



PEDIATRIC PATHOLOGY

Pediatric and Perinatal Pathology

Pediatric and Perinatal Pathology is a one-month rotation designed to learn the basics of perinatal and pediatric pathology, including autopsy and surgical pathology. Stages of development and placental pathology are also covered. Learning materials are presented in the form of journal articles, textbook reading assignments, and lectures. Pre- and Post-test exams will be administered.

Daily duties:

The resident will check the operative report for complex pediatric cases (tumors, multiple placenta, stillborns, fetopsy specimens, etc) and be available at the time of the specimen arrives into the surgical lab. The pediatric pathology resident may share responsibility with the surgical pathology resident for a pediatric pathology case. Any pertinent cases in the queue of another resident must be discussed with that resident regarding sign-out.

Pediatric unknown conference- once/month:

The rotating resident will pull slides for an unknown conference for a Thursday afternoon unknown conference. The resident will check with their attending to discuss case choices and important facts for other residents to know following conference.

Autopsy:

The rotating resident will assist other residents with sign out of all pediatric autopsies due during their rotation months. The rotating resident may be asked to present at Pediatric Mortality and Morbidity Conference on the 2nd Tuesday of the month.

Surgicals:

The rotating resident will gross and assist with sign-out of complex pediatric surgical cases.

End of the Month:

A post test will be administered at the end of the month. The results of this evaluation will be incorporated into the resident's evaluation for the month.

Objectives for Six General Competencies

Patient Care: Understanding the proper specimen collection and processing, gathering essential clinical data, and providing appropriate consultation to clinicians.

- A. Refer to the daily operative schedule for possible pediatric/perinatal cases and assist the surgical resident with complex cases (tumors, multiple placentas, fetopsies, etc).



- B. Know clinical indications for submission of the placenta to pathology; refer to articles from College of American Pathologists Conference XIX on The Examination of the Placenta: Patient Care and Risk Management (September 1990)
- C. Be familiar with the children's oncology group (COG) guidelines for tumor submission for examination and central review. See CAP website, www.cap.org. "Cancer Protocols." Pediatric.
- D. Read Legal Considerations from the Manual of Bernirschke and Kaufmann's *Pathology of the Human Placenta*, 2005. p 465-475.

Medical Knowledge:

- A. Know the difference between the abortion and autopsy specimens and the implications for the causes of both.
- B. Read the article: HC Wainwright. My approach to performing a perinatal or neonatal autopsy. Journal of Clinical Pathology. 2008. p 673-679.
- C. Read the article: Silver R. Fetal Death. Obstetrics & Gynecology. 2007. Vol 109. No. 1. p 153-167.
- D. Know how to estimate the time of death using placenta and still born specimens using Genest articles: Estimating the Time of Death in Stillborn Fetuses: III; Estimating the Time of Death in Stillborn Fetuses: I; and Estimating the Time of Death II. Obstetrics and Gynecology. 1992. Vol 80 No 4.
- E. Know how to differentiate an early pregnancy from hydatiform mole; refer to Kyu-Rae K et al. The Villous Stromal Constituents of Complete Hydatiform Mole Differ Histologically in Very Early Pregnancy From the Normally Developing Placenta. Am J Surg Pathol 2009; 33: 176-185.
- F. Understand the diagnosis and management of Hirschsprung's disease along with treatment outcomes.
- G. Understand the findings and diagnostic considerations of sudden infant deaths.
- H. Be familiar with the most common inborn errors of metabolism and diagnosis of these disorders.

Be able to identify (included on the pre- and post-test)

Tumor: Nephroblastoma with anaplasia

- Neuroblastoma
- Hepatoblastoma
- Teratoma
- Congenital mesoblastic nephroma
- Infantile fibrosarcoma
- Ewing sarcoma

Placental: Hemorrhagic endovasculitis

- Fetal thrombotic vasculopathy
- Hydatiform mole
- Twin-to-twin transfusion syndrome
- Funisitis
- Villitis



Perinatal: Stages of fetal lung development
Sudden unexplained infant death
Necrotizing enterocolitis
Estimation of time of death using Genest articles
Occipital osteodiastasis
Fetal hydrops
Ischemic brain injury
Periventricular leukomalacia

Malformations/Syndrome: Polycystic kidney disease
Trisomies (21, 18, 13)
Cystic renal dysplasia
Ductal plate malformation
Congenital hepatic fibrosis
Extrahepatic biliary atresia
Beckwith-Wiedemann syndrome
Gastroschisis
Omphalocele
Thanatophoric dysplasia
Achondrogenesis
Mitochondrial myopathy
Pompe disease
Maple syrup urine disease
Hurler syndrome
Craniosynostosis
Congenital heart disease

Practice-Based Learning and Improvement

- A. Participate in teaching fellow residents and medical students rotating in anatomic pathology.
- B. Perform literature searches on selected topics and interpret relevant articles using web-based and library sources.
- C. Know how to apply SNOMED codes and how to use these codes to retrieve cases from the pathology archives.

Interpersonal and Communication Skills

- A. Know the basic principles of transmitting the autopsy diagnosis to the clinicians in a timely and succinct way.
- B. Be able to interpret the relevance of information from the coroner or other officials involved in pediatric autopsies.
- C. Be able to write a concise and accurate autopsy report.
- D. Prepare pediatric autopsy cases to be presented to interdepartmental conferences.
- E. Prepare interesting surgical pathology cases for a monthly unknown conference in pediatric

Professionalism

- A. Maximize time management and prioritization of tasks.



- B. Maintain a high level of responsibility, educating residents on other rotations about pertinent pediatric/perinatal pathology issues.
- C. Understand the information relayed through the final report must be delivered in a manner sensitive to the family, patients, and other health professionals.
- D. Attendance and punctuality at conferences.

Systems-Based Practice

- A. Utilize the internet to access pathology websites (CAP, ASCP, etc) to stay abreast of current topics in pediatric/perinatal pathology and how these issues are handled at other institutions or organizations.
- B. Understand the legal considerations of placental pathology and perinatal/pediatric autopsy pathology and how information technology is utilized to relay and store data from one system to another.

Reading resources:

Bernirschke et al. Pathology of the Human Placenta.

Kraus et al. Placental Pathology.

Stocker and Dehner. Pediatric Pathology. Second ed.

Gilbert-Barness. Potter's Pathology of the Fetus, Infant, and Child. Second ed.

CAP website, www.cap.org. "Cancer Protocols." Pediatric.

Resident Assignment Checklist

Check off each assignment when completed.

This list is a summary. See rotation objectives for full, detailed assignments.

1. Read and understand rotation objectives and assignments. _____
2. Read assigned texts/handouts/literature. _____
3. Write-up reports on pediatric/perinatal pathology cases. _____
4. Attend/prepare pediatric/perinatal pathology conferences. _____
5. Take the Perinatal/Pediatric Pathology **post-test**. _____