

RESIDENT CONFERENCE CURRICULUM -- SYLLABUS (2 YEAR SYSTEM) PEDIATRIC RADIOLOGY

The Department is moving to a block-schedule for your resident lectures. A 2-year program has been designed to cover the spectrum of pediatric radiology expected of a general radiologist, so that you are well-equipped in your future careers. To cover this material, we will use a variety of resident conference formats: traditional didactic lectures (majority), journal clubs, case conferences, interactive games, board review & mock boards, and practicum sessions (e.g. "How-Tos"). Please note: Journal clubs will be ASSIGNED to you. Every resident is expected to read the assigned articles and participate. Journal review and discussion will be led by a team of 1st years and supervised/mentored by an attending. We will have 2 pediatric journal clubs each year, total of 4 during the 2 year curriculum. Please check the Journal Club section on the Georgetown Pediatric Radiology webpage (<http://pedrad.georgetown.domains>) to check which team you are on and which articles you cover.

Each of the two years will have FOUR 1-week blocks. You will have lecture at 7:30 AM and at 12:00 PM noon each day. This means 40 conference slots for each year, for a theoretical maximum of 80 pediatric radiology conferences during a 2 year period.

The following serves as a detailed outline of the resident curriculum. We reserve the right to change course content without any advance notice.

CORE DIDACTIC LECTURES (Total: 47 *including 4 NM*)

BASICS AND INTRODUCTION

(ARZ) Introductory Topics

General considerations, patient safety, contrast agents, ALARA, Image gently, ACR guidelines, indications, general techniques, dose-reduction

(ARZ) NICU Lines & Tubes

CNS AND PEDS NEURO

(ARZ) Pediatric skull

Craniosynostoses, dermoid/epidermoid and dermal sinus, wormian bones vs. fracture/trauma, scalp hematomas (caput succedaneum, subgaleal hemorrhage, cephalohematoma)

(ARZ) Sacrum

Sacroccygeal teratomas, caudal regression syndrome, Currarino triad, imperforate anus, sacroiliitis & ankylosing spondyloarthropathy

**** (CLEE) Congenital brain anomalies**

Migrational disorders, lissencephaly, schizencephaly, pachygyria, polymicrogyria, heterotopic gray matter, callosal agenesis, holoprosencephaly, hydrancephaly, Dandy-walker malformation, Chiari malformations

**** (CLEE) Hydrocephalus**

Aqueductal stenosis, syndromic causes, masses, post-hemorrhagic, etc

(CLEE) CNS Inflammatory Disorders

Bacterial infections (meningitis, cerebritis, abscess), TB, TORCH infections, ADEM, GBS, polyneuropathies, demyelinating disorders

**** (CLEE) Pediatric Brain Tumors**

Supratentorial -- craniopharyngioma, astrocytoma, oligodendroglioma, PNET, choroid plexus tumors, pineal tumors; Infratentorial -- medulloblastoma, ependymoma, brainstem glioma, astrocytoma

(CLEE) Neurotrauma

Cerebral injury, contusion, subdural hematoma, epidural hematoma, subarachnoid hemorrhage, NAI, spinal trauma, cord contusion

(CLEE) Neck Cysts & Masses

Thyroglossal duct cyst, branchial cleft cysts, lymphatic malformations, fibromatosis coli, lymph nodes & lymphadenitis, lymphoma, rhabdomyosarcoma, nasopharyngeal carcinoma, juvenile angiofibroma

**** (ARZ) Pediatric Spine**

Os odontoideum, Klippel-Feil, Sprengel, myelomeningocele, meningocele, lipomyelomeningocele, diastematomyelia, hydrosyringomyelia, tethered cord

CHEST AND AIRWAY

(CLEE) Upper Airway

Choanal atresia, laryngeal stenosis, tracheomalacia, Croup, epiglottitis, tracheitis, retropharyngeal abscess, subglottic hemangioma, laryngeal papillomatosis

**** (ARZ) Chest: Lower Airway**

Infections and inflammatory conditions (round pneumonia, necrotizing pneumonia, abscess, atypical infections, empyema), bronchiolitis, bronchiectasis, foreign body

** (CLEE) Chest: Lesions & Neoplasms

Bronchopulmonary foregut malformations, bronchial atresia, CPAM, sequestration, hybrid lesion, pleuropulmonary blastoma, chest wall neoplasms and infections (Ewing / askin tumor, rib lesions etc)

(CLEE) NICU Chest Radiography

Respiratory distress syndrome, neonatal pneumonia, transient tachypnea of the newborn, meconium aspiration syndrome, pulmonary interstitial emphysema, anterior pneumothorax, chronic lung disease of prematurity, congenital lobar overinflation, CDH

CARDIAC AND VASCULAR

(ARZ) Congenital Heart Disease

Tetralogy of Fallot, left-to-right shunts (VSD, ASD, endocardial cushion defect, PAPVR), left-sided obstructions (coarctation, hypoplastic left heart syndrome, cor triatriatum, obstructed TAPVC), pulmonic valve stenosis, Ebstein anomaly, transposition, congenital absence of the pericardium

** (ARZ) Vascular Rings, Slings, and other Things

Aortic arch variants, pulmonary sling, esophagram technique and examples

** (ARZ) Vascular Anomalies

GASTROINTESTINAL

(ARZ) Biliary Malformations

Biliary atresia, choledochal cyst, Alagille syndrome, neonatal cholestasis and hepatitis, anomalies of the gallbladder

(ARZ) Liver Disorders

Tumors & tumor-like conditions (hepatoblastoma, mesenchymal hamartoma, hemangioendothelioma, hepatocellular carcinoma, fibrolamellar HCC, secondary mets); infections, trauma, Budd-chiari syndrome, glycogen storage diseases

(CLEE) Upper GI Tract

Foregut duplication cysts, Esophageal atresias and tracheo-esophageal fistulas, eosinophilic esophagitis, congenital stomach anomalies, hypertrophic pyloric stenosis, duodenal atresia, duodenal web & stenosis, annular pancreas, intestinal malrotation, midgut volvulus, abdominal wall defects & herniations (gastroschisis omphalocele)

(CLEE) Lower GI Tract

Jejunal atresia, meconium ileus, meconium peritonitis, Meckel diverticulum, meconium plug syndrome / small left colon (functional immaturity of the colon), Hirschsprung disease, colonic atresia, anorectal malformations

(ARZ) Pancreas

Congenital malformations, cystic fibrosis, pancreatic divisum, trauma, pancreatitis, autoimmune pancreatitis, pancreatoblastoma and other tumors, cysts, syndromic associations (VHL, Beckwith Wiedemann)

(ARZ) Appendicitis

Overview; US how-to, characterization, MR applications; ddx; cases

(CLEE) Heterotaxy Syndromes

Situs inversus, Kartagener's, situs ambiguous, polysplenia spectrum, asplenia, azygous continuation of IVC

GENITOURINARY

(CLEE) Renal Anomalies

UPJ obstruction, renal duplication, multicystic dysplastic kidney, agenesis, horseshoe kidney, renal ectopias (ptosis, pelvic kidney, cross-fused ectopia), VACTERL association

(ARZ) Wilms Tumor & Other Renal Neoplasms

Wilms tumor, nephrogenic rests, mesoblastic nephroma, multilobular cystic nephroma, secondary renal tumors (leukemia/lymphoma), AML & Tuberous Sclerosis

(ARZ) Neuroblastoma & Other Adrenal DDx

** (ARZ) Lower Urinary Tract & Bladder

Primary megaureter, bladder diverticula, ureteral duplications, ureterocele, urachal abnormalities, exstrophy, Prune belly syndrome, Rhabdomyosarcoma, dysfunctional voiding, neurogenic bladder

** (ARZ) Male Genital Tract

Testicular torsion, epididymitis/orchitis, hydroceles, undescended testicle, testicular neoplasms, epispadias, hypospadias, hernias

** (ARZ) Female Genital Tract

Cloacal anomalies, ovarian torsion, ovarian cysts, tumors, polycystic ovarian disease, congenital anomalies of the uterus and vagina, vaginal occlusion (hydrometrocolpos etc.), fusion of the Mullerian duct (uterus didelphys etc)

MUSCULOSKELETAL

(ARZ) Introduction & MSK Overview

Normal development, normal variants, common mimics of pathology, fracture types and stress reactions, Salter Harris fracture classification system

(ARZ) Pediatric Elbow & Knee

Normal elbow development and CRITOE, sail-sign and elbow trauma, Monteggia and Galeazzi fracture/dislocation, elbow alignment, patellar variants vs. fracture, patella alta/aja, patellar sleeve, OCL, tibial spine avulsion

(CLEE) Pediatric Hip

Congenital hip dysplasia, radiographic and US features of DDH, hip effusion, septic arthritis, transient synovitis, coxa vara and other deformities, SCFE, femoral head AVN, Legg-Perthes disease

(CLEE) Child Abuse

(ARZ) Pediatric MSK Tumors and Tumor-Like Conditions

LCH, Ewing, Osteosarcoma, osteochondroma, MHE, osteoid osteoma, fibrous dysplasia, aneurysmal bone cyst, unicameral bone cyst, osteoblastoma, chondroblastoma, metastases

(ARZ) Rickets & Other Metabolic Disorders

Vitamin D deficiency, Scurvy, renal osteodystrophy, disorders of bone density (osteogenesis imperfecta, osteopetrosis, pycnodysostosis, diaphyseal and metaphyseal dysplasias), bone-age studies

(ARZ) Congenital Foot Deformities & Skeletal Dysplasias

Club foot, pes planus, pes cavus, tarsal coalition, metatarsus adductus, Achondroplasia, thanatophoric dysplasia, asphyxiating thoracic dystrophy, chondrodysplasia punctata

UNIQUE TOPICS

(ARZ) Baby Head Ultrasound

(CLEE) Neurophakamotoses (Neurofibromatosis and Tuberous Sclerosis Complex)

(ARZ) Fundamentals of Fetal Imaging

(ARZ) Complications of Liver Transplantation in Children

(CLEE) Hypoxic-Ischemic Encephalopathy

PEDIATRIC NUCLEAR MEDICINE

(NM) Peds NM 1 Bone studies

(NM) Peds NM 2 MIBG

(NM) Peds NM 3 Renal scintigraphy

(NM) Peds NM 4 Miscellaneous

INTERACTIVES, GAMES, CASE CONF, SPECIAL TOPICS, HOW-TO, & MISC. (Total: 33)

(ARZ) HOW-TO: Emergency Pediatric Fluoroscopy

How to perform urgent fluoro studies: Tube checks, UGI series, retrograde urethrogram

** (CLEE) HOW-TO: VCUg & Grading vesicoureteral reflux

(CLEE) Special Topics: Brain Myelination

(ARZ) Special Topics: Neuro-ocular disorders

(ARZ) Special Topics: Diagnostic Error in Radiology

** (CLEE) Special Topics: Unusual syndromic conditions

(CLEE) Special Topics: **TBD [x3]** (x3 CLEE)

(ARZ) Game: JEOPARDY 1

(ARZ) Game: JEOPARDY 2

(ARZ) Game: Pretending

(ARZ) Game: NICU Alphabet Soup

(ARZ) Game: Congenital Cookbook

(ARZ) Game: Diagnosis LIVE!

JOURNAL CLUB [x4] (1 pediatric JC per each 2 block-weeks; **total of 4 during the 2 years**)

2 each -- ARZ and CLEE

Journal Club 1 (RED), Journal Club 1 (BLUE)--- YEAR 1

Journal Club 2 (RED), Journal Club 2 (BLUE)---- YEAR 2

CASE CONFERENCE or resident-driven lecture **[x10]** (5 ARZ, 5 CLEE)

CALL PREP SESSIONS **[x2]** (2x CLEE --- 1 per year)

BOARD REVIEW **[x2]** (2x CLEE--- 1 per year at noon conference)

TOTALS FOR 2 YEARS= ARZ: (42), CLEE (34), NM (4)