



# Institute Lecture

## *Neurosurgery: An inspiring arena for engineering innovation*

**Sanjay Behari**

MBBS, MS, MCh, DNB

Additional Professor and Unit Head, Department of Neurosurgery,  
Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India

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### **Abstract**

Brain and spine surgery requires meticulous preoperative preparation and absolute precision. It is extremely equipment intensive and requires advanced and specific instrumentation and immense efforts by highly trained doctors and engineers for its success. Most of the equipment today is imported from developed countries. Most of the research conducted related to scientific instrumentation is a “hand-me-down” effort from the developed world. As a result, when we actually procure an instrument or equipment, we are already years behind in research and development and neurosurgical advancement when compared to the developed countries. The cost of procurement of this outdated equipment is also immense.

Every landmark advancement in the scientific world is the consequence of a combined effort in widely separated disciplines. In India, the bane of scientific advancement is the lack of communication and awareness regarding “what is needed” and “what is possible” between various disciplines of science. The need of the hour is cooperation between medicine and engineering towards the common goal: that of providing state-of-the-art indigenously developed medical care at affordable costs that is readily available to every citizen of the country. Through a series of videos and photographic presentations of brain and spine surgery conducted at Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, and a literature review of the scientific advancements, the talk aims to provide an insight into the needs of the neurosurgeons of India. This interactive session will attempt to churn up ideas for engineering research and development in the field of medicine in general and neurosurgery in particular.

### **About the speaker**

Education: MBBS (Honors and Best student) SMS Medical College, Jaipur; MS (General Surgery) Chief of Surgery Gold medal and Best Scientific paper gold medal; MCh and DNB Neurosurgery: SGPGI, Lucknow.

Dr Sanjay Behari is Sugita International Fellow, Nagoya University, Japan; International Fellow, Fujita University, Japan; International Union against Cancer Fellow, Friedrich Alexander University, Erlangen-Nurnberg, Germany; International Fellow, University of Geneva and Lausanne, Switzerland; Neurosurgical Fellowship, University of Pittsburgh, Johns Hopkins University and Dartmouth College, USA; Commonwealth Fellow, Newcastle General Hospital, UK. He was a Visiting Professor/Faculty to University of Nagoya, Japan; Medical University of South Carolina, Charleston, USA; Cantonal University of Geneva, Switzerland; Hospital de'Orta, Lisbon, Portugal. Dr Sanjay Behari served on the editorial board of European Journal of Neurosurgery (Acta Neurochirurgica); Neurology India; Journal of Pediatric Neurosciences, Journal of Craniovertebral junction and Spine. He is also the National Editor of Ramamurthy Tandon's Textbook of Operative Neurosurgery. Dr Sanjay Behari is a member of American Association of Neurological Surgeons, USA; Congress of Neurological Surgeons, USA; Union International against Cancer, Switzerland; AO Spine International; Asian Congress of Neurological Surgeons, Japan; Association of Commonwealth Fellows of UK; Neurological Society of India; National Academy of Science, India; and National Academy of Medical Sciences, India. He has delivered invited lectures at Congress of Neurological Surgeons; and World Federation of Neurosurgical Societies; Asian Congress of Neurological Surgeons; South African Congress of Neurological Surgeons. He has 136 Publications in Indexed Journals, 60 chapters in books, and 2 Books. He has supervised 6 PhD theses, 5 MD theses, and has supervised and examined several MCh and DNB Neurosurgery, apart from delivering 84 guest lectures in India and abroad.

**All interested are welcome.**

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A.K.Chaturvedi  
Dean: Research and Development