIN. It was a "narrow escape" and perhaps the deep interest in clinical neurology prevented this step. I did have interest in Neuroendocrinology and even procured placement in a laboratory in USA, which had pioneered work in cortisol metabolism. Unfortunately or fortunately (?) my application to National Institute of Health fellowship was rejected by Indian Council of Medical Research and thus interest in neuroendocrinology was nipped in the bud and I remained a clinical neurologist. We had the pleasure of organising the 19th Annual Conference of the Neurological Society of India at Hyderabad in 1969, a very successful event. The organisational skills of Dr. Dayananda Rao amazed me and as is my habit, I made copious notes which became handy when I assumed the responsibility of organising secretary of 29th Annual Conference of Neurological Society of India in 1979. at Bangalore.

Very soon a feeling of restlessness and isolation from my parents prompted me to return to Delhi in 1970 as Consultant Neurologist (Central Government Health Scheme) to Safdarjang Hospital. The department of Neurology was established by Prof. Janaki in 1960's and after she moved to GB Pant Hospital, Dr. Nigam was manning the department for a brief period. As the only neurologist working under the administrative control of head of department of medicine who was averse to development of superspecialities, to develop Neurology was indeed a daunting task with even a less helpful medical superintendent. It was a constant struggle, day-to-day battle for survival, to get inpatient beds, house staff to work in the department, to run EEG and EMG services, to face enormous hardships to get secretarial assistance and be on call duty everyday for the next seven years.

Dr. B. Sankaran, famous Orthopedic surgeon, assuming the office of Medical Superintendent dramatically changed the scenario to one of enthusiastic anticipation of rapid development of Neurology, Reasonable outpatient and inpatient services were established and medical and technical staff were also provided. Dr. Sriramachari, Director of Institute of

Pathology, ICMR, located in the Safdarjang Hospital Campus, was a source of inspiration, encouragement and my conscience keeper. With his support research work was initiated in the areas of muscular dystrophy, neuropathy in leprosy and osteomalacia induced by antiepileptic drugs.

I was lucky to have inherited an EMG machine, a foresight of previous dynamic Medical Superintendent, Dr. R. D. Iyer. In the early 70s, electromyography was at its infancy in India, with only a few neurologists notably Dr. Irani (now Dr. (Mrs) Wadia) in Bombay, Dr. Taori in Vellore, Dr. Chopra in Chandigarh, Dr. Naunihal Singh at Delhi interested in this field. Equipped only with theoretical knowledge about electromyography and absolutely no practical experience of the techniques, I took it as a challenge and started using the machine. I gained confidence in using the techniques for diagnosis and thereafter ventured to systematically study neuropathy in chronic renal failure, leprosy and Guillain-Barre Syndrome. The concept of averaging had not yet been introduced, therefore for the sensory conduction studies photographic superimposition was done with the camera provided along with the equipment and latency and amplitude measurements determined from the negatives or prints. This EMG machine had no facility for recording the graphs and hence all salient observations were photographed. For speedy reporting of results, instead of depending on the hospital photographer, a small dark room adjoining the EMG laboratory was established and one senior EEG technician who was a good photographer took over this responsibility.

An interesting paper by J. N. Davis on a simple technique of phrenic nerve conduction attracted my attention and I evaluated its usefulness in predicting ventilatory failure in Guillain-Barre Syndrome. with great hesitation and trepidation I presented this work at the Third Asian and oceanian congress of Neurology at Bombay in 1971 and never expected the considerable appreciation by Prof. John N. Walton and Prof. P. K. Thomas. This acquaintance facilitated the award of common wealth Medical Fellowship two year later. To supplement clinical and electrophysiological studies of peripheral neuropathy, I also learnt „teased fibre" techniques under the able guidance of Dr. M. C. Vaidya, professor of Anatomy, AIIMS who had a creep abiding interest in leprosy. This collaboration resulted in our work on single fibre studies in leprosy neuropathy and EEG changes in Leprosy. I established close liason with leprosarium at Shahadra, Delhi and JALMA, Agra and used to regularly give lectures on leprosy neuropathy to medical officers and trainees in leprosy.

with major neurological facilities being available across the road at AIIMS with many of my teachers at helm of affairs, it was an uphill task for me to give an identity to neurological unit at Safdarjang Hospital(SJH). I received unstinted support from my teachers and colleagues at AIIMS. SJH catered mostly to people from lower economic strata and government employees. Interestingly there were no paying wards and SJH boasted of excellent burns ward, neonatology ward (the first of its kind in the country), central Institute of Orthopaedics and rehabilitation services of a high quality, Superspecialities of cardiology, cardiac surgery (Prof- Valiathan was head of the department), paediatric surgery, neurology and neurosurgery were well entrenched. Safdarjung Hospital was affiliated to Delhi university and university college of Medical Sciences (which later shifted to Shahadra) was attached to SJH providing an active academic ambience.

Bed side observations on atrophy of a single upper or lower limb, later labelled as monomelic Amyotrophy, and the preliminary observation on the therapeutic utility of hyaluronidase in management of spinal arachnoiditis at SJH laid the foundation for long term research for the next two, and half decades.

The award of Common Wealth Medical Fellowship in 1973 provided an opportunity to further my research interest in disorders of muscle and peripheral nerves, initially at the Regional Neurological Centre, New Castle upon Tyne and later at Royal Free Hospital, London. In addition to clinical aspects, I acquired further skills in electroneuromyography, histopathology of muscle and nerve, single teased nerve fibre studies. quantitative morphometry and electron-

microscopy of nerve. On return to SJH in 1975 I could continue many of these techniques and usefully apply to clinical problems.

Once again the mood of restlessness overcame as I realised that working in an Institute along with colleague neurologists would be a more appropriate place to develop the area of neuromuscular disorders and electromyography. It was sheer coincidence or providence that during late 1975, offer of Associate Professor from CMC Vellore was made. There were also other possibilities of similar openings at National Institute of Mental Health and Neurosciences, AIIMS and PGI, Chandigarh. The final choice was NIMHANS for professional and personal reasons. Prof. R. M. Varma, Prof. K. S. Mani and Prof. Sriramachari, persuaded me to take up this job.

So I moved to NIMHANS in January 1977 as Associate Professor in Neurology. Before leaving Safdargung Hospital story, with a heavy heart, I must record that the seven years experience, instilled courage and confidence to overcome obstacles in establishing neurological services, developed organisational abilities. I also tasted sweet experience of success. I left behind a department equipped with trained medical and technical manpower, added new EEG and EMG equipments and abundance of goodwill among colleagues of other departments.

NIMHANS past, forward and future

I entered NIMHANS in 1971 at a crucial stage of its development as it had just then in 1974 emerged as an Autonomous integrated institute established through a novel concept of centre-state collaboration and partnership, an institute exemplifying a multidisciplinary approach to mental health and neurosciences, an unique place for interaction of brain and mind sciences and scientists. The earlier divisive centre-state forced many constraints and conflicts underwent a major transformation to create the new vibrant NIMHANS. The aims, ambitions and goals of the Institute were very high and I as a new entrant was literally fed and infused with these concepts by Dr. R. M. Varma, the dynamic founder-director and Prof. K. S. Mani who was mainly responsible for enticing me to join this Institute. Many years later he told me that he anxiously waited outside the committee room where I was being interviewed for selection to the post of Associate Professor in 1976, for the "delivery of the baby". I fondly hope that he is satisfied with the result. Meticulously maintained case records, strict discipline in the outpatient and inpatient neurological services were the great traditions laid by Dr. Mani, who joined the institute, in late 1950s when it was known as All India Institute of Mental Health and established the department from its very inception. He was ably supported in this endeavour by Dr. V. S. Achar, Dr. G. K. Ahuja, Dr. H. S. Swamy and Dr. B. Mruthyunjayanna who were in the faculty for varying periods of time.

An active programme in epilepsy including the multicentre PL-480 project, description of hot water epilepsy, tropical spastic paraplegia and experimental work on Neurolathyrism were the seminal contributions of Dr. Mani. He gave me the task of developing the areas of muscle disorders, peripheral neuropathy and electroneuromyography. There was a 2-channel Medilec machine, which he told me was gathering cobwebs. I set about the task in great earnestness and submitted a project to develop EMG laboratory, with infrastructural facilities including Faraday cage and a new machine. Although budget allocation for the year was finalised, a responsive administrator of the Ministry of Health, Government of India, sanctioned additional grant which enabled purchase of 1500 DISA EMG machine and establishment of laboratory with facilities for diagnosis and research. The procedures for muscle and nerve biopsies were standardised and the neurosurgeons were relieved of this responsibility as I felt that neurologists should take over this function. Prof. D. H. Deshpande and Dr. S. K. Shankar of Department of Neuropathology and later Prof. Sarala Das fully supported the programme on muscle and nerve disorders and very soon special slide sessions for medical neuropathology commenced. NIMHANS is well recognised for its contributions to better understanding of disorders of muscle and nerve.

The training programme for DM in Neurology was started in 1970 with an annual intake of 2 students and after my joining the faculty in 1977 it was increased to 4. With the foresight of Dr. Varma and Dr. Mani, to attract the best talent in the country, the DM course in Neurology was open to both postgraduates in MD (Medicine, Paediatrics) and MBBS, with duration of course being 3 years and 5 years respectively. Very recently in 1998 the annual intake has been increased to six. It is a matter of pride and satisfaction that 70 students completed DM in neurology and many of them have distinguished themselves as good clinicians, teachers and academicians and are occupying coveted positions.

The department in 1977 had faculty members, Dr. K. S. Mani, Dr. H. V. Srinivas, Dr. Swamy and I. With Dr. K. S. Mani opting for voluntary retirement, I had to assume the additional responsibility of head of the department. Very soon Dr. B. P. Mruthyunjayanna rejoined the faculty on return from deputation and I was selected for the post of Professor of Neurology in 1979. An year earlier, I was offered the post of Professor at Sree Chitra Tirunal Institute for Medical Sciences and Technology at Trivandrum which I declined with regret, as I was deeply involved in building EMG services at NIMHANS and had also initiated ICMR project on "effect of hyaluronidase in experimental arachnoiditis".

One is always amazed at the twists and turns in life and wonders how choices are made and what life would have been if alternatives were chosen. The faculty strength over the years had increased to present 10 with few earlier faculty members leaving and giving place to new blood - Dr. H. V. Srinivas and Dr. Mruthunjayanna left and Drs. D. Nagaraj, P. Satishchandra, A. B. Taly, M. Veerendrakumar, Anisya Vasant, E. Ratnavalli, Uday Muthane and G. R. Arunodaya joined at different periods. With the faculty members evincing interest in a particular area it has been possible to develop expertise in service and research in areas of epilepsy, neuroinfections, cerebrovascular disorders, movement disorders, electroneuromyography, neuromuscular disorders, behavioural neurology, neuroepidemiology and neurorehabilitation. I had made ' serious efforts to develop paediatric neurology, but unfortunately due to problem in retaining trained faculty, this discipline could not be established at the Institute and the plans to initiate DM in paediatric neurology were also abandoned.

From 12 resident posts in 1979 the number was gradually increased to the present strength of 25, providing opportunity for aspiring students to be trained in neurology. The training programme had also undergone a transformation to include exposure to disciplines of neurosurgery, neuroradiology, neuropathology, psychiatry, neuropsychology and basic neurosciences.

The inpatient facilities increased with addition of paediatric neurology ward, intensive care unit, neuro infections ward, neuro- directors. Dr. G. N. Narayana Reddy and Dr. S. M. Channabasavanna. A comprehensive outpatient, screening, casualty and emergency service block was a major development in clinical services. Regular extension (satellite) providing neurological and psychiatric services to rural areas became a special feature of health care delivery.

I continued to pursue research work in early detection of nerve damage in leprosy by conduction studies of greater auricular nerve and dorsal cutaneous branch of ulnar nerve and assessment of therapeutic efficacy of hyaluronidase in spinal arachnoiditis of tuberculous and non infective aetiology. It is gratifying that this method of treatment has found a place in Brains textbook of Neurology. As we started seeing increasing number of young adults with single limb atrophy, research efforts were also concentrated in this area leading to delineation and description of benign atypical form of motor neurone disease. Dr. T. G. Suresh and Dr. Shankar were my collaborators in this work. Subsequent studies focussed on CT myelographic changes of spinal cord and analytical epidemiological study to determine the risk factors associated with monomelic amyotrophy. International Symposium on Motor Neuron disease in 1984 with participation of a number of experts from India and abroad, including Dr. D. C. Gajdusek, Nobel Laureate was a landmark event. During the last 10 years further work in motor neurone disease was pursued and the focus had been on

cyclophosphamide as a treatment modality and development of experimental models of amyotrophic lateral sclerosis, the latter in collaboration with Dr. T. R. Raju and his team of the Department of Neurophysiology of NIMHANS.

A major outbreak of Japanese Encephalitis in Karnataka in 1979 got me deeply involved in clinical studies and public health education. Dr. Deshpande and Dr. Shankar greatly contributed to pathological dimension of the disease and later Dr. V. Ravi and Dr. Anita Desai of Neurovirology department did seminal work on virological and immunological aspects.

After the extension services of NIMHANS were established on a firm footing, I along with colleagues from Department of Psychiatric Social Work, initiated neuroepidemiological survey in 1982 in Gouribidnur (Kolar District) one of the five identified satellite centres, as it was felt that survey could be harmoniously dovetailed with service. This study aroused considerable interest and Indian Council of Medical Research identified neuroepidemiology as a thrust area of research in 1986 and a task force was set up to initiate multicentre collaborative neuroepidemiological survey. NIMHANS was identified as a centre for study and our group was asked to develop the protocol for survey. I was lucky to have Dr. G. Gururaj (Dept. of Epidemiology), Dr. P. Satishchandra (Department of Neurology) and Dr. K. Subbakrishna (Department of Biostatistics) as co-investigators in the project and we conducted a major survey of more than 1 lakh population in Bangalore urban and rural areas and determined the prevalence and pattern of spectrum of neurological disorders. A manual for neuroepidemiological survey in developing countries was developed and a National Workshop on Neuroepidemiology was also conducted in 1994. This activity initiated a number of studies in the country and in 1997/ in view of the increasing demand, the second edition of the manual was published.

Keeping pace with global trends the discipline of molecular genetics is being established at the institute and work in the area of triplet expansion in myotonic dystrophy has already been done in collaboration with Prof. Brahmachari of Indian Institute of Science, Bangalore (presently the Director of Centre for Biochemical technology, CSIR laboratory, New Delhi) and further studies in Duchenne Muscular Dystrophy are being initiated.

In all the areas of research work as well as in clinical services, the multidisciplinary approach and excellent cooperative and collaborative efforts of clinical and basic science departments have been a crucial and valuable asset. My 110 publications in National and International journals and chapters in books have been the outcome of such endeavours!

I am gratified by the recognition accorded to me for the research contributions and award of a number of orations and "distinguished scientist" awards by Academic bodies of the country. I was elected Fellow of National Academy of Medical Sciences in 1989, Fellow of Andhra Pradesh Akademi of Sciences in 1994 and Fellow of Indian Academy of Neurology in 1996 and President of Neurological Society of India in 1995. I have been able to contribute to development of neurological sciences in India by serving as an expert member of programme advisory committee on Neurobiology, Department of Science and Technology, Department of Biotechnology, Indian Council of Medical Research, National Academy of Medical sciences and very recently of programme Management committee of National Brain Research centre. As an expert member of world Health organisation, Advisory panel on Neurosciences and Vice-Chairperson of "standards for Neurological Care and Technology Committee" and member of Research Committees on Neuromuscular Diseases, Neuroepidemiology and Tropical Neurology of world Federation of Neurology, I have been able to participate in the endeavours to nurture neurology in global context.

The recent appointment as Director-Vice Chancellor of NIMHANS in September 1997 has provided me an opportunity and a challenge to take the institute to further heights and fulfil the dreams and vision of former directors, Dr. M. V. Govindaswamy, Dr. R. M. Varma, Dr. K. S. Mani, Dr. G. N. Narayana Reddy and Dr. S. M. Channabasavanna.

It is now time to let go and realise that „living being does not form an exception to the great natural harmony which makes things adapt themselves to one another. it breaks no concord, it is neither in contradiction to, nor struggling against general cosmic forces; but far from that, it is a member of the universal concert of things and is only a fragment of the total life of the Universe" (Claude Bernard).