

Perforated Appendicitis within the Sac of a Recurrent Incisional Hernia: A Rare Occurrence

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Abstract

Perforated hernial appendicitis rarely occurs with an incidence of 0.008%. We present a case of a young obese woman, a known hypertensive, who presented with abdominal pain, fever, and a tender abdominal swelling over a previous lower midline incision scar. She was thought to have a strangulated recurrent incisional hernia and was offered an emergency laparotomy. Intraoperatively, she was found to have a massive multiloculated hernia sac with the caecum, ruptured appendicitis, and abscess within a locus of the sac. Her ascending colon was mobile. The abscess was drained, appendectomy was done, hernia repair deferred, and wound closure effected. Such atypical presentation poses a diagnostic challenge. We seek to increase awareness of this condition and contribute to the medical literature surrounding this unusual pathology.

Keywords: Appendicitis, incisional hernia, perforation

INTRODUCTION

Acute appendicitis is a prevalent surgical emergency worldwide. The finding of hernial appendicitis is a rare event, with the overall incidence reported as 0.1% and perforated appendicitis as low as 0.008%.^[1]

Incisional hernias are late complications of laparotomy and laparoscopic procedures, with incidences ranging from 3.8% to 20%.^[2] Literature review has shown that the presence of an inflamed appendix or its complicated form in an incisional hernia is extremely rare.^[3] We report the case of a perforated inflamed appendix in a locus of a multiloculated and huge incisional hernia sac in a patient with a mobile caecum and ascending colon.

CASE REPORT

A 41-year-old known hypertensive woman presented with a week's history of colicky periumbilical abdominal pain and fever at the Jos University Teaching Hospital's emergency department. The bowel habits were intact, and there was no vomiting. She also presented with a large lower abdominal incisional hernia following three previous cesarean sections and a failed tissue-based incisional hernia repair. The hernia partially reduces lying supine but becomes

prominent with straining until the onset of the above symptoms when it became irreducible. On examination, she was pyrexia (38.9°C), tachycardic at 120 beats/min, and blood pressure of 140/90 mmHg. Her body mass index was 37.5 kg/m². Abdominal examination revealed an asymmetrically distended abdomen with a healed lower midline incision scar, a firm swelling with no cough impulse in the periumbilical region measuring 15 cm × 12 cm with areas of edema, differential warmth, and tenderness. The swelling was irreducible, and she had hypoactive bowel sounds.

A diagnosis of strangulated recurrent incisional hernia in a known hypertensive was made. She was resuscitated, prepared for, and had an emergency laparotomy. The intraoperative findings were a huge multiloculated sac, a perforated appendix with 120 ml of purulent material, and the caecum (mobile) within a locus with minimal intraperitoneal contamination. No faecolith was found [Figures 1 and 2]. There were a mobile

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ascending colon and a fascial defect of 30 cm × 20 cm. The abscess was drained, appendectomy was done, the hernia sac was excised, and the peritoneal edges closed continuously with 2-0 Polyglactin 910 suture. Repair of the fascial defect was deferred and delayed primary wound closure was effected.

She developed a surgical site infection postoperatively managed with antibiotics and wound care [Figure 3]. Histology

confirmed perforated appendicitis. She is scheduled for a definitive mesh repair in 6–12 months.

DISCUSSION

The appendix may be located in all forms of external hernia. The most typical locations are inguinal and femoral hernias, also known as Amyand's and De Garengeot's hernia, respectively.^[4] In addition, some reports have shown the appendix's presence in left-sided inguinal, umbilical, Spigelian, and on rare occasions, incisional hernias.^[2] The predisposing factors for incisional hernia in our patient were likely multifactorial, including obesity, multiple abdominal surgeries, and possibly, local operative factors

Several hypotheses aimed at explaining the appendix's unusual location in the sac of a ventral hernia has been put forward. They include a mobile caecum, postoperative adhesions, and malrotation during embryonic development.^[5] In the index patient, the mobile caecum and ascending colon may have accounted for the appendix's unusual anatomical location.

It is postulated that in hernial appendicitis, the inflamed appendix results from extraluminal compression or interference of its arterial supply or venous drainage by its unusual confinement.^[2] This is likely the cause of appendicitis and subsequent perforation in our patient, especially as no faecolith was found.

A hernia presentation containing an inflamed appendix is usually atypical, making preoperative diagnosis difficult without imaging studies. Meinke and his associates,^[6] reported that the clinical features of patients with hernial appendicitis are in keeping with incarcerated hernia as seen in our patient. These diagnostic challenges could be attributed to the absence of appendicitis classic symptoms due to its unusual location.

In patients with hernias containing an inflamed appendix or its complication, a tender abdominal mass with absent expansile cough impulse is a common finding as noticed in our patient.^[6,7] This appears to be due to inflammatory changes caused by perforated appendicitis within the sac and spreading beyond it with associated fibrinoid adhesions. The relatively smaller abdominal mass with the huge fascial defect may be due to the multiloculated nature of the sac such that focal areas of inflammation became prominent on a background obese abdomen that may have obscured other parts of the swelling.

Preoperative computed tomography (CT)-scan may be beneficial in demonstrating the unusual location of the appendix within the incisional hernias and thus, influence the treatment plan.^[8] Recently, there have been reports of nonoperative management of complicated appendicitis with a good outcome against the traditional practice of immediate surgical intervention.^[8,9] In addition, recent reports have described the safety and advantages of laparoscopic intervention.^[11] In our patient, an abdominal CT-Scan was not done because it is not



Figure 1: Appendix with terminal ileum and mobile caecum/ascending colon



Figure 2: Appendectomy specimen



Figure 3: Healed abdominal scar after two months of surgery

a routine investigation for emergency cases in our subregion; hence, the option of laparotomy was resorted to.

The ideal approach in managing incisional hernia containing an inflamed appendix or its complicated form is debatable. The management is determined by the surgeon's expertise, preference, and degree of contamination. A prosthetic mesh can be used safely in the absence of gross contamination or perforation following hernial appendicitis with a reduced recurrence rate.^[10]

In our case, it was thought appropriate to forego tissue-based repair, either the simple primary or component separation repair, due to the increased risk of wound complications in this setting, especially surgical site infection and the possibility of abdominal compartment syndrome secondary to the wide fascial defect. There is substantial evidence that comorbid patients suffer worse outcomes post appendectomy. Michailidou *et al.*^[11] showed that postoperatively, obese patients have an increased rate of surgical site infection as observed in our patient.

CONCLUSION

This is a report of an uncommon presentation of perforated appendicitis in a locus of a huge multiloculated and recurrent incisional hernia sac in a patient with a mobile caecum and ascending colon. We report this rare case as a lesson that appendicitis and its complications could be considered in the differential diagnosis of inflammation of an incisional hernia and its management.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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