

## T. S. Kanaka: First Asian Woman Neurosurgeon, Who Pioneered Stereotactic, Functional and Cerebral Electrode Implant Surgery and Developed Separate Neurosurgical Speciality in India Early 1970

Sir,

T. S. Kanaka M.B.B.S., M.S., M.S. (Neurosurgery), Ph.D. (31 March, 1932–14 November, 2018) was Asia's first female neurosurgeon<sup>[1]</sup> and also credited as the first Indian team member to pioneer functional Neurosurgery in 1960–1970.<sup>[2]</sup> She was also actively involved in performing cerebral implant surgery with the indigenous implant.<sup>[3,4]</sup> She had credit to performed deep brain stimulation in 1975 along with team comprising of Prof. S. Kalyanraman, Prof. Balasubramaniam and Prof. B. Ramamurthi.<sup>[5,6]</sup>

T. S. Kanaka was born and completed her early schooling at Madras. She completed her M.B.B.S. graduation in 1954 at the prestigious Madras Medical College and also got MS (General Surgery) in 1963, M.S. (Neurosurgery) in 1968 from the same institute. Further, she got Ph D. in 1972 and received Diploma in higher education in the year 1983.<sup>[7]</sup>

During the second phase of professional life, she also served as a medical officer in the Indian Army during the 1962 and worked at prestigious General Government Hospital in Chennai. She was a pioneer member of stereotactic surgery team at Madras in 1960, the earliest team to carry out stereotactic surgical procedures in India.<sup>[4]</sup> Different stereotactic procedures for ablative and stimulation were routinely performed included involuntary movement, behavioral disorder, for management of spasticity, and psychiatric disorders, epilepsy. Her team carried out about 1700 stereotactic surgical procedure at Madras Medical College. She developed a separate subspecialty of stereotactic and electrode implant about a decade earlier prior to getting the application popular and getting acceptance in the other part of globe.<sup>[7]</sup>

During the third phase of professional life, after retirement, she set up prestigious Sri Santhanakrishna Padmavathi Health Care and Research Foundation in 1990, were financed solely with her own personal savings, which used to offer free treatment for poor and needy fellow.<sup>[3,5]</sup>

In 1996, Kanaka became Honorary President of Asian women's Neurosurgical Association and also designated Asia's first female neurosurgeon. In 2014, she was honored by Dandy Indian chapter for representing the first woman neurosurgeon. She was listed in the Limca Book of records for the highest number of voluntary blood donation as an individual. She was involved in a project for manufacturing deep brain stimulation kits by the Indian Biomedical Engineers.

She was awarded with numerous awards and had many publications in international journals.<sup>[7]</sup> She always

demonstrated high courage and always fought against women discrimination in medical education and laid down the path for other women to enter the male-dominated field of neurosurgery as well as medical education. She had lot of younger neurosurgeons, who were mentored and guided by her and today heading many neurosurgical centers across India and thousands of happy patients treated by her. She was the real genius and always actively participated in conferences, writing scientific papers, and mentoring young colleague.

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