

## **ABSTRACT**

**Background:** Amyand hernia is an unusual type of inguinal hernia when vermiform appendix is identified as its content. This constitutes less than 1% of all groin hernia sac. **Case Representation:** We present successful mesh hernioplasty following appendectomy in a rare case of inguinal hernia with inflamed appendix as its content (Type 2) in an elderly man with no clinical signs of appendicitis. **Conclusion:** Amyand's hernia is less frequently seen, hard to diagnose preoperatively. Therefore the authors emphasise that the young surgeons are well-read, and adequately prepared to take prompt decisions intraoperatively for the patient's safe recovery after the surgery.

**Keywords -** Amyand hernia, Type 2 variant, Mesh hernioplasty

## **INTRODUCTION**

Amyand's hernia is defined as when the appendix is a content within an inguinal hernia. Incarceration of the appendix most commonly occurs within inguinal and femoral hernias, but may arise to a lesser extent in incisional and umbilical hernias <sup>[1]</sup>. It has been described as an inguinal hernia containing either a non-inflamed, an inflamed, or a perforated appendix <sup>[2]</sup>. Acute appendicitis within an Amyand's hernia could be a life threatening condition unless tackled immediately. In this case report, we present an unusual case of inguinal hernia with inflamed appendix as its content in an elderly man with no clinical signs of appendicitis.

## **CASE REPORT**

Gentleman aged 65 years, hypertensive, presented to our outpatient department with complaints of right sided inguino-scrotal swelling for the last 5 years, associated with dull aching pain over the swelling for a duration of one week, with no other accompanying history. Local examination revealed a complete, reducible, indirect inguinal hernia on the right side. Left side was normal. Scrotal examination was normal with both testes palpable. Tone of the abdominal muscle was poor. Laboratory investigations were within normal limits. Ultrasound imaging of the abdomen showed right sided indirect inguinal hernia with omentum as its content.

Patient was planned for elective Lichenstein tension free **open** hernioplasty under spinal anaesthesia. Intraoperatively, the **hernia** sac was identified and opened. The content of the sac was an inflamed, congested appendix (Fig 1). The tip and base showed no evidence of perforation or necrosis. An appendectomy was performed, the remnant stump and caecum were brought back into the abdominal cavity. The hernia repair was achieved by carrying out a Lichtenstein hernioplasty using Prolene mesh and Prolene sutures. A broad-spectrum antibiotic was administered **intravenously** for 5 days. The patient was discharged with no complaints, and recovered uneventfully. Histopathological examination of specimen of the excised appendix showed features of suggestive of **recurrent appendicitis, possibly chronic appendicitis**

## DISCUSSION

Back in 1735, English surgeon Claudius Amyand performed appendectomy in a child with perforated appendix found within an incarcerated inguinal sac. Since then the condition has been named after him<sup>[3]</sup>. Acute appendicitis has been documented in 0.1 % - 0.62% of groin hernia sac<sup>[4,5]</sup>. Amyand hernia usually occurs on the right side, probably as a consequence of normal anatomic position of the appendix. It has also been reported on the left side which may be associated with other conditions like situs inversus, mobile cecum or intestinal malrotation<sup>[6]</sup>. Acute appendicitis occurs much less frequently, and perforated appendix with peri-appendicular abscess formation within an inguinal hernia sac is an extremely unusual clinical entity<sup>[7]</sup>.

Inguinal hernias are largely diagnosed clinically and ultrasonogram (USG) of the abdomen-pelvis is performed to know the contents of the sac. USG may fail to identify appendix as a content and may require a skilled radiologist<sup>[8]</sup>. Contrast enhanced computed tomography (CECT) and Magnetic Resonance Imaging (MRI) are rarely performed pre-operatively in uncomplicated inguinal hernia. Therefore diagnosing Amyand's hernia is rare and incidental.

Losanoff and Basson proposed a classification to identify and treat Amyand's hernias. Type 1 hernia has a normal appendix in an inguinal hernia, which is managed with reduction and mesh repair. Type 2 has an inflamed non perforated appendix. Type 3 has a perforated appendix and type 4 is complicated with intra-abdominal pathology. Type 2 hernias are managed with appendectomy and primary repair. In addition to the latter, management of type 3 includes a laparotomy for abdominal irrigation, possible orchiectomy or colectomy and type 4 includes investigation of pathology<sup>[9]</sup>

Our patient was diagnosed to have type 2 variant of Amyand's hernia. Owing to the clinical examination, normal laboratory parameters, intraoperative finding of inflamed but intact appendix, a decision was made to perform tension free hernioplasty following appendectomy. Mesh repair was considered over primary repair to prevent recurrence of hernia in the patient with poor abdominal muscle tone. He was treated with intravenous broad spectrum antibiotics during the postoperative period (5 days). He recovered with no complications. Literature supports hernioplasty with synthetic mesh in clean-contaminated environment, provided it is supplemented with intraoperative irrigation and postoperative administration of intravenous broad spectrum antibiotics<sup>[10,11]</sup>.

Amyand's hernia has remained an ambiguous condition in the past, but recent literature show that appropriate intraoperative decisions have provided good results and the recovery of the patients have been as good as any other hernia surgery. Surgeons should be cautious while performing appendectomy within the hernia sac and individualise the type of hernia repair either primary or prosthetic mesh technique based on the patient's condition.

## **CONCLUSION**

Amyand's hernia is a very uncommon situation, hard to diagnose preoperatively. Therefore it is imperative for surgeons to be aware about the probabilities of different contents in a hernia sac during the repair. The diagnosis of most clinical scenario befits the quote "The eyes see what the mind knows". The authors emphasise that the young surgeons are well-read, adequately prepared to expect the unexpected intra-operative findings, and thereby are competent to see themselves, the patient and their family through a safe post-operative recovery.

## **STATEMENTS AND DECLARATIONS**

Conflicts of interest

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Financial disclosure

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Informed consent

Informed consent was obtained from the patient for the use of photographs for publication. The consent has been formally documented in the medical record.

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## **FIGURE LEGENDS**

Fig 1 Inflamed and congested appendix as the content of the inguinal indirect hernia sac, as seen intra-operatively