TATA MEMORIAL CENTRE

Office of the Director Academics

Fellowship Program in Orthopedic Oncology

Division / Department	:	Division of Orthopedic Oncology / Department of Surgical Oncology
Duration	:	1 Year
Eligibility	:	MS General Surgery / DNB Surgery

Introduction

The primary objective of this rotation is to develop proficiency in assessing, diagnosing, and managing patients with musculoskeletal tumors. The rotation aims to familiarize residents with the comprehensive management of benign and malignant tumors of the bones and soft tissues affecting the extremities, pelvis, and spine and familiarizing them with the overall management of metastatic bone disease. It includes hands-on experience in both outpatient and inpatient settings, exposing residents to a multidisciplinary approach in diagnosing and treating musculoskeletal tumors. As musculoskeletal tumors are relatively rare, the rotation focuses on acquiring the foundational knowledge and principles of musculoskeletal oncology. Advanced exposure or mastery of complex subspecialty skills is not expected at this stage.

Rotation Core Competencies

Patient Care

Residents will demonstrate competency in the following areas:

1. **Patient History:** Accurately and comprehensively, complete a history relevant to musculoskeletal oncology.
2. **Physical Examination:** Perform a thorough physical examination for musculoskeletal tumor patients.
3. **Diagnostic Tests:** Appropriately use diagnostic tests for both benign and malignant musculoskeletal tumors in adults and children.
4. **Imaging Interpretation**: Interpret imaging studies (e.g., X-rays, CT scans, MRIs, and bone scans) of musculoskeletal neoplasms.
5. **Pathology Interpretation**: Interpret pathology reports, including histopathology slides, for both benign and malignant tumors.
6. **Staging Systems:** Understand and apply staging systems for musculoskeletal tumors.
7. **Treatment Planning:** Develop and implement effective treatment plans, both operative and non-operative.
8. **Multidisciplinary Coordination:** Collaborate with other medical specialties for comprehensive patient care.
9. **Patient and Family Counseling:** Provide clear guidance to patients and their families regarding treatment options, procedures, and potential outcomes.

10. **Biopsy Techniques:** Demonstrate competency in biopsy procedures.
11. Gain detailed exposure to surgical management of benign bone and soft tissue neoplasms while assisting and understanding management of complex malignant lesions.

Medical Knowledge

Residents will demonstrate proficiency in the following objectives:

1. **Differential Diagnosis:** Formulate a differential diagnosis from unclear case presentations, considering infection and other possibilities.
2. **Understanding Tumor Etiology:** Recognize the etiology, natural history, and prognosis of specific neoplasms, accounting for age and gender-specific factors.

    - Primary bone tumors: Chondroid, Osseous, Fibroid, Other
    - Primary soft tissue tumors: Fibrous, Lipoid, Muscle, Vascular, Nerve, Other

3. **Pathologic Features:** Identify clinical and radiographic features of bone and soft tissue neoplasms.
4. **Tumor Classification and Behavior:** Understand different tumor classifications and their behavior, including tumor-like conditions such as infection, nodular fasciitis, and myositis ossificans.
5. **Radiologic Advances:** Stay updated on recent advances in radiologic imaging techniques for musculoskeletal tumors and options of interventional radiology.
6. **Work-up and Staging:** Summarize the work-up, biopsy, and staging of bone and soft tissue tumors, including metastatic potential and relevant staging systems (e.g., Enneking Musculoskeletal Tumour Society).
7. **Treatment Modalities:** Understand and compare treatment options such as radiotherapy, chemotherapy, and surgical interventions.
8. **Multidisciplinary Care:** Participate in a multidisciplinary approach to both curative treatment and palliative care for musculoskeletal tumors.
9. **Prosthetics and Complications:** Understand the indications, mechanisms, complications of prosthetics, and potential complications of orthopedic tumor surgery.

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Core Surgical Competencies

By the end of the rotation, residents should be capable of assisting with and partially performing, under direct supervision, the following procedures:

1. **Biopsy:** Assist with needle and incisional, biopsy techniques.
2. **Surgical Approaches:** Plan and assist appropriate surgical approaches for musculoskeletal oncology cases.
3. **Excision and Curettage:** Plan and assist curettage of benign bone tumors.
4. **Bone Grafting:** Assist with bone grafting techniques.
5. **Pathologic Fracture Stabilization:** Stabilize impending pathologic fractures.
6. **Resection of Sarcomas:** Plan and assist resection of bone and soft tissue sarcomas.
7. **Reconstruction:** Participate in reconstruction procedures following resection.
8. **Endoprosthesis:** Assist in the use and implantation of endoprosthesis.

Research and Audit Competencies

Residents will also be exposed to the field of research, with discussions focusing on:

1. **Understanding Current Research Trends in Orthopedic Oncology:** Be able to discuss the latest trends in the management of primary and metastatic bone and soft tissue tumors.
2. **Review of Landmark Papers and Studies:** Engage in an in-depth review of landmark studies and papers that have shaped the field of orthopedic oncology. This includes understanding how landmark trials have influenced current practices in bone tumor management, limb-salvage surgery, and postoperative outcomes.
3. **Data Auditing and Quality Improvement in Orthopedic Oncology Research:** Understand the process of auditing data in orthopedic oncology, identify gaps in data collection, and learn how data auditing contributes to better research quality, consistency, and reliability in the field.

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Assessments	:	Intra-Departmental.
Completion Certificate	:	Will be issued upon successful completion of tenure.

Contacts

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