Subspecialty Rotation: Radiology

Faculty:

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GOAL: Normal vs. Abnormal (Radiology). Differentiate normal from abnormal features on radiographs.

Examine radiographs in a systematic manner.

Interpret radiographs accurately, recognizing the characteristic patterns by which physiologic and morphologic alterations are demonstrated.

Differentiate common normal variants and developmental features from pathologic conditions on plain radiographs.

GOAL: Interpreting Common Radiographs (Radiology). Order and interpret radiographic studies in common and emergency conditions.

Request the radiographic study needed to clarify a clinical problem.

Communicate key patient information related to the radiographic study to the radiologist.

Manage patients effectively using radiographic information.

Interpret common findings on radiographs accurately. For example, identify the following features on commonly obtained radiographs:

1. Abdominal radiographs: abdominal masses, fecaliths, free intraperitoneal air, ileus, congenital and acquired intestinal obstruction, pneumatosis intestinalis, intraperitoneal and retroperitoneal calcifications

2. Chest radiographs: atelectasis, airspace and interstitial pulmonary disease, cardiomegaly, foreign bodies, abnormalities of lung volume pneumothorax, pleural fluid, tumors, abnormal pulmonary vascularity, vascular anomalies

3. Extremity radiographs: benign and malignant bone tumors, cysts, bone destruction, common fractures [Salter-Harris classification], common dislocations, osteomyelitis, arthritis, soft tissue swelling, foreign body

4. Lateral neck radiographs: adenoidal and tonsillar hypertrophy, epiglottic and glottic edema, foreign body, retropharyngeal abscess, subglottic narrowing--congenital

and acquired, cervical spine abnormalities

5. Sinus radiographs: mucosal thickening, masses, air-fluid levels, bone destruction

6. Spine radiographs: vertebral dislocation and fracture, vertebral destruction, collapsed vertebra, disc space disease, segmentation anomalies, scoliosis

Develop a basic level of proficiency in identifying common abnormalities in these radiographic studies that pediatricians order in emergent or urgent situations:

1. Skeletal survey for suspected non-accidental trauma

2. Computer tomography of the head

GOAL: Advanced Imaging (Radiology). Use appropriate imaging modalities in the diagnosis and management of pediatric patients.

Counsel families and patients regarding the basic indications for and risks and costs associated with specialized imaging such as the following:

1. Computed tomography (CT)

2. Contrast imaging: cystourethrography, barium esophagram, upper gastrointestinal series, small bowel follow through, contrast enema, angiogram, excretory urogram

3. Ultrasound

4. Nuclear medicine : Positron emission tomography (PET), Single photon emission computed tomography (SPECT)

5. Magnetic resonance imaging (MRI)

Use radiology consultation effectively for design of workup and diagnosis; provide key patient information to the radiologist and follow up as needed.

Consult the radiologist for interventional procedures where appropriate, such as:

1. Vascular intervention (angioplasty, thrombolysis, embolotherapy)

2. Venous intervention (central venous lines, peripherally inserted central lines, peripheral and central ports)

3. Abscess drainage

4. Percutaneous biopsies

5. Gastrostomy, gastrojejunostomy and cecostomy

6. Tracheal and esophageal intervention (esophageal dilatation, tracheobronchial stents)

7. Renal and hepatobiliary intervention (drainage catheters, stents)

Recognize the most suitable imaging study for evaluation of various disease conditions (e.g., bone scan vs. skeletal survey in suspected intentional trauma).

Conduct timely and appropriate follow-up of fetal ultrasonographic abnormalities.

Procedures

GOAL: Diagnostic and screening procedures. Describe the following tests or procedures, including how they work and when they should be used; competently perform those commonly used by the pediatrician in practice.

Radiologic interpretation: abdominal ultrasound

Radiologic interpretation: abdominal X-ray

Radiologic interpretation: cervical spine X-ray

Radiologic interpretation: chest X-ray

Radiologic interpretation: cranial US

Radiologic interpretation: CT of head

Radiologic interpretation: extremity X-ray

Radiologic interpretation: GI contrast study

Radiologic interpretation: lateral neck X-ray

Radiologic interpretation: MRI of head

Radiologic interpretation: nuclear medicine GI scanning

Radiologic interpretation: renal ultrasound

Radiologic interpretation: renogram

Radiologic interpretation: skeletal X-ray (incl. abuse)

Radiologic interpretation: skull film for fracture

Radiologic interpretation: sinus films

Radiologic interpretation: voiding cystourethrogram

Source

Kittredge, D., Baldwin, C. D., Bar-on, M. E., Beach, P. S., Trimm, R. F. (Eds.). (2004). APA Educational Guidelines for Pediatric Residency. Ambulatory Pediatric Association Website. Available online: www.ambpeds.org/egweb. [Accessed 03/02/2005]. Project to develop this website was funded by the Josiah Macy, Jr. Foundation 2002-2005.