

K.G.M.U. MEDICAL UNIVERSITY U.P. & G.M. & ASSOCIATED HOSPITALS
DEPARTMENT OF ORTHOPAEDIC SURGERY
(Upgraded K.G's Medical College)
LUCKNOW-226003

No...../OS/20

Dated: 04/02/2020

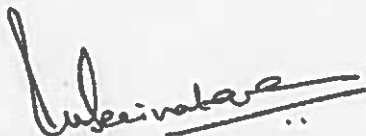
To,
The Head
Department of Orthopaedic Surgery
K.G.M.U.
Lucknow

Dear Sir,

I wish to state that in view of increasing number of patients in the field of Spine Injury/Diseases, there is essential need of trained Orthopaedic surgeons in the field of Spine. So I want to start one year PDCC course in Spinal Injury/Diseases. I am submitting my proposal for the same for kind approval from Board of Studies.

Thanking you

Yours Sincerely



(Prof. R. N. Srivastava)
Dept. of Orthopaedic Surgery
K.G. Medical University
Lucknow, U.P.

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1) Name of the Course --

Post-Doctoral Certificate Course (PDCC) in Spine Surgery, Department of Orthopaedic Surgery, KGMU, Lucknow.

2) No. of seats per course --2

Eligibility - MS/Dip/DNB (Orthopaedics) / Mch Neurosurgery passed from Medical Council of India (MCI) recognised institutes. Applicants with educational excellence and a keen interest in participating in the research program will be given priority.

Duration of course- One year

Selection & assessment – As per University guidelines.

3) Introduction and Overview:

Spine Surgery Fellowship PDCC program, Department of Orthopaedic Surgery, KGMU, LKO, is designed to provide comprehensive training for the individual who wishes to practice Spine surgery in either private practice or an academic setting. The aim of the Spine Surgery Fellowship is to provide fellows with intensive training and broad exposure in diagnosis and treatment of common Spinal disorders and research. The fellow will learn to evaluate and treat routine areas of the spine: cervical, thoracic, lumbar, and lumbo-sacral, both surgical and non-surgical methods of treatment.

The Spine Fellowship offers comprehensive exposure to adult and paediatric surgical treatments and procedures including deformities and injuries to the spine, degenerative and arthritic conditions, infections, tumors, metabolic diseases, trauma and fractures. This Program is geared toward the orthopaedic/neurosurgeon surgeon, who is interested in building a foundation for treating the common surgical spine conditions through the use of the most advanced methods and approaches. Upon completion of Spine Fellowship, fellows are prepared to build surgical practices, focus more deeply on research, and teach at top academic medical centres and hospitals around the country and the world.

K G Medical University being an apex institute will certainly provide an immense opportunity for the M S Orthopaedics students of a complete and comprehensive training in the Department of Orthopaedics. In order to train the future generation of Orthopaedic surgeons PDCC (Spine Surgery Fellowship Programme) course will offer a truly wide ranging curriculum.

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4) Aims and Objectives / Goals and Principles

Fellowship goal is to develop a Spine surgeon capable of recognizing and managing a broad variety of spinal conditions.

1. Develop critical thinking and recognizing and managing a broad variety of spinal conditions: Degenerative conditions, Deformity, Tumors and infections, Trauma, Adult and paediatric conditions and Infections.
2. Obtain a detailed work understanding of cervical, thoracic, and lumbar anatomy as it pertains to normal anatomy, pathology, and the surgical and non-operative treatment of spinal disorders.
3. Become familiar and comfortable with the usage of operative techniques of the spine, usage of implants and tools specific to spine surgery, and in the placement of spinal instrumentation.
4. Be exposed to and become skilled in a broad range of surgical skills to treat the spectrum of spinal pathology.

Learn to completely assess the patient with spinal disorders, including spine specific history taking, physical exam, evaluation of radiographic findings and an understanding of the results of treatment and diagnostic modalities.

Patient Care:

The Student must be able to provide patient care that is compassionate, appropriate, patient centred and effective for the diagnosis treatment of orthopaedic pathology, degenerative arthritis and the promotion of health. Demonstrate caring and respectful behaviours (verbal and non-verbal) with patients and families.

Medical Knowledge:

The Student must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioural sciences, as well as the application of this knowledge to patient care.

Practice- Based Learning and Improvement:

The Student must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.

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Systems Based Practice:

The Student must demonstrate an awareness and responsiveness to the larger context and system of health care, as well as be able to effectively call on other resources in the system to provide optimal health care.

Professionalism:

The Student must demonstrate commitment to carrying out professional responsibilities and an adherence to ethical principles.

Interpersonal and Communication Skills:

The Student must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families and professional associates.

5) Infrastructure to run the course - Clinical Practice and Expertise Available

Course Coordinator – Dr. R N Srivastava

Faculty -All the faculty in Department of Orthopaedic Surgery

Facilities & Resources- The Department of Orthopaedic Surgery, KGMU, LKO is a tertiary level teaching cum referral autonomous institute. It is one of the largest institute in the country with 4000 beds. At present this institute is around 160 bedded Orthopaedic department with 60 bedded Spinal surgery unit sanctioned by the State Government.

We have all the supporting Departments running full-fledged to support our courses -

1. Department of Radiology with X-ray units, CT scan, MRI, DSA and USG.
2. Department of Internal Medicine with Endocrinology support
3. Department of Pain and Palliative Medicine
4. Department of Cardiology to support high risk patients
5. Fully equipped ICU and HDU set ups
6. Facility of Private wards and Isolation rooms for special needs
7. Upgraded department of Physiotherapy with all modern equipment – CPM, UST, TENS, IFT
8. Department of Community and Family Medicine – to support our research
9. Department of Anatomy and Forensic Medicine with state of the art facility for cadaveric Dissection and training

6) Teaching Schedule (Organization of Training/ How Will You Train) Educational Program and Syllabus

Theatre: Twice per week

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Weekly meetings:

The Student will be expected to participate in all of the Spine meetings as well as the regular Departmental meetings.

1. Monday Orthopaedic Department Grand Rounds (2x/month)
2. Friday: Indications (review of the following week's cases)
3. Saturday: Resident Education and journal club and seminar (alternate week)

Monthly meetings:

1. Department Morbidity & Mortality – once every three months.
2. Department Journal Club specific to Spine surgery to be presented by PDCC Student – every month.
3. Spine Practice Council (representatives from all phases of care meet to discuss process improvements; Anaesthesiologist, Physician, Cardiologists, Physiatrists, Rheumatologist, Pulmonologists and Endocrinologists, ICU Incharge/ HDU Incharge) once every three months.
4. All providers meeting (from the Dept of Physiotherapy, Occupation Therapy, administration, nursing, review processes and areas for Quality Improvement) – Once every three months.
5. Research updates- Joint Clinical Community (meeting of representative from all concerned department who are part of research projects which are undergoing or any new or upcoming project proposals, to discuss harmonization projects within department).
6. The Student is required to present a poster/oral presentation in a speciality conference and complete at least one research project which should be published / submitted for publication in a PubMed indexed journal to make him eligible to appear in the exit exam. There are numerous opportunities for clinical, biomechanical, and bench research depending on the individual interests of the Student. Inter-departmental collaboration is encouraged. The department has an understanding with department of Community and Family Medicine and they have full time editorial staff to help facilitate publication of all manuscripts generated during the Studentship year.
7. Student performance will be subject to daily formative evaluation in the operating room, and the clinic. The Student will receive specific formative evaluation bi-annually from the Studentship Director.

7) Syllabus:

Basic & Applied Sciences:

- Anatomy
- Physical Examination
- Examination of Back Pain
- Radiologic Imaging of the Spine
- Diagnostic Evaluations

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- **General Considerations for Spine Surgery Including Consent and Preparation. General Surgical Principles, Guidelines for Informed Consent, Patient Positioning for Surgery, Equipment Needed, and Postoperative Considerations**
- **Surgical Approaches**
- **Cervical and Cervicothoracic Instrumentation**
- **Lumbosacral Instrumentation**
- **Bone Graft and Bone Substitute Biology**
- **Neurological Monitoring in Orthopedic Spine Surgery**

Cervical Spine

- **Closed Cervical Skeletal Tong Placement and Reduction Techniques**
- **Halo Placement in the Pediatric and Adult Patient**
- **Anterior Cervical Corpectomy/Discectomy**
- **Anterior Resection of Ossification of the Posterior Longitudinal Ligament**
- **Lateral Mass Screw Fixation**
- **Cervical Pedicle Screw Fixation**
- **Posterior Cervical Osteotomy Techniques**
- **Posterior Cervical Laminoplasty**

Thoracic Spine

- **Anterior Thoracic Discectomy and Corpectomy**
- **Anterior Thoracolumbar Spinal Fusion via Open Approach for Idiopathic Scoliosis**
- **Operative Management of Scheuermann's Kyphosis**
- **Endoscopic Thoracic Discectomy**
- **Posterior Thoracolumbar Fusion Techniques for Adolescent Idiopathic Scoliosis**
- **Complete Vertebral Resection for Primary Spinal Tumors and other pathologies.**

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Lumbar Spine

- Sacropelvic Fixation
- Posterior Disk Herniation
- The Lateral Extracavitary Approach for Vertebrectomy
- Osteotomy Techniques (Smith-Petersen and Pedicle Subtraction) for Fixed Sagittal Imbalance
- Spondylolysis Repair
- Surgical Treatment of High-Grade Spondylolisthesis
- Anterior Lumbar Interbody Fusion
- Transforaminal Lumbar Interbody Fusion
- Transpoas Approach for Thoracolumbar Interbody Fusion
- Kyphoplasty
- Minimally Invasive Exposure Techniques of the Lumbar Spine
- Lumbar Internal Laminectomy
- Minimally Invasive Presacral Retroperitoneal Approach for Lumbosacral Axial Instrumentation

Miscellaneous

- Bone Grafting and Spine Fusion
- Medical Complications in the Adult Spinal Patient
- Gait Considerations in Patients with Spinal Deformity

Biomechanics

- General Considerations of Biomechanical Testing
- Basic Pedicle Screw and Construct Biomechanics.
- Biomechanics of Three-Dimensional Scoliosis Correction
- Treatment Considerations and Biomechanics of the Lumbosacral Spine

Spinal disorders

- Cervical State of the Art Evaluation of Axial Neck Pain. Who is a Surgical Candidate and Who Isn't:

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- How to Manage the Nonoperative Treatment, How to Work Up the Pathology
- Cervical Radiculopathy: Clinical Evaluation and Nonoperative Treatment
- Cervical Spondylosis and Radiculopathy
- Cervical Myelopathy
- Foramen Magnum Decompression disorders
- Revision Cervical Spine disorders
- Normal Sagittal Plane Alignment
- Microscopic Approach to the Posterior Lumbar Spine for Decompression
- Minimal Access Techniques Using Tubular Retractors for Disc Herniations and Stenosis
- Anterior Cervical approach
- Anterior Exposure of the Thoracic and Lumbar Spine Down to L4
- Anterior Approaches to the Distal Lumbar Spine and Sacrum
- Direct Lateral Approach to the Lumbar Spine
- Thoracic and Lumbar Degenerative Disorders
- Evaluation of Thoracic and Lumbar Axial Back Pain
- Evaluation of Thoracic and Lumbar Radicular Pathology. Who Is a Surgical Candidate and Who is not
- Use of Discography to Evaluate Lumbar Back Pain with an Eye Toward Surgical Treatment
- Revision Laminectomy
- Techniques for Dural Repair
- When to Consider ALIF, TLIF, PLIF, PSF, or
- Motion-Preserving Techniques
- Motion-Preservation Techniques (Other Than Disc Arthroplasty)
- Transforaminal Lumbar Interbody Fusion/Posterior Lumbar Interbody Fusion
- Spondylolisthesis
- Sacro-Pelvic Morphology, Spino-Pelvic Alignment, and Spinal Deformity Study Group Classification
- Scoliosis

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- Adult Spinal Deformity
- Kyphosis and Postlaminectomy Deformities
- Ankylosing Spondylitis/Thoracolumbar Deformities
- Spinal trauma – cervical, thoracic and lumbar
- Tumor and Osteomyelitis
- Neurological Complications
- Reconstruction of Complex Spinal Wounds
- Postoperative Early and Late Wound/Implant Infections
- Medical Complications Associated with Spinal Surgery
- Fluoroscopy-based navigation
- Degenerative/rheumatic disorders and deformities
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8) Suggested Readings

1. Benzel's Spine surgery
2. Operative techniques in Spine Surgery
3. Minimally Invasive spine Surgery
4. Endoscopic Spine Surgery
5. Anesthesia for Spine Surgery

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