Unusual presentation of more common disease/injury

Strangulated inguinal hernia presenting as haemoperitoneum

David Alexander George, James Hollingshead, Colin Elton

General Surgery Department, Barnet Hospital, Hertfordshire, UK

Correspondence to Dr David Alexander George, davidgeorge@doctors.org.uk**Summary**

A 57-year-old man presented with abdominal pain following a collapse, with peritonism in his lower abdomen. He was haemodynamically stable, with haemoglobin of 12.6 g/dl. His significant medical history included open bilateral inguinal hernia repairs. CT demonstrated fluid within the abdominal cavity, and an area of stranding lying medially within the left iliac fossa. Ultra-sound guided fluid aspiration demonstrated frank blood. During admission, the patient noted a recurrence of his left inguinal hernia. Laparotomy revealed haemoperitoneum, and a haematoma arising in the left iliac fossa, walled off by mesentery of the sigmoid colon and adherent omentum. The open repair of the recurrent inguinal hernia identified the sac contents to be similar to the omentum. This association implies the omentum had herniated within the inguinal canal, tore or avulsed, resulting in haemorrhage from the proximal omental blood vessel resulting in haemoperitonism.

BACKGROUND

The acute abdomen has a diverse range of differential diagnosis, many well documented and clinically relevant on a daily basis. However, we report a logical but rare case of a 57-year-old gentleman presenting with an acute abdomen following omental inguinal herniation, and subsequent strangulation and haemorrhage of the omentum, which has not been discussed previously in the medical literature.

CASE PRESENTATION

A 57-year-old man presented to our hospital following a collapse and abdominal pain. The pain was of sudden onset the previous evening; initially generalised but became more prominent in his lower abdomen, and was aggravated by movement. The pain score fluctuated between 2 and 8/10. He had no other associated gastrointestinal or urological symptoms. Before arrival at accident and emergency the pain increased in severity in his lower abdomen, followed by a syncopal episode for which he remained unresponsive for 2 min. There was no report of seizure activity, and he regained responsive after being supine for a few minutes.

His medical history included dietary-controlled type-two diabetes mellitus, hypertension, hypercholesterolaemia, haemorrhoids and bilateral open inguinal hernia repair. He was normally fit and well, non-smoker and lived with his family.

Physical examination revealed a soft abdomen, with no distension or guarding and peristaltic sounds present, but was tender on deep palpation in the lower half of the abdomen. Previous open bilateral inguinal hernia scars were evident, but no current cough impulses were noted. His pulse was 66, blood pressure 123/65, oxygen saturations 100% on air, temperature of 36.6, with a Glasgow coma score of 15.

INVESTIGATIONS

Blood examination showed a leucocytosis (white blood cell count of $13.4 \times 10^9/l$), C reactive protein level was 4 mg/l and a haemoglobin level of 12.6 g/dl. Plain erect chest x-ray showed no evidence of free air under the

diaphragm, and abdominal x-rays showed multiple dilated small loops of bowel containing air and faeces (figure 1).

CT with contrast was undertaken which demonstrated fluid within the abdominal cavity surrounding the spleen as well as the liver and small bowel (figure 2). No bowel wall or peritoneal thickening, or free air was seen.

Subsequently, the patient underwent ultra-sound guided fluid aspiration, which demonstrated frank blood. Cytology identified peritoneal fluid containing blood and mesothelial cells, but no malignant cells.

During admission, the patient remained haemodynamically stable with no decline in his haemoglobin levels. However, 2 days after admission the patient noted a recurrence of his left inguinal hernia which was tender and non-reducible.

Figure 1 Abdominal x-ray at time of patient admission.

Figure 2 Large volumes of fluid (darker concave shading) around liver and spleen are arrowed.

Figure 3 There has been significant improvement in the intra-abdominal appearances. The free fluid previously seen in the perihepatic and perisplenic regions has resolved (arrowed).

A subsequent non-contrast CT demonstrated significant improvement in the intra-abdominal appearances. The free fluid seen in the perihepatic and perisplenic regions had completely resolved (figure 3). Residual free fluid was noted within the left paracolic gutter and pelvis, consistent with haemorrhage (figure 4). No active contrast extravasation was demonstrated on this scan, but an area of stranding around a loop of small bowel lying medially within the left iliac fossa was difficult to fully identify.

TREATMENT

Due to the uncertainty of the lesion seen on CT and the new onset of strangulated left inguinal hernia, the patient underwent a laparotomy and an open repair of the recurrent inguinal hernia. Laparotomy revealed 300 mls of altered blood throughout the peritoneum (haemoperitoneum) and a haematoma arising in the left iliac fossa, walled off by mesentery of the sigmoid colon and adherent omentum. There was no evidence of bowel loops being adherent to the anterior abdominal wall, or entering the inguinal canal. The bowel was healthy

Figure 4 Moderate volumes of high density free fluid in the pelvis consistent with haemorrhage, arrowed anterior to the bladder.

with no signs of ischaemia, and did not require resection. The peritoneum was washed out, and excision biopsies taken of the walled off cavity consisting of omentum and mesentery.

The inguinal hernia was repaired via an oblique skin incision, and tissue dissected in layers until the cord was identified. An indirect hernia was present, and was dissected off the cord structures. The sac contained old blood and ischaemic fat from the detached omentum, but no bowel. The sac and contents were and sent for histology. The inguinal hernia defect was then closed using a polypropylene mesh.

OUTCOME AND FOLLOW-UP

Postoperatively recovery was unremarkable, and the patient felt pain-free on day 1 and discharged home on postoperative day 6.

Histological examination revealed that the inguinal hernia sac contents were similar to the omental and mesenteric biopsies. They consisted of irregular grey/brown tissue with fibrofatty (adipose) areas, with microscopic areas of inflammation, fibrosis and haemorrhage, and appeared focally necrotic. They were consistent with omentum or colonic appendix epiploica.

DISCUSSION

At surgery, the cavity involving the omentum and colonic mesentery was adjacent to the deep inguinal ring, and a small segment of omentum was found within the inguinal sac. This association implies the omentum had herniated within the inguinal canal, tore or avulsed, resulting in haemorrhage from the proximal omental blood vessel (figure 5). The remaining small segment of omentum within the inguinal sac bled, resulting in inguinal swelling consistent with a recurrent strangulated inguinal hernia.

Published case reports relating to omental torsion differ to our case, as the expected vascular impairment with progression to infarction secondary to torsion,¹ is inconsistent with our findings. Similarly, previously published differentials of haemoperitoneum, including trauma, intra-abdominal disease, malignant growth, abdominal apoplexy or medical causes, does not highlight the pathology that has been demonstrated here.²

Figure 5 Diagram of the anatomy of the inguinal canal and intra-abdominal viscera (A), process of herniation of greater omentum through the deep inguinal ring (B), followed by strangulation and avulsion of a small segment of omentum and subsequent bleeding of proximal blood vessel within the omentum (C).

Learning points

- Our case demonstrates a logical but rare differential of an acute abdomen.
- Preoperatively the approach adopted was that of any acutely unwell surgical patient, with patient stabilisation and utilisation of different imaging modalities.
- Despite radiological attempts, the cause was only diagnosed during laparotomy, and confirmed histologically postoperatively.

Competing interests None.

Patient consent Obtained.

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