Case Report

Perforated appendicitis within paraumbilical hernia

Hamad H. Al-Qahtani, MBBS, FRCS, *Tariq Z. Al-Qahtani*, MBBS, CABS.

ABSTRACT

The appendix is not uncommonly encountered within an external hernial sac. However, acute appendicitis in hernia is quite rare. We report a female patient who was admitted and operated as a case of incarcerated, strangulated paraumbilical hernia and the hernial sac was found to contain part of the greater omentum, pus and acutely inflamed, gangrenous appendix, perforated at the tip. Appendicectomy and hernial repair were carried out through the same incision.

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The finding of vermiform appendix within an inguinal hernial sac is not rare. However, it is rare to find a perforated appendix within an inguinal or femoral hernia and even rarer to find perforated appendix in umbilical, obturator or incisional hernia. Ryan[1] reported only 11 (0.13%) of 8692 cases of acute appendicitis found in external hernias.[1] We present an unusual case of perforated appendicitis in incarcerated paraumbilical hernia.

Case Report. A 36-year-old female was admitted with the sudden onset of dull, intermittent pain in an earlier diagnosed partially reducible paraumbilical hernia that has enlarged in size, associated with nausea and vomiting for 2 days. She was known diabetic on oral hypoglycemic drugs. On examination, a large 10 cm x 10 cm irreducible paraumbilical hernia was found, associated with redness, hotness and tenderness in the right side of hernial swelling. The white blood cell count was 18,000, hemoglobin was 10 gm/dl, serum electrolytes, blood urea nitrogen, creatinine all were within normal range. Blood glucose was 17 mmol/dl. The x-ray of the abdomen was unremarkable. She was admitted as a case of incarcerated, strangulated paraumbilical hernia and prepared for surgery. Blood sugar control was achieved, and broad-spectrum intravenous antibiotics (Zinacef + Flagyl) started. She was operated through a supraumbilical transverse incision. Hernial sac was explored and found to contain part of the greater omentum, pus and inflamed gangrenous appendix perforated at the tip. Aspiration of the pus, resection of part of the omentum and appendicectomy was carried out through the same incision; wound was closed primarily without any septic complications. Postoperative recovery was uneventful. Histopathology showed acute suppurative appendicitis (**Figure 1**).

Discussion. Acute appendicitis is rarely reported in external hernia. Carey[2] presented 10 cases of acute appendicitis occurring in various hernias; 3 of the patients died resulting from septic complications. The first reported case of appendicitis was in a femoral hernial sac reported by De Garengot in 1731.[3] Five years later Amyand[4] performed an appendicectomy through an inguinal herniotomy. When we reviewed the literature we could find only one adult case of acute appendicitis in umbilical hernial sac reported by Doig in 1970.[5] The presence of the appendix in a hernial sac, especially inguinal and femoral hernias, is not rare,

From the Department of General Surgery, Riyadh Medical Complex, Riyadh, *Kingdom of Saudi Arabia*.

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Address correspondence and reprint request to: Dr. Hamad Al-Qahtani, Senior Registrar General Surgery, Department of General Surgery, Riyadh Medical Complex, PO Box 57031, Riyadh 11574, *Kingdom of Saudi Arabia*. Tel. +966 (1) 4611453. Fax. +966 (1) 4611453. E-mail: hamad232326@hotmail.com

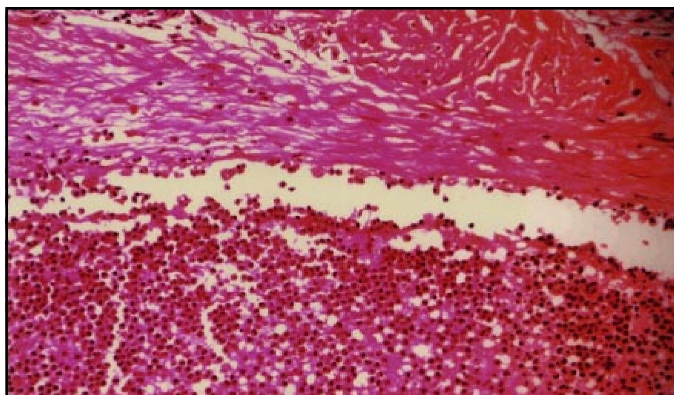

Figure 1 - Histopathology of the appendix showing the muscular layer diffusely infiltrated with neutrophils.

however, acute appendicitis in a hernia is quite rare and usually occurs in a right inguinal hernia or femoral hernia but has been reported in left inguinal hernia, obturator, umbilical and incisional hernia.[4-6] The diagnosis is virtually never made before operation. Only one author has documented the correct diagnosis on one occasion before surgical exploration.[7] The correct diagnosis depends on awareness of the condition. Commonly the patient experiences a sudden onset of pain in the hernial swelling which gives the impression of strangulated or incarcerated hernia. However, there are no radiological or clinical signs of bowel obstruction. Most of the patients undergo surgical exploration due to suspicion that an incarcerated or strangulated hernia is the source of the intense and localized pain in the hernial swelling. Differential diagnosis is usually of strangulated omentocele or Richter's hernia.[8] Pyrexia and leukocytosis are not constant findings in hernial appendicitis.[9]

Treatment is appendicectomy, if possible via the hernial sac. Though separate laparotomy incision might be occasionally required, but carries the risk of dissemination of the infection throughout the general peritoneal cavity. Gross intraperitoneal soiling necessitates liberal washing out, or mopping of the contaminated areas as well as the herniorrhaphy wound.[4] Primary hernial repair has been recommended unless there are strong individual contraindications.[10] Wound drainage and antibiotics reduce the likelihood of wound infection. Although mortality rates as high as 14-30% were reported in the late 1960s, previous reports have recorded fewer complications.[3,9,10]

In conclusion, acute appendicitis within paraumbilical hernia is a very rare condition. The patient usually presents with diagnosis of strangulated hernia that should be managed promptly to decrease the morbidity and mortality. The case cannot be diagnosed before surgical exploration. The management should include treatment of appendicitis as well as the hernial repair.

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