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CINDY A. OWEN

EDWARD G. GRANT

Abdominal Sonography Review

**A REVIEW FOR THE
ARDMS ABDOMEN SPECIALTY EXAM**

2019

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Series Editor in Chief





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Davies Publishing, Inc.
32 South Raymond Avenue
Pasadena, California 91105-1961
Phone 626-792-3046
Facsimile 626-792-5308
e-mail info@daviespublishing.com
www.daviespublishing.com

Printed and bound in the United States of America

ISBN 0-941022-46-3

Library of Congress Cataloging-in-Publication Data

Owen, Cindy.
Abdominal sonography review : a review for the ARDMS
Abdomen specialty exam/ Cindy Owen; Edward G. Grant.

p. ; cm.

Includes bibliographical references.

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PART I

The Liver

Anatomy

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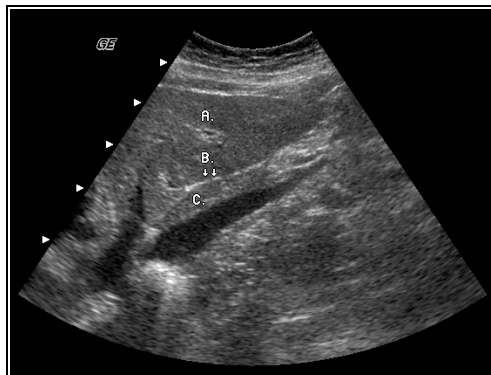
Abscesses

Hematomas

1. You are scanning a patient with a known mass in the left medial segment of the liver. What anatomic landmark can you use to identify the left medial segment separate from the right anterior segment of the liver?
 - A. Left portal vein
 - B. Ligamentum teres
 - C. Ligamentum venosum
 - D. Middle hepatic vein
 - E. Left hepatic vein
2. You suspect enlargement of the caudate lobe in a patient with liver disease. What structure located at the anterior border of the caudate lobe will help you to identify this lobe of the liver?
 - A. Left portal vein
 - B. Fissure for the ligamentum venosum
 - C. Inferior vena cava
 - D. Fissure for the ligamentum teres
 - E. Main lobar fissure
3. You are asked to rule out the presence of a recannalized paraumbilical. Which anatomic structure is a useful landmark in location of this structure?

- A. Ligamentum teres
 - B. Ligamentum venosum
 - C. Coronary ligament
 - D. Hepatoduodenal ligament
 - E. Glisson's ligament
4. Which vessel courses within the main lobar fissure?
- A. Main portal vein
 - B. Left portal vein
 - C. Middle Hepatic vein
 - D. Proper hepatic artery
 - E. Right hepatic vein
5. Oxygenated blood is supplied to the liver via the:
- A. Portal vein and hepatic vein
 - B. Hepatic vein and hepatic artery
 - C. Hepatic vein and portal vein
 - D. Portal vein and hepatic artery
 - E. Hepatic artery only
6. You are performing a sonogram on a slender female and notice a long, thin extension of the inferior aspect of the right lobe of the liver. This most likely represents:
- A. Caudate lobe
 - B. Quadrate lobe
 - C. Reidel's lobe
 - D. Accessory liver
 - E. Papillary projection of the caudate lobe
7. Which of the following forms the caudal border of the left portal vein?
- A. Ligamentum venosum
 - B. Hepatoduodenal ligament
 - C. Main lobar fissure
 - D. Coronary ligament
 - E. Ligamentum teres
8. What ligament divides the left lobe of the liver into medial and lateral segments?
- A. Ligamentum venosum
 - B. Hepatoduodenal ligament
 - C. Main lobar fissure
 - D. Coronary ligament
 - E. Ligamentum teres

9. You are asked to perform a Doppler study on the hepatic veins in the liver. What differentiates the hepatic veins from the portal veins?
- A. The hepatic veins converge toward the porta hepatis.
 - B. The hepatic veins have brightly echogenic walls.
 - C. The portal veins are largest near the dome of the liver.
 - D. The portal veins are accompanied by branches of the biliary tree and hepatic artery.
 - E. The portal veins normally exhibit a triphasic flow pattern.
10. You have detected a mass anterior and to the left of ligamentum venosum. This mass is located in what lobe of the liver?
- A. Left lobe
 - B. Caudate lobe
 - C. Reidel's lobe
 - D. Right lobe
 - E. Quadrate lobe
11. The thin capsule surrounding the liver is known as:
- A. Reidel's capsule
 - B. Glisson's capsule
 - C. Teres capsule
 - D. Langerhans' capsule
 - E. Wirsung's capsule
12. Which of the following course interlobar and intersegmental within the liver?
- A. Bile ducts
 - B. Portal veins
 - C. Hepatic arteries
 - D. Lymphatics
 - E. Hepatic veins



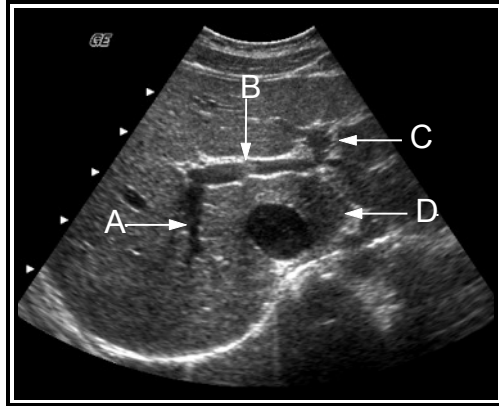
Questions 13–15 refer to this sagittal image of the liver.

13. What lobe of the liver does the letter A represent?
- A. Left lobe
 - B. Caudate lobe

- C. Posterior right lobe
 - D. Anterior right lobe
 - E. Quadrate lobe
14. What structure does the letter B represent?
- A. Ligamentum teres
 - B. Falciform ligament
 - C. Hepatoduodenal ligament
 - D. Ligamentum venosum
 - E. Main lobar fissure
15. What lobe of the liver does the letter C represent?
- A. Left lobe
 - B. Caudate lobe
 - C. Posterior right lobe
 - D. Anterior right lobe
 - E. Quadrate lobe
16. Identify the structure labeled A in this image of the liver.



- A. Ligamentum venosum
- B. Ligamentum teres
- C. Hepatoduodenal ligament
- D. Coronary ligament
- E. Glisson's capsule



Questions 17–20 refer to this image of the liver.

17. Identify the anatomy labeled A.
 - A. Main portal vein
 - B. Right posterior portal vein branch
 - C. Left portal vein
 - D. Right hepatic vein
 - E. Middle hepatic vein
18. Vessel A is located in what lobe of the liver?
 - A. Caudate lobe
 - B. Medial segment left lobe
 - C. Lateral segment left lobe
 - D. Posterior segment right lobe
 - E. Anterior segment right lobe
19. Identify the anatomy labeled C.
 - A. Main portal vein
 - B. Right posterior portal vein
 - C. Left portal vein
 - D. Right hepatic vein
 - E. Middle hepatic vein
20. The arrow labeled D is pointing to what lobe of the liver?
 - A. Medial segment left lobe
 - B. Lateral segment left lobe
 - C. Posterior segment right lobe
 - D. Anterior segment right lobe
 - E. Caudate lobe

21. You are performing an ultrasound exam of the liver on a small patient with a 5 MHz curved linear array. Although you have increased the overall gain to its maximum setting, the posterior border of the liver and diaphragm are not visualized. What should you do?
- A. Call the service representative to repair your equipment.
 - B. Decrease the transmit power on the ultrasound unit.
 - C. Move the focal zone into the near field.
 - D. Rescan the liver with a higher frequency transducer
 - E. Rescan the liver with a lower frequency transducer.
22. Which of the following correctly describes the probe placement and imaging plane you would use to demonstrate the three hepatic veins and inferior vena cava in one view?
- A. Subcostal oblique approach with the probe angled superiorly and to the patient's right
 - B. Intercostal approach with the probe angled inferiorly and to the patient's left
 - C. Intercostal approach with the probe oriented in a coronal plane
 - D. Subcostal oblique approach with the probe angled inferiorly and to the patient's left
 - E. Sagittal subcostal approach with the probe just to the right of midline
23. You are performing a follow-up sonogram on a patient in which a 5-mm cyst was previously identified at the anterior border of the left lobe of the liver. Although you are using a 3.5 MHz curved linear array probe, you do not see the cyst. Which of the following would be most helpful in improving visibility of this cyst?
- A. Increase the overall gain
 - B. Increase the dynamic range
 - C. Increase the transmit power
 - D. Rescan the left lobe with a higher frequency transducer
 - E. Rescan the left lobe with a lower frequency linear array transducer
24. You are imaging a patient with a high liver. Subcostal images do not clearly demonstrate the liver tissue. What should you do?
- A. Scan the patient in deep inspiration
 - B. Scan the patient in expiration
 - C. Place the patient in a Trendelenburg position and rescan
 - D. Have the patient drink 32 oz. of water and rescan
 - E. Scan with the patient in quiet respiration
25. A patient is referred for ultrasound evaluation of a questionable mass in the dome of the liver seen on a CAT scan. Which method below would improve visualization in this area of the liver?
- A. Perform a subcostal scan with the probe angled superior and the patient in deep inspiration.

- B. Perform an intercostal scan with the probe in a coronal plane and the patient in expiration.
 - C. Perform a subcostal scan with the patient performing a Valsalva maneuver.
 - D. Roll the patient into a right lateral decubitus position and scan from a subcostal approach with the patient in expiration.
 - E. The dome of the liver cannot be seen with ultrasound.
26. A patient is referred for a liver ultrasound with the clinical history of a raised serum alpha-fetoprotein level. What should you look for?
- A. Focal nodular hyperplasia
 - B. Fatty liver
 - C. Hepatocellular carcinoma
 - D. Hydatid disease
 - E. Increased alpha-fetoprotein levels are not associated with liver disease
27. You are reviewing lab work prior to performing an abdominal ultrasound exam. Elevated lab values include Gamma-glutamyl transpeptidase (GGT) and alkaline phosphatase. Which statement below is true?
- A. Elevation of both GGT and alkaline phosphatase suggests the source of elevated alkaline phosphatase is due to metastatic bone cancer.
 - B. Elevation of both GGT and alkaline phosphatase is a sensitive indicator of pancreatitis.
 - C. If both GGT and alkaline phosphatase are elevated, the lab work is invalid and must be repeat
 - D. Concomitant elevation of both GGT and alkaline phosphatase indicates the source of the elevated alkaline phosphatase is the liver.
 - E. Concomitant elevation of both of these lab values is highly specific for hepatocellular carcinoma.
28. Which of the following lab tests is **NOT** used in evaluation of liver function?
- A. Gamma-glutamyl transpeptidase (GGT)
 - B. Aspartate aminotransferase (AST)
 - C. Direct bilirubin
 - D. Indirect bilirubin
 - E. Lipase
29. A patient is referred with right upper quadrant tenderness and a history of oral contraceptive use. A solid, hypoechoic mass is identified in the right lobe of the liver. Color Doppler reveals hypervascularity of the mass. Which of the following scenarios is most likely?
- A. Hydatid liver disease
 - B. Hepatic lipoma
 - C. Hepatic abscess
 - D. Hepatic adenoma
 - E. Hepatocellular carcinoma

30. A liver ultrasound on a 49-year-old obese male demonstrates diffuse increased echogenicity with a focal hypoechoic area anterior to the portal vein. This most likely represents:
- A. Liver cirrhosis with hepatocellular carcinoma
 - B. Hydatid disease
 - C. Fatty metamorphosis of the liver with focal sparing
 - D. Metastatic disease most likely due to a colon primary
 - E. Normal liver parenchyma with a simple cyst
31. A 52-year-old male with known liver cirrhosis presents for an abdominal ultrasound. You will carefully evaluate the liver to rule out the presence of any focal mass because of which true statement below?
- A. Patients with liver cirrhosis are at increased risk for hepatocellular carcinoma
 - B. Patients with liver cirrhosis tend to develop multiple cysts in their liver and pancreas
 - C. Metastatic disease occurs commonly with cirrhosis
 - D. The presence of regenerative nodules rules out cirrhosis
 - E. All of the above are correct
32. You are scanning a patient with suspected liver cirrhosis. All of the following are sonographic features of cirrhosis **EXCEPT**:
- A. Surface nodularity
 - B. Shrunken caudate lobe
 - C. Altered echo texture
 - D. Ascites
 - E. Regenerative nodules
33. An ultrasound evaluation of liver cirrhosis should include a search for which associated complication?
- A. Biliary dilatation
 - B. Mesenteric ischemia
 - C. Splenic infarction
 - D. Kaposi's sarcoma
 - E. Portal hypertension
34. Ultrasound findings of an abdominal study on a 51-year-old female include enlargement of the hepatic veins and inferior vena cava in an otherwise normal appearing liver. These findings are most consistent with which of the following?
- A. Budd-Chiari syndrome
 - B. Right-sided heart failure
 - C. Liver cirrhosis
 - D. Portal hypertension
 - E. Sarcoidosis

35. Focal fatty liver is most commonly found in which location?
- A. Medial to the ascending branch of the left portal vein
 - B. Posterior to the right hepatic vein
 - C. Lateral, inferior tip of the right lobe
 - D. Adjacent to the fissure for the ligamentum venosum
 - E. Anterior to the portal vein at the porta hepatis
36. You have performed an ultrasound study on a patient with an enlarged caudate lobe, shrunken right lobe and splenomegaly. The hepatic veins could not be identified. No other abnormalities were discovered. What should you do?
- A. Scan the pelvis to rule out a pelvic mass.
 - B. Have the patient perform a Valsalva maneuver and reexamine the hepatic veins.
 - C. Evaluate the hepatic veins and IVC with color Doppler to confirm patency
 - D. Have the patient return in a week for a repeat study to evaluate the hepatic veins.
 - E. Nothing, you have completed the exam.
37. A patient is referred to rule out hepatomegaly. All of the following are useful indicators of hepatomegaly **EXCEPT**:
- A. Rounding of the inferior border of the liver
 - B. Longitudinal measurement of the right lobe exceeding 15.5 cm
 - C. Extension of the right lobe inferior to the lower pole of the right kidney
 - D. Increased diameter of the main portal vein greater than 1 cm
 - E. Increased anteroposterior measurement of the right lobe
38. You have identified a single homogeneous hyperechoic lesion measuring 2.4 cm in the posterior aspect of the right lobe of the liver. What is the most common etiology of a mass fitting this description?
- A. Cyst
 - B. Hepatic adenoma
 - C. Cavernous hemangioma
 - D. Hepatocellular carcinoma
 - E. Focal fatty sparing
39. A patient is referred for a sonogram of the liver to rule out metastatic disease. Which of the following describes the sonographic appearance of liver metastasis?
- A. Single hypoechoic mass
 - B. Multiple hyperechoic masses
 - C. Masses of mixed echogenicity
 - D. Cystic masses
 - E. All of the above appearances of liver metastasis may be encountered
40. Which of the following is **NOT** a feature of hepatic cysts?
- A. Thin wall
 - B. Posterior acoustic enhancement

- C. Anechoic
 - D. Increased attenuation
 - E. Increased through transmission
41. A single large, well-defined mass with smooth walls and homogeneous low-level echoes is seen within the anterior right lobe of the liver in a 48-year-old female. No Doppler signals could be obtained within the mass. Which of the following conditions is the most likely etiology of this mass?
- A. Kaposi's sarcoma
 - B. Focal nodular hyperplasia
 - C. Hemorrhagic cyst
 - D. Portal vein aneurysm
 - E. hepatocellular carcinoma
42. You are scanning a patient with a history of fever, abnormal liver function tests, and right upper quadrant tenderness. The liver is enlarged with decreased echogenicity, the gallbladder wall is thickened and thick echogenic bands are noted surrounding the portal veins. Which of the following conditions is most likely?
- A. Fatty liver
 - B. Cirrhosis
 - C. Budd-Chiari syndrome
 - D. Hepatitis
 - E. Normal liver
43. You are evaluating a suspicious lesion to look for gas bubbles to confirm the presence of liver abscess in a patient with fever and increased white blood cell count. What is the sonographic appearance of the gas bubbles?
- A. Brightly echogenic echoes with clean distal acoustic shadow
 - B. Brightly echogenic foci associated with echogenic ringdown artifact
 - C. Hypoechoic areas within the mass associated with increased through transmission
 - D. Anechoic foci with distal acoustic enhancement
 - E. Hyperechoic foci with distal acoustic enhancement
44. Which of the following is associated with infestation by a parasite and is most prevalent in sheep and cattle-raising countries?
- A. Budd-Chiari syndrome
 - B. Hydatid disease
 - C. Candidiasis
 - D. Hepatitis A
 - E. Kaposi's sarcoma
45. You are scanning the liver and notice irregularity of the surface. A nodular liver surface is associated with which of the following abnormalities?
- A. Cirrhosis

- B. Acute Hepatitis
 - C. Fatty liver
 - D. Polycystic liver disease
 - E. Hepatomegaly
46. Which of the following is **NOT** true regarding fatty liver?
- A. It is an irreversible disorder
 - B. Fatty liver may be caused by obesity
 - C. It may be diffuse or focal
 - D. It may show a rapid change in appearance with time
 - E. It commonly causes increased attenuation of the sound beam through liver
47. You are scanning through the liver and notice luminal narrowing of the hepatic veins. Color and spectral Doppler reveal high velocities through the strictures. These findings are most commonly associated with which of the following?
- A. Diffuse fatty liver
 - B. Acute hepatitis
 - C. Cirrhosis
 - D. Focal fatty infiltration
 - E. Glycogen storage disease
48. The most common benign tumor in the liver is:
- A. Focal nodular hyperplasia
 - B. Hepatic adenoma
 - C. Hepatic lipoma
 - D. Cavernous hemangioma
 - E. Hepatoma
49. Which of the following is most commonly associated with invasion of the portal vein?
- A. Hepatocellular carcinoma
 - B. Cavernous hemangioma
 - C. Liver metastases
 - D. Hepatic adenoma
 - E. Focal nodular hyperplasia
50. You have been asked to perform a liver sonogram on a patient with AIDS. Which of the following tumors is most commonly associated with this history?
- A. Hepatocellular carcinoma
 - B. Kaposi's sarcoma
 - C. Budd-Chiari syndrome
 - D. Hemangiosarcoma
 - E. Hepatic adenoma

51. You are scanning a 53-year-old female with a history of recent weight loss and vague abdominal pain. The liver is markedly heterogeneous and contains numerous calcified lesions. This most likely represents metastatic disease from which primary?
- A. Non-Hodgkin lymphoma
 - B. Cystadenocarcinoma of the ovary
 - C. Lung
 - D. Adenocarcinoma of the colon
 - E. Breast
52. During ultrasound evaluation of the liver, a bull's eye or target lesion is identified in the anterior right lobe. The most likely etiology of this mass is:
- A. Liver abscess
 - B. Hepatic adenoma
 - C. Focal nodular hyperplasia
 - D. Hepatocellular carcinoma
 - E. Liver metastasis from lung cancer
53. You are performing an ultrasound exam on a young female and notice a well-defined solitary mass with a central scar measuring 4 cm in diameter. Color Doppler reveals prominent blood vessels coursing within the scar. This most likely represents:
- A. Liver abscess
 - B. Hepatic adenoma
 - C. Focal nodular hyperplasia
 - D. Hepatocellular carcinoma
 - E. Liver metastasis from lung cancer
54. You are performing a liver sonogram on a young female with right upper quadrant pain, sudden onset ascites and hepatomegaly. You have obtained transverse and sagittal images of the liver, common bile duct, and gallbladder according to your protocol. What else should you do?
- A. Nothing, the study is complete
 - B. Expand the study to include the kidneys to rule out associated hydronephrosis
 - C. Use color and spectral Doppler to determine patency of the portal and hepatic venous systems
 - D. Give the patient a fatty meal and then measure the portal vein diameter at 1, 2, 5 and 10 minutes
 - E. Call the referring physician to get an order to perform a pelvic study to see if the patients' pain is referred from an ovarian mass
55. Which of the following is **NOT** true regarding cavernous hemangiomas?
- A. Small, well-defined, hyperechoic masses
 - B. Consist of a vascular network
 - C. More common in women than men

- D. Usually asymptomatic
 - E. Show prominent, high-velocity color Doppler signals
56. A patient is referred for ultrasound with a history of liver transplantation. You identify an extrahepatic fluid collection. What is the likely etiology of this finding?
- A. Biloma
 - B. Hematoma
 - C. Loculated ascites
 - D. Abscess
 - E. Any of the above may be seen following liver transplantation
57. What significant complication following liver transplantation is **NOT** detectable with ultrasound?
- A. Rejection
 - B. Malignant disease
 - C. Hepatic artery thrombosis
 - D. Portal vein thrombosis
 - E. Pseudoaneurysm
58. You are scanning a patient with a history of liver transplantation. You should search for all of the following complications of this surgery **EXCEPT**:
- A. Biliary sludge
 - B. Acute cholecystitis
 - C. Portal vein stenosis
 - D. Hepatic artery thrombosis
 - E. Liver malignancy
59. You have been asked to provide ultrasound imaging during liver surgery. What transducer would be best suited for this purpose?
- A. 3.5 MHz curved linear array
 - B. 10 MHz linear array
 - C. 2.25 MHz phased array
 - D. 7 MHz linear array
 - E. 12 MHz curved linear array
60. You are scanning through the right lobe of the liver and notice that although you have maximized the far field TGC, the parenchyma in the far field and diaphragm are not clearly visualized. What should you do?
- A. Decrease the transmit power
 - B. Increase the compression curve
 - C. Decrease the transmit frequency
 - D. Decrease the overall gain
 - E. Increase the dynamic range

61. Hepatofugal flow in the portal vein is a sign of:
- A. Normalcy
 - B. Hepatic artery thrombosis
 - C. Portal hypertension
 - D. Acute cholecystitis
 - E. Hepatocellular carcinoma
62. A patient is referred for abdominal ultrasound with a high fever and right upper quadrant pain. You document the presence of a large, rounded, homogeneous mass with low-level internal echoes and poorly defined borders. The mass is located in the right lobe of the liver, adjacent to the capsule and shows increased through transmission. This most likely represents:
- A. Hemorrhagic cyst
 - B. Abscess
 - C. Hematoma
 - D. Choledochal cyst
 - E. Loculated ascites
63. The most common form of malignant disease of the liver is:
- A. Hepatocellular carcinoma
 - B. Angiosarcoma
 - C. Cholangiocarcinoma
 - D. Metastatic disease
 - E. Primary lymphoma
64. You are scanning a patient with known liver cirrhosis and notice a focal mass within the posterior right lobe. What laboratory test would be most helpful in determining if this mass is hepatocellular carcinoma?
- A. Serum alpha-fetoprotein
 - B. Alkaline phosphatase
 - C. Serum bilirubin
 - D. Serum creatinine
 - E. Lactate dehydrogenase (LD)
65. You have been asked to perform an ultrasound to rule out the presence of Budd-Chiari syndrome. You will tailor your exam to include which of the following?
- A. Volume measurement of the spleen
 - B. Doppler analysis of the hepatic venous system
 - C. Both supine and upright views of the porta hepatis
 - D. Oblique view of the right lobe of the liver to include the right hemidiaphragm
 - E. Careful search for periaortic lymphadenopathy
66. You are performing an ultrasound on a patient with a transjugular intrahepatic portosystemic shunt (TIPS). What two vessels are connected with the TIPS stent?

- A. Portal vein and hepatic artery
 - B. Hepatic artery and hepatic vein
 - C. Hepatic vein and inferior vena cava
 - D. Portal vein and hepatic vein
 - E. Portal vein and inferior vena cava
67. The majority of blood supply to the liver is provided from the:
- A. Hepatic veins
 - B. Portal vein
 - C. Hepatic artery
 - D. Superior mesenteric vein
 - E. Gastroduodenal artery
68. Following liver transplantation, which of the following anatomic locations has an anastomotic connection that should be evaluated with ultrasound?
- A. Inferior vena cava
 - B. Portal vein
 - C. Hepatic artery
 - D. Bile duct
 - E. All of the above
69. You are scanning a patient with liver cirrhosis and suspected portal hypertension. In this study, assessment of the size of which of the following is most important?
- A. Spleen
 - B. Common bile duct
 - C. Abdominal aorta
 - D. Right hepatic vein
 - E. Inferior vena cava
70. A recannalized paraumbilical vein may be seen as a result of which of the following?
- A. Hepatic adenoma
 - B. Portal hypertension
 - C. Hepatitis
 - D. Hepatic trauma
 - E. Liver biopsy
71. Which of the following describes the best sonographic window to view a recannalized paraumbilical vein?
- A. Intercostal oblique view through the right lobe
 - B. Subcostal oblique view through the right lobe
 - C. Sagittal subcostal view through the left lobe at the level of the ligamentum teres
 - D. Sagittal subcostal view through the right lobe at the level of the main lobar fissure

- E. Sagittal subcostal view to the left of midline
72. What three structures comprise the portal triad?
- A. Portal vein, bile duct, hepatic artery
 - B. Portal vein, bile duct, hepatic vein
 - C. Bile duct, hepatic vein, hepatic artery
 - D. Hepatic vein, hepatic artery, lymph node
 - E. Hepatic vein, hepatic artery, portal vein
73. The ligamentum venosum forms the anterior border of what lobe of the liver?
- A. Left lobe
 - B. Reidel's lobe
 - C. Right lobe
 - D. Caudate lobe
 - E. Quadrate lobe
74. You are scanning a patient with portal hypertension. Enlargement of which of the following structures is diagnostic of this condition?
- A. Coronary vein
 - B. Hepatic vein
 - C. Renal vein
 - D. Common bile duct
 - E. Ligamentum teres
75. Which measurement below is the diagnostic cutoff for portal vein enlargement?
- A. 13 mm
 - B. 5 mm
 - C. 10 cm
 - D. 1.8 cm
 - E. 9 mm
76. Regenerating nodules are a feature associated with:
- A. Hepatitis
 - B. Hepatocellular carcinoma
 - C. Hydatid disease
 - D. Cirrhosis
 - E. Polycystic liver disease
77. You are performing an ultrasound exam in a patient with a history of alcoholic liver cirrhosis. You have documented the presence of splenomegaly and dilated veins at the splenic hilum. Considering the patient's history and findings, what else should you look for?
- A. Search for signs of acute cholecystitis
 - B. Carefully scan the spleen for the presence of infarcts

- C. Search for the presence of portosystemic collaterals
 - D. Check the pelvis for a left side mass.
 - E. Rule out the presence of an aortic aneurysm.
78. Which of the following describes the best view for ultrasound demonstration of the coronary vein?
- A. A transverse scan under the right lobe of the liver.
 - B. An oblique subcostal scan under the right lobe of the liver with the probe oriented toward the patient's head
 - C. A sagittal view of the splenic vein near the midline
 - D. A sagittal view through the splenic hilum
 - E. A transverse view along the long axis of the left renal vein
79. You are performing a follow-up study on a patient with a history of cavernous transformation. Where should you look to evaluate this condition?
- A. Splenic hilum
 - B. Pancreatic head
 - C. Porta hepatis
 - D. Renal hilum
 - E. Left lobe of the liver
80. You are scanning a patient with an enlarged caudate lobe and shrunken right lobe. What diffuse liver process should you suspect?
- A. Cirrhosis
 - B. Acute hepatitis
 - C. Fatty infiltration
 - D. Candidiasis
 - E. Hepatocellular carcinoma
81. You are scanning an obese patient to rule out fatty liver. Which of the following describes a common sonographic appearance of this condition?
- A. Increased through transmission throughout the hypoechoic liver
 - B. Increased echogenicity of the liver compared to normal
 - C. Focal hypoechoic masses throughout both lobes of the liver surrounded by normal liver echotexture
 - D. Shrunken liver with surface nodularity
 - E. Enlarged, hypoechoic right lobe compared to a small and shrunken left lobe

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