# Acute appendicitis in Amyand's hernia. A case report

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Case Report

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**Background**
This entity was first described in 1735 by the English surgeon Claudius Amyand after successfully performing an appendectomy during an incarcerated inguinal hernia repair which contained a perforated cecal appendix.
It is defined by the presence of the cecal appendix within the sac of an inguinal hernia, this being a rare presentation, it is usually a trans operative finding.
The treatment depends on the context, whether it is urgent or elective surgery and whether there is a complication associated with acute appendicitis, which is why the surgeon must know and be prepared for the type of approach and the decision to opt for placement. or not of polypropylene mesh.
We report the case of a 62-year-old male with abdominal pain for 11 days, with anorexia, nausea, and vomiting, with leukocytosis, he went to the operating room due to complicated intestinal occlusion syndrome, during the trans operative period a perforated cecal appendix was observed within the hernial defect.
The objective of this article is to present a case due to the exceptional incidence of Amyand's Hernia with complicated acute appendicitis and the few reports that exist internationally.

**Keywords:** Acute appendicitis, Amyand's hernia.

Amyand's hernia is a rare condition, with an incidence ranging from 0.28% to 1% of all inguinal hernias (1). Typically, it involves an inguinal hernia containing the appendix without inflammation, although occasionally it can be perforated or gangrenous.

It is defined by the presence of the cecal appendix within the sac of an inguinal hernia (References 6, 7, 8, 9). The cecal appendix may be normal, inflamed, perforated, or gangrenous (3, 4, 5).

The term "Amyand's Hernia" was named after the English surgeon Claudius Amyand (1681-1740), who in 1735 performed the first appendectomy on an 11-year-old boy during the repair of an incarcerated inguinal hernia containing a perforated cecal appendix (7). In 1735, Claudius Amyand performed an appendectomy on an 11-year-old boy after discovering a perforated appendicitis with a pin with a filter in the sac of an incarcerated inguinal hernia, which is when this rare combination was coined.

Preoperative diagnosis is usually exceptional; in most cases, it is made intraoperatively due to its infrequent and nonspecific presentation, requiring a high degree of diagnostic suspicion (8).

The differential diagnosis of a complicated inguinal hernia requires careful clinical judgment, presenting less suddenly than a strangulated inguinal hernia, with pain in the right iliac fossa and fever. It is occasionally associated with predictive values of sepsis.

## Case report

A 62-year-old male with a history of treated hypertension using losartan presented to our hospital with a generalized abdominal pain persisting for 11 days, rated at 7 out of 10 on the numerical verbal scale. He also reported progressive abdominal distension, loss of appetite, nausea, and a lack of bowel movements.

Upon physical examination, we noted abdominal distension and a palpable mass in the right inguinal region, accompanied by an 8 cm x 4 cm ecchymosis. Auscultation revealed metallic bowel sounds, and deep palpation elicited tenderness. The patient exhibited a positive von Blumberg sign. The inguinal mass was indurated and non-reducible.

Laboratory results showed leukocytosis with a count of 14,000 and a neutrophil count of 72%, with no signs of organ failure.

Clinical ultrasound findings indicated free fluid in the right iliac fossa (Figure 1) and the presence of an abscess (Figure 2). Further examination using a convex transducer in the inguinal region confirmed the presence of fluid within the hernia sac (Figure 3).

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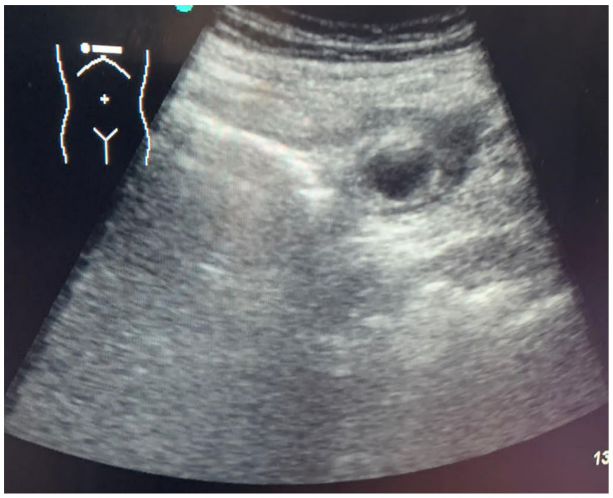

**Figure 2.** Presence of a pelvic abscess located in the right iliac fossa.

Based on these findings, the diagnosis of strangulated inguinal hernia was made. The patient was managed with a nasogastric tube, fasting, and intravenous fluids, and surgical intervention was deemed necessary.

During surgery, an inguinal approach was utilized, revealing an indurated sac with discoloration (Figure 4). Upon entering the cavity, purulent material was discovered upon dissecting the inner aspect of the sac (Figure 5). The cecum was found adhered to the inguinal region (Figure 6). Dissecting the cecum revealed a hernia defect, an inflamed and incarcerated cecal appendix within the hernia sac, along with a 20cc collection (Figure 7). The cecal appendix was dissected, revealing a mid-third perforation with an intact base. Consequently, an appendectomy was performed, and the internal defect was closed primarily.

The immediate postoperative period was uneventful, and enhanced recovery measures were instituted. The Penrose drain was removed, and the patient was discharged the following day with oral antibiotics. At the 30-day follow-up, there were no readmissions, and elective hernia surgery was scheduled.

## Discussion

The preoperative diagnosis of acute appendicitis should not pose difficulties in most cases; however, it can occur in atypical locations (4,5). In our case, it was located in an unusual position within the inguinal hernia sac, making its preoperative diagnosis very unusual, as it was diagnosed during the intraoperative period.

Amyand's hernia has a prevalence in the literature ranging from 0.19% to 1.7% of all inguinal hernias (9). Regarding appendicitis within the inguinal hernia sac, it is even rarer, ranging from 0.07% to 0.13% of all cases of appendicitis (9).

The most common clinical presentation is as a non-reducible inguinal hernia, painful in some instances, and predominantly on the right side, making it indistinguishable from a complicated inguinal hernia (7). Clinical presentation may vary depending on the stage of appendicitis and may include vomiting, fever, periumbilical pain, abdominal distension, and even signs of peritoneal irritation (15).

Typical inflammatory markers of acute appendicitis such as leukocytosis and elevated C-reactive protein do not consistently appear in patients with Amyand's hernia and appendicitis (7). Preoperative diagnoses have been described using computed tomography or abdominal ultrasound (7, 9).

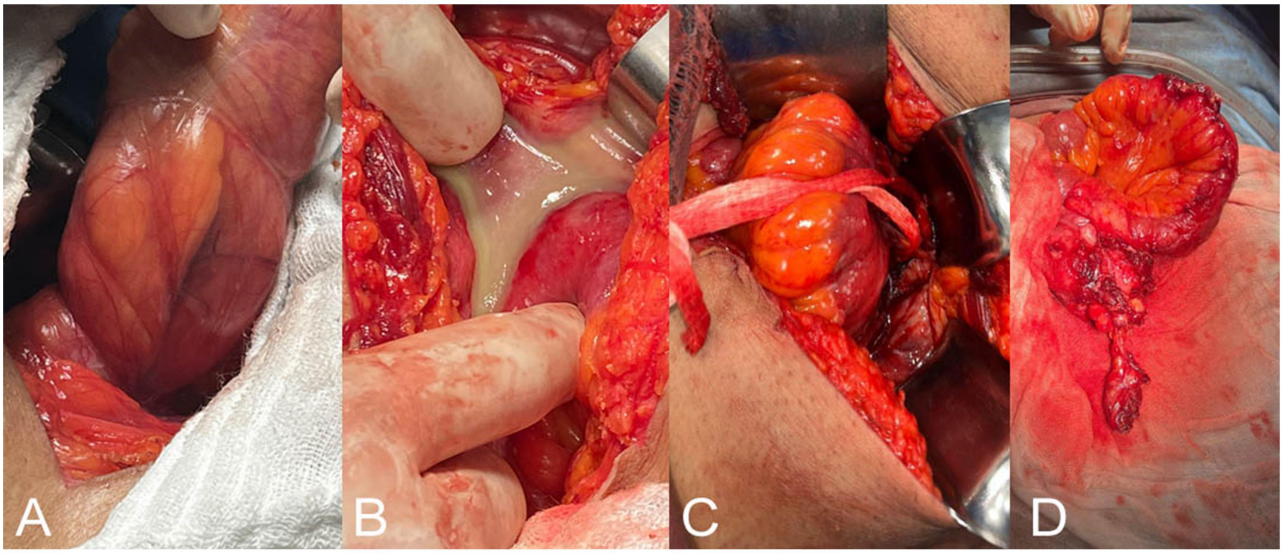


**Figure 2.** A. Hernia sac completely indurated and dissected. B. Purulent collection in the inner portion of the hernia sac. C. The cecum and ileum are adhered to the inguinal region. D. The sac is dissected, revealing the cecal appendix in its contents, perforated in its middle third with a purulent collection of 20cc.


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Treatment involves performing an appendectomy along with primary repair of the hernia defect (4, 10, 11). The literature mentions various approaches, including preperitoneal (4) or inguinal (12) approaches to address both pathologies, as well as abdominal and inguinal approaches for appendectomy and laparoscopic methods (4, 11, 12). The abdominal approach via an exclusive lower midline laparotomy has been recommended for better exposure and control of the surgical field, particularly in cases of extensive inflammatory involvement of the right iliac fossa (15). Hernioplasty with mesh is not recommended because using prosthetic material in a contaminated abdominal wall increases the risk of surgical wound infection and appendiceal stump fistula (4, 10, 15). The literature reports a mortality rate of 14-30% (15).

The very low incidence of patients with strangulated inguinal hernia with peri appendicular abscess within the sac is what makes this case important for reporting.

## Conclusion

Amyand's hernia is an unusual variant of inguinal hernia that any surgeon may encounter in the context of elective or emergency surgery, and even more unusual is the presence of a perforated appendix with a peri appendicular abscess.

Most of the time, the diagnosis is made intraoperatively, so it is important to be prepared to perform an incidental appendectomy in the case of an appendix with a normal appearance, in addition to using our chosen tension-free technique.

In the case of complicated acute appendicitis, there is ongoing controversy regarding the use of mesh in cases of complicated acute appendicitis. Despite reports of uncomplicated cases, there is no solid evidence to support its routine use.

The use of a lower midline laparotomy may be required in cases like the one described above to achieve an adequate exposure field and proper surgical field control.

## Conflicts of interests

The authors have no conflicts of interest to declare.

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