

An 82-year-old nursing home resident is brought to the emergency department due to 3 days of progressively worsening abdominal pain. He has had several episodes of vomiting during the past 24 hours. The patient usually has a bowel movement every 2-3 days, but his last bowel movement was 4 days ago. He has Alzheimer disease, hypertension, and osteoarthritis. The patient has had no prior abdominal surgery. Temperature is 37.2 C (99 F), blood pressure is 140/88 mm Hg, and pulse is 96/min. Physical examination shows a distended and tympanitic abdomen with tenderness to palpation. Peritoneal signs are absent. Bowel sounds are high pitched and increased. The patient has discomfort during rectal examination and no stool is present. Blood counts and serum electrolytes are within normal limits. Abdominal radiography reveals a markedly distended bowel loop, without any haustra, extending from the pelvis to the right upper quadrant in an inverted U shape. There are several dilated small-bowel loops with air-fluid levels. No air is present in the rectum. Which of the following is the most likely cause of this patient's abdominal pain?

- ☐ A. Adhesive small-bowel obstruction
- ☐ B. Gallstone impaction in the ileum
- ☐ C. Obstructing rectal carcinoma
- ☐ D. Strangulated inguinal hernia
- ☐ E. Torsion of the sigmoid colon



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- ☐ A. Adhesive small-bowel obstruction [11%]
- ☐ B. Gallstone impaction in the ileum [8%]
- ☐ C. Obstructing rectal carcinoma [7%]
- ☐ D. Strangulated inguinal hernia [8%]
- ☒ E. Torsion of the sigmoid colon [66%]

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

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This patient has manifestations of obstructed intestinal flow (eg, constipation, abdominal distension, no stool in the rectal vault), with radiographs demonstrating colonic dilation and no air in the rectum, consistent with anatomic obstruction from sigmoid colon torsion (**sigmoid volvulus**). This condition is often seen in **elderly** patients who are institutionalized (eg, nursing home) and have an underlying **neurologic** disorder (eg, dementia). Colonic dysmotility and **redundant** sigmoid colon, likely from **chronic constipation**, increase the risk of torsion of the sigmoid colon around its mesentery.



[F]

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Clinical presentation is variable. The elderly are at risk for a delayed presentation due to milder initial symptoms, but necrosis and bowel perforation can result in a more acute presentation. Most patients have **progressive** abdominal pain, **obstipation**, abdominal distension, and subsequent nausea and vomiting. **High-pitched** bowel sounds imply active intestinal motility with severe narrowing or obstruction. Discomfort during rectal examination and no stool in the rectal vault may be present. On radiograph, the **dilated colon (no haustra)** appears as an **inverted U shape** (arrow); a transition point at the site of torsion leads to **no air in the rectum**.

**(Choice A)** Small-bowel obstruction from adhesions occurs in those who, unlike this patient, had abdominal surgery and developed adhesive scar tissue. Radiographic findings include dilated loops of small bowel with multiple air-fluid levels and no air in the large intestine; an inverted U-shaped, ahaustral, dilated loop of bowel is more consistent with sigmoid volvulus.

**(Choice B)** Gallstone ileus is a mechanical small intestine obstruction following passage of a gallstone through a biliary-enteric fistula. Patients classically have episodic symptoms of obstruction as the stone becomes transiently impacted and then travels in the small intestine until it becomes impacted again. X-rays may reveal pneumobilia (gas in the biliary system) and a gallstone.

**(Choice C)** Obstructing rectal carcinoma could cause colonic dilation but would likely present as chronic symptoms (eg, change in bowel habits, rectal bleeding). It may be detected on a thorough rectal examination.

**(Choice D)** Hernia strangulation is an incarceration of hernia contents in the hernia sac, with impedance of vascular flow resulting in ischemia. It would present as a warm, painful, and nonreducible hernia.

#### Educational objective:

Elderly institutionalized patients are at risk for torsion of the sigmoid colon, often due to redundant sigmoid and colonic dysmotility. They may have insidious onset of abdominal



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#### Educational objective:

Elderly institutionalized patients are at risk for torsion of the sigmoid colon, often due to redundant sigmoid and colonic dysmotility. They may have insidious onset of abdominal pain and distension, obstipation, and nausea and vomiting. Abdominal radiograph demonstrates near-total colonic dilation but no air in the rectum.

#### References:

1. [Colonic volvulus in the United States: trends, outcomes, and predictors of mortality.](#)