ANSWERS: CHAPTER 19

MATCHING

1. c  4. h  7. i
2. e  5. g  8. f
3. b  6. a  9. d

IMAGE LABELING

1A. IVC
1B. Aorta
1C. Left iliac artery
1D. Right iliac artery
1E. Left renal artery
1F. Right renal artery

MULTIPLE CHOICE

1. b  6. b  11. d  16. c
2. c  7. c  12. a  17. d
3. a  8. c  13. c  18. a
5. d  10. b  15. a  20. b

FILL-IN-THE-BLANK

1. 3 to 4 hours; 4 hours; 8 hours
2. Azygous; posterior
3. Girls; 2 months; hyperechoic
4. Infectious mononucleosis; spleen; IM
5. Umbilicus; mesentery; portal; umbilical
6. More; two-thirds
7. Primary; metastases; hepatomegaly; palpable
8. Hepatoma; infantile hemangioendothelioma; mesenchymal hamartoma
9. Wilm’s tumor; neuroblastoma; leukemia; lymphoma
10. Liver; hepatitis; biliary tract; biliary atresia
11. Jaundice; 3 to 4 weeks; cholestasis; hepatitis
12. Sickle cell disease; cystic fibrosis
13. Sclerosing cholangitis; bowel
14. Rhabdomyosarcoma; obstructive jaundice
15. Exocrine; lungs; GI; hyperechoic
16. 1.5 cm; 1.8 cm; 4 mm
17. Intrinsc; malrotation; duodenal duplication; choledochal; annular
18. SMA; SMV; whirlpool sign
19. Ileocolic; abdominal pain; currant jelly; abdominal mass; 3 months and 3 years
20. Bull’s-eye; target; pseudo-kidney

SHORT ANSWER

1. Hemangioma, hemangioendothelioma, mesenchymal hamartoma, hepatoblastoma, hepatoma, and metastatic liver tumor are all differential diagnoses for a hyperechoic, solid liver tumor.

2. Malnutrition, malignancy, hyperalimentation, cystic fibrosis, Reye’s syndrome, glycogen storage disease, malabsorption syndrome, high-dose steroid therapy, acute hepatitis, obesity, and Cushing’s syndrome are all causes of fatty infiltration in the pediatric population.

3. Sonographically, liver malignancies typically appear as a solitary, solid, homogeneous, hyperechoic mass. In some cases, a hypoechoic rim or halo may be seen. Invasion of the liver vessels is common with primary hepatic malignancies.

4. Hepatoblastoma is associated with Beckwith-Wiedemann syndrome, fetal alcohol syndrome, Wilm’s tumor, dysplastic kidney, and Meckel’s diverticulum. The tumor most commonly occurs in boys younger than 5 years of age.

5. With cystic fibrosis, patients may have fatty infiltration or cirrhosis of the liver; gallstones; sludge; or a small, nondistended gallbladder; an echogenic pancreas; or meconium ileus.

IMAGE EVALUATION/PATHOLOGY

1. The liver mass is a large, solid, heterogeneous mass. Differential diagnoses include hemangioendothelioma and hepatoblastoma.

2. Type I choledochal cyst

3. An abnormally thickened pylorus is seen consistent with pyloric stenosis. The P represents the pancreatic head. Measurements of the channel length, the AP diameter of the pylorus, and the muscle thickness should be taken.

4. Intussusception

5. A hypoechoic tubular structure is seen consistent with a dilated appendix. The arrows are pointing to an echogenic area with distal shadowing consistent with an appendicolith.

CASE STUDY

1. A large, solid mass is seen in the right lobe of the liver. Hepatoblastoma is the most likely cause and the AFP is typically elevated. Primary liver tumors may invade the liver vasculature, including the portal and hepatic veins. These vessels should be evaluated for involvement as well as the lymph nodes in the porta hepatis.

2. This is consistent with sclerosing cholangitis. Inflammatory bowel disease is frequently found concurrent with sclerosing cholangitis.