International Journal of Research in Medical Sciences
Vazquez-Fong DG et al. Int J Res Med Sci. 2025 Sep;13(9):3805-3807
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20252796

Case Report

Amyand's hernia: case report and literature review

Diego G. Vazquez-Fong*, Mariana González-Villegas, Carlos A. Santana-Perez

Surgical Department in Hospital General de Zona 86, Instituto Mexicano del Seguro Social, Uruapan, Michoacán, México

Received: 18 July 2025
Accepted: 11 August 2025

***Correspondence:**
Dr. Diego G. Vazquez-Fong,
E-mail: diego.memo.vazfo@gmail.com

ABSTRACT

Amyand's hernia is the eponym for a cecal appendix-whether inflamed or not-incarcerated within the sac of an inguinal hernia. This type of hernia is uncommon, occurring in approximately 0.5-1% of all inguinal hernias, and most cases are found in children.

Keywords: Hernia, Inguinal, Amyand, Appendix

INTRODUCTION

The first author to describe a non-inflamed cecal appendix within the sac of a direct inguinal hernia was Garangeot in 1731.[1-5] Later, in 1735, Claudius Amyand performed the world's first successful appendectomy on an 11-year-old boy who had been admitted to St. George's Hospital with an inguinoscrotal hernia**,** which contained a perforated cecal appendix within the hernia sac.[6,7] Since then, this condition has attracted the attention of the surgical community due to its rarity and complexity in management.[3,6,7] Current literature shows that this clinical entity remains a diagnostic and therapeutic challenge, especially when complicated by acute appendicitis, the incidence of which within Amyand's hernia is extremely rare, reaching only 0.1%.[2,3]

CASE REPORT

This case involves a 54-year-old male with a medical history of type 2 diabetes mellitus diagnosed 3 years ago and systemic arterial hypertension, also diagnosed 3 years ago, both currently under treatment and well-controlled. He denies any allergies or prior surgical procedures**.**

The patient presented to the general surgery outpatient clinic with occasional pain in the right inguinal region. He reported being aware of an inguinal hernia since childhood, and throughout his life has experienced episodes of abdominal pain, predominantly in the right inguinal area, along with sac protrusion and inability to reduce it.

On physical examination, vital signs were within normal limits and the patient was pain-free at the time. However, a hardened, non-reducible right inguinal canal with tenderness on palpation was noted. No imaging studies were performed.

After a preoperative evaluation, the patient underwent a right inguinal hernia repair with an open anterior approach using a Lanz incision. An indirect inguinal hernia was found, classified as Nyhus III-B, with anatomical loss of the posterior wall. An 8 cm sac was observed, containing the cecal appendix (Figure 1) and the bladder in close contact (Figure 2). The peritoneal sac was opened, identifying an appendix measuring 7×1 cm with its tip sealed to the peritoneal surface of the bladder. This was classified as type 2 according to the Losanoff classification. Blunt dissection was performed, revealing a grade I injury according to the American association for the surgery of trauma (AAST), measuring 1 centimeter, which was repaired with two layers of polyglycolic acid sutures. The cecal appendix was removed, and the appendiceal stump was managed using the Pouchet technique. Subsequently, the sac was reduced, and a

tension-free inguinal hernioplasty was performed using a polypropylene mesh with the Lichtenstein technique. Before leaving the operating room, clear urine without traces of blood was confirmed.

The patient monitored for 1 day, showing adequate recovery without postoperative complications, experiencing minimal pain, ambulating, and tolerating oral intake. Discharge to home was decided without a urinary catheter.

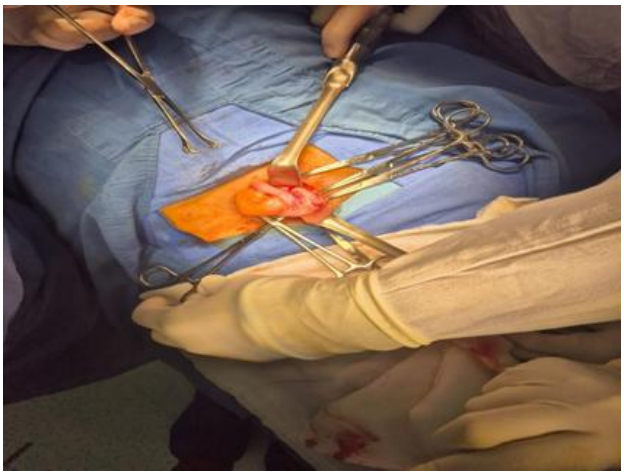

Figure 1: Cecal appendix within the hernial sac.

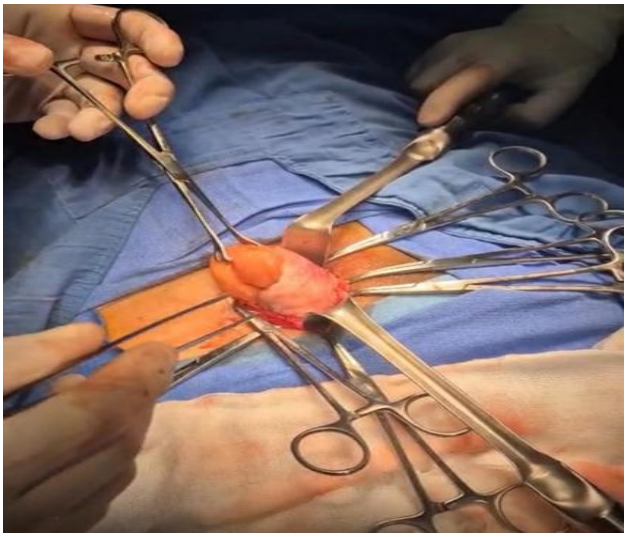

Figure 2: Cecal appendix adherent to urinary bladder.

DISCUSSION

The prevalence of inguinal hernia in the general population shows that more than 90% of Amyand hernia cases occur in males, as in our patient who was male. Amyand hernia has been reported across all age groups, from neonates to nonagenarians. The first peak was observed in infants (from 1 month to 1 year), and the second peak in elderly individuals (over 70 years).[11]

Our patient experienced intermittent pain during the presentation of the hernia but did not have an acute appendicitis episode. This condition is usually asymptomatic, presenting with the typical symptoms of an inguinal hernia in childhood (a reducible lump-usually spontaneously-in the groin with mild local discomfort). In very rare cases, incarceration and obstruction of the appendix may occur, resulting in acute appendicitis. Since the inflamed appendix is contained within the hernia sac, the symptoms of appendicitis in this case are those of an irreducible or incarcerated inguinal hernia, or sometimes of an acute ipsilateral scrotum with the inguinal hernia, accompanied by symptoms such as right lower quadrant abdominal pain, anorexia, nausea, and vomiting.[12]

It is important to highlight that appendix perforation leads to a dramatic increase in mortality rate (15-30%) due to severe abdominal sepsis. The incidence of acute appendicitis in the general population is 8%, whereas-as previously mentioned-the incidence of appendicitis occurring within an inguinal hernia is reported to be 0.1%. The exact mechanism of appendicitis within an inguinal hernia is not fully understood.[11]

In this case, surgery was performed via the inguinal approach because laparoscopic equipment was not available at the institution. The most widely accepted treatment algorithm is that proposed by Losanoff and Basson (Table 1), where management is determined by the condition of the appendix within the hernia sac.[7]

The surgical approach is generally inguinal if no complications are suspected; in our case, the inguinal approach was used, and no intraoperative complications were found. Currently, the incidence of laparoscopic surgery for this pathology is increasing, and cases of laparoscopic extraperitoneal approaches have even been reported.[5,8]

Table 1: Losanoff and Basson classification.[5-7,10]

Hernia type	1	2	3	4
Appendix	Normal	Acute appendicitis without peritonitis	Acute appendicitis with peritonitis	Acute appendicitis associated with another abdominal pathology
Treatment	Appendectomy or reduction	Appendectomy	Laparotomic appendectomy	Laparotomic appendectomy
	Hernioplasty	Herniorrhaphy	Herniorrhaphy	Manage as types 1-3, investigate or treat the second abdominal pathology

The decision to perform an appendectomy should consider patient factors such as age, medical history, functional status, and life expectancy. A young patient with good functional status is a good candidate for appendectomy and inguinal hernia repair.[2,5,8] In our patient, an appendectomy was performed due to the patient's age and intraoperative condition.

For inguinal hernia repair, the technique of choice involves the use of prosthetic material as it presents lower recurrence rates. However, in cases of appendicitis, the intrinsic risk of prosthetic mesh increasing the inflammatory response and bacterial biofilm formation is a concern, and its use is contraindicated in contaminated abdominal wall defects.[5,8,9]

In our case, prosthetic mesh was placed since no acute appendicitis was found, and there was no contamination of the abdominal cavity. Additionally, the Lichtenstein technique was performed.

CONCLUSION

Amyand's hernia is a rare pathology that occurs mostly in male patients. Its pathophysiology is not yet fully understood. In cases where acute appendicitis occurs, mortality can increase. The treatment in these cases is well described in the literature according to each patient.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Ghattas S, El Bitar J, Hadeer RA, Salloum M, Akel C, Bitar H. Two cases of intraoperative diagnosed Amyand hernia: Case report and literature review. Int J Surg Case Rep. 2024;118:109560.
2. Amyand's Hernia and Complicated Appendicitis Presenting as an Abdominal Wall Abscess | ACS. Available at: https://www.facs.org/for-medical-professionals/news-publications/journals/case-reviews/issues/v3n8/perez-iglesias-amyands-hernia/. Accessed on 7 June 2025.
3. Ivashchuk G, Cesmebasi A, Sorenson EP, Blaak C, Tubbs SR, Loukas M. Amyand's hernia: A review. Med Sci Monit Int Med J Exp Clin Res. 2014;20:140-6.
4. Singal R, Gupta S. Amyand's Hernia-Pathophysiology, Role of Investigations and Treatment. Mædica. 2011;6(4):321-7.
5. Agirre Etxabe L, Prieto Calvo M, García Etxebarría A, García González JM, Sarriugarte Lasarte A, Colina Alonso A. Hernia de Amyand (tipo 2 de Losanoff) diagnosticada preoperatoriamente y tratada mediante hernioplastia con malla biológica. Rev Hispanoam Hernia. 2014;2(4):169-72.
6. Santella G, Oliva G, Catauro A, Sorrentino C, Lombardi G, Candida M, et al. Amyand's Hernia: Case Report and Literature's Review Annals of Case Reports Case Report. Ann Case Rep. 2025;9(5):1-5.
7. Jaramillo Bolívar YE, Galíndez Girón LB, Freites Morales A, Soto Díaz GJE, Guevara Pérez DA, Yoris Marín CE. Hernia De Amyand Tipo 3. Reporte De Caso. Rev Venez Cir. 2020;73(1):14-7.
8. Soto-Valle JE, Respardo-Ramírez CA, Nieto-López V, Montoya-Moreno M, López-Ceballos AG, Rico-Méndez MA, et al. Hernia de Amyand tipo 2 de Losanoff: reporte de caso y revisión de la literatura. Revmeduas. 2025;15:15-8.
9. Simons MP, Aufenacker T, Bay-Nielsen M, Bouillot JL, Campanelli G, Conze J, et al. European Hernia Society guidelines on the treatment of inguinal hernia in adult patients. Hernia. 2009;13(4):343-403.
10. Losanoff JE, Basson MD. Amyand hernia: a classification to improve management. Hernia. 2008;12(3):325-6.
11. Manatakis DK, Tasis N, Antonopoulou MI, Anagnostopoulos P, Acheimastos V, Papageorgiou D, et al. Revisiting Amyand's hernia: a 20-year systematic review. World J Surg. 2021;45(6):1763-70.
12. Patoulias D, Kalogirou M, Patoulias I. Amyand's Hernia: an Up-to-Date Review of the Literature. Acta Medica. 2018;60(3):131-4.

Cite this article as: Vazquez-Fong DG, González-Villegas M, Santana-Perez CA. Amyand's hernia: case report and literature review. Int J Res Med Sci 2025;13:3805-7.