

CASE REPORT

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Laparoscopic approach to Amyand hernia: A case report

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ABSTRACT

Background: Amyand's hernia is an inguinal hernia containing the vermiform appendix. The herniated appendix can be inflamed during this stage. This rare inguinal hernia presentation is named after Claudius Amyand, the first surgeon to record an appendectomy. It is a rare event in which symptoms and signs are usually not obvious, leading to misdiagnosis, delay in treatment, and higher complication rates. Laparoscopy has become an invaluable tool for physicians, as it can accurately diagnose and treat unexpected pathologies, such as Amyand's hernia in an emergency setting.

Case Report: We present the case of a 31-year-old male patient with acute abdominal pain. After clinical examination, surgery was required, and an Amyand's hernia was discovered. The laparoscopic approach successfully treated this hernia without surgical site infection or complications.

Conclusion: Amyand's hernia is an extremely rare presentation of an inguinal hernia. Due to its rare presentations and low incidence, it can easily be missed, leading to troublesome complications.

Keywords: Amyand's hernia, Inguinal hernia, Laparoscopic surgery

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INTRODUCTION

Amyand's hernia is defined as the presence of the vermiform appendix within an inguinal hernia sac [1, 2]. It is an extremely rare pathology (1% of all inguinal hernias) that can lead to troublesome complications if it is misdiagnosed [3, 4]. Open appendectomy and hernia repair were the mainstay treatment of this rare condition. However, with the advent of laparoscopic surgery, a less invasive procedure, we can provide more significant advantages to our patients [1, 5]. We report the case of a 31-year-old male patient. He presented with acute abdominal pain, and laparoscopic surgery was needed to treat him. Amyand's hernia was detected and successfully treated.

CASE REPORT

We present the case of a 31-year-old male without past medical history. He presented to the emergency room with an 18-hour history of acute abdominal pain, nausea, and anorexia. On clinical examination, he was tachycardic (117), febrile (38°C) and with a blood pressure of 130/65. Severe pain on touch was detected on his lower abdomen. His pain was not migratory or colicky, although there was no tenderness or percussion pain over McBurney's point. On groins inspection, no masses, lumps, or swellings were detected. Complementary exams, including complete blood count and abdominal echography, were normal. Thus, he was admitted for close surveillance. A computed tomography

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(CT) was considered, nonetheless as his pain persisted, hence, surgery was decided.

At laparoscopy, a 3 × 2 cm right-sided indirect inguinal hernia was discovered. The hernia sac was covered with the cecum and small bowel (Figure 1A). After blunt dissection to separate the bowel from the hernia sac, the vermiform appendix was found within the hernia sac (Figure 1B). After slightly dissecting the hernia sac, the appendix was removed without complications. The appendix measured 0.3 × 6 cm and was completely normal without signs of congestion or perforation.

From there, dissection continued, and the hernia sac was grasped and released from the transverse fascia, and dissection of the extraperitoneal space was completed. A 10 × 15 cm polypropylene mesh was placed and secured with absorbable tacks. Afterward, the free peritoneal edges were grasped, brought up, and secured using tacks (Figure 2).

After this procedure, the appendix was re-assessed, and due to his clinical picture, and since the appendix was found within the hernia sac, an incidental appendectomy was decided. His postoperative course was uneventful. Sips of liquids were initiated on his first postoperative day and then after followed by full diet. He was discharged without complications on his second postoperative day without any pain and remained well on close follow-ups. He resumed full activity 3 months after surgery.

Pathology reported lymphoid hyperplasia with slight neutrophilic infiltration. Three months after surgery, he was completely asymptomatic and is doing well.

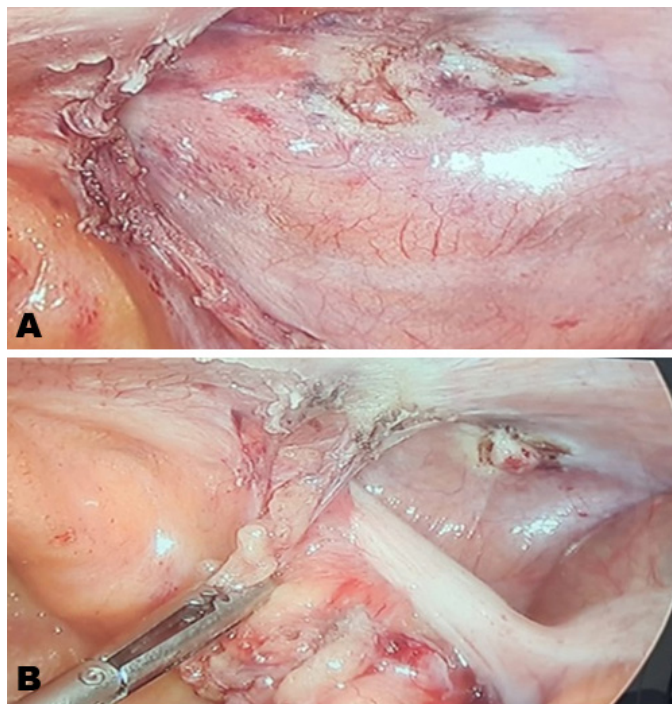


Figure 1: (A) Cecum covering the right inguinal ring; (B) Appendix within the hernia sac.



Figure 2: Transabdominal preperitoneal (TAPP) repair with prosthetic mesh.

DISCUSSION

There are two sporadic events in which the vermiform appendix, inflamed or not, is discovered within the inguinal (Amyand) or femoral canal (de Garengeot). These hernias are named after Dr. Claudius Amyand and Dr. Croissant de Garengeot, the first physicians who described these conditions in 1736 and 1731 [1–3]. Amyand's hernias occur in 0.4–0.6% of all inguinal hernias, and the presence of appendicitis within an Amyand's hernia accounts for 0.1% of all appendicitis [1, 2]. These hernias are usually more common in children due to the patency of processus vaginalis in the pediatric population [1, 4]. Preoperative diagnosis is generally tricky as their abdominal exam, physical signs, lab results, and imaging are not always helpful [3]. Symptoms are usually non-specific and include sudden onset epigastric or periumbilical pain, tenderness, or even mass in the inguinal region, mimicking a hernia [1, 4, 5]. Computed tomography (CT) can aid in the diagnosis; however, since appendicitis and inguinal hernias are usually diagnosed clinically, it is rarely ordered on a regular basis and only use to rule out a more severe pathology [2, 6].

In our case, the patient presented with acute abdominal pain, and since the pain persisted, laparoscopic surgery was decided. Most cases are rarely diagnosed preoperatively, and many cases are diagnosed during surgery [2, 3]; as it happened to our patient. The herniated appendix can be normal, acutely inflamed, or perforated, and its treatment can be based on the Losanoff and Basson classification [3, 7, 8]. The hernia defect should always be repaired unless there are severe complications. The use of meshes in a contaminated environment is usually contraindicated due to the high risk of infection and should be avoided when the appendix is compromised [1, 9, 10]. Mortality from Amyand's hernia range from 14% to 30%, and wound infection rates can be as high as 50%, mostly due to the abdominal sepsis that can happen if the appendix perforates [3, 11].

There is still no agreement in the literature concerning the best course of action in treating the appendix in Amyand's hernia, while there are many reviews which argue that appendectomy should only be performed if

the appendix is inflamed, others support appendectomy to avoid future complications. Nonetheless, the decision to remove the appendix will remain on the surgeon [1, 4, 6, 12].

As the appendix in our patient was found within the hernia sac and to prevent an appendectomy later, it was removed without complications despite its normal appearance. Although open approaches have been considered the usual treatment of Amyand's hernias, the laparoscopic approach has proved useful when treating inguinal hernias [5, 6]. In 1999, Vermillion et al. were the first surgeons to prove that laparoscopy can be useful in Amyand's hernias, as it can help identify unexpected pathologies in an emergency setting. It can provide a view of the hernia contents, successfully reduce the hernia, and perform a mesh repair if needed [4, 7–9].

CONCLUSION

Amyand's hernia is an extremely rare presentation of an inguinal hernia. Due to its rare presentations and low incidence, it can easily be missed, leading to troublesome complications. High clinical awareness is necessary to provide prompt decisions and accurately treat this rare and unexpected pathology.

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Author Contributions

Andres V Ayala – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Macarena Dávalos – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Juan C Aldaz – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

A Gabriela Lara – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Gabriel A Molina – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all

aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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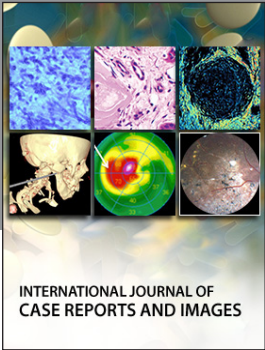
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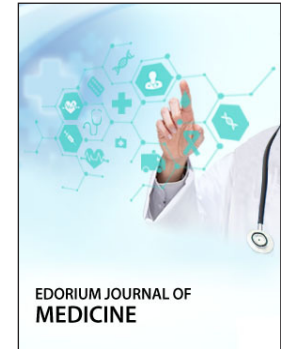
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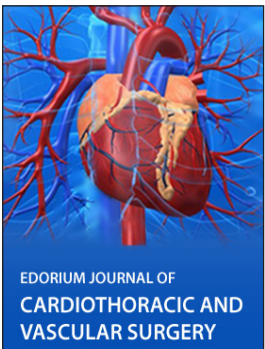
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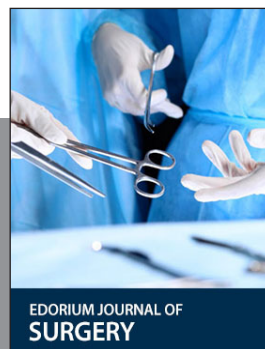
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