

Amyand Hernia. A case report

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Case Report

General Surgery



Background: Amyand's hernia is defined as the presence of the cecal appendix within an inguinal hernia. It is a rare condition, with an incidence of 1% of all inguinal hernias, while the presence of appendicitis within an Amyand's hernia accounts for 0.1% of all appendicitis cases. Most often, it is an incidental finding during inguinal exploration in the operating room. The clinical presentation may include pain starting in the epigastrium or periumbilical region that migrates to the right lower quadrant, associated with an irreducible mass in the right inguinal region. Possible complications include incarceration, strangulation, and perforation.

The diagnosis of a complicated inguinal hernia is clinical; however, an abdominal CT scan may be used to identify the hernial contents, where the presence of the cecal appendix may or may not be observed. The treatment of choice is surgical.

We present the case of a 57-year-old male patient with a history of inguinal hernioplasty using a Rutkow-Robbins mesh in 2024, who developed a recurrent hernia in the form of an Amyand's hernia. The simultaneous presentation of an inguinal hernia recurrence and an appendix within the hernial sac is extremely rare (0.01% of all hernioplasties). Additionally, the incidence of recurrence in hernioplasty using the Rutkow-Robbins technique, according to multicenter studies, is 1-2%. Given these findings, we report this case treated at our institution.

Keywords: Amyand's hernia, inguinal hernia, vermiform appendix, Lichtenstein, general surgery.

Amyand's hernia is a rare entity. It is an inguinal hernia containing the cecal appendix, which may be normal (most commonly) or inflamed, or even perforated. Diagnosis is usually made during surgery. Amyand's hernia is a rare condition estimated to represent approximately 1% of all inguinal hernias. Most reported cases present characteristics of an incarcerated or strangulated inguinal hernia. The diagnosis is made intraoperatively, during surgical exploration [1].

A cecal appendix within an inguinal hernia, with or without an inflammatory process, is referred to by the eponymous name Amyand's hernia. The finding of a non-inflamed cecal appendix within the peritoneal sac of an indirect inguinal hernia was first described by Garangeot in 1731. However, it was Claude Amyand who first described, in 1735, an appendectomy of the inguinal region of an 11-year-old boy with a fistula due to perforated appendicitis in the hernial sac. 2 It is a rare disease, estimated to occur in 1% of all inguinal hernias [1].

When the vermiform appendix is located within a femoral hernia, it is called a Garengéot hernia, in recognition of René Jacques Croissant de Garengéot (1688-1759), a French surgeon who was the first to describe the presence of a vermiform appendix within an indirect inguinal hernia in 1731; in this case, the appendix did not show signs of inflammation.

Diagnosis is generally made intraoperatively, since it is a rare pathology, without specific symptoms and requiring a high diagnostic suspicion, so preoperative diagnosis is usually exceptional [2]. Our objective in presenting this article is to present our experience by presenting this clinical case and performing the relevant bibliographic review.

Case report

Amyand's hernia is a rare condition in which the vermiform appendix is located within the inguinal hernia sac. We present the case of a male patient with a preoperative diagnosis of a right inguinal hernia. An intraoperative finding was a type I Amyand's hernia, with no evidence of appendiceal inflammation. He was successfully treated using the Lichtenstein technique with mesh placement.

A 78-year-old male patient was admitted to the hospital as a scheduled admission with a diagnosis of a right inguinal hernia, with elective surgery scheduled for April 22, 2024. His medical history included systemic arterial hypertension under pharmacological treatment with telmisartan + hydrochlorothiazide and amlodipine, with good blood pressure control. He denies any history of surgery, transfusions, allergies, smoking, or illicit drug use; he

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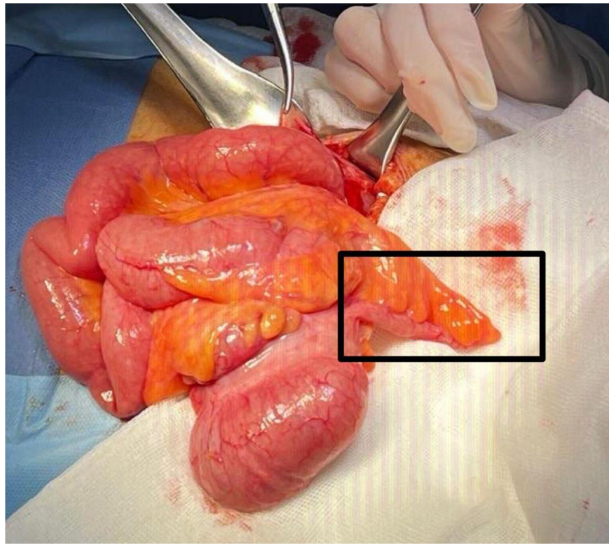


Figure 1. Hernial content, vermiform appendix compatible with Amyand type 1 hernia is observed.

reports occasional alcohol consumption. The patient was evaluated preoperatively by Internal Medicine on April 16, 2024, and classified as Goldman I, with moderate thromboembolic risk and no contraindications for the surgical procedure.

During surgery, a dilated deep inguinal ring was revealed, with a hernia sac measuring approximately 10 x 7 cm, the contents of which corresponded to the cecum and appendix, with no macroscopic signs of inflammation or significant adhesions. This finding was consistent with an Amyand type I hernia (Fig. 1), according to the Losanoff and Basson classification.

The hernia contents were reduced, the defect was closed with 2-0 chromic gut, and a polypropylene mesh was subsequently placed using the Lichtenstein technique, without incident or intraoperative complications.

The patient returned to the outpatient clinic 3 weeks later with satisfactory postoperative progress, and the department decided to discharge him.

Discussion

Amyand's hernia is defined as an inguinal hernia containing the appendix within the hernial sac [3].

Amyand's hernia is classified into four subtypes based on clinical symptoms and the location of the appendix. In type 1 Amyand's hernia, inflammatory changes are not observed in the groin; in type 2 Amyand's hernia, septic changes are limited to the hernial sac; in type 3 Amyand's hernia, sepsis has spread beyond the hernial sac; and in type 4 Amyand's hernia, acute appendicitis and other abdominal injuries occur. The appendix within the hernia may be normal or inflamed; appendicitis is present in 0.13% of cases.

Notably, appendix perforation could lead to a dramatically increased mortality rate (15–30%) due to severe abdominal sepsis [3].

Its prevalence is low, accounting for approximately 1% of all inguinal hernias, and even lower when it involves inflamed appendices, with an incidence of approximately 0.1%. The incidence is 0.13–1% globally, and as an associated complication, appendix perforation within the hernial sac can be found [4,8].

The exact pathophysiology of HA is not well understood. HA is a subtype of sliding hernia, but we can hypothesize its cause with an anatomical rationale. Anatomically, the cecum may fuse with the lateral edge of the peritoneum in some individuals, while in others it may freely elevate within the abdomen. After the hernial defect enlarges, increased intra-abdominal pressure forces the lateral peritoneal edge (including the attached cecum and appendix) through the inguinal canal. This repetitive movement of the appendix within the inguinal canal, along with self-manipulation by the patient, can irritate it and cause some degree of inflammation [4].

The decision to preserve or remove the appendix depends on the patient's age, endurance, and risk of developing acute appendicitis. Younger patients are much more likely to develop acute appendicitis compared to middle-aged or older men [5].

Ultrasound in a large inguinal hernia, even if reducible, may be beneficial in reducing complications. Early use of analytical imaging may make immediate preoperative identification of the inguinal hernia difficult. Right Amyand's hernias are more common than left Amyand's hernias due to the appendix's anatomical location on the right. Left Amyand's hernias are very rare. Laparoscopic repair has also been described in pediatric patients [5].

While the diagnosis of Amyand's hernia is difficult preoperatively, an incidental diagnosis can sometimes be made with ultrasound, as evidenced by the study reported by Moya-Sánchez et al. in 2017. Amyand's hernias contain a normal appendix, which is managed by mesh hernia repair, without performing an appendectomy unless the patient is young. For types 2 to 4 hernias, appendectomy is routinely performed in addition to primary hernia repair. Type 3 hernias require laparotomy for abdominal irrigation, and type 4 hernias require additional investigations for associated pathology [6,8].

Currently, there is a worldwide controversy regarding the management of type 2 hernias, but there are increasing reports and case series describing the successful use of mesh for the management of type 2 hernias, without increasing the risk of surgical site infection or the development of fistulas [7].

This case corresponds to a type I Amyand hernia, according to the Losanoff and Basson classification, in which the appendix is not inflamed within the hernia sac. This subtype allows for safe mesh placement without the need for appendectomy, as the risk of surgical infection is low in the absence of inflammation or perforation.

The intraoperative finding of appendiceal contents in the hernia sac highlights the importance of careful examination during surgery, as well as awareness of the clinical spectrum of this condition to make appropriate decisions in real time. Due to its rarity, most cases are diagnosed during surgery, as preoperative imaging studies tend to have low sensitivity for detection unless clinical signs of appendicitis are present.

This report reinforces the importance of including Amyand's hernia in the differential diagnosis of inguinal masses and highlights the feasibility of conventional surgical management in the absence of complications, in accordance with current literature recommendations.

Conclusion

Amyand hernia is a rare surgical finding, the identification of which depends largely on intraoperative examination, as it is rarely diagnosed preoperatively. The Losanoff and Basson classification guides appropriate surgical management based on the status of the appendix. In type I cases, where the appendix is not inflamed, as in the patient we present, the treatment of choice consists of reduction of the hernial contents and mesh placement without the need for appendectomy.

This case highlights the importance of recognizing this anatomical variant during hernioplasty, as inappropriate management—such as unnecessary appendectomy in the presence of a healthy appendix could increase the risk of complications, especially infectious ones, associated with the use of prosthetic material.

Finally, it is essential for the general surgeon to be familiar with this entity, as evidence-based decision-making allows for offering the patient a safe, effective approach with excellent postoperative outcomes.

Conflicts of interests

It is declared that there are no conflicts of interest related to the publication of this work.

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