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Sliding Amyand's hernia with acute appendicitis presenting as an incarcerated inguinoscrotal hernia: a case report

Sudesh Udayanga Dodampahala Gamage

sudeshrc@yahoo.com

Base Hospital Galgamuwa

Case Report

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Abstract

Background: Amyand's hernia, defined as the presence of the vermiform appendix within an inguinal hernia sac, is uncommon. Acute appendicitis within an Amyand's hernia is rarer, and a sliding variant in which the caecum contributes to the hernia sac adds further operative complexity. We report a case of sliding Amyand's hernia with acute appendicitis presenting as an incarcerated inguinoscrotal hernia.

Case presentation: A 56-year-old man with type 2 diabetes mellitus presented with a one-day history of a painful, irreducible right inguinoscrotal swelling on a background of a three-year hernia. He was constipated but continued to pass flatus and had no fever or urinary symptoms. Examination showed a tender irreducible right inguinoscrotal hernia with a soft, non-tender abdomen and no peritonism. The white cell count was 19 × 10^9/L and C-reactive protein was 142 mg/L. Plain abdominal radiography showed dilated small bowel loops. Computed tomography was difficult to arrange on an emergency basis. Although ultrasonography was available, it was not requested because the clinical diagnosis of an incarcerated inguinal hernia was sufficiently compelling to warrant operative management, and the anticipated findings were unlikely to alter the decision to proceed with surgery. At exploration, the caecum was found to form part of the wall of the hernia sac within the right hemiscrotum, with a grossly inflamed appendix and inflammatory fluid. There was no features of bowel ischaemia or gangrene. Appendicectomy and primary non-mesh tissue repair were performed. Histology confirmed acute appendicitis. The postoperative course was uncomplicated, and the patient was well at three-week follow-up.

Conclusion: Sliding Amyand's hernia with acute appendicitis should be considered as a differential diagnosis in patients presenting with an incarcerated inguinoscrotal hernia and disproportionate inflammatory markers. Although the diagnosis is often established intraoperatively, awareness of this possibility may improve operative preparedness. Intraoperative assessment of appendiceal inflammation, contamination and the sliding caecal anatomy should guide appendiceal management and the choice of hernia repair. In this patient, appendicectomy with primary tissue repair was followed by an uncomplicated early recovery.

Introduction

Amyand's hernia is defined as the presence of the vermiform appendix within an inguinal hernia sac. It is named after Claudius Amyand, who in 1735 performed the first recorded successful appendicectomy after finding a perforated appendix within the hernia sac of an 11-year-old boy [1]. The appendix is encountered in fewer than 1% of inguinal hernia repairs, while inflammation of the trapped appendix occurs in approximately 0.07–0.13% of cases [2]. The diagnosis is frequently established intraoperatively, although preoperative identification is possible, particularly with ultrasonography or computed tomography [2, 3].

Sliding Amyand's hernia is an uncommon anatomical variant in which the caecum contributes to the hernia sac, creating additional technical challenges during reduction and repair [4, 5]. We report a patient

with an incarcerated inguinoscrotal hernia in whom disproportionate inflammatory markers prompted further concern, and in whom intraoperative exploration revealed a sliding caecal component with acute appendicitis.

Case presentation

History

A 56-year-old man presented to the surgical emergency department with a one-day history of pain in a pre-existing right inguinoscrotal swelling. He gave a three-year history of the hernia, which had been irreducible for the preceding year, with intermittent pain that had not previously required hospital admission. He had not opened his bowels for one day but continued to pass flatus, and denied fever or urinary symptoms. He had no prior abdominal or hernia surgery. His only comorbidity was type 2 diabetes mellitus, well controlled on oral hypoglycaemic agents, and he had no known drug allergies.

Examination

On examination, the patient was afebrile and not pale, with a pulse rate of 90 beats/min, respiratory rate of 22 breaths/min and blood pressure of 140/85 mmHg. The right inguinoscrotal region showed an irreducible, tender hernia with a tender scrotum. The abdomen was otherwise soft and non-tender, with no signs of peritonism and no renal angle tenderness.

Investigations

Laboratory studies showed a markedly elevated white cell count of 19 × 10^9/L and a C-reactive protein of 142 mg/L, with a haemoglobin of 11.1 g/dL. Serum electrolytes and an electrocardiogram were normal. Plain radiographs were obtained; formal radiologist reporting was not available at the time of assessment. The erect chest radiograph (Fig. 1) showed no gross lung pathology and no free gas under the diaphragm. The supine abdominal radiograph (Fig. 2) showed dilated loops of small bowel, raising suspicion of partial intestinal obstruction associated with the incarcerated hernia.

Computed tomography was difficult to arrange on an emergency basis. Although ultrasonography was available, it was not requested because the clinical diagnosis was an incarcerated inguinal hernia requiring operative management, and the anticipated findings were unlikely to alter the decision to proceed with surgery. No further imaging was therefore performed before exploration.

Working diagnosis and initial management

A working diagnosis of an incarcerated right inguinal hernia was made; the cause of the disproportionately raised inflammatory markers was not clear from the clinical picture or plain imaging

alone. The patient was kept nil by mouth, resuscitated with intravenous fluids, and commenced on broad-spectrum intravenous antibiotics (co-amoxiclav 1.2 g eight-hourly) together with analgesia. He was taken to theatre for surgical exploration approximately eight hours after admission.

Operative findings

Under general anaesthesia, a right groin incision was made with a 1 cm extension towards the right hemiscrotum, and the external oblique aponeurosis was divided along the line of its fibres. Exploration revealed a sliding hernia with the caecum forming part of the wall of the sac within the scrotum. Alongside it lay a grossly inflamed vermiform appendix within the right hemiscrotum, surrounded by inflammatory fluid (Fig. 3). There was no evidence of bowel gangrene.

Procedure

The hernia contents were reduced from the scrotum to the surgical site, and an appendicectomy was performed, with the specimen sent for histopathological examination. The hernia was repaired primarily with non-absorbable nylon sutures. A prosthetic mesh was not used because of the inflammatory and contaminated operative field. A non-suction tube drain inserted in the groin and the tip was left in the scrotum, and the wound was closed in layers, with skin closure using 4/0 interrupted Prolene sutures.

Postoperative course and follow-up

Intravenous antibiotics were continued for 48 hours postoperatively, alongside regular analgesia, and oral feeding was resumed uneventfully. The scrotal drain was removed on postoperative day 2, and the patient was discharged home in good condition. He was reviewed at 10 days, when his skin sutures were removed, and again at three weeks, at which point he had a healthy surgical scar. Histopathology confirmed acute appendicitis. The patient was subsequently discharged from further surgical follow-up.

Discussion

Amyand's hernia is an uncommon but well-recognised anatomical variant of inguinal hernia in which the vermiform appendix lies within the hernia sac. Since Claudius Amyand's original description in 1735 [1], several hundred cases have been reported, most as single case reports. The appendix is found incidentally in under 1% of inguinal hernia operations, and true appendiceal inflammation within the sac complicates only 0.07–0.13% of all inguinal hernias [2, 3, 6]. The right-sided predominance of the condition is consistent with the usual anatomical position of the caecum and appendix and the greater prevalence of right-sided inguinal hernias [3, 7].

The sliding component in the present case—in which the caecum itself forms part of the hernia sac wall rather than simply the appendix lying within the sac—is a distinctly rarer anatomical variant described in a small number of case reports [4, 5]. A sliding component has important operative implications because

the caecal wall forms part of the sac. Careful dissection and reduction are therefore required to avoid inadvertent bowel injury and to allow safe repair of the hernia defect.

Preoperative diagnosis of Amyand's hernia remains difficult. Clinical findings overlap closely with those of an incarcerated or strangulated inguinal hernia, and neither history nor examination reliably distinguishes the two [3, 6]. Raised inflammatory markers, as seen in this patient, are non-specific but may suggest an intra-sac inflammatory process beyond simple incarceration. Computed tomography is a useful preoperative investigation and can identify the appendix within the hernia sac, while ultrasonography may also assist diagnosis in selected patients [2, 3, 8]. Although ultrasonography may assist in the preoperative diagnosis of Amyand's hernia, its diagnostic value must be considered in the context of the clinical presentation and urgency of management. In this patient, the clinical diagnosis of an incarcerated inguinal hernia was sufficiently compelling to warrant operative exploration, and ultrasonography was not expected to alter the immediate management. The diagnosis was consequently established intraoperatively.

Operative management can be considered using the Losanoff–Basson classification, which relates appendiceal pathology and the degree of contamination to surgical strategy [9]. Type 1 disease involves a normal appendix; type 2 involves appendicitis confined to the hernia sac without wider sepsis; type 3 involves appendicitis with peritonitis; and type 4 denotes appendiceal pathology associated with an unrelated intra-abdominal process [9]. Based on the absence of appendiceal perforation, gangrene, or generalized peritoneal sepsis, the appendiceal pathology in this patient was consistent with Losanoff–Basson type 2 disease. The additional sliding caecal component represents an anatomical feature requiring separate operative consideration.

The decision to avoid prosthetic mesh in this case was based on the intraoperative inflammatory findings. Although mesh repair has been reported safely in selected Amyand's hernias with non-perforated appendicitis and limited contamination, the presence of a grossly inflamed appendix with inflammatory fluid led us to favour primary tissue repair [3, 7, 10]. Current evidence supports an individualized, contamination-guided approach rather than an absolute prohibition of mesh in all cases of appendicitis [7, 10].

With prompt recognition and surgery, reported outcomes in Amyand's hernia are generally favourable [3, 6]. In the present case, appendicectomy and primary tissue repair were followed by an uncomplicated early postoperative recovery, with a healthy wound at three weeks. Longer-term follow-up was not available and therefore conclusions regarding recurrence or late complications cannot be drawn. The case reinforces two practical points: disproportionate inflammatory markers in a patient with an apparently straightforward incarcerated inguinal hernia should prompt consideration of an intra-sac inflammatory process, and recognition of a sliding caecal component requires careful operative handling and individualized selection of the hernia repair technique.

Conclusion

Sliding Amyand's hernia with acute appendicitis should be considered in patients presenting with an incarcerated inguinoscrotal hernia and disproportionate inflammatory markers. Although the diagnosis is often established intraoperatively, awareness of this possibility may improve operative preparedness. Intraoperative assessment of appendiceal inflammation, contamination and the sliding caecal anatomy should guide appendiceal management and the choice of hernia repair. In this patient, appendicectomy with primary tissue repair was followed by an uncomplicated early recovery.

Declarations

Ethics approval and consent to participate

According to institutional policy, written consent is obtained from patients at admission for clinical photography and the use of clinical data for educational purposes, including research, audits, and case reports. Institutional ethical review is not required for individual case reports when patient-identifying information is not disclosed. For this case report, written informed consent was additionally obtained from the patient for publication of the case report and accompanying clinical images.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and the accompanying clinical images. The patient was informed that identifying information would not be disclosed.

Competing interests

The author declares no competing interests.

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Author contributions

Sudesh Dodampahala: conceptualization, clinical investigation, data curation, surgical management, literature review, writing—original draft, writing—review and editing, and final approval of the manuscript.

Patient perspective

At the three-week postoperative follow-up, the patient reported being satisfied with the care he had received and expressed his gratitude to the treating team.

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Figures

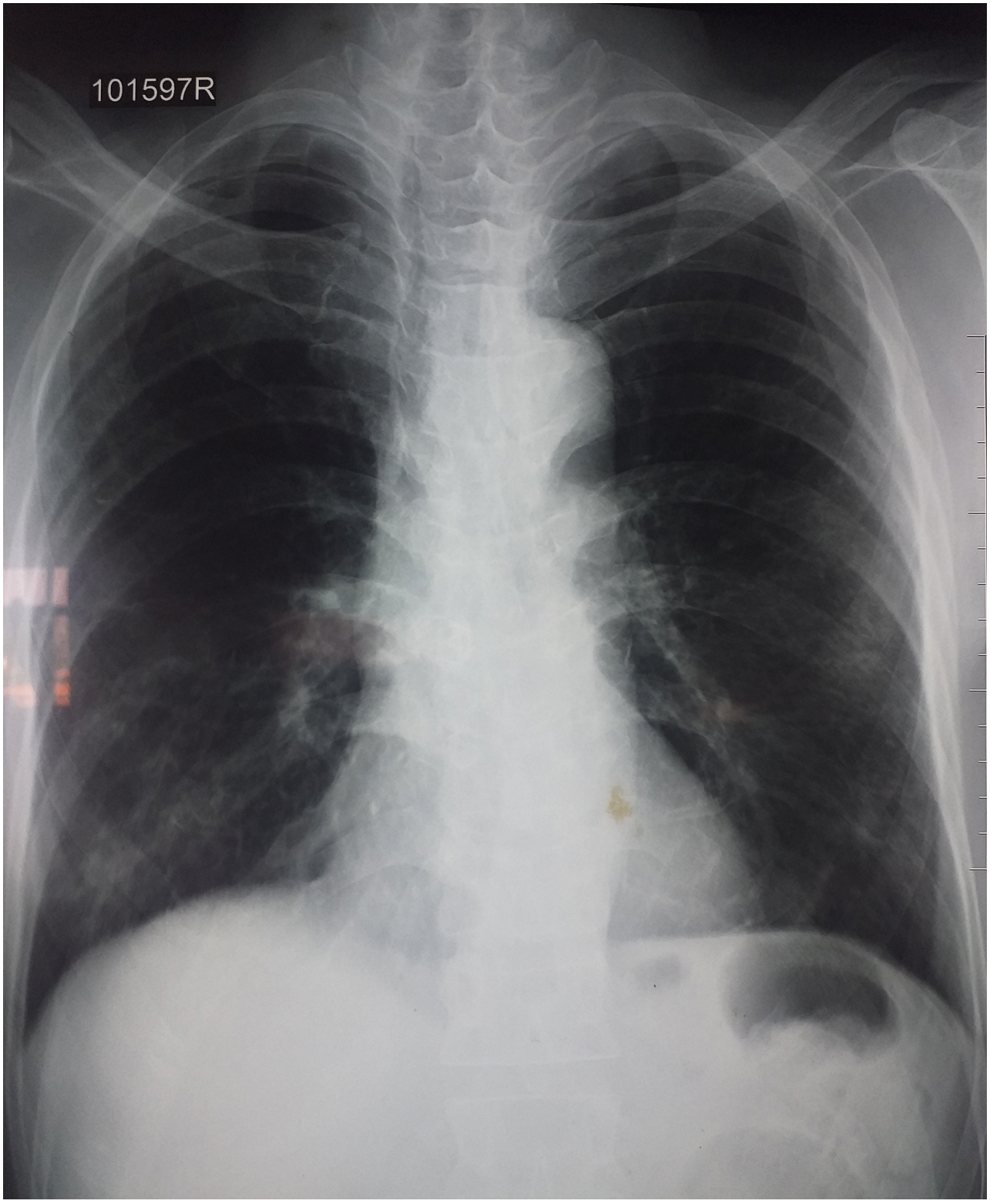


Figure 1

Erect chest radiograph showing no free gas under the diaphragm and no gross cardiopulmonary pathology.



Figure 2

Supine abdominal radiograph demonstrating dilated small bowel loops, raising suspicion of partial intestinal obstruction associated with the incarcerated hernia.

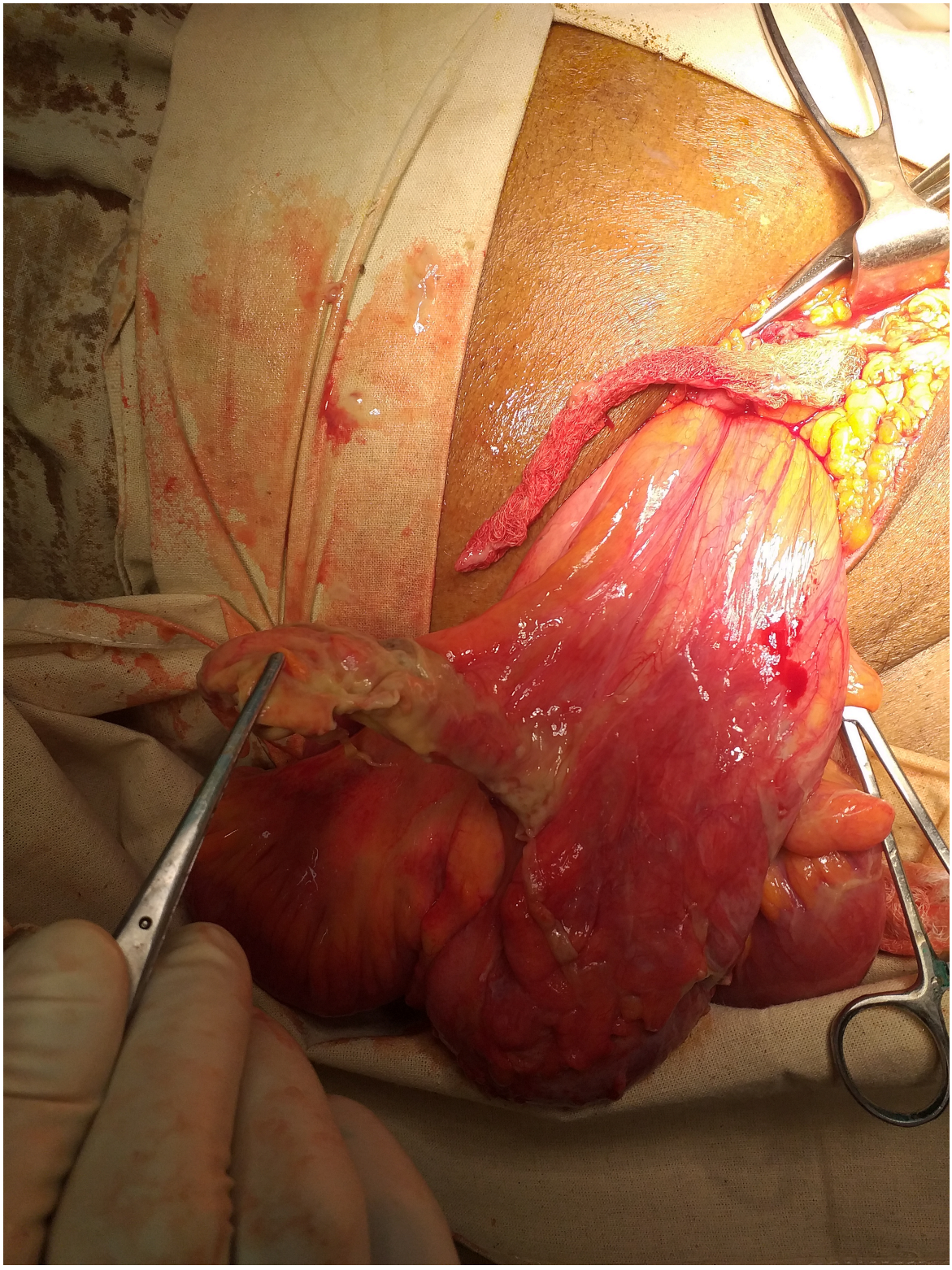


Figure 3

Intraoperative photograph following reduction of the sliding hernia to the surgical field, showing the caecum forming the sliding component of the sac with the inflamed appendix and surrounding inflammatory exudate (retracted with a swab, upper right of field).