

## **Post - Doctoral Fellowship in Orthopaedic Spine Surgery**

**Duration of the Course : One year**

### **INTRODUCTION:**

Spine Surgery is one of the rapidly developing Surgical Sub – Specialties of Orthopedic Surgery. With increase in the knowledge and diagnostic capabilities, the incidence of spinal disorders has increased tremendously in the recent past. The rise in the life expectancy of people has resulted in an increased diagnosis of elderly patients with degenerative disorders. Similarly the rise in road traffic accidents has contributed to an increase in spinal and spinal cord injuries. Many of these diseases and injuries, if diagnosed and treated appropriately in the early staged itself, can result in improved outcomes, thus preventing neurological insufficiency for the patients. However to treat spinal disorders efficiently with the best outcomes, it requires adequate training of surgeons in the field of spine surgery. The idea is to have safe and sensible spinal surgeons at the end of the fellowship who can use his knowledge, training, education, and surgical techniques acquired for the best patient outcomes.

## SYLLABUS

The list of theory topics that will be discussed during the spine fellowship training

1. Approaches to Spine – Cervical, Thoracic, Lumbar
2. Basic osteology of spine – C1 – C2, Typical Subaxial C-spine, Thoracic Spine, Lumbar, Sacrum.
3. Basic Radiology of Spine.
4. Basic Sciences – Disc anatomy, bioeconomics
5. Spinal instrumentation – Basics (Screw designs, hook designs etc.,)
6. Metallurgy basics, Biomechanics and Applications.
7. Functional / Scoring Systems in spine – Overview of importance of various scoring systems in different pathologies, validity and reliability such as ODI, SF-36
8. The Pharmacologic Management of Spine Pain – axial and radicular
9. Therapeutic Exercises for Low Back Pain and Neck Pain
10. Bone Graft Substitutes – Concept of Bone healing, Bone graft substitutes
11. Thoracolumbar Trauma – Basic review of classification Systems, Management.
12. Cervical Trauma Basic review of classification systems, management.
13. Initial evaluation of polytrauma including head injury.
14. Basic Anatomy of Sacrum and Coccyx
15. Spinal fusion – PLF, PLIF, TLIF, XLIF, 360 fusion – indications, techniques, pitfalls.
16. Spondylolisthesis – classification systems, importance in management, pitfalls.
17. Scoliosis – AIS classification and management, congenital / Early onset, Neuromuscular, Adult deformity – Assessment, indications and management.
18. TB Spine – conservative and operative.
19. Osteoporotic Fractures – Overview with indications for cementing
20. Spinal Dysraphism
21. CV junction anomalies and AC Malformations
22. Syringomyelia

23. Spinal cord tumours, spinal metastasis
24. Vertebral tumors – primary and secondary – evaluation and management
25. Spinal Cord injury and Rehabilitation strategies/goals
26. Cervical myelopathy – Options, pros, cons, recent trends
27. Minimally invasive spinal surgery – indications and techniques.

### **SURGICAL TRAINING**

(Year one will focus on observing and assisting the below described set of surgeries, and year two will focus on independent performance under supervision)

1. Posterior Lumbar discectomy
2. Anterior Cervical discectomy
3. Lumbar decompression +/- TLIF, PLIF, GLOBAL FUSION OF SPINE
4. Thoracic and Lumbar pedicle screw insertion
5. Lateral mass fixation
6. Cervical cage and plate
7. Cervical laminectomy
8. Thoracic laminectomy
9. Vertebral Cementing
10. Deformity correction (as first Assistant)
11. Osteotomy spine VCR/PSO/Ponte (as first assistant)
12. Minimally invasive screw placement lumbar/thoracic (as first assistant)
13. Anterior approaches thoracic/lumbar (as first assistant)
14. Management of spinal fractures through appropriate instrumentations.
15. Minimal access spine surgery endoscopic spine surgery endoscopic spine surgery / microscopic spine surgery
16. Vertebroplasty, kyphoplasty
17. Instrumentation of spine at all levels
18. Management of sacral and coccygeal pathologies
19. Thoracotomy, retroperitoneal approaches to dorsolumbar spine pathology
20. Oblique lumbar interbody fusion
21. MISS-TLIF

### **OT SETUPS**

Navigation optional

Spinal cord monitoring -2

Operating microscopic -2,

Operating loop with light source – 5

O-arm optional

High intensity 9inch c. arm -2

Rehab facilities -3 faculties

May field table head rest-2

Image comfortable operating tables – 4 with  
positioning device

Icu – 6 beds (ventilator defibrillator)

Internist-2

Basic & advanced spinal instrumentation

Sets : 3+2

Anaesthetist - 3