USMLE and COMLEX II

CE / CK Review

General Surgery

Northwestern Medical Review
www.northwesternmedicalreview.com
Lansing, Michigan
2014-2015
1. Your patient is a 45-year-old woman who is presented with the complaint of severe abdominal pain. You made the initial diagnosis of acute abdomen based on her history and examination. To determine the exact etiology, you want to perform a laparotomy on the patient. Before ordering the procedure you re-evaluate the findings more thoroughly and come to the conclusion that you should NOT perform laparotomy on the patient. Which of the following clinical suspicions and/or findings was the CONTRAINDICTION to the laparotomy procedure on this patient?

A. Suspicion of bacterial peritonitis  
B. Presence of acute right lower quadrant abdominal pain  
C. History indicating that the abdominal pain is chronic  
D. Presence of a palpable abdominal mass  
E. Alvarado score of 9

2. What is acute abdomen?

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3. What is the most commonly performed procedure on patients with acute abdomen?

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**Must-Know Causes of Acute Abdomen**
- Acute cholecystitis  
- Acute appendicitis  
- Acute pancreatitis  
- Acute diverticulitis  
- Bowel volvulus  
- Acute peptic ulcer  
- Acute intestinal ischemia  
- Diabetic ketoacidosis  
- Ectopic pregnancy with tubal rupture  
- Acute peritonitis with perforation  
- Acute pyelonephritis  
- Abdominal aortic aneurysm  
- Ruptured spleen  
- Kidney Stone  
- Ovarian torsion

4. What is the most common confirmatory physical finding for peritonitis?

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5. In a stable patient who is suspected of having acute abdomen what is the next best course of action?

A. Administering opiate analgesics  
B. Laparotomy  
C. Serial abdominal exams  
D. Abdominal CT scan  
E. Serial abdominal exams and CT scan

6. What would you do if the above patient were to become unstable?

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7. What are the top-tested causes of acute abdomen that do not require laparotomy?

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8. What is the common cause of acute pain and peritonitis in the ULQ?

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9. What is the common cause of acute pain and peritonitis in the URQ?

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10. What is the common cause of acute pain and peritonitis in the LRQ?

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11. What is the common cause of acute pain and peritonitis in the LLQ?

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12. What is the common cause of acute pain and peritonitis in the epigastric area?

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13. Your patient is a 45-year-old woman with the complaint of right upper quadrant pain after eating. She claims that her pain starts within 30 to 60 minutes after meals and is more exaggerated with fatty meals. On examination she has a positive Murphy sign. What is your most likely suspicion?

A. Choledocholithiasis
B. Cholecystitis
C. Ascending cholangitis
D. Pyelonephritis
E. Hepatitis

14. What is Murphy’s sign?

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15. What is the common cause of cholecystitis?

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16. What are the common symptoms of cholecystitis?

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17. What are the top 3 must-know associations for primary sclerosing cholangitis?

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18. What type of biliary stones are prevalent in patients with chronic hemolytic conditions (e.g. sickle cell disease)?

19. Your patient is a 45-year-old Caucasian female with a history of postprandial right upper quadrant pain and positive Murphy’s sign. How would you confirm your clinical suspicion?

HIDA or hepatobiliary scan, or hepatominoacetic acid exam, is a confirmatory test for cholecystitis. A radioactive chemical tracer is injected via IV. The tracer is handled by the liver like bile. Like bile, the tracer is stored in the gallbladder and released into the duodenum after a meal. A special nuclear medicine scanner (gamma camera) tracks the flow of the tracer from liver into gallbladder and small intestine. The name HIDA comes from the earlier tracer used for the scan (hydroxy iminodiacetic acid). Currently, better tracers have replaced the original HIDA.

20. What is your most likely diagnosis if the patient above suddenly turns febrile?

21. What is the treatment of choice for this patient?

Biliary Ductal System
- Left and right hepatic ducts
- Common hepatic duct
- Cystic duct
- Common biliary duct

22. A patient is scheduled for cholecintigraphy scan. One hour after IV administration of the radionuclide, the left and right hepatic ducts, common hepatic duct, common bile duct, and the last centimeter of the cystic duct next to the common bile duct are filled with radionuclide. What is your diagnosis?

23. Your patient is a 41-year-old Chinese-American who is seen for evaluation of a wide array of symptoms that include fatigue, abdominal pain, and diarrhea. History shows that he has been working as a construction engineer in a riverside rural village in China for the past 6 months. He claims that he has had his symptoms for more than 30 days. You order a stool sample analysis, and after reviewing the results, you come to the conclusion that you should prescribe praziquantel for the patient. While your office assistant is calling in the prescription, the patient is rushed back to your clinic, with a fever and shaking chills. On examination he has right upper quadrant pain and icterus. What is the best management for the patient?

A. Ultrasound evaluation
B. Cholecystectomy followed up with praziquantel
C. Nuclear hepatobiliary scintigraphic evaluation followed up with praziquantel
D. Changing the praziquantel to albendazole
E. Continuation with the praziquantel regimen and re-evaluation within 30 days

24. What is Charcot’s triad and what does it confirm?
Chinese Liver Fluke

• The patient has cholangitis caused by Clonorchis sinensis, evidenced by the presence of Charcot’s triad.
• Definitive management includes cholecystectomy with evacuation of worms and follow-up treatment with praziquantel.
• Clonorchis sinensis, or Chinese liver fluke, is a human liver fluke that feeds on bile and is thus found mainly in the common bile duct and gallbladder.
• This helminthes is believed to be the third most prevalent worm parasite in the world, and it is endemic to China, Japan, and Southeast Asia.
• The pathology of long-standing infections consists of bile stasis, obstruction, periductal fibrosis, hyperplasia, and predisposition to cholangiocarcinoma.
• Infection is detected mainly by microscopic identification of eggs in faeces or in duodenal aspirates. A more specific diagnosis includes detection of the worm’s DNA from fecal eggs with polymerase chain reaction. Drug treatment includes praziquantel (choice drug) and albendazole.

25. What is the treatment for cholangitis?

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26. You are examining an 18-year-old boy with the complaint of crampy and poorly localized periumbilical pain and vomiting. He claims that he does not have any appetite and has not eaten anything within the past 24 hours. Which of the following findings would support your clinical suspicion?

A. Positive Murphy’s sign
B. Positive Kehr’s sign
C. Positive Puddle sign
D. Positive Groove sign
E. Positive Rovsing’s sign

General Surgery to be continued…
Answers

1. [A]. Bacterial peritonitis.
2. Acute and sudden pain in the abdomen that requires immediate diagnosis and surgery. It may loosely be defined as a potentially life-threatening acute peritonitis. **Categories of Causes:** Inflammatory; Mechanical; Neoplastic; Vascular; Congenital defects; and Traumatic.
3. Laparoscopy or laparotomy.
4. **Rebound tenderness** is pain upon quick removal of pressure (after deep palpation) rather than application of pressure to the abdomen. It is due to aggravation of the parietal layer of the peritoneum by stretching or moving.
   **Abdominal guarding** is the tensing of the abdominal wall muscles to guard inflamed organs. It may be voluntary (in response to palpation) or involuntary. The tensed muscles of the abdominal wall automatically go into spasm to keep the tender underlying tissues from being disturbed.
5. [E]. Serial abdominal exams (i.e. every 6 hours over a 24-hour period), possibly with CT Scan, are the best option. Strong medications may mask the signs of the cause of acute abdomen.
6. Proceed to laparoscopy.
7. Acute pancreatitis, spontaneous bacterial peritonitis, and acute diverticulitis. Spontaneous bacterial peritonitis is peritonitis despite the absence of an obvious infection source. It almost always occurs with portal hypertension, and less commonly with nephrotic syndrome.
8. A rupture of the spleen.
9. Cholecystitis, cholangitis, and liver abscess.
10. Appendicitis and pelvic inflammatory disease (PID).
11. Diverticulitis (of the sigmoid colon) and PID.
12. Stomach peptic ulcers and pancreatitis.
13. [B]
14. During inspiration the physician palpates and puts pressure below the costal margin on the right side at the mid-clavicular line. If the patient stops inspiring it is a positive sign. Positive sign is indicative of cholecystitis and it rules out choledocholithiasis, ascending cholangitis, and pyelonephritis.
15. Gallstones.
16. Postprandial RUQ pain with Murphy’s sign.
17. Cholangiocarcinoma, ulcerative colitis, and colon cancer.
18. Calcium bilirubinate. These patients are often younger than patients with cholesterol stones.
19. Imaging diagnosis of cholecystitis include: (1) Ultrasound (that shows gallstones or film of fluids around the gallbladder); (2) Ultrasonography with Murphy’s sign (sonographer is pressed against the gallbladder). This is often used in obese patients; and (3) Nuclear hepatobiliary scintigraphic study (HIDA Scan). Also known as cholescintigraphy scan. Confirmatory.
20. Acute cholecystitis.
21. Cholecystectomy. Note that a laparoscopic approach is currently preferred over an open procedure.
22. Acute cholecystitis with biliary stones lodged into and blocking the cystic duct. Note that as a result, the gallbladder will not be highlighted.
23. [B]
24. Charcot’s triad has 3 components: (1) right upper quadrant pain; (2) fever and shaking chills, and (3) jaundice. It is diagnostic of cholangitis (inflammation of bile ducts, often due to gallstones).
25. **Step 1:** Administer empiric antibiotics to safeguard against bowel flora (e.g. piperacillin and tazobacta; mezlocillin; imipenem; ticarcillin and clavulanate; or ampicillin and sulbactam).
   **Step 2** (Definitive treatment): Cholecystectomy and removal of the culprits (stones, adenomas, etc.).
   Note: For Chinese liver fluke use anti-helminthics. Note: Unresectable malignancies may be managed with biliary stents.

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