Innoscience Journal
ISSN 3005-8953
Open Access

Case Reports

Complicated Amyand's Hernia with Cecal Perforation and Diffuse Peritonitis Managed by Total Colectomy: Case Report and Literature Review.

Carrera Holguín, Alejandra*[1]; Estrada Chacón, Cecilia Estefanía[12]; Ruiz Ruelas, Carlos Alejandro[1]; Orona Díaz, Karen Sofía[1]; Olivas Ruelas, Guillermo[3]; Barranco Valdés, Francisco[1]; Coronado Esquivel, Obed Asoid[1].

*Correspondence: alejandracarreraholguin@gmail.com | ORCID: 0009-0002-2536-4137

[1]Hospital General de Torreón, Torreón, Coahuila, Mexico. [2]Facultad de Medicina, Universidad Autónoma de Coahuila, Torreón, Coahuila, Mexico. [3]UMAE No. 71, Instituto Mexicano del Seguro Social, Torreón, Coahuila, Mexico.

Keywords: Amyand's hernia, Cecal perforation, Acute abdomen, Abdominal sepsis, Total colectomy, Case report.

Abstract: Amyand's hernia is a rare condition defined by the presence of the vermiform appendix within an inguinal hernia sac, accounting for about 0.4 to 1% of inguinal hernias, with acute appendicitis within the sac in fewer than 0.1% of cases. Cecal perforation combined with massive colonic dilatation is exceptionally rare. We report a 43-year-old woman with a ten-year history of chronic methamphetamine use and no other relevant background, who presented with seven days of progressive abdominal pain, fever, bilious vomiting, distension, constipation, and absence of flatus. Examination showed generalized peritoneal irritation and marked distension, and computed tomography demonstrated pneumoperitoneum, free intraperitoneal fluid, marked colonic dilatation, and the cecum within a right inguinal hernia sac. Emergency laparotomy revealed a complicated Amyand's hernia with near-total destruction of the appendix, cecal perforation, diffuse purulent peritonitis (about two liters), a right inguinal abscess, massive colonic dilatation, and a left tubo-ovarian abscess. The patient underwent total colectomy, terminal Brooke ileostomy, left salpingo-oophorectomy, drainage of the inguinal abscess, and primary intra-abdominal hernia repair without mesh. Recovery was uneventful, and she was discharged on postoperative day eight. Prompt surgery and operative management individualized to the intraoperative findings are essential when complicated Amyand's hernia presents with severe intra-abdominal sepsis.

Cite as: Carrera Holguín A, Estrada Chacón CE, Ruiz Ruelas CA, Orona Díaz KS, Olivas Ruelas G, Barranco Valdés F, Coronado Esquivel OA. Complicated Amyand's Hernia with Cecal Perforation and Diffuse Peritonitis Managed by Total Colectomy: Case Report and Literature Review. Innoscience Journal. 2026;4(1):8–11. DOI: 10.17613/59nja-j8p38

Published: July 25, 2026
Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.
Conflicts of Interest: The authors declare that this manuscript was approved by all authors in its current form and that there are no conflicts of interest.

INTRODUCTION

Amyand's hernia is an uncommon surgical entity defined by the presence of the vermiform appendix within an inguinal hernia sac. It is named after Claudius Amyand, who in 1735 performed the first documented appendectomy during the repair of a strangulated inguinal hernia. The condition is rare: the appendix is found in roughly 0.4 to 1% of inguinal hernias, and acute appendicitis within the sac occurs in fewer than 0.1% of cases (1,2,8,17).

Preoperative diagnosis is difficult because the clinical picture is nonspecific (1,7,8). Most patients reach the operating room with a working diagnosis of incarcerated or strangulated hernia, and the appendiceal content is recognized only during surgery (8,10,17). Cross-sectional imaging has increased the number of preoperative diagnoses, yet the low incidence keeps the condition off most differential lists (7,8,10).

Losanoff and Basson proposed a widely accepted classification that divides Amyand's hernia into four types according to the state of the appendix and the presence of associated intra-abdominal disease (18). It guides three practical decisions: whether to perform an appendectomy, whether to use prosthetic mesh, and whether additional procedures are needed (8,18).

The combination of Amyand's hernia with cecal perforation, purulent peritonitis, a tubo-ovarian abscess, and massive

colonic dilatation is exceptionally rare (7,8,10). Because so few cases exist, the available guidance comes from isolated reports and small series rather than controlled data (1,8,17). We describe a patient with complicated Amyand's hernia who required total colectomy, terminal ileostomy, and drainage of several septic foci, and we review the literature on the diagnosis and treatment of this entity.

CASE REPORT

A 43-year-old woman presented to the emergency department of Hospital General de Torreón with seven days of abdominal pain. She had no history of diabetes mellitus, systemic hypertension, or previous abdominal surgery. Her only relevant background was chronic methamphetamine use for about ten years; she did not smoke or drink alcohol.

The pain began insidiously in the periumbilical region and became diffuse and severe over the week. It was accompanied by unquantified fever, repeated bilious vomiting, and progressive abdominal distension. She had not passed stool for seven days or flatus for the preceding five. She also reported anorexia, general deterioration, and difficulty walking because of the pain.

Clinical Examination: She was alert and oriented but looked acutely ill. The abdomen was markedly distended and diffusely tender to superficial and deep palpation, with signs of peritoneal irritation. A mass was palpable in the right groin, without overlying skin changes and without clinical evidence of irreducibility. Bowel sounds were diminished.

Laboratory Findings: Studies showed leukocytosis of 23.7 × 10^3/µL, microcytic anemia (hemoglobin 8.4 g/dL, mean corpuscular volume 67 fL), thrombocytosis of 1,025 × 10^3/µL, and severe hypoalbuminemia of 1.7 g/dL. Coagulation times were prolonged: prothrombin time 16.5 s, partial thromboplastin time 54.3 s, and INR 1.4.

Imaging Findings: Computed tomography of the abdomen and pelvis revealed pneumoperitoneum, abundant free intraperitoneal fluid, marked colonic dilatation, and a fluid collection in the right groin. The cecum lay within the right inguinal hernia sac, and the appendix could not be identified. These findings are consistent with the reported role of computed tomography in the preoperative diagnosis of complicated Amyand's hernia (7,8,10). Given the clinical and radiological picture, we proceeded to an emergency exploratory laparotomy through a midline incision.

Operative Findings: We found about two liters of free purulent exudate, diffuse peritonitis, and multiple inflammatory adhesions. The right inguinal hernia contained the cecum. The appendix was almost entirely destroyed by the inflammatory process, with only remnants of its base recognizable. The cecum was perforated, and the whole colon was massively dilated with evident loss of tone and motility. The distal ileum showed a mottled, marbled appearance without macroscopic transmural ischemia. A left tubo-ovarian abscess and a right inguinal abscess were also present.

Because of the cecal perforation, the purulent contamination of the peritoneal cavity, and the generalized colonic dilatation, we performed a total colectomy to achieve source control, in keeping with the principles of surgical management of severe intra-abdominal infection (20). We then fashioned a terminal Brooke ileostomy and added a left salpingo-oophorectomy, drainage of the inguinal abscess, and primary intra-abdominal repair of the hernia. We did not use prosthetic mesh because of the degree of contamination (18,20).

Recovery was uneventful. The patient did not require intensive care or reoperation. The ileostomy functioned well, her clinical parameters improved steadily, and she was discharged on the eighth postoperative day for outpatient follow-up.

DISCUSSION

Amyand's hernia is a rare variant of inguinal hernia. Although the appendix is found in 0.4 to 1% of inguinal hernias, appendiceal inflammation or perforation within the sac is exceptional and is reported in fewer than 0.1% of cases (1,2,7,8,17). Most cases are therefore diagnosed incidentally during surgery (8,17).

In this patient the preoperative diagnosis was especially hard to reach because she was so ill on arrival. She presented with an acute abdomen, a systemic inflammatory response, and pneumoperitoneum, findings that initially pointed to perforation of a hollow viscus. Computed tomography identified the cecum within the hernia sac and a right groin collection, but the diagnosis was confirmed only at laparotomy, when we saw the near-total destruction of the appendix and the cecal perforation. This matches the literature: computed tomography raises the rate of preoperative diagnosis, but confirmation is still usually intraoperative (7,8,9,10).

The Losanoff and Basson classification remains the most useful framework for surgical decisions in Amyand's hernia (18). The coexistence of cecal perforation, purulent peritonitis, a tubo-ovarian abscess, and massive colonic dilatation placed this case in type IV, in which concomitant intra-abdominal disease requires independent treatment (18). The classification makes the point plainly: the operation must be tailored to the intraoperative findings rather than limited to repair of the hernia (1,8,18).

The decision to perform a total colectomy deserves comment. In most reported cases, treatment consists of appendectomy with hernia repair, with or without mesh depending on the degree of contamination (3–10). Here the massive dilatation of the whole colon, the cecal perforation,

and the extensive purulent contamination made a conservative procedure unlikely to succeed. Under these conditions total colectomy was the safest way to control the septic source, in keeping with the principles of managing severe intra-abdominal infection (20).

The near-total destruction of the appendix was itself unusual, with only remnants of the base remaining. This explains why computed tomography could not identify the appendix and reflects the intensity of the inflammatory process. The simultaneous left tubo-ovarian abscess shows how far the abdominal contamination had spread and how complex the clinical picture was.

The patient had used methamphetamine for about ten years. These drugs can cause vasospasm, hypoperfusion, and intestinal ischemia, but we cannot establish a causal link between that history and the operative findings in this case. It should be read as a clinical characteristic of the patient rather than as the cause of her presentation.

We repaired the hernia without mesh because of the heavy intra-abdominal contamination. Mesh lowers recurrence in elective repair, but most reviews and guidelines advise against it when there is active infection or gross contamination of the surgical field (8,18,20).

To our knowledge, no previous report describes the simultaneous combination of complicated Amyand's hernia with near-total appendiceal destruction, cecal perforation, diffuse purulent peritonitis, a tubo-ovarian abscess, and the need for total colectomy. This combination makes the present case exceptional and adds practical information for managing severe forms of the entity (1,7,8,10).

CONCLUSIONS

Complicated Amyand's hernia remains difficult to diagnose before surgery. When cecal perforation, abdominal sepsis, and massive colonic dilatation occur together, the operation must be individualized according to the intraoperative findings (1,8,18). This case shows why the entity belongs in the differential diagnosis of an acute abdomen associated with an inguinal mass.

DECLARATIONS

This case report was conducted in accordance with the principles of the Declaration of Helsinki. Written informed consent was obtained from the patient for publication of this case report and the accompanying clinical information.

The authors declare that they have no competing financial interests or personal relationships that could have influenced the work reported in this article.

This research received no specific grant from any public, commercial, or not-for-profit funding agency.

AUTHOR CONTRIBUTIONS

All authors participated in the surgical management and clinical follow-up of the patient, the literature review, and the drafting and critical revision of the manuscript. All authors read and approved the final version.

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