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The importance of keeping in the loop about abdominal pain

Erika Poggiali,¹ Chiara Minelli,² Claudia Caborni²

¹Emergency Department, Guglielmo da Saliceto Hospital, Piacenza; ²Radiology Unit, Guglielmo da Saliceto Hospital, Piacenza, Italy

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Correspondence: Erika Poggiali, Emergency Department, “Guglielmo da Saliceto” Hospital, Via Giuseppe Taverna 49, Piacenza, Italy.
Tel.: +39 0523 303044. E-mail: E.Poggiali@ausl.pc.it.



A 59-year-old Italian woman presented to our emergency department with worsening crampy pelvic abdominal pain, accompanied by severe nausea and vomiting. She experienced constipation 24 hours after the onset of symptoms but denied having a fever or any urinary issues. Her medical history included an appendectomy and a hysterectomy performed 10 years prior. Upon examination, her abdomen was tender, and she rated her pain as severe (10/10). Point-of-care ultrasound revealed fluid-filled, dilated small bowel loops with increased parietal thickening and free fluid between bowel loops, along with a “caliber jump” observed between the swollen loops upstream and the collapsed loops downstream of the obstruction. All laboratory tests were within normal limits, including lactate levels. The patient was treated with intravenous morphine and crystalloids. A computed tomography (CT) scan of the abdomen was immediately performed afterward and showed the so called “bunch of grapes sign” (panel A, red circle) and multiple dilated small bowel loops (panel B).

obstructions are classified as a partial, complete, or closed loop.² A closed-loop obstruction is a specific type of bowel blockage where two points of the intestine are blocked at a single location, thus forming a closed loop (Figure 1). The most common causes are postsurgical adhesions, volvulus, or internal herniation. The risk of strangulation and bowel infarction is significant with a mortality rate of 10-35%. This is a surgical emergency that requires immediate treatment.

The primary goal of an emergency physician is to suspect a SBO, make an accurate diagnosis, and identify the presence of strangulation. Bedside ultrasound can be a valuable tool for diagnosing SBO and can also assess intestinal peristalsis in real-time, playing a critical role in both diagnosis and patient monitoring.³ However, CT is the imaging technique of choice when SBO is suspected. CT should focus on four key points: confirming the obstruction, determining whether there is a single transition point or whether the obstruction is found in a closed loop, establishing the cause of the obstruction, and seeking signs of complications.⁴ Identifying signs of ischemia is crucial for managing patients effectively. It helps identify those at higher risk of poor outcomes after conservative treatment, allowing for timely surgical intervention that can prevent increased morbidity and mortality associated with bowel strangulation and ischemia.^{5,6} Initial conservative treatment can be considered in selected patients with both a distance between the transition zones >1 cm and low-grade obstruction.⁷ Our patient underwent laparoscopic surgery that revealed a thick, adherent bridge causing a volvulus of the ileum in the pelvis with

Question

Based on the CT imaging, what is the most likely diagnosis?

- A. Paralytic ileus
- B. Ovarian cyst rupture
- C. Small bowel closed-loop obstruction
- D. Complicated inguinal hernia

Answer

The correct answer is a small bowel closed-loop obstruction. Small Bowel Obstructions (SBOs) are more common than large bowel obstructions, accounting for 12-16% of emergency surgical admissions and 20% of emergency surgical procedures.¹ Bowel



Figure 1. Closed loop obstruction: the entry and exit points are indicated with arrows.

vascular compromise, which completely solved after adhesiolysis. The patient was discharged in good condition after four days.

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Informed consent: the patient provided consent for the access to medical records at the time of admission.

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