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# A case report of unexpected pathology within an incarcerated ventral hernia☆

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ABSTRACT

*INTRODUCTION:* Incidence of hernial appendicitis is 0.008%, most frequently within inguinal and femoral hernias. Up to 2.5% of appendectomy patients are found to have Crohn's disease. Elucidating the etiology of inflammation is essential for directing management.

*PRESENTATION OF CASE:* A 51-year-old female with achondroplastic dwarfism, multiple cesarean sections, and subsequent massive incisional hernia, presented with ruptured appendicitis within her incarcerated hernia. She underwent diagnostic laparoscopy, appendectomy, intra-abdominal abscess drainage, and complete reduction of ventral hernia contents. She developed a nonhealing colocutaneous fistula, causing major disruptions to her daily life. She elected to undergo hernia repair with component separation for anticipated lack of domain secondary to her body habitus.

Her operative course consisted of open abdominal exploration, adhesiolysis, colocutaneous fistula repair, ileocolic resection and anastomosis, and hernia repair with bioresorbable mesh. She tolerated the procedure well. Unexpectedly, ileocolic pathology demonstrated chronic active ileitis, diagnostic of Crohn's disease.

*DISCUSSION:* Only two cases of hernial Crohn's appendicitis have been reported, both within Spigelian hernias. Appendiceal inflammation inside a hernia sac may be attributed to ischemia from extraluminal compression of the hernia neck. This case demonstrates a rare presentation of multiple concurrent surgical disease processes, each of which impact the patient's treatment plan.

*CONCLUSION:* This is the first report of incisional hernia appendicitis with nonhealing colocutaneous fistulas secondary to Crohn's. It is a lesson in developing a differential diagnosis of an inflammatory process within an incarcerated hernia and management of the complications related to laparoscopic hernial appendectomy in a patient with undiagnosed Crohn's disease.



## 1. Introduction

Incidence of hernia sac appendicitis has been reported as 0.1% and perforated appendicitis within a hernia as 0.008%, most frequently within inguinal and femoral hernias [2]. Appendiceal inflammation inside a hernia may be due to ischemia from extraluminal compression of the hernia neck or trauma from periappendiceal adhesions [1].

Elucidating the etiology of appendiceal inflammation is essential for directing management. While emergent appendectomy is the standard of care for appendicitis, non-operative medical management is appropriate in cases of inflammatory bowel disease. Up to 2.5% of appendectomy patients are found to have Crohn's disease [3] and 34–58% of patients who undergo appendectomy without ileocecectomy, develop complications associated with Crohn's disease, like enterocutaneous fistula, necessitating further surgical management [2].

Only two cases of hernial Crohn's appendicitis have been reported, all within Spigelian hernias [3,5]. Here we describe the first reported case of Crohn's appendicitis within an incisional hernia.

This work has been reported in line with the SCARE criteria.

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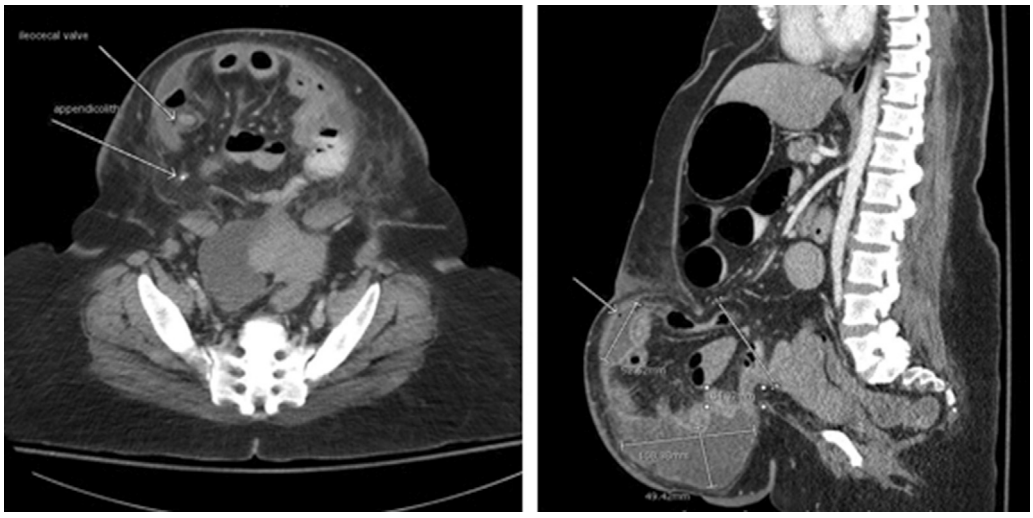


**Fig. 1.** Computed tomography scan of abdomen and pelvis. Large, broad-based ventral hernia (8.4-cm × 5.9-cm) containing ileum, cecum, appendix, and some ascending colon, with dilatation of proximal small bowel loops without passage of contrast into normal caliber exiting loops of colon, concerning for high grade small bowel obstruction. Within the hernia sac, the appendix is slightly dilated to 7.5 mm, with two appendicoliths found within the lumen. The bowel walls within the hernia sac are thickened, with prominent fat stranding. There are two adjacent fluid collections, measuring 10.8 × 4.9 × 10.4-cm and 1.4 × 3.8 × 5.2-cm, containing locules of gas, suggestive of abscess.

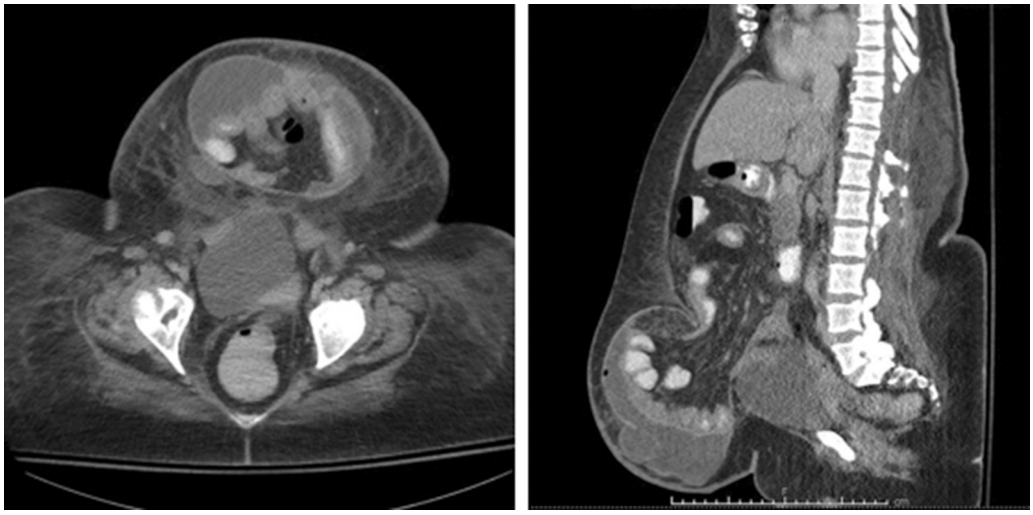

**Fig. 2.** Computed tomography scan of abdomen and pelvis. Ventral hernia with wide neck (6.6 × 6.0-cm), containing multiple loops of small bowel, including the cecum. No evidence of obstruction or dilated loops of bowel. Thickening present of the bowel wall along the terminal ileum. A localized fluid collection is seen within the subcutaneous fat between the skin surface and the hernia sac, measuring 10.0 × 9.0 × 3.0-cm.

## 2. Presentation of case

A 51-year-old female with history of achondroplastic dwarfism, morbid obesity (BMI of 46), multiple cesarean sections, and subsequent massive incisional hernia presented to the emergency department after one week of nausea, bloating, intermittent vomiting, fever, and diarrhea. On evaluation, she was tachycardic, febrile, and displayed tenderness on palpation of her lower abdomen over her ventral hernia with corresponding areas of cellulitis. Furthermore, her laboratory values were notable for a leukocytosis of 16,000. Computed tomography scan demonstrated a dilated appendix with appendicoliths, thickening of the neighboring small bowel walls with fat stranding, and two adjacent abscesses, consistent with ruptured appendicitis within her incarcerated ventral hernia (Fig. 1). Given that the patient's septic status and the extent of the multiple abscesses tracking through the hernia sac compromising the surrounding incarcerated small bowel, the decision was made to proceed with surgical drainage and appendectomy. Intravenous antibiotics were initiated in the emergency department and sustained during the operation. Intra-operatively, she underwent diagnostic laparoscopy, laparoscopic access into the hernia sac, releasing 550-cc of purulent fluid with necrotic tissue, which was drained and washed out, followed by appendectomy, and complete reduction of the hernia contents. The patient's body habitus made for limited abdominal domain and increased the difficulty of the operation. The small bowel and cecum appeared hyperemic, but viable and without obvious pathognomonic evidence of Crohn's disease.

Pathologic analysis of the appendix showed acute and organizing serosal and subserosal inflammation with sparing of the mucosa. Mucosal inflammation would be expected in the normal pathogenesis of ruptured appendicitis progressing from bacterial invasion to ischemia and gangrene; therefore, the pathology and surgical team deduced that the periappendicitis was the result of an extrinsic inflammatory process, likely associated with incarceration at the hernia neck. While evidence of perforation and