

A 46-year-old man is brought to the emergency department after a fall during a downhill bicycle race. The patient lost consciousness for approximately 1 minute after the fall and reports severe back and abdominal pain. He has no other medical problems. CT scan of the head reveals no intracranial bleeding; CT scan of the abdomen reveals a small retroperitoneal bleed and splenic laceration. Lumbar film suggests a compression wedge fracture of the L2 vertebral body, and a brace is placed. The patient is conservatively managed with analgesics and supportive measures. On hospital day 3, he reports mild diffuse abdominal pain and nausea. His abdomen is distended, tympanic, and mildly tender without rebound or guarding. Bowel sounds are absent. X-ray of the abdomen reveals the following:





Which of the following is the most likely diagnosis?

- ☐ A. Cecal volvulus
- ☐ B. Complete small bowel obstruction





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- ☐ A. Cecal volvulus
- ☐ B. Complete small bowel obstruction
- ☐ C. Gastric outlet obstruction
- ☐ D. Paralytic ileus
- ☐ E. Sigmoid volvulus
- ☐ F. Viscus perforation

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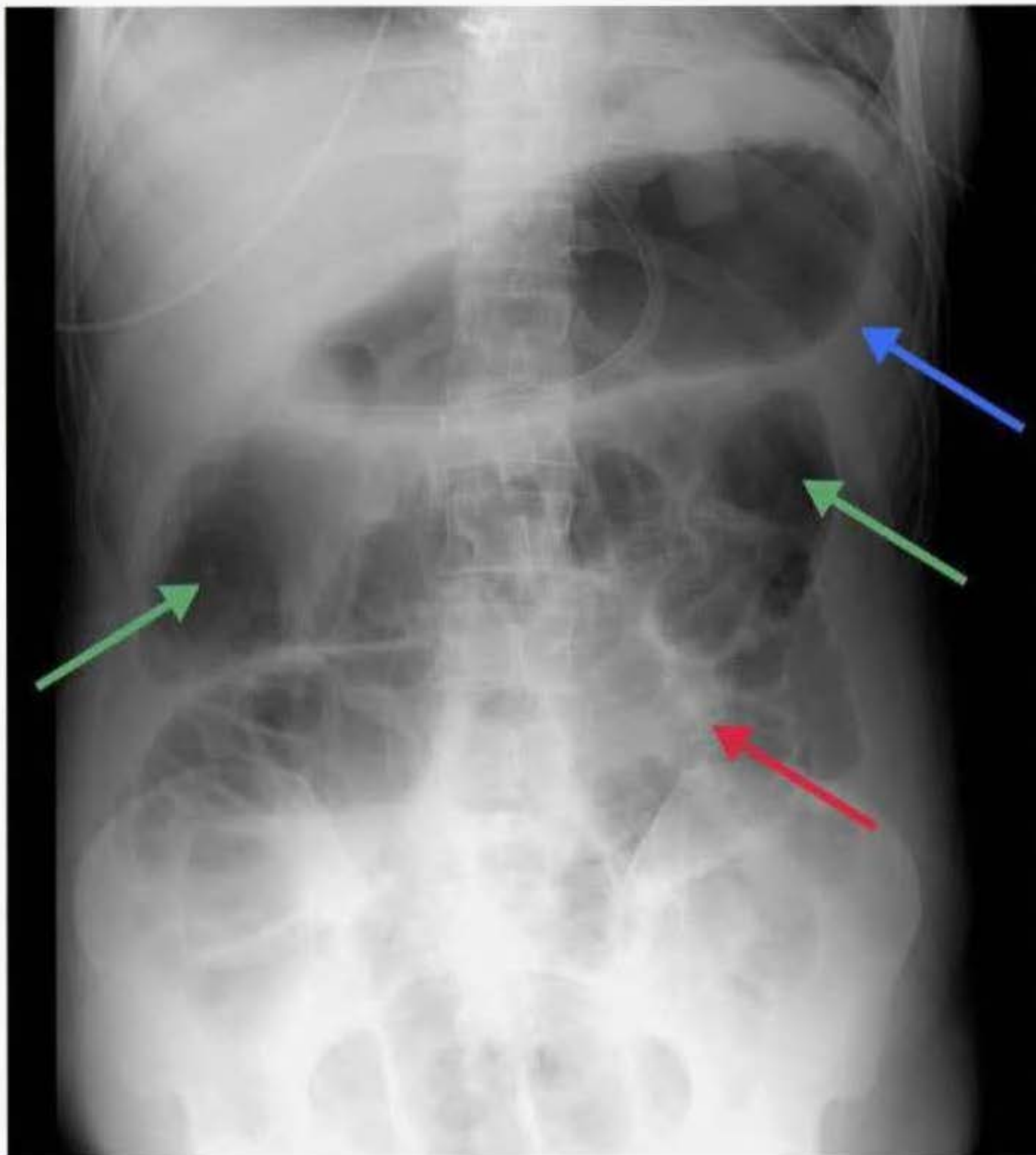
Which of the following is the most likely diagnosis?

- ☐ A. Cecal volvulus [4%]
- ☐ B. Complete small bowel obstruction [11%]
- ☐ C. Gastric outlet obstruction [6%]
- ☒ D. Paralytic ileus [67%]
- ☐ E. Sigmoid volvulus [6%]
- ☐ F. Viscus perforation [6%]

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Explanation:

User Id: [redacted]



**Paralytic (adynamic) ileus** is the most likely diagnosis in this patient who has



**Paralytic (adynamic) ileus** is the most likely diagnosis in this patient who has **abdominal pain** following a traumatic injury and an abdominal x-ray revealing gas-filled loops of both the small (red arrows) and large intestines (green arrows) as well as gastric dilation (blue arrow). Ileus is most commonly due to **abdominal surgery** but can also be seen in other conditions such as retroperitoneal/abdominal hemorrhage or inflammation, intestinal ischemia, and electrolyte abnormalities. Contributors to the pathophysiology of ileus include increased splanchnic nerve sympathetic tone following irritation of the peritoneum, local release of inflammatory mediators, and opioid analgesic use.

Signs and symptoms of ileus include nausea, vomiting, abdominal distension, failure to pass flatus or stool (obstipation), and hypoactive or **absent bowel sounds**. The diagnosis is clinical, but abdominal x-rays (classically revealing **dilated gas-filled loops** of bowel with **no transition point**) can be helpful in confirmation. Management is conservative and includes bowel rest, supportive care, and treatment of secondary causes.

**(Choices A and E)** The most common sites of volvulus in adults are the cecum/proximal ascending colon and sigmoid colon. Abdominal x-rays frequently reveal a transition point at the cecum or **sigmoid colon**. Patients are usually much older than this patient and have a more insidious onset of symptoms. Neither sigmoid volvulus nor cecal volvulus is a common complication of trauma.

**(Choice B)** In complete small bowel obstruction, the bowel distal to the obstruction will not be distended. In addition, hyperactive "tinkling" bowel sounds are typically present on physical examination. Peristaltic waves on the abdominal wall can also be observed.

**(Choice C)** Gastric outlet obstruction only demonstrates a distended stomach on x-rays. A succussion splash may be heard over the stomach; otherwise, bowel sounds may be normal or hyperactive.

**(Choice F)** Perforation of an abdominal viscus commonly causes free air under the diaphragm as well as diffuse abdominal tenderness (due to peritonitis), neither of which is present in this patient.

#### Educational objective:

Ileus is commonly due to abdominal surgery but can also be seen in retroperitoneal/abdominal hemorrhage or inflammation, intestinal ischemia, and electrolyte abnormalities. Signs and symptoms of ileus include nausea, vomiting, abdominal distension, obstipation, and hypoactive bowel sounds. Abdominal radiography classically reveals uniformly distended, gas-filled loops of both the small and large



peritoneum, local release of inflammatory mediators, and opioid analgesic use.

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#### References:

1. **Adynamic ileus and acute colonic pseudo-obstruction.**
2. **Mechanisms of postoperative ileus.**
3. **A comprehensive review of evidence-based strategies to prevent and treat postoperative ileus.**



Media Exhibit

volvulus

