

A Case of Amyand's Hernia in the Emergency Department

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INTRODUCTION

A hernia refers to the abnormal displacement of any organ or fatty tissue beyond the boundary of its containing cavity.¹ Although hernias may vary significantly in location, herniation is most often used when describing displacement of tissue through different sections of the abdominal wall. Inguinal hernias are the most common of these, accounting for 75% of all abdominal wall hernias, and are defined by the intrusion of the peritoneal sac through the interior abdominal wall within the region of the inguinal canal.^{2,3}

Complications of hernias include the risk of incarceration and strangulation—wherein the trapped organ tissue becomes compromised due to venous or lymphatic obstruction—and may ultimately lead to necrosis, perforation, rupture, peritonitis, and sepsis.¹ Normal contents of the hernia sac of an inguinal hernia include parts of the small intestine and omentum; however, inguinal hernial sacs may rarely contain other anatomical structures, including the ureter, bladder, sigmoid colon, stomach, and appendix.²

CASE REPORT

We report a case of an 87-year old man who presented to the emergency department with acute onset inguinal bulging and pain. The patient denied any previous abdominal or pelvic surgical interventions or any significant history leading to his presenting complaints, including any straining or exertion. On examination, the patient had a palpable, tender, inguinal bulge without any overlying skin changes. There was no crepitus and the remainder of his abdominal exam did not reveal any peritoneal findings. Laboratory studies were unremarkable, including a normal white blood cell count and lactate. A CT scan of the abdomen/pelvis revealed an inguinal hernia containing fat and the distal portion of the appendix concerning for Amyand's Hernia.

DISCUSSION

Amyand's hernia was first described on December 6, 1735 at St George's Hospital in London, when French surgeon Claudius Amyand operated on an 11-year-old boy who presented

with an inguinal hernia and fecal fistula, determining intraoperatively that the appendix was within the hernia sac and had previously been perforated by a pin, incidentally causing the fistula.⁴ Furthermore, Amyand's hernia is defined as an inguinal hernia containing vermiform appendix, whether normal, inflamed, or perforated.⁵

Inguinal hernia is a common pathology with an incidence rate of approximately 1.2%, with the condition being roughly 12 times as common in males than females.⁶ The incidence rate of Amyand's hernia varies within published literature and is estimated to account for between 0.19% and 1.7% of all inguinal hernias.^{1,7} Of individuals diagnosed with Amyand's hernia, the majority are found to have a normal appendix. The incidence rate of appendicitis amongst cases of Amyand's hernia is estimated to be between 0.07% and 0.13%.⁸ Cases of an incarcerated segment of vermiform appendix leading to perforation are even more uncommon, and are estimated to be only 0.1% of all cases of appendicitis.⁹⁻¹¹ Mortality rate of Amyand's hernia is variable, with figures reported from as low as 5.5% to as high as 14–30%.^{8,12} Cause of death in cases of Amyand's hernia is most often linked to peritonitis and sepsis.

As is the case with other organs of the abdominal cavity, an incarcerated appendix is at risk of inflammation, infection, necrosis, or perforation. Additionally, it is possible for the appendix to be incarcerated and otherwise remain healthy.^{8,12-14} Prior to the creation of multi-detector computed tomography (MDCT) and ultrasound (US) imaging, herniation of the appendix was predominantly an intraoperative finding.^{2,15}

Clinical presentation of Amyand's hernia is variable and can be influenced by multiple factors, including inflammation of the appendix or peritoneal contamination.¹⁶ Amyand's hernia often presents similar to a strangulated inguinal hernia and may be mistaken for testicular torsion.^{12,13} Common exam findings include a tender, non-reducible mass within the inguinal canal.¹⁶⁻¹⁸ Cases where the appendix has ruptured, causing a chronic fistula or abscess have been documented.^{4,19} Abdominal findings typical of acute appendicitis—including McBurney's point tenderness, Rosving's sign, and Blumberg's sign—may be absent in cases of Amyand's hernia with concomitant appendicitis due to the unique positioning of the appendix, and are therefore unhelpful pertaining to the differential diagnosis.²⁰⁻²²

Table 1. Classification system on management of Amyand's hernia

Type of hernia	1	2	3	4
Salient features	Normal appendix	Acute appendicitis localized in the sac	Acute appendicitis, peritonitis	Acute appendicitis, other abdominal pathology
Surgical management	Reduction or appendectomy (depending on age), mesh hernioplasty	Appendectomy through hernia, endogenous repair	Appendectomy through laparotomy, endogenous repair	Appendectomy, diagnostic workup and other procedures as appropriate

Although most cases of Amyand's hernia occur within the right inguinal canal, a rare few have been documented wherein the appendix was discovered to be incarcerated with a left-sided inguinal hernia.^{14,22,23} Furthermore, laterality of an inguinal hernia alone cannot be used to disqualify Amyand's hernia from a differential diagnosis.

A system of classification aimed at improving management of Amyand's hernia was proposed in 2008 by Losanoff and Basson, differentiating a total of four basic types of Amyand's hernia [Table 1].²⁴

CONCLUSION

The patient was admitted to the surgical service and underwent laparoscopic hernia repair with mesh. Intraoperatively, the appendix did not reveal any findings suggestive of gangrene, infection, or inflammation, and therefore appendectomy was not performed. The patient had an uncomplicated post-operative course and was discharged home and recovered well.

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Disclosures

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