

A 55-year-old woman comes to the emergency department due to acute onset midepigastriac pain that radiates to her back. She also has nausea and vomiting. Past medical history is significant for plantar fasciitis and hypertension, for which she takes amlodipine. The patient does not use tobacco, alcohol, or illicit drugs. Her temperature is 37.1 C (98.8 F), blood pressure is 117/76 mm Hg, pulse is 102/min, and respirations are 16/min. Examination shows tenderness to deep palpation in the epigastrium. The remainder of the examination is within normal limits. Laboratory test results are as follows:

Liver studies

Albumin	4.2 g/dL
Alkaline phosphatase	148 U/L
Aspartate aminotransferase (SGOT)	111 U/L
Alanine aminotransferase (SGPT)	160 U/L
Amylase	940 U/L
Lipase	2155 U/L

Complete blood count

Hemoglobin	12.8 g/dL
Platelets	220,000/mm ³
Leukocytes	13,200/mm ³

Abdominal ultrasound showed several gallstones without gallbladder wall thickening. The patient is admitted to the hospital and given supportive care with pain control, intravenous fluids, and nothing by mouth. She recovers rapidly and is able to eat within 2 days. Her enzymes begin to trend down, and the patient says she feels normal. Which of the following is the next best step in the management of this patient?

- ☐ A. Amlodipine discontinuation and close follow-up
- ☐ B. Endoscopic retrograde cholangiopancreatography
- ☐ C. Hepatobiliary iminodiacetic acid (HIDA) scan

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- ☐ E. Repeat ultrasound in 4 weeks

Submit

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- ☐ A. Amlodipine discontinuation and close follow-up [3%]
- ☐ B. Endoscopic retrograde cholangiopancreatography [20%]
- ☐ C. Hepatobiliary iminodiacetic acid (HIDA) scan [3%]

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- ☒ D. Laparoscopic cholecystectomy [64%]
- ☐ E. Repeat ultrasound in 4 weeks [10%]

Proceed to Next Item

Explanation:

User Id: [REDACTED]

This patient's midepigastlic pain, nausea, vomiting, and markedly elevated amylase and lipase are consistent with acute **pancreatitis**. As this patient does not drink alcohol and has elevated liver function enzymes (aspartate aminotransferase [AST], alanine aminotransferase [ALT], alkaline phosphatase) with several gallstones on ultrasound, her pancreatitis is most likely due to **gallstones** (second most common cause of pancreatitis). Some studies have shown that **ALT >150 U/L** has a 95% positive predictive value for diagnosing gallstone pancreatitis.

Once this patient's symptoms and laboratory values have improved, her attack of acute pancreatitis is considered mild and resolved. However, she is at increased risk for recurrent attacks of acute pancreatitis due to gallstones. Early **cholecystectomy** is recommended for medically stable patients who recover from acute pancreatitis and are surgical candidates. Cholecystectomy can markedly reduce the risk of recurrent gallstone pancreatitis.

(Choice A) Antihypertensives commonly associated with drug-induced pancreatitis include thiazides and angiotensin-converting enzyme inhibitors. However, calcium channel blockers (eg, amlodipine) are less commonly associated with pancreatitis.

(Choice B) Endoscopic retrograde cholangiopancreatography (ERCP) is recommended in patients with gallstone pancreatitis who have cholangitis, visible common bile duct dilation/obstruction, or increasing liver enzyme levels. ERCP allows for cannulation and sphincterotomy in an attempt to relieve the obstruction.

(Choice C) The hepatobiliary iminodiacetic acid (HIDA) scan uses a nuclear tracer that is excreted in bile. Failure to visualize the tracer in the gallbladder suggests obstruction.

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(Choice C) The hepatobiliary iminodiacetic acid (HIDA) scan uses a nuclear tracer that is excreted in bile. Failure to visualize the tracer in the gallbladder suggests obstruction. HIDA can be used for evaluating cholecystitis in patients with indeterminate ultrasound findings. However, this patient's ultrasound showed no findings of biliary obstruction or gallbladder wall thickening.

(Choice E) Repeat ultrasound in 4 weeks can be done in patients with biliary colic symptoms who do not have gallstones on initial ultrasound. However, this patient has gallstones complicated by acute pancreatitis and requires treatment at this time.

Educational objective:

Gallstone pancreatitis should be suspected in patients who have evidence of pancreatitis with alanine aminotransferase levels >150 U/L. Early cholecystectomy is indicated in all patients with gallstone pancreatitis who are medically stable enough to undergo surgery.

References:

1. **Early cholecystectomy safely decreases hospital stay in patients with mild gallstone pancreatitis: a randomized prospective study.**
2. **Recurrence of acute gallstone pancreatitis and relationship with cholecystectomy or endoscopic sphincterotomy.**
3. **Predicting gallstone pancreatitis with laboratory parameters: a meta-analysis.**