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Questions and Answers

1. A 67-year-old White female, while undergoing a follow-up examination for an abdominal aortic aneurysm, was found to have a 3-cm hypodense mass in the dome of the liver. Ultrasound confirms splenomegaly with varices around the hilum and a nodular liver surface. Her liver function tests are normal, but the platelet count is 86,000/mm³; alpha feto protein (AFP) is 5.6 ng/mL.

Which of the following is appropriate next step?

- A. Red cell scan
- B. Ultrasound-directed biopsy
- C. Triple-phase CT scan
- D. Liver spleen scan

Answer: C

Patient has cirrhosis as demonstrated by radiological evidence. A solid mass in patient with cirrhosis should be considered as hepatocellular carcinoma (HCC) unless proven otherwise. AFP can be normal in HCC; normal AFP should not prevent further studies. The best initial test is triple-phase CT scan. HCC can be diagnosed by triple-phase CT and a tissue diagnosis is not required if the CT scan findings are typical.

2. A 67-year-old White female with hepatitis C for at least 25 years was found to have a 5-cm hypodense mass in the dome of the liver. She was diagnosed to have cirrhosis following a liver biopsy 7 year ago. Her liver function tests are normal, but her platelet count is 78,000/mm³, and the AFP is 8.6 ng/mL. She has had grade 2 esophageal varices on upper endoscopy. A tripe-phase CT scan showed an arterial-enhancing mass with rapid washout in portal venous phase. Which of the following is appropriate?
- A. CT-guided biopsy
 - B. Sorafenib
 - C. Refer to liver transplant center

- D. Refer to surgery for curative resection
- E. Percutaneous ablation

Answer: C

Patient meets Milan Criteria; transplantation offers the best treatment option and should be the primary treatment consideration. Surgical resection is not a good option in this patient with a large tumor and portal hypertension. Sorafenib is indicated only for advanced HCC. A liver biopsy is not indicated in patients with classical CT scan findings.

3. A 71-year-old White female who is in good health was found to have a 3-cm hypodense mass seen in the left lobe of the liver on ultrasound examination when she was evaluated for epigastric discomfort. She also underwent EGD which was normal. Her epigastric discomfort responded to omeprazole. She has normal liver tests and no known liver disease. Her tumor markers are normal. Contrast-enhanced magnetic resonance imaging (MRI) scan showed a solid mass with no enhancement with contrast. What is the appropriate next step?

- A. Guided biopsy
- B. Triple-phase CT scan
- C. Repeat the MRI in 6 months
- D. Refer for liver transplant
- E. ERCP

Answer: A

In a patient without any underlying liver disease, differential diagnosis includes intrahepatic cholangiocarcinoma, metastatic cancer, and benign tumors such as adenoma or hemangioma. MRI is usually diagnostic in hemangioma or adenoma. In the absence of typical radiographic findings, a tissue diagnosis is appropriate. CT scan is also a reasonable option, but since MRI was nondiagnostic, CT is unlikely to provide additional information. Waiting for 6 months will not be appropriate if this is a malignant tumor.

4. Seventy-three-year-old White female, who is being evaluated for a new onset abdominal distension, was found to have two solid masses in the liver on noncontrast CT scan. The mass on the left lobe was 2 cm and the one in the right lobe was 4 cm in size. She has history of diabetes, hypertension for 20 years, and has had triple vessel bypass 7 years ago. Her liver function demonstrates a bilirubin of 8 mg/dL, INR of 2.3, AFP of 1,700 ng/mL, and creatinine of 2.3 mg/dL. CT scan demonstrates an enlarged spleen, a small nodular liver, and large ascites. The best option is
- A. Guided biopsy of the larger lesion
 - B. Triple-phase CT scan
 - C. Sorafenib
 - D. Refer for liver transplant
 - E. Palliative care

Answer: E

She has advanced HCC with liver failure. She is not a candidate for liver transplant due to her age and comorbid conditions. In addition, her tumor is outside the Milan Criteria. Triple-phase CT is useful for confirmation of diagnosis of HCC, but in someone with cirrhosis and a very high AFP and a liver mass, HCC is the only possibility. Hence, doing contrast-enhanced CT is not going to add value. In addition, a contrast CT may be risky because of her impaired renal function. Sorafenib is contraindicated in patients with advanced liver failure. Her life expectancy is likely to be short, and hence, palliative care is the best option.