

Amyand's Hernia: Case Report With Review Of Literature

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Abstract

Amyand's hernia means that the appendix protrudes through an inguinal hernia. The incidence is estimated to be 0.08%. And although the real incidence is higher than the one known for Littré's hernia, Amyand's hernia is rarely recognized with the same merit. We describe 2 cases of Amyand's hernia both of which presented with a hernia thought to be incarcerated, until the final diagnosis was made in the operating room.

The preferred treatment is an appendectomy through a herniotomy and a primary hernia repair, but as we state in one of the cases the involvement of other abdominal structures changes the treatment and the conditions of the patient.

INTRODUCTION

Amyand's hernia means that the appendix protrudes through an inguinal hernia sac [1]. Claudius Amyand (1650-1770), a French refugee surgeon of George II and Chief Surgeon at St George and the Westminster Hospital of London performed the first recorded successful appendectomy in 1735, the patient being Havil Handerson, an 11-year-old boy with an inguinal hernia [2,3,4]. During the half-hour surgery, he found the appendix in the hernia sac and a fistula tract from the perforation to the appendix (which he traced with a pin) [2,3,4,5]. The case was reported in the "Philosophical Transactions of the Royal Society" in 1736 where he commented "it is easy to conceive that this operation was as painful to the patient as laborious to me". The boy recovered, but the hernia recurred [6].

Many articles refer to Garengéot as the first one to find a non-swollen appendix in an inguinal hernia sac, but it was Amyand who performed surgery on a swollen appendix which by chance was inside an inguinal hernia sac, 144 years before Tate, and 150 years before Hall in the Roosevelt Hospital in New York in 1885 [2, 4, 7].

CASE REPORT

Case no. 1. A 39-year-old man with pre-medical history of a right inguinal hernia refers a 24-hour right inguinal region lump after extenuating physical effort without being able to manually reduce it. The pain was progressive, irradiated to the right leg and was associated with nausea and vomiting in two occasions. At admission, he was dehydrated, vital signs were stable and the right inguinal region had a painful

protrusion not able to be reduced manually without changes in skin color. Hemoglobin was 16.5 g/dL, WBC $14.9 \times 10^3/L$, platelets $288 \times 10^3/L$, and coagulation times were normal. He was diagnosed with an incarcerated right inguinal hernia and taken to the operating room; the hernia sac was identified and once opened, a swollen appendix was found inside, an appendectomy was performed and the hernia repaired with a Bassini technique without complications (Figure 1). He was discharged 48 hours later in excellent condition.

Figure 1

Figure 1: Inguinal region approach, we can see the opened hernia sac with the swollen appendix inside and a lipoma of the spermatic cord beside it.



Case no. 2. A 45-year-old man without relevant pre-medical history started with a three week history of pain irradiating

to the right testicle and a non-reducible mass in the right inguinal region. He had a fever of 38°C 24 hours before, abdominal pain in the right lower quadrant and difficulty walking because of the mass, accompanied with nausea and vomiting. At admission, he had stable vital signs and a painful, non-reducible protrusion in the right inguinal region and scrotum without skin changes. His laboratory values showed a hematocrit of 45.3 g/dL, WBC of $10.4 \times 10^3/L$ and platelets of $199 \times 10^3/L$. He was taken to the operating room with a diagnosis of incarcerated inguinal hernia; the approach was through the inguinal region and the sac contained necrotized omentum and the swollen appendix adhered to it. A laparotomy incision had to be performed to reduce the omentum to the abdomen after which a Zuckerman type appendectomy and partial omentectomy were performed (figures 2, 3 and 4). The hernia defect was repaired with a Bassini technique and drainage was left in the abdominal cavity. He developed an ileus that resolved spontaneously and was discharged on the sixth day.

Figure 2

Figure 2: Right inguinal-scrotal hernia, before surgery.



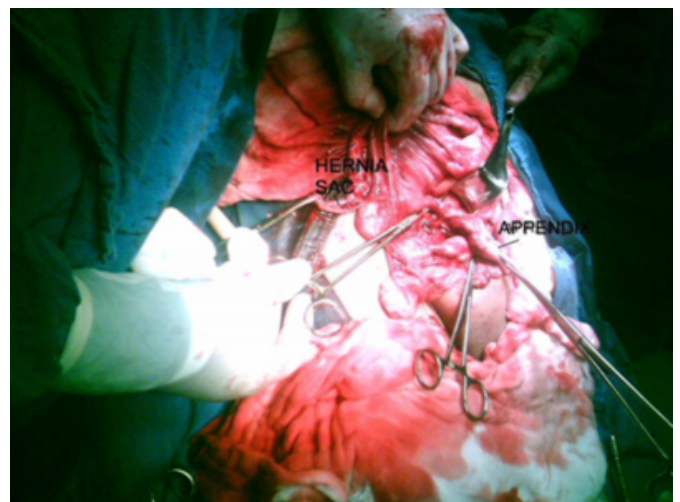
Figure 3

Figure 3: Inguinal region approach, opened hernia sac, necrotized omentum.



Figure 4

Figure 4: Abdominal approach, swollen appendix and the hernia sac



DISCUSSION

The presence of acute appendicitis within an inguinal hernia sac is a rare entity. In 1937, Ryan reported 11 cases out of 8692 inguinal hernias with a normal appendix and 0.13% with appendicitis [3, 8]. In 2003, D'Alia reported that appendicitis in an inguinal hernia is as frequent as 0.08% of all surgeries [9].

Although the pathophysiology is unknown, Weber and colleagues hypothesize that the inflammatory swelling may lead to incarceration, subsequent impaired blood supply and bacterial overgrowth [10]. Abu-Dalu and Urca support that when the appendix enters the sac it becomes vulnerable to trauma and is ultimately retained by adhesions [11]. It is

difficult to make a diagnosis before surgery, the clinical picture usually points to an incarcerated hernia with peritonitis, and diagnosis is usually made during surgery; nevertheless, there have been reports of cases being diagnosed before surgery, as the one reported by Weber out of 60 surgeries performed [7, 12,13,14]. Two cases have also been diagnosed before surgery with ultrasonography, one in a 3-month-old baby and the other one in a 59-year-old man, later confirmed by CT scan [14,15]. Although the diagnosis can be made with preoperative CT scan, this is not a routine procedure in the emergency room [12]. We should be aware of the differential diagnosis of complicated inguinal hernia, as Amyand's hernia has to be considered in these patients. [8] Almost all cases occur on the right side of the abdomen because of the anatomical position of the appendix, but left sided Amyand's hernia can be associated with situs inversus, malrotation and a mobile cecum [12,13]. The mortality rate is estimated between 14-30% and is usually due to septic complications [3].

The surgical treatment for Amyand's hernia is appendectomy through a herniotomy with primary hernia repair if there is inflammation of the appendix and incipient necrosis; another treatment approach is through the abdomen so as to have access to both the abdomen and the inguinal regions. [3] Mesh should be avoided in contaminated abdominal wall defects because of the complications that may arise.

In our cases the diagnosis of appendicitis within the inguinal hernia sac were made during surgery. In the first case, the surgical treatment was appendectomy through the herniotomy with primary hernia repair. In the second case, we performed a herniotomy; however, because we found necrosis of the omentum, we preferred a classical abdominal incision reducing the appendix and omentum into the abdominal cavity.

In conclusion, the awareness of this condition will be helpful in diagnosing it preoperatively and preventing complications that could result in a longer hospital stay, probably within the ICU.

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