



New Paradigm in Neurosurgical Training

Anita Jagetia

¹Department of Neurosurgery, G.B. Pant Institute of Postgraduate Medical Education and Research (GIPMER), New Delhi, India

Address for correspondence Anita Jagetia, MS, MCh, G.B. Pant Institute of Postgraduate Medical Education and Research (GIPMER), New Delhi, India (e-mail: anitajagetia@gmail.com).

Indian J Neurosurg 2022;11:1–2.

One of the primary functions of a doctor is to impart skills and education to the next generation of learners. The task of continuous upgradation of skills and capabilities is one which all neurosurgeons commit to, particularly in the wake of the rapid expansion of the knowledge base and technological armamentarium resulting in the need to train and retrain at frequent intervals to keep abreast of the expanding frontiers of knowledge.

Academic centers and superspecialty hospitals have a major focus on neurosurgical education and training of postgraduate students and residents.

In the wake of the current coronavirus disease (COVID) pandemic, this initiative has been stretched to the limits.

While the calling exists for each medical practitioner has been to support and contribute to the care of COVID patients, the story of the neurosurgical trainee is particularly compelling. While on the one hand the pandemic has strained the health care system like never before, the need for COVID protective measures has ushered in a new reality. Social distancing and waves of explosive patient inrush have limited surgical work at least in part in most centers. In addition, there have been periods where the training has been strained due to social distancing norms, resident redeployment, and reduced clinical schedules and surgical opportunities.

The resilience of the training saw new innovative measures with greater webinars and online didactic lectures replacing classroom initiatives. This further explored the possibility of international talent being available for even remote academic centers without the hassle of travel and stay. The thriving technological avenues of communication provided enhanced experiences. Learning experiences suitable for online platforms included video teleconferencing, lectures, case conferences, journal clubs, and many more creative didactic components.

While emergency surgical procedures continued, the online access of virtual training support such as the Neurosurgical Atlas as well as three-dimensional virtual

reality surgical aids have been introduced and utilized to a large extent. The rapid increase in the surgical apps which feature live surgical simulation was seen in the last 2 years across all platforms of mobile applications. Again, many start-ups and technological companies have introduced advanced surgical simulators for a variety of neurosurgical procedures which may be upscaled according to the need of the residency curriculum. Indeed, this may very well replace existing techniques of surgical cognitive introduction so as to provide a safe and holistic learning experience. The greatest advantage of the simulators is in the management of complications and rare adverse events which would enable the residents as well as practicing neurosurgeons the opportunity to create standard operating procedures for these life-threatening events not encountered routinely.

With the growing popularity of minimal invasive techniques, the training is also focused on the popular surgical interventions. Little exposure is obtained in more demanding and skill-based neurosurgical interventions, leaving few surgeons continuing these techniques. There is a pressing need on part of the trainers to realize the long-standing implications of this trend which would leave a major part of the next generation bereft of these essentials which may be called upon as a requirement in select cases. The need is to balance the exposure and training so that all aspects of surgical training are taken care of.

Neurosurgery, being the multispecialty branch, requires close cooperation of various other specialities such as ear, nose, and throat surgeon, plastic surgeon, orthodontists, endocrinologists, urologists, etc. to improve patient's outcome and safety. Team work among the same speciality such as close association with neurologist to manage stroke, functional neurosurgery, and epilepsy surgery has opened new paradigms in sharing knowledge, helping in decision making which results in better overall outcome compared to individual decision of surgeon. Team work among neurosurgeons

published online
January 13, 2022

DOI <https://doi.org/10.1055/s-0042-1748753>
ISSN 2277-954X

© 2022. Neurological Surgeons' Society of India.

This is an open access article published by Thieme under the terms of the Creative Commons Attribution-NonDerivative-NonCommercial-License, permitting copying and reproduction so long as the original work is given appropriate credit. Contents may not be used for commercial purposes, or adapted, remixed, transformed or built upon. (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).

Thieme Medical and Scientific Publishers Pvt. Ltd. A-12, 2nd Floor, Sector 2, Noida-201301 UP, India

supports to get good outcome, making difficult cases less effortful and decreases operation time.

The demanding training period in neurosurgery with its many facets leaves little room for the introduction of modern-day scientific thought including research methodology and data science. These are areas which need adequate thrust for the tomorrow's researchers and practitioners. Guidelines and protocols would stem from best practices recorded and analyzed today. It is imperative that the residents are made aware of the technical aspects of data science and research methodology at least in part.

The future beckons, we need to prepare for it. The highs and lows of the neurosurgery need to be tempered to future excellence. A new paradigm awaits. The call is for a balanced futuristic training for a future-ready speciality. While ending the editorial here, I would like to take this opportunity to motivate young clinicians and researchers and veterans to come forward and submit, high-quality clinical content and best practices, preferably in the form of original articles, reviews, meta-analysis, short communications, and letters. We look forward to having such interesting content and contribute toward the growth of neurosurgical best practices.