



Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Right salpingo-ovarian and distal ileal entrapment within a paracaecal hernia presenting as acute appendicitis[☆]

A. Dhillon^{*}, S.G. Farid, S. Dixon, J. Evans

Department of General Surgery, Northampton General Hospital, United Kingdom

ARTICLE INFO

Article history:

Received 15 August 2013
 Received in revised form 3 September 2013
 Accepted 10 October 2013
 Available online 24 October 2013

Keywords:

Paracaecal hernia
 Appendicitis
 Salpingo-ovarian
 Ileum entrapment

ABSTRACT

INTRODUCTION: Pericaecal hernias are a rare subgroup of internal abdominal hernias that present with abdominal pain and occasionally with features of bowel obstruction.

PRESENTATION OF CASE: A 72 year old female presented with a 24-h history of sharp, localised right iliac fossa pain, and no other symptoms. Clinical examination confirmed localised peritonism in the right iliac fossa. A tentative diagnosis of acute appendicitis was considered but in view of age a CT scan was performed. An area of abnormality in the right iliac fossa region was noted. At laparoscopy a macroscopically normal appendix and caecum was found. A smooth non-indentable mass in the lateral right iliac fossa contained loops of distal ileum, passing through a retro-caecal mesenteric defect consistent with a paracaecal hernia, with entrapment of the right ovary and fallopian tube. A right salpingectomy as performed and subsequent histopathological examination confirmed infarction of the fallopian tube.

DISCUSSION: Internal abdominal hernias are reported to have a post mortem incidence ranging between 0.2 and 0.9% of which only 10–15% are accounted for by pericaecal hernias. Types of pericaecal hernias include: ileocolic, retrocaecal, ileocaecal and paracaecal. These hernias are predisposed by the embryological development of the caecum retracting to the posterior abdominal wall and forming potential fossae.

CONCLUSION: This case highlights the need to consider a pericaecal hernia as a differential cause of right iliac fossa peritonism, and an indication for radiological imaging such as CT scan when the history is atypical for acute appendicitis.

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1. Introduction

Paracaecal hernias are a rare subgroup of internal abdominal hernias that can present with abdominal pain and features of bowel obstruction. Often the diagnosis is made at time of operation and is not apparent from the clinical history or examination. We describe the first reported case of a paracaecal hernia identified at laparoscopy within which entrapment of the right ovary, fallopian tube and distal ileum were present in a patient thought to have acute appendicitis.

2. Presentation of case

A 72 year old female presented with a 24-h history of sharp, localised right iliac fossa pain. The patient denied nausea and vomiting, altered bowel habit, anorexia, weight loss or urinary symptoms. There was no significant prior medical, gynaecological

or surgical history of note. She was haemodynamically stable and afebrile. Clinical examination confirmed localised peritonism in the right iliac fossa with no other evidence of abdominal distension, hernias, masses or organomegaly. Per rectal and urine examination were normal. Plain abdominal X-rays showed two small loops of mildly dilated small bowel but no overt obstruction (Fig. 1).

Laboratory investigations including full electrolyte, haematological and coagulation profiles were within normal limits. However arterial blood gas revealed an elevated lactate of 4.1, with a pH of 7.435. On the basis of clinical history and examination findings acute appendicitis was considered but as the diagnosis was not clear a CT scan was performed. An area of abnormality in the region of the right iliac fossa was noted with a soft tissue density area inferior to the caecum with mesenteric thickening and calibre change in the small bowel (Fig. 2). There was no small or large bowel dilatation, groin hernia or abnormality within the rest of the intra-abdominal viscera.

Further ongoing pain on the second day of hospital admission mandated operative intervention. At laparoscopy a macroscopically normal appendix and caecum were found, in addition to a smooth non-indentable mass in the lateral right iliac fossa. Loops of distal ileum were observed to pass through a retrocaecal mesenteric defect consistent with a paracaecal hernia and further evaluation revealed entrapment of the right ovary and fallopian tube (Fig. 3). The fallopian tube appeared ischaemic and after

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^{*} Corresponding author. Tel.: +44 7966199021.

E-mail address: ajitdhillon@doctors.org.uk (A. Dhillon).

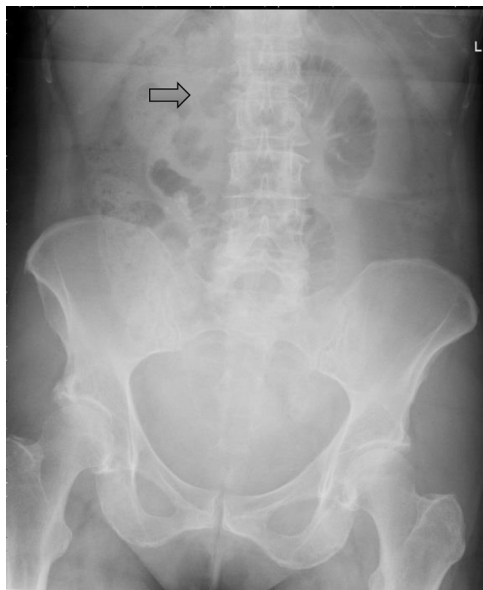


Fig. 1. Plain abdominal radiograph. Two dilated loops of small bowel are seen (arrow).



Fig. 2. CT scan transverse view. A retrocaecal soft tissue mass is seen pushing the caecum anteriorly (→).

evaluation by gynaecology colleagues was considered to be non-viable and a salpingectomy was performed. The ileum and ovary were not compromised. To prevent future recurrence of internal hernias in this area the entire paracolic attachment was divided.

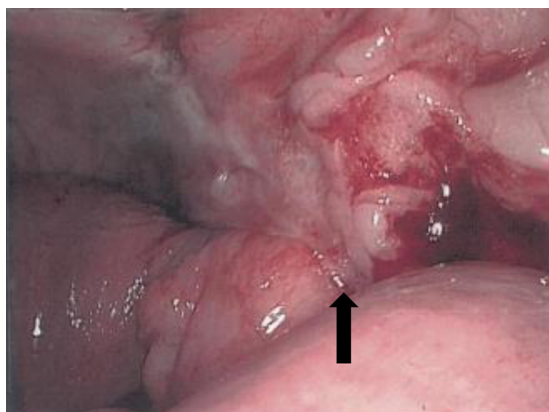


Fig. 3. Laparoscopic view. The figure shows distal ileum passing through the paracaecal defect (↑) with the caecum displaced anteriorly.



Fig. 4. CT scan transverse view. The figure shows mushrooming of the soft tissue as it passes through the defect with beaking appearance (⇨) in the peritoneal recess and displacement of the mesenteric vascular pedicle (↑). Unable to positively identify the appendix.

Postoperative recovery was uneventful and the patient discharged on day 4. At 2 months review she remained clinically well and pain free. Subsequent histopathological examination confirmed infarction of the fallopian tube.

3. Discussion

Internal abdominal hernias are reported to have a post mortem incidence ranging between 0.2 and 0.9% of which only 10–15% are accounted for by pericaecal hernias.¹ Types of pericaecal hernias include ileocolic, retrocaecal, ileocaecal and paracaecal.² These hernias are predisposed by the embryological development of the caecum retracting to the posterior abdominal wall and forming potential fossae.³ Meyer et al. proposed a classification for the boundaries of these as follows: paracaecal sulci, caecal fossa, caecal, superior ileocaecal, inferior ileocaecal and retrocaecal recesses.⁴ Paracaecal sulci are lateral depressions of peritoneum investing on the caecum with or without recesses. The caecal fossa is a groove formed by two peritoneal folds made up of a lateral fold from the



Fig. 5. CT scan coronal view. The figure shows mushrooming of the soft tissue as it passes through the defect with beaking appearance (⇨) in the peritoneal recess

continuation of the line of Toldt and a medial fold from the ileocaecal angle of the medial aspect of the caecum. The caecal recess is formed by the folds of the caecal fossa but the caecum is retroperitoneal. Both superior and inferior ileocaecal recesses are formed by the peritoneal folds from the terminal ileum to the caecum. Finally a retrocaecal recess is formed by the caecum anteriorly, the iliac fossa posteriorly, the right paracolic gutter and mesentery medially. In most cases of pericaecal hernia, the ileal loops herniate through the retrocaecal defect and occupy the right paracolic gutter as in our subject.⁵

While there have been a number of cases reported of pericaecal hernias^{6–9} only one has reported the appendix within a paracaecal hernia¹⁰ and from a review of the literature this is the first to document the concomitant entrapment of distal ileum, right ovary and fallopian tube. Clinical presentation of this rare entity can range from being non-specific to mimicking acute appendicitis as in our case, or even acute intestinal obstruction requiring resection.¹¹

CT scanning has resulted in a paradigm shift in the ability to make a preoperative diagnosis of pericaecal hernias. Features on scan may reveal fluid filled small bowel loops located lateral to the caecum and posterior to the ascending colon². Furthermore a beaking appearance in the peritoneal recess, acute changes in calibre of small bowel and displacement of the mesenteric vascular pedicle in the hernia sac have all been described.^{2,7} In patients with milder clinical presentations a barium enema has been utilised to demonstrate ileal loops behind and lateral to the caecum and ascending colon.⁵ Although the diagnosis was not made preoperatively in our case, a retrospective analysis of images does show suggestive features (Figs. 4 and 5).

4. Conclusion

This is the first documented case of a paracaecal hernia with entrapment of the right ovary, fallopian tube and distal ileum presenting as a clinical acute appendicitis. The scenario highlights the requirement for ensuring a differential diagnosis which includes paracaecal hernia in patients presenting with right iliac fossa peritonism, even in the absence of obstructive symptoms and normal inflammatory markers. CT scanning provides an accurate ability to identify a paracaecal hernia preoperatively. Nevertheless in the absence of CT imaging the operating surgeon requires a high index of suspicion when a macroscopically normal appendix is encountered together with features of a mass in the region of the caecum. Often only loops of ileum are observed within the hernia but as our case illustrates, the ovary and fallopian tube can be also included.

Conflict of interest statement

None declared.

Funding

None.

Ethical approval

Written informed consent was obtained from the patient for publication of this case report and case series and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contributions

The manuscript was written by Ajit Dhillon and Shahid Farid. Radiology advice was given by Simon Dixon. John Evans is the consultant under whose care the patient was admitted. He also supervised the case report manuscript.

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