

CASE REPORT

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Amyand's hernia as a sliding component of inguinal hernia: A case report

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ABSTRACT

Introduction: Amyand's hernia is a type of sliding inguinal hernia where the vermiform appendix lies in the hernial sac. **Case Report:** A 43-year-old man who presented with Amyand's hernia with acute appendicitis for which appendicectomy as well as Lichtenstein repair of the hernia was carried out with no postoperative complications. **Conclusion:** Amyand's hernia is rare entity which is seen only in about 1% of inguinal hernias. The finding of appendicitis in the inguinal hernia is only 0.1%; and when it occurs it is often misdiagnosed as a strangulated inguinal hernia, which also represents a surgical emergency. Claudius Amyand performed the first surgery for such a case in 1735.

Keywords: Amyand's hernia, Sliding hernia, Inguinal hernia, Appendicitis

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INTRODUCTION

Claudius Amyand (1680–1740) was sergeant surgeon to George II and principal surgeon of St. George's and the Westminster hospitals of London. His role in surgical history is secured because in 1735 he performed the first recorded successful appendectomy on Hanvil Anderson; an 11-year-old boy with a perforated appendix within an inguinal hernia sac. Amyand reported the case to the Royal Society and it was published in their Philosophical Transactions [1]. An uninflamed appendix within an inguinal hernia is estimated to be found in approximately 1% of adult inguinal hernia repairs [2, 3]. The finding of appendicitis in the inguinal hernia is even rare. D'Alia et al. observed one case (0.08%) in 1,341 inguinal hernia operations [2, 4] while Ryan et al. [5] in 1937 reported only 11 cases of appendicitis out of 8,692 (0.13%) external inguinal hernia sacs.

CASE REPORT

A case of a 43-year-old man, who presented to the Emergency Department, with four days of progressively increasing dull aching pain in a longstanding non-complicated right inguinal hernia for which he was awaiting elective hernia repair. His past medical history was not significant and general examination was unremarkable. Vital signs were normal apart from mild tachycardia (heart rate: 92/min). Abdominal examination revealed mild right iliac fossa tenderness with negative rebound as well as negative Rovsing's signs, groin examination revealed severely tender

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irreducible right inguinal hernia. His laboratory investigations were within normal range except CRP which was raised (160 mg/L). Abdominal X-ray did not show any signs of obstruction. Our provisional diagnosis was incarcerated inguinal hernia, so with patient's consent, the patient was scheduled for groin exploration and hernia repair. Intraoperatively, the sac of an indirect inguinal hernia was identified. Surprisingly, a mildly inflamed appendix was found in the hernia sac, for which appendectomy was carried out. Lichtenstein repair of the hernia was also done. The histopathological examination of the specimen of appendix confirmed acute appendicitis.

The patient passed through a smooth postoperative period and was discharged from the hospital one day after surgery. He was seen in the clinic after three weeks with improvement in general condition and no notable complications.

DISCUSSION

The credit for performing first appendectomy goes to Claudius Amyand. He successfully performed appendectomy and repair of the hernia on 6 December 1735 [6]. He took approximately half an hour to complete the surgery and after completion of operation, he commented that it is easy to conceive that this operation was as painful to the patient as laborious to me. This operation was not only the first to describe a hernia containing vermiform appendix but also one of the earliest documented appendectomy in literature. Hernia is abnormal protrusion of a viscus or part of a viscus through a normal or abnormal opening, from the cavity which contains it. The common contents are either omentum or intestine. Unusual contents may be encountered, such as Meckel's diverticulum (Littre's hernia), or a portion of circumference of intestine (Richter's hernia). The presence of appendix within femoral hernia sac is referred as De Garengeot hernia. The term Amyand's hernia refers to presence of appendix within the sac of inguinal hernia [7]. The pathophysiology of Amyand's hernia is unknown. The relationship between incarceration and inflammation of appendix is not yet clear. Weber et al. proposed that the appendix in Amyand's hernia becomes inflamed, and the inflammatory swelling may lead to incarceration and subsequent impaired blood supply and bacterial overgrowth. Abu-Dalu et al. and Urca et al. support the scenario in which as soon as the appendix enters the sac it becomes vulnerable to trauma and is ultimately retained there by adhesions. Its blood supply may subsequently be cut off or significantly reduced resulting in inflammation and bacterial overgrowth. Contraction of the abdominal muscles and other sudden increases in intra-abdominal pressure may cause compression of the appendix resulting in further inflammation. Because of anatomical location Amyand's hernia is almost always on the right side. However, extensive literature search revealed eight cases of left sided Amyand's hernia. There are four

conditions responsible for left sided Amyand's hernia: situs inversus, mobile caecum, malrotation of intestine and excessively long appendix.

Amyand's hernia is rarely diagnosed preoperatively and requires awareness of the disease process by the clinician in combination with the physical findings of a tender hernia without radiological or clinical evidence of obstruction. The clinical presentation is very similar to that of a strangulated inguinal hernia with local peritonitis. In many cases, the prodromal signs could be typical of appendicitis with epigastric or periumbilical pain localizing to the right lower quadrant or to hernia sac. Several authors suggest that the pain of strangulated appendicitis tends to be episodic and crampy instead of a constant dull ache usually seen in strangulated bowel. Acute appendicitis in hernia sac is often misdiagnosed as either testicular torsion or epididymo-orchitis [8, 9, 10]. Leucocytosis and fever are not constant findings.

Ultrasound often demonstrates a potentially inflammatory mass within the hernial sac. Computed tomography (CT) scan is a very powerful technique to establish early diagnosis, which is very important considering the high risk of perforation. Diagnosis is made by demonstration of an inguinal herniation containing a blind-ending tubular structure with thickened walls, in connection with the cecum. The CT scan is not routinely used in such cases but it remains integral to preoperative diagnosis [11]. The American College of Radiology recommends the use of non-ionizing radiation techniques for front-line imaging in pregnant women. MPR is most useful in order to better visualize the appendix and demonstrating its relationship with surrounding structures. It aids in confidently making the right diagnosis preoperatively, enabling the surgeon to successfully combine both appendectomy and hernia repair.

There is no standard protocol for the management of Amyand's hernia. Factors such as the presence of an inflamed appendix, contamination of the surgical field, patient age and anatomic features of the tissue are important determinants for appropriate surgery. The appropriate approach is preperitoneal for access to both abdomen and inguinal regions. Normal appendix can be returned back to peritoneal cavity, or alternatively appendectomy can be performed as in this case. Hernioplasty (mesh repair) without appendectomy is the favored option in patients with a normal appendix. However, in cases of appendicitis, a trans-herniotomy appendectomy should be performed followed by herniorrhaphy (sutured repair). The presence of pus or perforation is an absolute contraindication to hernioplasty. However, laparotomy in case of symptoms of peritonitis or problems in releasing the appendix incarcerated in the deep inguinal ring, have been performed. Laparoscopic treatment has been proposed but synthetic mesh is not advisable. Mortality rate varies from 14-30% and septic complications are common. Other complications are pneumonia, epididymitis and urinary retention [8, 9, 10].

CONCLUSION

To conclude appendicitis within an Amyand's hernia is rare, and when it occurs it is usually misdiagnosed as strangulated inguinal hernia which also represents a surgical emergency. The proper treatment should involve appendectomy through herniotomy with primary hernia repair without the use of any synthetic mesh.

Author Contributions

Sherif Monib – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Bassem Amr – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

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Ahmed Farghaly – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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