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Case Report

A Rare Case of Amyand's Hernia with Acute Appendicitis in a Middle-Aged Man: A Case Report in Nakhon Phanom (General) Hospital, Thailand

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ABSTRACT

Amyand's hernia is a form of inguinal hernia which is consider as extremely rare. In this type of inguinal hernia, the content of hernia sac is appendix. Most patient with Amyand's hernia often remains asymptomatic and diagnosed intraoperatively. Surgery is the gold standard to treatment.

A 46-year-old male presented to the emergency department in May 2024 with intermittent right inguinal pain and a painful, irreducible right inguinal mass. So, with a diagnosis of right-sided obstructed indirect inguinal hernia, patient was operated for open hernia repair surgery, intra operatively we found mild inflamed appendix into the inguinal canal. Therefore, we decided to perform hernioplasty (The Bassini endogenous tissue repair technique) and appendectomy.

Amyand's hernia was found only a small proportion of most inguinal hernia cases, and its diagnosis is usually based on incidental finding intra-operatively with an inflamed appendix. Mainstay treatment of this type of hernia should be individualized according to appendix's inflammation stage, presence of abdominal sepsis and co-morbidity. Open and Laparoscopy approach for dealing Amyand's hernia are both diagnostic and therapeutic.

Keywords: Amyand's hernia; Inguinal hernia; Appendix

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Introduction

Amyand's hernia is a form of inguinal hernia which is considered extremely rare, accounting for up to 1% of all inguinal hernia cases.[1,2] In this type of inguinal hernia, the content of the hernia sac is the appendix.[3,4] Most patients with Amyand's hernia often remain asymptomatic and are diagnosed intraoperatively.[5] Mortality of Amyand's hernia has been reported to be about 20% and is related to sepsis, timing, and diagnosis.[4,6] Amyand's hernia can lead to further complications such as strangulation and perforation.[1,4,6] Incarceration of the appendix most commonly occurs within inguinal and femoral hernias but may arise to a lesser extent in incisional and umbilical hernias[7,8] as shown in Figure 1. Incarcerated appendix has been reported in a variety of ventral abdominal and inguinal locations.[4,8] The diagnosis is challenging since it requires a high index of suspicion and imaging is essential.[1,2,4] Surgery is the gold standard of treatment.[1,2,4] We report a case of Amyand's hernia that was managed operatively in a public hospital in Thailand.

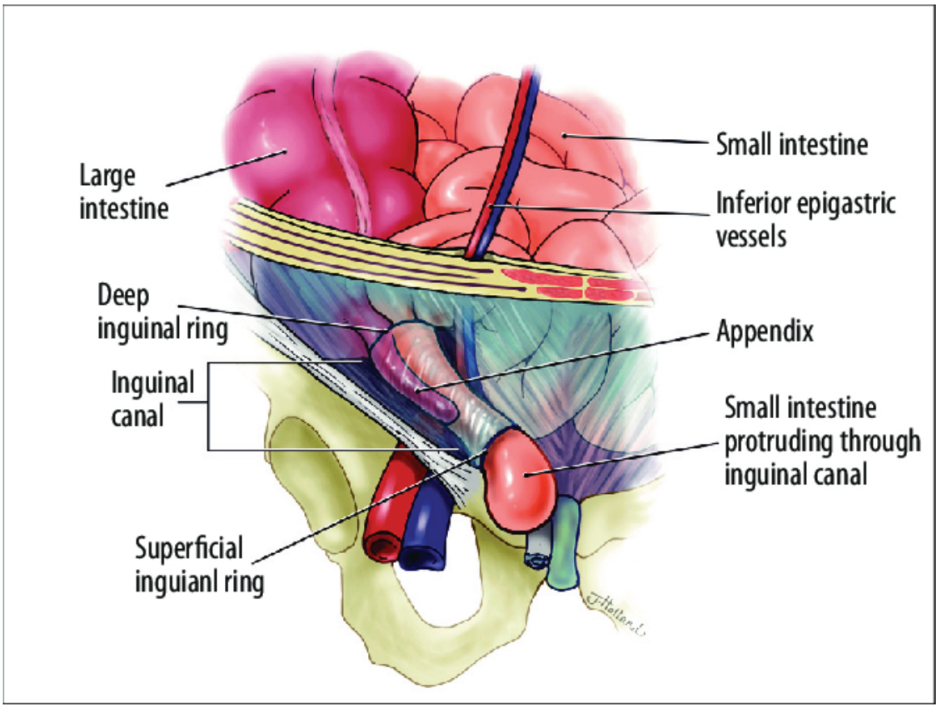

Figure 1 This illustration depicts an Amyand's hernia. The appendix is shown within an indirect inguinal hernia, passing through both the deep and superficial inguinal rings and passing lateral to the inferior epigastric vessels.[8]

Case Presentation

A 46-year-old male presented to the emergency department in May 2024 with intermittent right inguinal pain and a painful, irreducible right inguinal mass. He denied any associated abdominal pain, vomiting, or prior history of a reducible groin mass. His past medical history was unremarkable, with no known underlying diseases ,no previous abdominal surgery or family history of malignancy. Laboratory parameters were leukocytosis (White blood cell count (WBC) = 29,000 cells/mm^3 with Polymorphonuclear (PMN) not dominated (77 %) and normal film X-rays abdomen series.

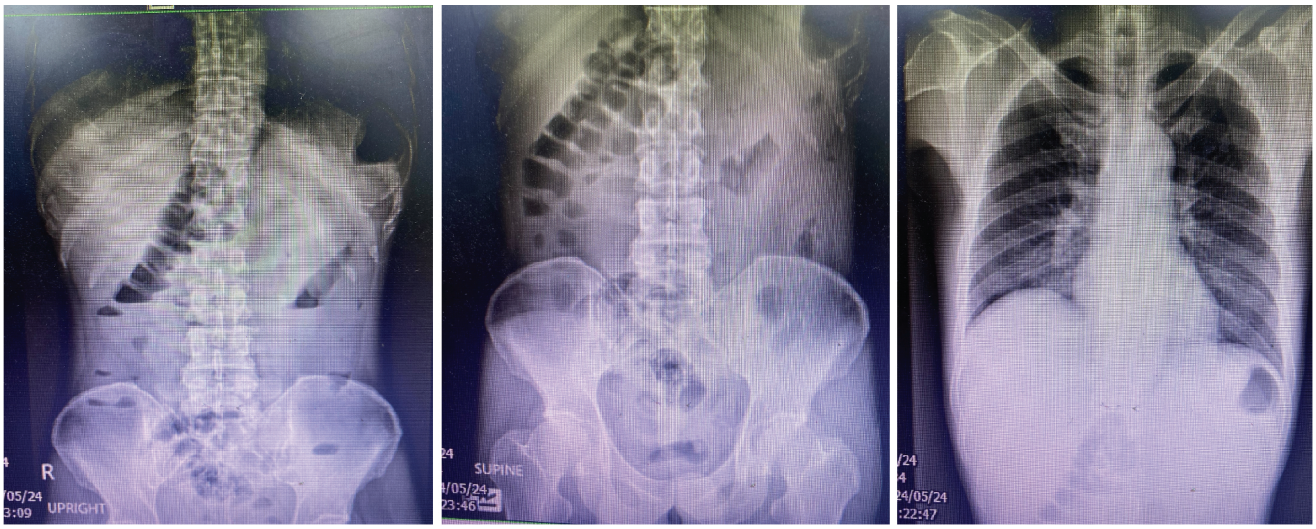

Figure 2 Acute abdominal X-ray series at admission showing normal bowel gas pattern without gut obstruction.

After discussing the risks and benefits with the patient he agreed to proceed with surgery and was taken to the operating room for open right inguinal hernia repair So, with a diagnosis of right-sided obstructed indirect inguinal hernia, patient was operated for open hernia repair surgery. Intraoperatively, a mildly inflamed appendix was found within the inguinal canal, with no evidence of ascites or sac extension as shown in Figure 3.

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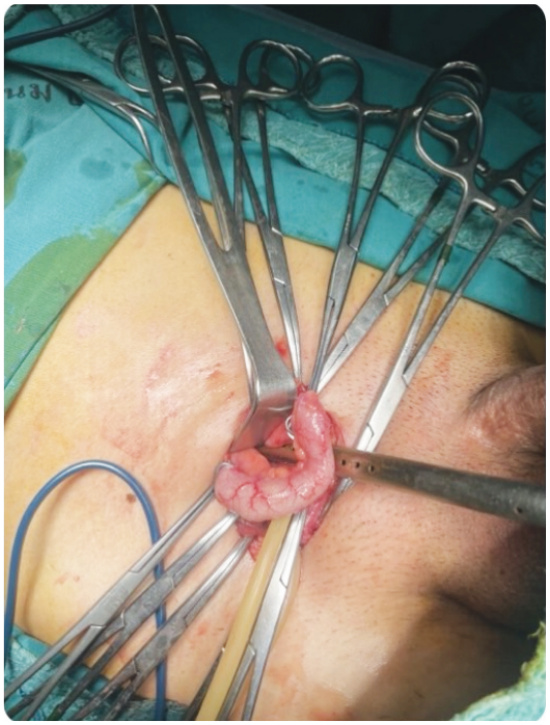

Figure 3 Amyand's hernia, appendix in hernia sac, (Nakhon Phanom (General) Hospital. May 2024)

Therefore, we decided to perform hernioplasty (Bassini's endogenous tissue repair) and appendectomy with double ligation technique. Histopathological findings revealed PMNs infiltration in submucosa and muscularis propria in section of appendix. Pathological diagnosis is acute appendicitis. Intravenous (IV) antibiotics were administered and soft diet were introduced the morning after surgery. Postoperative period was uneventful; patient discharged at the third day. The first fourteenth days after the operation, and the second two months later, during which no complications were observed in the patient, and he is in good general condition.

Discussion

Amyand's hernia (AH) is very uncommon and characterized by the presence of the appendix in the hernia sac; it occurs in 0.4–1% of all inguinal hernia cases.[1,2] AH is observed in approximately 1% (0.19–1.7%) of inguinal hernia cases, with acute appendicitis occurring within the hernia sac in only 0.1% (0.07–0.13%) of all AH cases.[3,4]

The clinical presentation of Amyand's hernia varies widely depending on whether the appendix is inflamed. Patients with a non-inflamed appendix usually present with nonspecific symptoms such as inguinal swelling or discomfort, mimicking a typical inguinal hernia.[4,8] When the appendix becomes inflamed within the hernia sac, it can lead to

acute appendicitis, characterized by sudden-onset abdominal or groin pain, fever, nausea, vomiting, and leukocytosis.[2,4,6] These symptoms often overlap with those of incarcerated or strangulated hernias, making preoperative diagnosis difficult.[3,7,9]

Preoperative diagnosis of Amyand's hernia is uncommon and is usually established intra-operatively.[4,5] However, advances in imaging techniques, particularly computed tomography (CT) and ultrasound (USG), have improved the ability to identify the appendix within the hernia sac preoperatively.[4,11] CT scans can directly visualize the appendix in the inguinal canal and assess signs of inflammation, aiding surgical planning.[2,4,11] Ultrasound is a cost-effective, non-invasive tool that can demonstrate a blind-ending tubular structure with thickened walls connected to the cecum within the hernia sac.[2,11] Despite these advances, imaging is not routinely performed for uncomplicated inguinal hernias, contributing to the frequent intraoperative diagnosis of Amyand's hernia.[3,5]

The management of Amyand's hernia is guided by many factors, including clinical presentation, severity of inflammation, and patient characteristics . In Table 1, the Losanoff and Basson classification system provides a framework for surgeons to make informed treatment decisions based on the level of appendiceal inflammation.[5] However, Hernia repair without synthetic mesh is recommended due to the high risk of mesh infection in contaminated fields.[14] Tissue-based repairs such as the Bassini or Shouldice techniques are preferred. In cases of perforated appendicitis with abscess or peritonitis, a lower midline laparotomy may be required for adequate abdominal exploration and control.[8] Some reports support laparoscopic appendectomy and hernia repair in selected emergency cases when performed by experienced surgeons, but conversion to open surgery may be necessary if complications are encountered.[14,15]

Table 1 The Losanoff and Basson classification for Amyand's hernia.[5]

Type	Description	Recommended Management
1	Normal appendix in hernia sac	Hernia repair with mesh; no appendectomy
2	Acute appendicitis in hernia sac, no sepsis	Appendectomy + primary (no mesh) hernia repair
3	Acute appendicitis with abdominal sepsis	Laparotomy, appendectomy, hernia repair (no mesh)
4	Amyand's hernia with unrelated pathology	Manage as per type 1–3, plus treat other pathology

In our case, the patient presented with a history of intermittent pain in the right inguinal region, ultimately diagnosed intraoperatively as an Amyand's hernia, type 2.[1,2] We found that the appendix was mildly inflamed. Therefore, we decided to perform an appendectomy with hernioplasty using endogenous tissue (the Bassini technique) because the presence of an inflamed appendix increased the risk of surgical site contamination and infection. Usually, Appendectomy is generally not indicated in the absence of appendiceal inflammation to avoid unnecessary contamination and complications.[13] In such potentially contaminated surgical fields, the use of synthetic mesh is generally contraindicated due to the significantly higher risk of mesh infection.[10]

Conclusion

In summary, Amyand's hernia is found only in a small proportion of inguinal hernia cases and is extremely rare.[1,2] Furthermore, its diagnosis is usually based on incidental findings intraoperatively with an inflamed appendix.[3,4] This condition may remain as an asymptomatic inguinal hernia.[4,5] The mainstay treatment of this type of hernia should be individualized according to the stage of appendiceal inflammation, presence of abdominal sepsis, and co-morbidities.[6,7] Open and laparoscopic approaches for dealing with Amyand's hernia are both diagnostic and therapeutic but minimally invasive techniques such as laparoscopic hernia repair are increasingly favored for elective cases, providing excellent visualization and reduced postoperative pain.[8,12]

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