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Case Report

# Claudius Amyand's hernia: An uncommon form of appendicitis

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## Abstract

Claudius Amyand's hernia is defined by the incarceration of the vermicular appendix through the hernial sac. The first appendectomy was performed in 1735. It is a very rare pathology. Therefore, the frequency of this pathology is not yet established. We report the observation of a 54-year-old patient with an estimated BMI of 25.5 kg: height$^2$ with a simple inguinal hernia that was not followed up and admitted to the emergency room with a painless and impulsive inguinal swelling when coughing. The management consisted of a conditioning and a pre-anesthetic assessment. The intraoperative exploration revealed a right inguinal hernia with caecal and appendicular contents of viable appearance. The procedure included an appendectomy and cure of the hernia using the Lichtenstein technique. The evolution was marked by a resumption of transit 24 hours postoperatively, Appendicitis complicating an Amyand's hernia is a rare pathology that often presents in an atypical clinical picture of an inguinal painful mass without the occlusive syndrome. Its preoperative radiological diagnosis, although exceptional, is of interest given the atypical presentation allowing the elimination of local pathologies that sometimes do not require emergency surgery.

## Introduction

Amyand's hernia (HA) corresponds to an appendix contained in an inguinal hernial sac, often right, whether the appendix is inflammatory or not. It was described for the first time by Claudius Amyand in 1735 at Saint George's Hospital in London in an 11-year-old child who was admitted for a right inguinal hernia complicated by a right scrotal stercal fistula. Amyand discovered on an exploration through a right inguinal incision a pin within the stercolith. He performed an appendectomy with resection and closure of the hernia sac and flattening of the fistula. The postoperative course was simple [1].

The age of the patients can vary between 3 weeks and 92 years. Its incidence in the literature is very variable (0.2% - 1.7%) and the presence of an associated acute appendicitis is extremely rare (0.07% - 0.13%) [2].

Acute appendicitis is the most common surgical emergency and usually presents as a painful, febrile Right Iliac Fossa syndrome (RIF).

Incarceration of the inflamed appendix in a right crural orifice is a rare form [3].

Mortality ranges from 5% to 30% for severe peritonitis secondary to appendicular perforation [4].

### Patient ET observation

A 54-year-old man, without any particular pathological history, presented with a right inguinal swelling that was non-painful, reducible, and impulsive to coughing, and had been evolving for 1 month in an apyretic context. His body mass index was calculated at 25.5 kg/height$^2$.

The clinical examination showed a swelling located below Malgaigne's line and outside the right femoral vessels. This mass was painless, irreducible, and impulsive to coughing.



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A strangulated inguinal hernia was evoked. Moreover, the patient was apyretic with a preserved general condition with an unremarkable rectal touch.

An ultrasound of the mass was performed (Figure 1) and showed a hernia sac containing a blind, distended, incompressible digestive structure under the probe, with a thickened wall and hyperemia on color Doppler, associated with a heterogeneous liquid effusion.

The diagnosis of inguinal intra-hernial appendicitis was then strongly evoked.

The indication for surgery was retained. The surgical approach was the right inguinal approach. Intraoperative exploration showed an inguinal hernia sac with a thickened and infiltrated wall, containing a viable appendix and cecum (Figure 2).

An inguinal appendectomy was performed followed by a hernia repair using the Lichtenstein technique. The anatomopathological examination concluded in an acute suppurated appendicitis with peri-appendicitis and abscess of the mesoappendix. The immediate postoperative course was simple and the patient was declared discharged on day 2 postoperatively. The local condition one month after the operation was satisfactory.

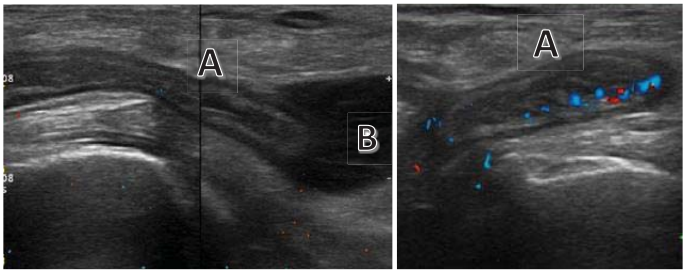


**Figure 1:** Ultrasound of the right inguinal region: blind digestive structure (A) originating from the cecum (asterisk), vermiform, distended, with a thickened and hyperemic wall on color Doppler, the tip of which is located in the hernia sac, which has a fine echogenic content (B).

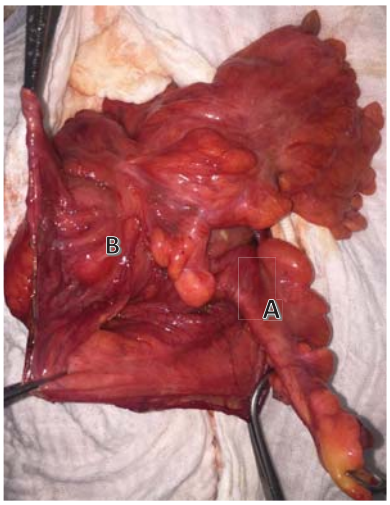


**Figure 2:** Intraoperative view showing View of the hernia sac contents: appendix (A) cecum (B).

## Discussion

Amyand's hernia is an atypical hernia, defined by the incarceration of an appendix, inflamed or not, in a hernial opening of the abdominal wall.

The first successful appendectomy through a hernial sac was performed by Amyand in 1735 in London [1].

It is a rare pathology representing 0.13% of all acute appendicitis and 1% of strangulated crural hernias according to Ryan [2].

From 1959 to 1999, thirteen cases of intra-hernial appendicitis have been reported at all sites [3]. The hernial site may be umbilical, at Spiegel's line, obturator, diaphragmatic, or even in the path of a laparoscopic trocar, but the most frequent site remains inguinal or right crural [4]. However, the crural hernia is classically described in postmenopausal women with a sex ratio reaching 0.16 [5,6].

Hernia formation is usually due to the combination of abdominal hyper pressure factors (chronic cough, chronic constipation, urinary retention, abdominal obesity...) and weakening of the abdominal wall noted in cases of advanced age and obesity.

Our 54-year-old patient was obese with a BMI of 25.5 kg/height$^2$.

Concerning the pathophysiology of appendicitis, the most likely mechanism seems to be the compression of the appendix in the inextensible crural orifice with strangulation of its meso and the creation of secondary ischemic phenomena [7].

The usual clinical picture of a crural Amyand hernia is often atypical making the positive diagnosis difficult [6].

Usually, it is that of a strangulated hernia without an occlusive syndrome with general signs inconsistently present [8].

According to Lawrence, the finding of local redness and warmth associated with subcutaneous crepitus of the inguinal region is usually consistent with appendicular perforation. However, no formal anatomopathological correlation exists between the intraoperative state, inflammatory or not of the appendix, and the clinical picture [6]. In our case, the patient was apyretic with a preserved general state and there were no local inflammatory signs. The biology inconstantly shows an inflammatory syndrome, the absence of which does not eliminate a local complication of the hernia (appendicitis, appendicular perforation...).

The diagnosis is very often made intraoperatively, which is the major interest of our case where the diagnosis was made radiologically preoperatively.

In a series of 60 Amyand's hernias published by Weber, the diagnosis was made preoperatively in only one patient [9].

In a recent Turkish series published in 2009 of 1090 children with inguinal hernias, 33 of these were incarcerated and 12



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patients had a Claudius Amyand hernia. These were always boys with a median mean age of 40 days (extreme than one day 14 months) [10,11]. Among the 12 Claudius Amyand hernias, two appendages were normal, six were inflammatory and two were the site of serous inflammation of uncertain significance, mechanical or infectious. Several cases of left-sided Claudius Amyand hernia have been reported.

In Inan's series, three of the eleven published patients had abdominopelvic CT scans, which made the diagnosis in only one [8-18]. The low use of imaging preoperatively may be explained by the low incidence of the disease [6-17]. In case of suspected acute intrahernial appendicitis, an ultrasound [12-16] or Computed Tomography (CT) scan [13] should be performed to assess the condition of appendix, its length, and the position of the cecum and thus determine the determine the surgical approach and technique.

Our patient had an ultrasound of the inguinal region which evoked the diagnosis. The use of imaging is justified in our case because of the diagnostic doubt and to eliminate other probable diagnoses (adenophlegmon, tumor, aneurysm of a femoral artery, etc.).

For CT, the use of multiplanar reconstructions greatly facilitates the diagnosis [19].

The positive diagnosis is most often made intraoperatively when a vermicular appendix is found within the hernia sac, whether it is inflamed or not. The operation consists of an appendectomy and resection of the hernia sac [19-21].

Management is always surgical. Most authors recommend an inguinal appendectomy [8]. If the appendicitis is complicated by perforation with peritonitis, a laparotomy by median approach or by Mc Burney should be performed [3,8].

The cure of the crural hernia is usually done by simple raphia according to the Mc Vay technique [14]. The use of a synthetic prosthesis should be avoided, as according to several authors it increases the risk of postoperative infection [8,14,15]. The immediate and secondary postoperative follow-up is generally simple if the diagnosis is made early and the surgical treatment is undertaken in time [3,6,8,15].

## Conclusion

Appendicitis complicating an Amyand's hernia is a rare pathology that often presents in an atypical clinical picture of an inguinal painful mass without the occlusive syndrome. Its preoperative radiological diagnosis, although exceptional, is of interest given the atypical presentation allowing the elimination of local pathologies that sometimes do not require emergency surgery.

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