

A 50-year-old woman comes to the emergency department with 2 days of abdominal pain, nausea, and vomiting. The pain was initially intermittent, coming in waves, but over the past 6 hours it has become severe and continuous. She has vomited 3 times over the last several hours but has not passed gas or had a bowel movement for the last 3 days. The patient's medical history is notable only for a large benign ovarian cyst, which was removed 10 years ago. Temperature is 38.5 C (101.3 F), blood pressure is 91/64 mm Hg, pulse is 122/min, and respirations are 24/min. Pulse oximetry shows 97% on room air. Mucous membranes are dry. Cardiopulmonary examination shows tachycardia but no abnormalities. The abdomen is distended, tympanic, and tender to palpation in all 4 quadrants. There is mild guarding and bowel sounds are decreased. Digital rectal examination shows no stool in the rectal vault. Laboratory results are as follows:

Hemoglobin	14.0 g/dL
Leukocytes	14,300/mm <sup>3</sup>
Blood glucose	70 mg/dL
Blood urea nitrogen	36 mg/dL
HCO <sub>3</sub>	15 mEq/L
Serum amylase	120 U/L

Plain abdominal x-ray shows distended loops of small bowel with air-fluid levels. A nasogastric tube is placed. In addition to intravenous fluids and analgesics, which of the following is the best next step in management?

- ☐ A. Broad-spectrum antibiotics and serial abdominal x-rays
- ☐ B. Contrast (barium) enema
- ☐ C. Magnetic resonance angiography of the mesenteric vessels
- ☐ D. Rectal tube placement
- ☐ E. Small-bowel follow-through series
- ☐ F. Urgent surgical exploration



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- ☐ A. Broad-spectrum antibiotics and serial abdominal x-rays [24%]
- ☐ B. Contrast (barium) enema [7%]
- ☐ C. Magnetic resonance angiography of the mesenteric vessels [3%]
- ☐ D. Rectal tube placement [1%]
- ☐ E. Small-bowel follow-through series [11%]
- ☒ F. Urgent surgical exploration [54%]

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Explanation:

User Id: [REDACTED]



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Small bowel obstruction	
<b>Clinical presentation</b>	<ul style="list-style-type: none"> <li>• Colicky abdominal pain, vomiting</li> <li>• Inability to pass flatus or stool</li> <li>• Hyperactive → absent bowel sounds</li> <li>• Distended &amp; tympanic abdomen</li> </ul>
<b>Diagnosis</b>	<ul style="list-style-type: none"> <li>• Dilated loops of bowel with air-fluid levels</li> <li>• Partial: Air in colon</li> <li>• Complete: Transition point (abrupt cutoff), no air in colon</li> </ul>
<b>Complications</b>	<ul style="list-style-type: none"> <li>• Ischemia/necrosis (strangulation)</li> <li>• Bowel perforation</li> </ul>
<b>Management</b>	<ul style="list-style-type: none"> <li>• Bowel rest, nasogastric tube suction, intravenous fluids</li> <li>• Surgical exploration for signs of complications</li> </ul>

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This patient's presentation is consistent with complicated small-bowel obstruction (SBO). Patients with SBO typically present with colicky abdominal pain, vomiting, inability to pass flatus or stool, abdominal distension, and diffuse tenderness. A history of prior abdominal surgery is an important risk factor due to adhesion development. Increased pain and hyperactive bowel sounds are sometimes noted during a peristaltic rush; however, as the SBO progresses, sounds may become diminished and if ischemia occurs they may disappear altogether. Depending on the level of obstruction, abdominal radiographs can reveal dilated loops of bowel with multiple air-fluid levels. Mild leukocytosis and amylase elevation can also be seen.

Most patients with SBO can be managed initially with conservative measures (eg, bowel rest, nasogastric tube suction, correction of metabolic derangements). However, this patient has several findings that indicate a **complicated SBO** with increased risk of impending ischemia, strangulation, and necrosis, warranting **emergency abdominal**



Surgical exploration for signs  
of complications

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**(Choice A)** Antibiotics should not be used in patients with uncomplicated SBO. Patients (such as this one) who have a complicated SBO with suspected strangulation have increased risk of intestinal bacterial translocation and sepsis; broad-spectrum antibiotics can reduce infection risk. However, antibiotics and observation (with serial x-rays) alone would not be appropriate for this patient given her clinical deterioration (eg, worsening pain, fever, acidosis).

**(Choices B and E)** Barium enema is not a useful diagnostic test in patients with suspected SBO. Small-bowel follow-through can help diagnose partial intestinal obstruction in clinically stable patients who do not respond completely to initial conservative management.

**(Choice C)** Acute mesenteric ischemia may present with similar signs and symptoms, including severe pain, vomiting, distension, decreased bowel sounds, and peritonitis. However, obstipation and air-fluid levels are more characteristic of SBO. CT angiography is the preferred imaging choice for acute mesenteric ischemia.

**(Choice D)** Colonic pseudo-obstruction (obstruction without a mechanical cause) may also present with pain, distension, and vomiting; however, imaging would instead show a dilated colon.



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#### Educational objective:

Immediate surgical intervention is indicated for patients with intestinal obstruction who develop clinical or hemodynamic instability, fail to improve after initial conservative measures, and/or develop symptoms or signs of ischemia or necrosis.

#### References:

1. [Adhesive small bowel adhesions obstruction: evolutions in diagnosis, management and prevention.](#)
2. [Adult small bowel obstruction.](#)