CASE REPORT

Amyand's hernia with a periappendicular abscess

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SUMMARY

We present a rare case of a perforated vermiform appendix presenting as a strangulated inguinal hernia. An 89-year-old man presented to the surgical assessment unit with a 1-week history of progressively worsening abdominal pain, fever and a tender mass in the right iliac fossa. A diagnosis of strangulated inguinal hernia was made. Intraoperatively, a perforated appendix and a pus-filled sac were found. An appendicectomy and a Bassini repair of the hernia were performed with a satisfactory postoperative outcome. In the majority of cases Amyand's hernia is an intraoperative finding and its management depends on the extent of appendiceal disease. In cases of perforated appendix with periappendiceal abscess within the hernial sac, an appendicectomy with Bassini's repair is recommended.

BACKGROUND

The finding of a vermiform appendix within an inguinal hernia was first described by Amyand¹ in 1736. This uncommon incidental finding is between 0.6% and 1% of all hernias.^{2–3} The complication of acute appendicitis within the hernial sac is even rarer, reported to be between 0.08% and 1%.^{3–5}

We present a case and subsequent management of Amyand's hernia with a periappendicular abscess, the first in 3983 (0.03%) hernia operations at our centre since April 2003.

CASE PRESENTATION

An 89-year-old man was acutely referred to the surgical assessment unit with a 1-week history of right iliac fossa pain, fever and swelling. He had a background of intermittent abdominal pain, general malaise and unintentional weight loss over the previous 5 weeks. There were no symptoms to indicate bowel obstruction.

His medical history included hypertension and ischaemic heart disease. Of note was an elective left inguinal hernia repair 5 years prior.

Examination revealed a tender irreducible mass in the right inguinal area. His full blood count showed normocytic anaemia and white cell count of $17.5 \times 10^9/L$. Plain abdominal X-ray was normal.

At this point a diagnosis of strangulated inguinal hernia was made and the patient was prepared for emergency surgery and perioperative antibiotics were administered according to local trust guidelines.

At operation an oblique inguinal incision was made. The subcutaneous fat contained foul smelling pus that tracked up to the neck of the right scrotum. The anatomy of the inguinal canal was distorted due to pus and necrotic tissue. The

inguinal canal contained a very long appendix, approximately 6 cm in length. The thick-walled tip of the appendix had perforated causing local abscess formation. The base of the appendix was traced through the deep inguinal ring and an appendicectomy was performed. Intraoperative examination of the caecum revealed no mass. All visible necrotic tissue was excised. A Bassini repair was performed. External oblique was closed with absorbable sutures and a corrugated wound drain inserted. The wound was closed loosely with clips. Postoperatively, the patient continued on broad-spectrum antibiotic therapy. A CT scan of the abdomen and pelvis 2 days postoperative showed no evidence of colonic malignancy. Histological examination of the appendix confirmed acute inflammation, perforation and necrosis.

OUTCOME AND FOLLOW-UP

The postoperative period was uneventful and the patient was well on discharge 8 days following his procedure.

DISCUSSION

The pathophysiology of Amyand's hernia has been hypothesised. It is most likely due to extraluminal obstruction of the appendix, subsequent trauma and retention by adhesions within the hernia sac.⁶ Increased intra-abdominal pressure or an insult to the blood supply can exacerbate the inflammation and may lead to bacterial overgrowth.⁷

Preoperative diagnosis of Amyand's hernia is rarely made as clinically the condition is similar to, and most commonly misdiagnosed as, a strangulated inguinal hernia. As with our patient the commonest presenting complaint is with painful inguinal swelling in adults. Up to 83% of patients present in this manner.⁸ Other presentations include chronic scrotal sinus⁹ and testicular torsion¹⁰ and appear to be more common in children and neonates. With the advancement of medical imaging, there are cases that have been diagnosed preoperatively using ultrasound¹¹ and CT scan;^{12–14} however these are not routinely performed in the management of a suspected strangulated inguinal hernia.

Amyand's hernia has been reported in ages ranging from premature babies to the 10th decade.¹⁵ As with our patient, the overwhelming majority are right sided and have been found in men, probably owing to the natural anatomical position of the appendix.⁸ Left-sided Amyand's hernias also occur and do so usually when the caecum is mobile, but it is a comparatively rare phenomenon.¹⁶

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Table 1 Classification of Amyand's hernia according to Losanoff and Basson¹⁷

Classification	Description	Surgical management
Type 1	Normal appendix within an inguinal hernia	Hernia reduction, mesh repair, appendectomy in young patients
Type 2	Acute appendicitis within an inguinal hernia, no abdominal sepsis	Appendectomy through hernia, primary repair of hernia, no mesh
Type 3	Acute appendicitis within an inguinal hernia, abdominal wall or peritoneal sepsis	Laparotomy, appendectomy, primary repair of hernia, no mesh
Type 4	Acute appendicitis within an inguinal hernia, related or unrelated abdominal pathology	Manage as types 1–3 hernia, investigate or treat second pathology as appropriate

The surgical management of Amyand's hernia depends on the condition of the appendix (table 1).¹⁷ If the appendix is normal, mesh (Lichtenstein's) hernia repair has been performed without appendectomy. As in our case, type 2 Amyand's hernias—where the appendix was inflamed or perforated without intra-abdominal sepsis, appendectomy through the hernia repair without the use of a mesh has been performed.^{18 19} Briefly, Bassini's hernia repair is a mesh free, tensioned repair of an inguinal hernia, involving closing the defect by suturing the conjoined tendon to the inguinal ligament. The same approach is taken in children but appendectomy is advised in children with type 1 Amyand's hernias.^{17 19}

There is no non-operative approach to the management of Amyand's hernia as without an operation the sequela of disease involves gangrene, intra-abdominal sepsis and death if left untreated.

Although the neck of the scrotum was involved in our case, there was no further involvement inferiorly and orchidectomy was not considered as there was no complaint of orchialgia and the testes were normal on examination. Generally operative

outcomes are good; Sharma *et al*⁸ found that recurrence of hernia occurred in only 1 case of 18 over a 15-year period with a median follow-up of 6.4 years. Other postoperative complications include infection, postoperative pain and appendiceal stump fistula formation.

Carcinoma of the caecum can present as acute appendicitis. The incidence of acute appendicitis as the presenting symptom of caecal or ascending colon cancer is reported to be from 3.4% to 15%.²⁰ Underlying small caecal tumours may be missed intraoperatively. We recommend, dependant on the patients comorbidities, that they should undergo either colonoscopy or CT postoperatively to exclude a coexistent colonic malignancy.

Contributors BO researched and was involved in the write up of the case report. MHA was involved in the surgery of the patient and reviewed the case for publication.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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Learning points

- ▶ Amyand's hernia is a rare pathology that should be considered in presentations of strangulated inguinal hernia with prodromal symptoms.
- ▶ In the majority of cases it is an intraoperative finding and its management depends on the extent of appendiceal disease.
- ▶ In cases of perforated appendix with periappendiceal abscess within the hernial sac, an appendectomy with Bassini's repair is recommended.¹⁷
- ▶ In elderly patients, a follow-up CT scan or colonoscopy should be performed postoperatively to exclude coexistent colonic malignancy.

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