Perforated appendicitis in the setting of a massive ventral hernia, morbid obesity, and multiple severe comorbidities: challenges in acute management

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CASE SUMMARY
A 57-year-old woman with morbid obesity (body mass index [BMI] of 43), systemic lupus on steroids, type 2 insulin-dependent diabetes, peripheral vascular disease, unprovoked pulmonary embolism on rivaroxaban, and hypertension presented with 3 days of worsening abdominal pain and nausea. She had an extensive surgical history including a cesarean section, multiple laparotomies for small bowel obstructions (one complicated by bowel perforation requiring resection), and a double-barelled ileostomy, which had been since reversed. As a result, she had a massive incisional hernia (figure 1). On presentation she was afebrile but tachycardic at 110 beats per minute. Physical examination revealed tenderness to deep palpation in the right upper and lower quadrants. CT demonstrated an 11 mm appendix with an appendicolith outside the hernia sac abutting the right kidney, discontinuity of the appendix tip, free fluid, and associated stranding in the subhepatic region (figure 2A).

She was admitted to the surgical floor for a trial of conservative management with ancef and flagyl. On day 3, her pain worsened, her white cell count remained stable at 12 x10⁹/L, her temperature was 37.8°C, she was not tachycardic, and a repeat CT showed a 15 mm perforated appendix with increased periappendiceal stranding and an associated small volume of free fluid. There was no phlegmon or organized abscess (figure 2B).

WHAT WOULD YOU DO?
1. Continue non-operative management with broadened intravenous antibiotic coverage and bowel rest.
2. Laparoscopic ± open appendectomy without concomitant hernia repair.
3. Laparoscopic ± open appendectomy with abdominal wall reconstruction.

The recurrence rate after conservative management for uncomplicated appendicitis is approximately 34% at 2 years and 39% at 5 years. Another important consideration is the risk of malignancy. The incidence of malignancy has been estimated to be approximately 1% overall. However, the risk increases with age, and recent literature suggests the rate of malignancy is higher in complicated appendicitis.

In summary, patients with complicated appendicitis do not always require immediate surgical management; decisions should include a thoughtful evaluation of their individualized perioperative risks. Non-operative management can be feasible and safe under close monitoring. In addition, interval appendectomy should be strongly considered once the patient can be optimized, particularly in patients older than 40.

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