



## **Curriculum**

**Postdoctoral fellowship training program**

**(Skull Base Neurosurgery)**

**Department of Neurosurgery**

**Sree Chitra Tirunal Institute for Medical Sciences and Technology**

**Thiruvananthapuram, India**

**(An Institution of National Importance, Department of Science and Technology, Govt. of India)**

One year fellowship program for Neurosurgeons

Sub-speciality:

### **Skull Base Surgery**

Background and objective

Introduction:

Skull base neurosurgery is a sub-specialty of neurosurgery which deals with diagnosis, evaluation and management of lesions in relation to or involving the skull base structures. The lesions occurs in the midst of important neurovascular structures and pose special challenges owing to the depth of the surgical corridor, the vascular nature of some the tumours and the relatively increased risk of complications like CSF rhinorrhoea, cranial nerve palsies, stroke and haemorrhage. The surgical management of such lesions requires identifying key anatomical landmarks, understanding the surgical anatomy of the surgical corridor while minimising surgical morbidity and complications . Skull base surgery has also been transformed by the advent of endoscopic techniques for managing a variety of skull base pathologies. A formal training in both microneurosurgical and endoscopic skills is essential to durable surgical outcomes while minimising morbidity following skull base surgery.

Qualifications:

This fellowship will be offered only after completion of either a 3 year M.Ch course in Neurosurgery after 3 years of MS in general surgery or after 5 year MCh course in Neurosurgery after MBBS.

SCTIMST offers 1 fellowship position in Skullbase surgery and one fellowship position in Cerebrovascular Fellowship every year. While advertising the fellowship, it will be mentioned that this fellowship is a desirable qualification and does not bestow a right for employment.

Expertise and training places in India.

India has over 2000 neurosurgeons currently practicing. However, majority of them are practicing general neurosurgery. The skull base surgeries are limited to a few centers in country. Without a formal training in this specialty, the skull base is still considered as no man's land by many neurosurgeons. Most of the cases are either referred to the bigger centers or are inadequately managed. The bigger centers are far and few, delaying the management of these lesions. There are hardly any centers in India who offer formal training in skull base surgeries.

Departmental expertise :

SCTIMST is a tertiary care institution of national importance operating under the Ministry of Science and Technology. The institute receives referrals from states in South India including Kerala, Karnataka, TamilNadu and Andhra Pradesh as well as from many other states of India. At present, very few neurosurgeons possess formal training in the sub-specialty of Skullbase neurosurgery with an adequate exposure in managing complex skull base pathologies as well as an all-round training in microneurosurgical and endoscopic skull base techniques. This justifies the need for trained skull base surgeons for times to come.

SCTIMST is a tertiary care referral centre for management for skull base tumours like vestibular schwannomas, pituitary adenomas, petroclival meningiomas, clival chordomas etc

Core faculty for the course

- Prof. Easwer HV
- Prof Mathew Abraham
- Dr. Jayanand Sudhir
- Dr Prakash Nair

Structured training programme

Curriculum

Course content

Diagnostics

Imaging modalities are part of training and the candidate should be aware of the latest developments in imaging techniques related to skull base. The candidate should be able to give a radiological differential diagnosis on CT, MRI and is required to assess for the additional investigations. Regular discussion with neuroradiologists is recommended with feedback. The indications for radio intervention in relation to skull base surgery need to be understood by the fellow. This is spread evenly over the two years.

Clinical work

The curriculum includes participation in the clinical diagnosis, pre-operative assessment, operative steps, and postoperative management of patients with skull base lesions

including tumors at the base of the skull, complex aneurysms located at the cranial base. He/she will perform clinical pre-procedural evaluations of patients, interpret preliminary diagnostic studies, consult with clinicians on other services, generate procedural reports, and participate in short-term and long-term post-procedure follow-up care, including neuro-intensive care.

#### Operative planning

The candidate needs to plan the surgery and present his views to the consultant incharge of the case. This is an important part of the training. If the plan does not match with consultant's plan; the reasons should be noted. The involvement in operative planning and surgery per- se should be more in the second year of fellowship.

#### Presentation

Will include seminars, journal clubs and symposia's, bedside teaching of residents at all levels

#### Academic contributions during fellowship

Must either publish or complete publishable manuscripts for two original articles/research articles. The articles should have been accepted or published in indexed national or international journals.

Before the completion of course the candidate be well versed in:

- Cranio-orbito-zygomatic craniotomies
- Anterior clinoidectomy
- Anterior petrosectomies
- Far lateral approaches
- Skull base bypass procedures,
- Endoscopic skull base procedures.

At the end of training the trainee will be

- Well versed with recognition of the disease processes which require skull base approaches.
- The fellow will be able to clinically diagnose, investigate and take a decision in selecting appropriate patients for skull base surgery.
- plan the specific type of skull base approach and should be able to independently perform the surgical procedure.
- Manage complications associated with these procedures
- Able to identify complex aneurysms which need skull base vascular bypass procedures
- Manage lesions of the cranio-vertebral junction anomalies and for clival pathologies.
- Able to use and care for the specialized instrument used in skull base surgery such as operating microscope, high speed drills, endoscope systems etc.

### **Evaluation/Exit examination**

The log book and progress would be assessed at 6 monthly intervals. At the end of one year, the candidate will be evaluated for skills acquired in making clinic- radiological diagnosis and operative planning. The exit examination will a practical examination conducted by two internal examiners. The pass percentage will be 50%.

### **Eligibility**

This fellowship will be offered only after completion of either a 3 year M.Ch course in Neurosurgery after 3 years of MS in general surgery or after 5 year MCh course in Neurosurgery after MBBS.

The upper age limit will be 35 years. The age limit would be relaxed by 5 years for sponsored candidates.

### **Duration**

One year

### **Selection procedure**

Through an open interview which will be conducted by SCTIMST after screening all applicants for eligibility.

**Reservation**

As per rules.

**Emoluments and stipend**

Same as of senior resident in Neurosurgery. There will be no financial burden on the Institute as out of new M.Ch. senior residency seats.

**Type of experience certificate**

Certificate of proficiency in the subspecialty. This fellowship is a desirable qualification and does not bestow a right to the fellow for employment.

**Number of posts**

One