Pediatric Interventional Radiology Fellowship - Goals and Objectives

DEFINITION OF PEDIATRIC INTERVENTIONAL RADIOLOGY

Pediatric interventional radiology is the medical imaging subspecialty in which minimally invasive image-guided techniques are used for both diagnosis and therapy in infants and children. It involves expertise in diagnostic imaging, radiation safety, image-guided minimally invasive procedures and techniques, and evaluation and management of patients who can benefit from these interventions.

TRAINING YEAR SPECIFIC OBJECTIVES

1) Medical Expert:
   1.1) Describe human anatomy and basic sciences as applied to pediatric interventional radiology.
   1.2) Operate basic radiographic equipment in an angiographic suite: digital imaging, advanced fluoroangiographic techniques, fluoroscopy, ultrasound and computed tomography (CT). Operate a vascular contrast injector and vascular pressure monitoring. Describe magnetic resonance (MR) imaging techniques and MR imaging safety applied to MR imaging-guided interventions.
   1.3) Show diagnostic and interpretative skills relevant to interventional radiology.
   1.4) Define the importance of maintaining patient well-being during interventional procedures and the specific requirements for infants and children.
      1.4.1) Analgesia, fluid balance and body temperature maintenance.
      1.4.2) Monitoring devices including pulse oximetry and ECG.
      1.4.3) Usage of face mask oxygen and airway suction.
   1.5) Perform common interventional procedures in children:
      1.5.1) Describe interventional hardware such as catheters, wires, tubes, devices – names and sizes, etc.
      1.5.2) Perform pre-procedure scrubbing techniques, aseptic techniques, self-protection against needle injury and unnecessary exposure to body fluids.
      1.5.3) Insert, remove and maintain all vascular access and enterostomy access devices.
      1.5.4) Operate ultrasound, CT and fluoroscopy for image-guided drainage and biopsy.
   1.6) Consult with patients, families and other health care professionals.
   1.7) Manage patients undergoing an interventional procedure.
      1.7.1) Describe the pre-procedural requirements (bloodwork, fasting and the need for collaboration with other services prior to procedures).
1.7.2) Follow hospital guidelines regarding patient sedation for interventional procedures.
1.7.3) Manage allergic reactions.

1.8. Define adequate imaging assessment prior to certain interventional procedures including mapping ultrasounds and use of recent imaging rather than basing procedures on older examinations.

1.9. Assess a patient (clinical history, physical exam, imaging studies) and design a treatment plan in the Vascular Anomalies clinic.

1.10. Present cases at rounds (e.g. urology, teaching rounds, city-wide rounds, journal club, etc.).

2. Communicator:

2.1. Communicate effectively with patients and families and other health care professionals.

2.2. Obtain informed consent which includes discussion with patient and family about procedures, expected outcomes and risks, and generally answering patient and family questions.

2.3. Communicate findings of procedures and their outcome in a timely fashion with responsible physicians and services.

2.4. Generate adequate written reports and records.

3. Collaborator:

3.1. Collaborate with referring physicians, colleagues and other health care professionals.

3.2. Function as a team member with other members of the department including radiologists, nurses and technologists.

3.3. Effectively participate in combined cases, especially with surgical specialties.

4. Manager:

4.1. Describe effective resource utilization in medical imaging.

4.2. Assess safety issues and economic considerations in pediatric interventional radiology.

5. Health Advocate:

5.1. List the benefits and risks of medical imaging investigations as pertaining to pediatric interventional radiology.

5.2. Recognize situations in which imaging or intervention would be detrimental to the health/safety of the patient.

5.3. Describe all aspects of radiation safety, including protection and necessary precautions for patients and staff and how to minimize exposure of patients to ionizing radiation.

6. Scholar:
6.1. Prepare a personal continuing education plan. This includes attendance and case presentation at rounds, reading educational and published work, attendance to courses and conferences and completion of PALS course.

6.2. Critically appraise the literature. This will be evident at case presentations in rounds and paper reviews at Journal Club.

6.3. Conduct a radiology research project, at least one research project per year of fellowship that must be completed and a draft submitted to Medical Imaging, University of Toronto, before the end of the training.

6.4. Presentations at bi-annual departmental research rounds organized by Dr. Andrea Doria (Diagnostic Imaging Research Director).

6.5. Teach medical students, residents and observers.

7. Professional:

7.1. Show ethical practice, sensitivity to gender/culture diversity, enthusiasm, motivation, good behaviour (honesty, integrity and compassion), good work habits (punctual, organization in work, adequate speed of work and responsibility).

7.2. Show awareness of strengths and weaknesses.

7.3. Show acceptance of constructive criticism.