

A 42-year-old woman reports bloating with mild, diffuse abdominal discomfort 4 days after undergoing an elective cholecystectomy. She has not passed gas since the surgery. Perioperatively, she received antibiotics, morphine for pain, and metoclopramide for nausea. Medical history is significant for hypertension, diabetes mellitus, and hyperlipidemia. Blood pressure is 132/90 mm Hg and pulse is 76/min. BMI is 33 kg/m<sup>2</sup>. Physical examination shows a distended, tympanic abdomen with decreased bowel sounds. There is mild, diffuse tenderness but no rebound or guarding. The remainder of the examination shows no abnormalities. Which of the following is most likely contributing to this patient's current condition?

- ☐ A. Absence of bile storage reservoir
- ☐ B. Impaction of a gallstone in the ileum
- ☐ C. Metoclopramide
- ☐ D. Morphine
- ☐ E. Perioperative antibiotics
- ☐ F. Postoperative adhesions

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- ☐

A. Absence of bile storage reservoir [1%]
- ☐

B. Impaction of a gallstone in the ileum [5%]
- ☐

C. Metoclopramide [4%]
- ☒

D. Morphine [84%]
- ☐

E. Perioperative antibiotics [0%]
- ☐

F. Postoperative adhesions [5%]

Proceed to Next Item

Explanation:

User Id:

Small bowel obstruction versus ileus		
	Small bowel obstruction	Ileus
Etiology	<ul style="list-style-type: none"><li>• Prior surgery (weeks to years)</li></ul>	<ul style="list-style-type: none"><li>• Recent surgery (hours to days)</li><li>• Metabolic (eg, hypokalemia)</li><li>• Medication induced</li></ul>
Abdominal examination	<ul style="list-style-type: none"><li>• Distension</li><li>• Increased bowel sounds</li></ul>	<ul style="list-style-type: none"><li>• Possible distension</li><li>• Reduced/absent bowel sounds</li></ul>
Small bowel	Present	Present



Proceed to Next Item

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User Id: [REDACTED]

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<b>Small bowel dilation</b>	Present	Present
<b>Large bowel dilation</b>	Absent	Present

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**Ileus** is a functional defect in bowel motility without an associated physical obstruction. Manifestations include nausea, vomiting, **abdominal distension**, failure to pass flatus or stool (**obstipation**), and **hypoactive bowel sounds**. Some degree of ileus occurs following most abdominal procedures; however, persistence of the signs and symptoms (>3-5 days postoperatively) is termed **prolonged (or "pathologic") postoperative ileus (PPI)**.

Contributors to PPI include increased splanchnic nerve sympathetic tone following peritoneal instrumentation, local release of inflammatory mediators, and postoperative **opiate** analgesic use (which causes decreased gastrointestinal motility and disordered peristalsis). Techniques to prevent PPI include epidural anesthesia, minimally invasive surgery, and judicious perioperative use of intravenous fluids (to minimize gastrointestinal edema). Diagnosis is clinical, although **abdominal x-rays** revealing dilated loops of bowel with no transition point support the diagnosis.



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Adhesions, which begin to form immediately following abdominal surgeries, are the most common cause of mechanical bowel obstruction (MBO) in the United States. Manifestations of MBO are similar to those of PPI. However, MBO typically causes hyperactive (not hypoactive) bowel sounds. In addition, patients with postoperative MBO often have a temporary return of bowel function prior to symptom onset (unlike this patient). As with PPI, x-rays reveal dilated loops of bowel; however, compared to PPI, x-rays in MBO are more likely to reveal **air-fluid levels** and a clear transition point (**Choice F**).

**(Choice A)** Following cholecystectomy, bile is secreted into the duodenum via the intact common bile duct and then stored in the upper small intestine during fasting. Occasionally, postcholecystectomy diarrhea can occur due to bile acid malabsorption.

**(Choice B)** Gallstone ileus occurs when a gallstone passes through a biliary-enteric fistula into the small bowel causing signs and symptoms of MBO. As the stone advances, it can cause intermittent "tumbling" obstruction until finally lodging in the **ileum**. Diagnosis is typically made preoperatively.

**(Choice C)** Metoclopramide is a dopamine antagonist with promotility effects whereas ondansetron, a serotonin receptor antagonist, can contribute to constipation.

**(Choice E)** Common antibiotics are not known to directly inhibit intestinal motility, although many can cause gastrointestinal upset and diarrhea.

#### Educational objective:

Prolonged postoperative ileus is characterized by nausea, abdominal distension,



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#### Educational objective:

Prolonged postoperative ileus is characterized by nausea, abdominal distension, obstipation, and hypoactive bowel sounds that persist postoperatively. Opiates compound this problem by decreasing gastrointestinal motility.

#### References:

1. **Mechanisms of postoperative ileus.**
2. **A comprehensive review of evidence-based strategies to prevent and treat postoperative ileus.**



Media Exhibit



Media Exhibit

bowel obstruction

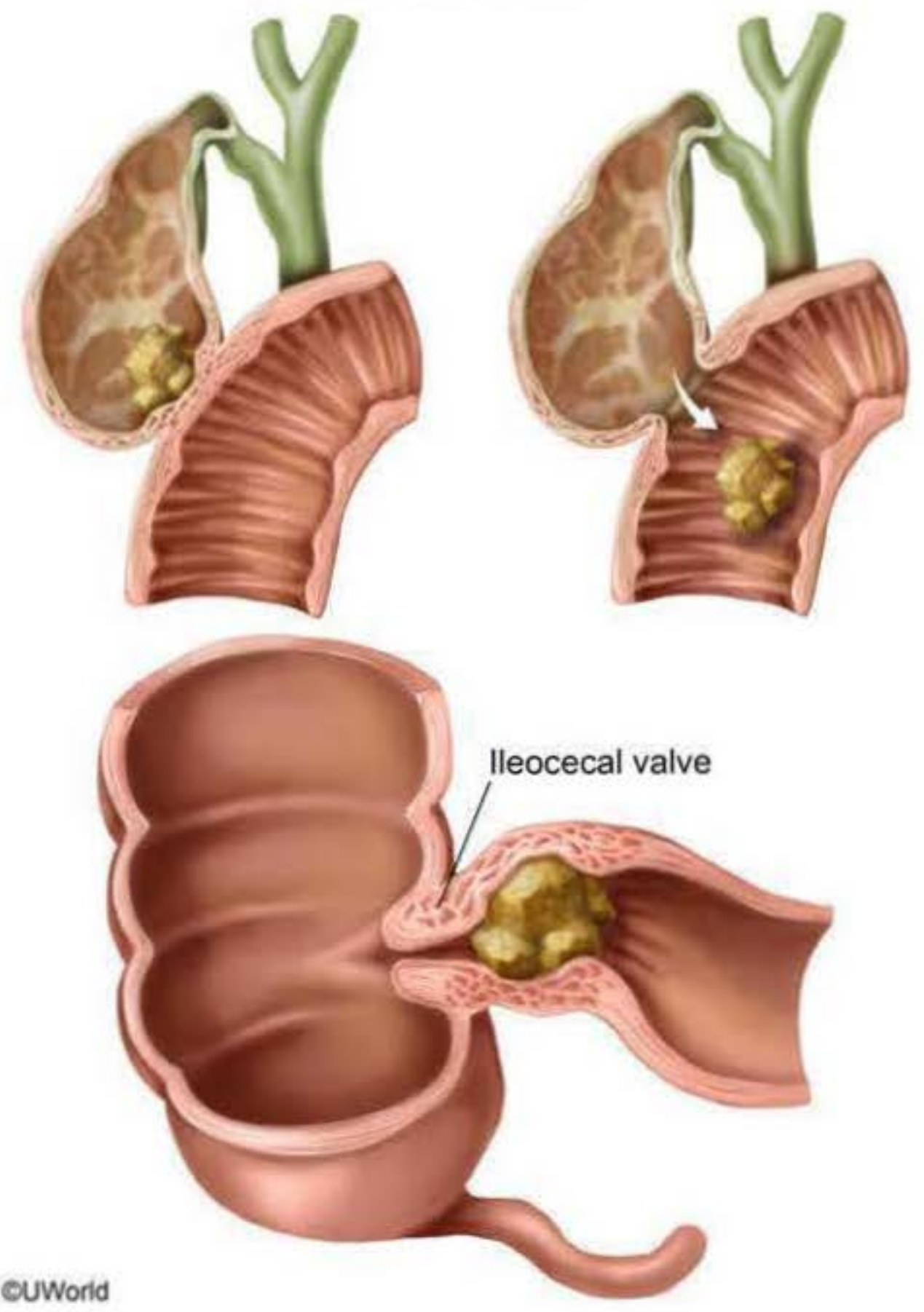




Media Exhibit

ileus

Gallstone ileus



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