



مستشفى الملك فيصل التخصصي ومركز الأبحاث
King Faisal Specialist Hospital & Research Centre
Gen. Org. مؤسسة عامة
الشؤون الأكاديمية والتدريب
Academic & Training Affairs

PEDIATRIC ORTHOPEDIC SURGERY

FELLOWSHIP TRAINING PROGRAM

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DEPARTMENT OF ORTHOPEDIC SURGERY

I. INTRODUCTION

Children constitute at least 50% of the Saudi Arabian population, with congenital anomalies and orthopedic deformities being more prevalent than in most other parts of the world. The need for well trained orthopedic surgeons with a special interest in pediatric orthopedics who can deliver their expertise to the whole of the Kingdom of Saudi Arabia stands to reason.

King Faisal Specialist Hospital and Research Centre (Gen.Org.) [KFSH&RC] has for many years played a leading role in the field of pediatric orthopedics with well established general pediatric orthopedic and pediatric spinal tertiary level reconstructive surgical services being rendered to patients referred from all areas of the Kingdom. KFSH&RC has been in the privileged position of continuously having orthopedic surgeons from abroad with vast experience and expertise to not only render outstanding tertiary clinical services but also institute research projects which have resulted in numerous publications.

KFSH&RC is therefore considered an appropriate institution where fellows could learn the basic skills as well as the subtleties and intricacies of pediatric orthopedics in order to equip them to render quality clinical and surgical services to the community at large. Simultaneously the program will offer the opportunity for academic interaction and research.

To date, there have been more than 25 fellows who had graduated from this fellowship. It has started to develop into an international fellowship program with a high impact fellowship criteria. There has never been a single year in our Program without fellows doing their training here at our Hospital.

II. GENERAL OBJECTIVE

The Pediatric Orthopedic Fellowship Program is the only program in the Kingdom which teaches fellows in all aspects of Pediatric Orthopedic Surgery. It is a well recognized two-year program with possible one year extra for research. The program would like to recruit suitable and appropriately qualified orthopedic surgeons, preferably from the local Saudi Board circuit that have a passion for pediatric orthopedics and have intentions of practicing independently as such in the Kingdom.

The main objective of the program is to equip fellows with unique skills and proficiency to effectively practice pediatric orthopedics within the broader demographics of the Kingdom of Saudi Arabia.

III. SPECIFIC OBJECTIVES

The program aims to train orthopedic surgeon's proficiency and competency in the following aspects of pediatric orthopedic patient care.

- Comprehensive history taking pertaining to all pediatric orthopedic conditions.
- Recognize and comprehensively assess all physiologic deformities of the lower limbs in children, know the natural history and be able to convey to the parents the appropriate conservative options in treating this aspect of childhood orthopedic disorders.
- Be able to perform a comprehensive observational gait analysis and scientifically elaborate upon and discuss the various aspects thereof.
- Perform a detailed clinical examination of the musculoskeletal system in the pediatric patient to assess rotational, alignment deformities, contractures of joints, congenital deformities and spinal deformities.
- Select and prescribe appropriate investigation modalities such as radiologic, hematologic, and biochemical in order to reach or confirm specific diagnoses.
- Propose the correct conservative or surgical management option appropriate for each individual patient and be in a position to explain to the parents in detail the nature, objectives and implications of the procedures.
- To perform minor and major pediatric orthopedic surgical reconstructive procedures including revision surgery under guidance of the consultant.
- Develop the practical proficiency to master manipulative, casting and immobilization skills.
- Be able to comprehensively manage patients throughout the perioperative period, timely detecting problems and complications which may result in morbidity.
- Compile and structure a comprehensive rehabilitation program for each postoperative case involving paramedical services such as physiotherapy, occupational therapy and orthotic and prosthetic services where applicable.

IV. ADMISSION REQUIREMENTS

Candidates must have completed a well structured residency program in Orthopedic Surgery with certification by the Saudi Board of Health Specialties or must have at least passed the written examination and registered for the final parts. Other candidates must possess an equivalent certification.

Candidates must submit reference letters from at least three consultants with whom the candidate had worked with during the previous four years and for a period of at least six months and must provide a letter of release and sponsorship from his or her base hospital for full time fellowship at KFSH&RC for a period of two years.

They must have successfully completed a personal interview with the program director and members of the Department.

V. STRUCTURE OF TRAINING PROGRAM

A. *Duration:*

The program will accommodate two fellows simultaneously every year with a new fellow commencing every year. The program commences on the first day of the Gregorian calendar each year. The pediatric orthopedic fellowship program will be 24 months in duration. An optional extra year may be offered to meritorious fellows to undertake research work in the subspecialty, if the fellow's sponsoring hospital would permit it. This can be undertaken at KFSH&RC or can be arranged overseas.

The rotation will comprise 12 months general pediatric orthopedics and 12 months pediatric spinal surgery.

B. *Training capacity:* The Fellowship program can accommodate one clinical fellow every year, (maximum of two clinical fellows, one in F1 level and one in F2 level), and one research fellow.

C. *Faculty Qualification:*

The Fellowship Program faculty should be board certified orthopedic surgeons with subspecialty training and at least 5 years or more experience in the field of pediatric orthopedics and pediatric spinal surgery. They should have an academic background and experience in postgraduate education training in order to fulfill the comprehensive teaching responsibilities to implement and achieve the educational goals of the fellowship program.

The Faculty should have the expertise and knowledge to identify, coordinate and bring to completion all clinical and basic research projects in which the fellow will be involved that will ultimately result in a publication. They should be in a position to guide fellows in the evaluation of investigative methods, the interpretation of accumulated data and statistics.

VI. PROGRAM CONTENT

The program will be structured as such that at all times optimal patient care is assured whilst providing the fellows with opportunities to develop clinical skills and surgical dexterity. Fellows will be afforded the opportunity to develop skills in history taking, clinical examination, therapeutic judgment, radiologic assessment, practical surgical skills, perioperative care and rehabilitative aftercare. In addition, fellows will acquire experience in applicable administration, quality assurance, performance improvement and teaching. Fellows will be expected to participate in scientific or clinical projects, ongoing or new that will ultimately result in a publication.

Fellows are expected to also actively participate in all academic activities of the Department and to present at least one Grand Round topic every six months. They must participate in regular literature reviews and reading tasks related to basic theoretical knowledge and advanced clinical information as directed by the consultant. Fellows will be expected to attend a statistic or research course and at least

one international conference of refresher course featuring pediatric orthopedics during the program.

Fellows are required to do the hospital and unit orientations. They are second on call and must attend and supervise all the residents' activities and conduct of examination with the Program Director and other medical staff.

A. Clinical resources

1. **Outpatients.** Outpatient clinics are held on Saturday full day, Sunday full day, Sunday afternoon, Tuesday morning. Patients referred to the clinics are approved by the Department of Orthopedic Surgery through the medical eligibility system. Approximately 400 patients are seen at the clinics monthly of which 50 are new referrals. Combined interdisciplinary clinics have been established such as the spina bifida and myelomeningocele clinic and sarcoma clinics to improve patient care. Local outreach visits to centres for the physically disabled are regularly done by consultants which fellows may attend.

Musculoskeletal oncology. KFSH&RC is the main referral centre for pediatric musculoskeletal tumors in Saudi Arabia.

The Department Orthopedic Surgery has the luxury of a consultant in Rehabilitation Medicine and the physiotherapeutic infrastructure to develop and implement postoperative rehabilitation programs. KFSH&RC hosts a well equipped Orthotics and Prosthetic Centre to assist in the rehabilitation of children.

2. **Inpatients.** Ward C2 is the Orthopedic Department ward which has a complement of 26 beds of which approximately 13 are constantly occupied by pediatric orthopedic cases.

3. **Operating room.** Saturday full day, Monday full day and half day, Wednesday full day.

Total of 26 hours per week

Total major cases performed per year over 200

Total minor cases performed per year over 300

The possibility of a spinal unit being developed in the next few years is a distinct possibility.

The Hospital has a superb infrastructure in place for day surgical and medical surgical cases to be managed in conjunction with other disciplines.

4. **Technologic advances** at KFSH&RC include electronic medication, PACS, radiologic programs within a superb Radiology Department, CBay dictating system, and electronic library access to most orthopedic journals.

5. **Research, basic, and clinical** is conducted in conjunction with the Research Centre and academic activities such as departmental symposia and workshops with Academic and Training Affairs.

B. Surgical procedures

During the rotation, the fellow will be expected to have surgically assisted or performed the following elective procedures:

□ FEET

- ✓ Soft tissue release for congenital deformities, eg club feet, congenital convex pes valgus, metatarsus adductus, fibula hemimelia, tibia hemimelia and cavus deformities.
- ✓ Reconstructive surgical procedures for neuromuscular conditions such as cerebral palsy, spina bifida and MMC, Polio and dystrophies.
- ✓ Tendon transfers to correct any dynamic foot imbalance
- ✓ Corrective Osteotomies of phalangeal, metatarsal and tarsal bones, eg calcaneal, Dwyer displacement and Evans lengthening osteotomies, closed wedge cuboid, and medial cuneiform open wedge osteotomies, midfoot cavus corrective osteotomies and base metatarsal realignment osteotomies.
- ✓ Arthrodeses of all joints including triple arthrodesis of the hindfoot and midfoot, and subtalar extraarticular arthrodesis.

□ FEMUR AND TIBIA

- ✓ Corrective osteotomies - alignment and rotational intertrochanteric valgus and varus osteotomies, supracondylar femoral valgus and varus osteotomies and Sofield realignment procedures, valgus and varus osteotomies of the tibia and fibula, rotational osteotomies and Sofield realignment procedures.
- ✓ Callotasis lengthening procedures.
- ✓ Pseudoarthrosis of the tibia management.
- ✓ Pinning in situ of slipped upper femoral epiphysis
- ✓ Epiphyseolysis
- ✓ Epiphyseodesis – temporary and permanent, hemi and total

□ KNEE JOINT

- ✓ Aspiration
- ✓ Arthrotomy
- ✓ Synovectomy
- ✓ Soft tissue releases
- ✓ Tendon transfers
- ✓ Patella realignment procedures
- ✓ Arthrodesis

□ HIP JOINT

- ✓ Aspiration
- ✓ Arthrotomy
- ✓ Open reduction
- ✓ Capsulorrhaphy

- ✓ Tendon transfers
- ✓ Pelvic osteotomies
- ✓ Arthrodesis

☐ UPPER LIMB

- ✓ Tendon transfers
- ✓ Osteotomies
- ✓ Arthrodeses

☐ INFECTION

- ✓ Drainage of all joints and bones and soft tissue infections

☐ FRACTURES AND DISLOCATIONS

- ✓ Casting and splinting of fractures and dislocations
- ✓ Open reduction and internal fixation
- ✓ External fixation of fractures
- ✓ Fixation of pathologic fractures

☐ TUMORS OF BONE, JOINT AND SOFT TISSUE.

- ✓ Biopsy techniques
- ✓ Bone grafting techniques
- ✓ Resection techniques

☐ AMPUTATIONS

- ✓ All level amputations and disarticulations of the upper and lower limbs

☐ SPINAL SURGERY

- ✓ Biopsy techniques
- ✓ Posterior spinal fusion and instrumentation
- ✓ Anterior spinal decompression
- ✓ Vertebral resection
- ✓ Scoliosis correction
- ✓ Kyphosis correction
- ✓ Fracture management

☐ CASTING TECHNIQUES

- ✓ Congenital foot deformities
- ✓ Correction of joint deformities
- ✓ Trauma

☐ ORTHOTICS

Fellows should have a working knowledge of and know when to prescribe the following braces:

- ✓ Spinal bracing techniques
- ✓ Lower limb orthoses
- ✓ AFO
- ✓ KAFO and HKAFO
- ✓ Foot orthotics
- ✓ Knee orthotics
- ✓ Prosthetics

VII. EVALUATION AND PROMOTION

The fellow's level of competence and performance will be evaluated at a frequency determined by the Postgraduate Education Committee and in the manner as detailed in the Policy for Fellowship Training Program. A self-assessment examination covering the different topics in Pediatric Orthopedics will be given at the end of the first and second years of fellowship training.

A fellow's advancement from year to year is contingent upon professional performance and personal growth. The criteria for promotion are as enumerated in the Policy for Fellowship Training Program.

Fellows are assessed continuously during pre operative and post operative rounds, operating room, emergency room situations, bed side teaching, journal club, and other academic activities. They usually run clinic under consultant supervision and Operating room and clinical privileges are also monitored.

The fellow's progress and promotion depends on their attendance in departmental activities (it has to be at least 75%). He should be on time in operating room, in responding to pager and would do at least one daily patient round. He should be able to come on one of the weekend days to hand over documentation, medical records, and perform research. Also, one of the most important points for fellow's training is not to overlap with the residents in the operating room.

VIII. COMPLETION

A Certificate of Fellowship training at KFSH&RC will be awarded upon satisfactory completion of the requirements of the Program.

A Special certificate and a Department souvenir will be given to the fellows at the end of their fellowship program and during the Recognition day of the Department. After the fellowship, the fellow can register with the AOSpine International where he/she can attend one of the AOSME (AO SPINE MIDDLE EAST) courses and workshops. He should also endeavor to attend either POSNA or EPOS meetings.

IX. DUTIES, LEAVES AND HOLIDAYS

Regulations governing duties, leaves and holidays are as stipulated in the Policy for Fellowship Training Program.