

Starting Neurotrauma Facilities at the All India Institute of Medical Sciences Rishikesh

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Abstract

Keywords

- ▶ neurotrauma
- ▶ cranial injuries
- ▶ spinal injuries
- ▶ peripheral nerve injuries

It is said that making a start is half the job done. The same can be said for starting a new institute, a new department, or a new facility. Neurotrauma at the All India Institute of Medical Sciences (AIIMS) Rishikesh made humble beginnings in June 2016 when a patient with L1 compression burst fracture with paraparesis with urinary retention presented to the Outpatient Department and underwent surgery. The neurotrauma facilities at the institute got a major push with the beginning of emergency and trauma services in June 2017. The Department of Neurosurgery at AIIMS Rishikesh takes up cases of traumatic brain injuries, spinal injuries, and peripheral nerve injuries.

Introduction

The All India Institute of Medical Sciences (AIIMS) Rishikesh was established by an act of Parliament in 2003 under the Pradhan Mantri Swasthya Suraksha Yojana. The hospital came into being in 2012, and the Department of Neurosurgery began its services in 2014. The department handles various cases of trauma including traumatic brain injuries, traumatic spine injuries, and peripheral nerve injuries. In this brief article, we would like to highlight the resources (manpower, infrastructure, etc.) available for neurotrauma, challenges ahead, and vision for the future.

Manpower

Neurosurgery Faculty

The Department of Neurosurgery was started by the first director of the institute, Professor Rajkumar, who came on deputation from Sanjay Gandhi Postgraduate Institute (SGPGI), Lucknow. Later, Dr. Rajnish Arora joined him in 2014 on a contractual post, who became a regular faculty member in 2016. It was in the same year that Dr. Nishant Goyal joined the department as a regular faculty, and Professor Rajkumar shifted back to SGPGI, Lucknow (▶ Fig. 1). Dr. Jitender Chaturvedi joined the department in 2017. The department had three faculty members until the very recent recruitment of Professor Radhey Shyam Mittal, Dr. Pranshu Bhargava, and Dr. Rajasekhara Rekapalli. Thus, the department is constituted by a total of six faculty members now.

Residency Program

MCh training program at AIIMS Rishikesh began in January 2018. Till date, four batches of residents have joined the institute, with a total strength of eight residents (▶ Fig. 2). The admissions are held twice every year based on all India entrance examination conducted by AIIMS, New Delhi.

Nursing Staff

There are 30 nursing staff members for the neurosurgery beds (ward and intensive care unit [ICU]) in three shifts. For the operating room (OR), there are six dedicated nursing officers. In emergency hours, there are two nursing officers trained for all surgical departments.

Ward Beds

The Department of Neurosurgery has a 22-bedded ward including a 4-bedded neurosurgery ICU. In the trauma ward in the trauma center building, eight beds are reserved for neurotrauma patients. The neurotrauma patients are admitted in the neurosurgery ward, neurosurgery ICU, common surgical ICU, or neurotrauma beds in the trauma ward depending on the patient's condition.

Intensive Care Unit Beds

At present, four ICU beds with two ventilators are available for neurosurgical patients. This is for both elective and emergency procedures.



Fig. 1 Faculty of Neurosurgery at the All India Institute of Medical Sciences (AIIMS) Rishikesh (left to right: Dr. Rajnish Arora, Dr. Jitender Chaturvedi, Professor Rajkumar, and Dr. Nishant Goyal).

Operating Room

Neurosurgery has one operation room per day from Monday to Saturday, where elective cases are performed. For emergency cases, there is a separate operation room, which has to be shared with various surgical departments.

Operating Room Equipment

The following items are available in emergency OR:

- Neurodrill: one.
- Basic craniotomy set: one.
- Basic laminectomy set: one.
- C-arm: we have to ask the orthopaedics or urology Department to lend us theirs.

If we feel the need for a microscope in a trauma case, we try to take the case in our elective OR, which is on a different floor.

The neurosurgery OR (elective) is equipped with the following equipment:

- Pentero 900 microscope (Zeiss): one.
- Craniotomy set: two.
- Laminectomy set: two.
- Cranial endoscope: one set.
- Neuromonitoring set: one set.
- CUSA system (Integra): one.
- Endoscopic set for transsphenoidal cases: one.

Emergency and Trauma Services

The emergency and trauma services were started in June 2017 when Professor Ravikant joined the institute as the Director. At present, the emergency and trauma services are managed on the ground floor of the Outpatient Department block and are being run by the Emergency Department for nontrauma emergencies and by the Department of Trauma Surgery for traumatic cases. The Department of Trauma Surgery has faculty trained in trauma surgery and orthopaedics, whereas the Emergency Department itself has faculty from various specialties such as medicine, anesthesia, and pulmonary medicine. Computed tomography (CT) scan and magnetic resonance imaging (MRI) are available 24 hours.

Discussion

It is always a challenge to start something new. With the Jai Prakash Narayan Apex Trauma Center of AIIMS, New Delhi to look up to for inspiration, the challenges were manifold in front of AIIMS, Rishikesh when it was decided to start neurotrauma facilities here. The 24-hour emergency service was started in June 2017 when there were no MCh residents in the department, and the two faculty members at that time had to make frequent visits to the hospital to attend calls during odd hours. The department had four to five nonacademic junior residents to help perform duties. From that time to the present day, the department has grown significantly and now boasts of a full-fledged MCh training program and six faculty members. Today, the department attends all kinds of head, spinal, and peripheral nerve injury patients. An emergency OR, though shared by various surgical departments, is available throughout the year.

► **Fig. 3** shows the distribution of patients who underwent surgery for spinal injuries over the last 3.5 years and shows how the numbers have been steadily increasing from 2 cases in 2016 to 32 in 2019. ► **Fig. 4** shows the number of patients who underwent surgery for head injuries over the last 3 years. Here also, the number of cases has steadily increased from 1 in 2017 to approximately 34 in 2019 (till October). As the department has only two ventilators and only 30 ward beds, one is sometimes not able to attend all the needy patients. However, with the support from the administration, we are hopeful for the future. There is still a long way to go and a lot of roadblocks, but, at least, the department seems to be heading in the right direction.



Fig. 2 Faculty and residents of neurosurgery at an informal gathering.

Year	Number of cases (n = 75)
2016	2
2017	12
2018	29
2019	32

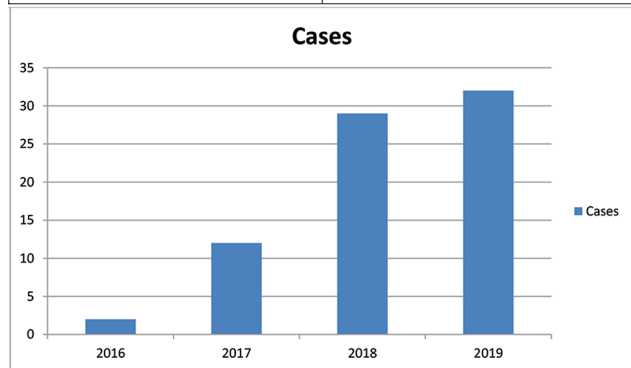


Fig. 3 Yearwise distribution of patients undergoing surgery for spinal injury.

Funding

None.

Disclosures

None.

Year	Number of cases (n = 55)
2017	1
2018	26
2019	28

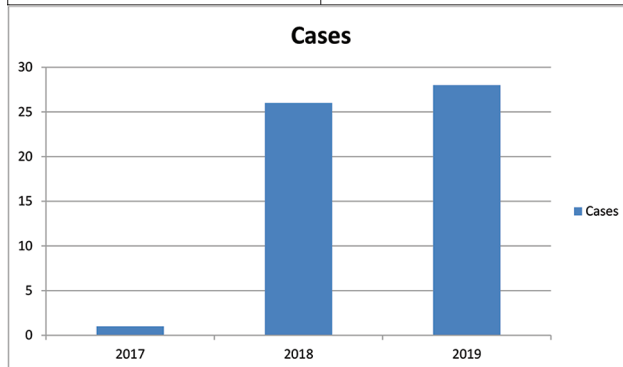


Fig. 4 Yearwise distribution of patients undergoing surgery for head injury.

Conflict of Interest

None declared.