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CASE REPORT

Amyand's hernia: history, imaging, and management

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Abstract
Background Amyand's hernia is an inguinal hernia containing vermiform appendix. We report a case of this rare condition, diagnostic findings, and management considerations. A short review and history of Amyand's hernia is presented as well.
Methods A literature search from Medline was done, and the published articles were reviewed. A case of Amyand's hernia, which was recently managed by the authors, was studied and the data reviewed.
Results Diagnosis of the Amyand's hernia is usually made intraoperatively. The majority of the existing literature recommends doing open or laparoscopic appendectomy with open repair of the inguinal hernia, although some authors advise mesh repair of the hernia if the appendix is normal.
Conclusion Amyand's hernia can be a challenge for the surgeon. We recommend laparoscopic appendectomy and open repair of the inguinal hernia without using mesh.

Keywords Amyand's hernia · Inguinal hernia · Appendix · Claudius Amyand

Introduction

Amyand's hernia is an inguinal hernia containing vermiform appendix. The herniated appendix can be inflamed or normal. The authors of this manuscript were recently involved in the diagnosis and treatment of a case of Amyand's hernia. We report our case, as well as review of literature. A short review and history of Amyand's hernia is presented as well.

Claudius Amyand (1660–1740) is variously reported as having held the title of "surgeon-in-ordinary" or "sergeant–surgeon" to King George II of England. On 6 December 1735 he performed the first recorded successful appendectomy. The patient was an 11-year-old boy with "a fistula between the scrotum and thigh." The "operation proved the most complicated and perplexing," as the pathology consisted of chronically inflamed appendix contained within the inguinal hernia sac and perforated by a previously swallowed pin. At surgery the appendix was removed, the stump was ligated and "so much of the hernia bag as had been detached from the skin, the Spermaticks, *&c*. was cut off." The patient eventually recovered and was "discharged with a truss, which he was ordered to wear some time, to confirm the cure." The case was published in *Philosophical Transactions of the Royal Society of London* [1].

Case

An 84-year-old male presented to the emergency department with a history of right lower quadrant pain and nausea. Findings on physical examination included slight abdominal distention, tenderness to deep palpation in the right lower quadrant and a moderate-size right inguinal hernia. No fever, leukocytosis, or peritoneal signs were noted. CT scan of the abdomen and pelvis demonstrated appendix herniating into the right inguinal canal (Fig. 1). Diagnosis of Amyand's hernia was thus made. The patient was taken

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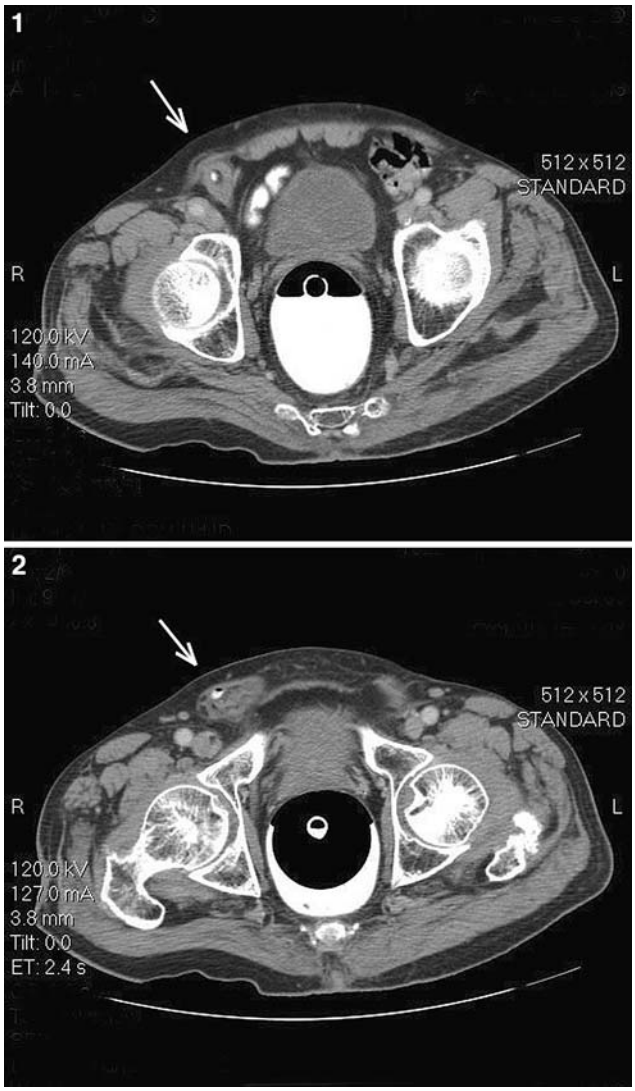

Fig. 1, 2 CT-scan findings in Amyand's hernia in two different patients. Note the contrast-filled appendix in the right inguinal canal (*white arrows*)

to the operating room where laparoscopy revealed appendix, mildly thickened at its distal half, and a direct right inguinal hernia defect. Laparoscopic appendectomy was performed followed by repair of the right inguinal hernia via separate incision using the Bassini technique. The postoperative course was unremarkable, and the patient was discharged home on postoperative day 2.

Materials and methods

A literature search from Medline was done. A total of 27 articles was found from 1988 to 2007. The articles were reviewed. Information thus collected was added to the data gleaned from our experience and summarized below.

Results and discussion

Amyand's hernia is defined as the presence of vermiform appendix in an inguinal hernia sac. The herniated appendix can be normal, acutely inflamed, or perforated [2]. The diagnosis of Amyand's hernia is rarely made preoperatively and is often confused clinically with an incarcerated or strangulated right inguinal hernia [3]. It is more common in men. In one report of 18 cases the median age was 42 years [2], although it is occasionally reported in pediatric patients as well. The overwhelming majority of the cases involve the right groin. Acute appendicitis, therefore, should be included in the differential diagnosis of patients who present with incarcerated right groin hernias [4]. Although we do not advocate indiscriminant use of computed tomography for all incarcerated hernias, CT may be used to diagnose Amyand's hernia preoperatively in select patients who, in addition to hernia findings, exhibit signs and symptoms consistent with acute appendicitis (Fig. 1, 2).

Intraoperatively, should a normal appendix be discovered upon exploration of hernia contents, mesh hernia repair without appendectomy should be considered a safe option [2]. Because of potential contamination of the operative field inherent to surgery for appendicitis, most authors recommend appendectomy and hernia repair without prosthesis implantation [5]. Under such circumstances, we recommend laparoscopic appendectomy followed by open hernia repair without prosthetic mesh (e.g., by Shouldice's or Bassini's method).

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