

An 82-year-old woman is brought to the emergency department due to severe abdominal pain and vomiting. She has been feeling "unwell" with nausea and decreased appetite for the past 5 days. The patient describes several mild, self-resolving episodes of vomiting, abdominal bloating, and cramps during that time. She attributed her symptoms to a "stomach virus" and did not seek medical attention. Her past medical history includes diabetes mellitus, hypertension, mitral valve prolapse, osteoarthritis, gallstones, and constipation. She was treated medically for diverticulitis 2 years ago without recurrence. The patient has no known drug allergies. Her temperature is 37.2 C (99 F), blood pressure is 108/68 mm Hg, pulse is 106/min, and respirations are 20/min. Physical examination reveals an anxious and obese woman. Cardiopulmonary examination reveals a late systolic click but is otherwise unremarkable. Her abdomen is soft but distended with hyperactive bowel sounds. There is no evidence of icterus. Laboratory workup is significant for a leukocyte count of 11,000/mm³ and mild elevation of liver transaminases. Abdominal x-ray shows dilated loops of small bowel and air in the intrahepatic bile ducts. Which of the following is the most likely cause of this patient's symptoms?

- ☐ A. Acute bowel ischemia
- ☐ B. Diverticulitis
- ☐ C. Emphysematous cholecystitis
- ☐ D. Mechanical bowel obstruction
- ☐ E. Pancreatic cancer
- ☐ F. Peptic ulcer perforation

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- ☐ A. Acute bowel ischemia [6%]
- ☐ B. Diverticulitis [2%]
- ☐ C. Emphysematous cholecystitis [33%]
- ☒ D. Mechanical bowel obstruction [57%]
- ☐ E. Pancreatic cancer [1%]
- ☐ F. Peptic ulcer perforation [2%]

[Proceed to Next Item](#)**Explanation:**User Id: XXXXXXXXXX

This patient with stuttering episodes of nausea and vomiting, pneumobilia (air in the biliary tree), **hyperactive bowel sounds**, and dilated loops of bowels likely has a **gallstone ileus**, a form of mechanical small bowel **obstruction**. **Gallstone ileus** occurs when a gallstone passes through a biliary-enteric fistula into the small bowel. As the stone advances it may cause **intermittent "tumbling"** obstruction with diffuse abdominal pain and vomiting until finally lodging in the ileum, the narrowest section of the bowels, several days later.

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In addition to experiencing colicky pain and vomiting, patients may report distension and inability to pass flatus or stool and show signs of hypovolemia (eg, hypotension, tachycardia). Stones can occasionally also lodge in the stomach, jejunum, or colon. Cholecystitis, which predisposes to biliary-enteric adhesions, is the most important risk factor, and patients are more commonly elderly women, which reflects their higher prevalence of gallstone disease.

Diagnosis can be confirmed by abdominal CT scan, which may reveal gallbladder wall thickening, pneumobilia, and an obstructing stone. Treatment is surgical and involves removal of the stone and either simultaneous or delayed cholecystectomy.

(Choice A) Acute intestinal ischemia typically results in diminished bowel sounds and frequently presents with severe abdominal pain despite a relatively normal physical examination. It would also not account for the pneumobilia.

(Choice B) Diverticulitis is also common in this patient's age group, but is more likely to present with left lower quadrant pain and fever.

(Choice C) Emphysematous cholecystitis (gallbladder wall infection due to gas-producing organisms) is more commonly characterized by fever and right upper quadrant pain and can also cause ileus (decreased or absent bowel sounds). This patient has hyperactive bowel sounds.

(Choice E) Pancreatic cancer more commonly presents with weakness, pain, jaundice, and weight loss.

(Choice F) Peptic ulcer perforation usually presents with acute-onset, severe abdominal pain followed by peritoneal signs and abdominal distension. Abdominal x-ray demonstrates free air.

Educational objective:

Gallstone ileus results from small bowel obstruction due to a gallstone that has passed through a biliary-enteric fistula. As the stone advances it may cause "tumbling"

bowels, several days later.

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Educational objective:

Gallstone ileus results from small bowel obstruction due to a gallstone that has passed through a biliary-enteric fistula. As the stone advances it may cause "tumbling" obstruction before ultimately causing complete obstruction. Treatment involves surgical removal of the stone and cholecystectomy.

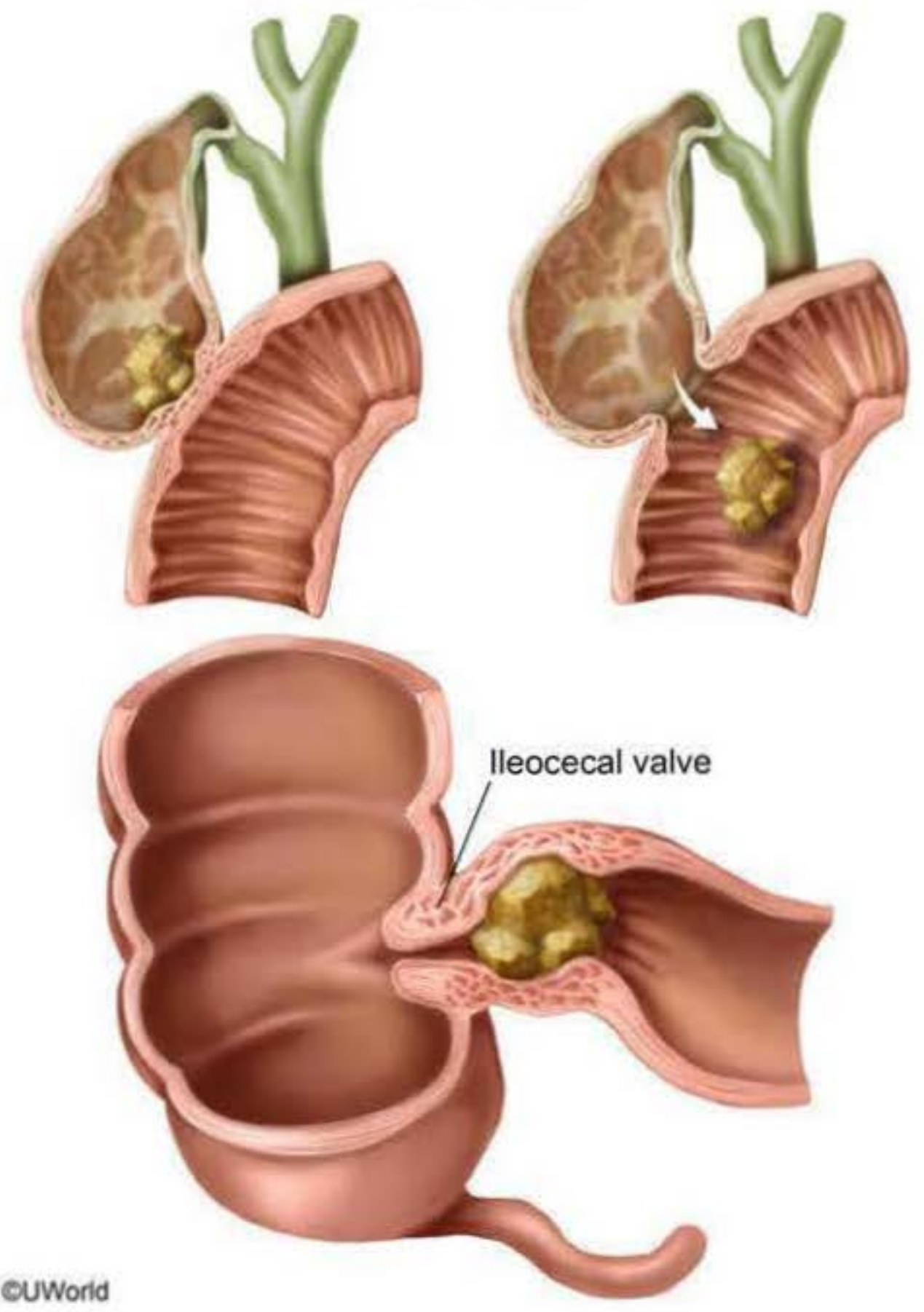
References:

1. [Gallstone ileus, clinical presentation, diagnostic and treatment approach.](#)
2. [Gallstone ileus: case report and literature review.](#)

Media Exhibit

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Gallstone ileus



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