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Case Report

Strangulation of the appendix in a femoral hernia sac

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The appendix is reported to be found in the hernia sac in 1% of femoral hernias, but strangulation of the appendix in this site is extremely rare [1]. We report three unusual cases, in which femoral herniation and strangulation resulted in ischaemic necrosis of the appendix.

CASE 1. An 83 year old man presented with a 48 hr history of vomiting and constipation. He was pyrexial, the abdomen was distended, and a tender swelling was present in the medial aspect of the right groin, below the inguinal ligament. A diagnosis of incarcerated femoral hernia was made. Exploration through a McEvedy incision revealed strangulation and necrosis of a loop of small bowel and of the appendix in the hernial sac. Appendicectomy, small bowel resection and repair of the femoral ring were performed. He made an uneventful recovery. Histopathology confirmed appendiceal necrosis and focal necrosis in the small bowel.

CASE 2. A 60 year old woman presented with a painful lump in the right groin. She was pyrexial and there was an irreducible lump in the right groin with erythema of the overlying skin. A diagnosis of incarcerated femoral hernia was made. A McEvedy approach was undertaken and the hernial sac was found to contain omentum and a gangrenous appendix. Appendicectomy and repair of the femoral ring were performed. She made an uneventful recovery. Histopathology revealed congestion of the meso-appendix, with ischaemia and necrosis of the appendix.

CASE 3. A 77 year old woman presented with a two week history of a painful lump in the right groin. There was a tender, irreducible lump in the region of the right femoral ring with no cough impulse. The overlying skin was oedematous and inflamed. A McEvedy incision, extended inferiorly over the lump, revealed

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an abscess containing 30ml pus, adjacent to a femoral hernial sac which contained a perforated appendix. The abdominal cavity was entered through the upper part of the incision and the herniated appendix reduced. The mid-portion only had herniated, and was surrounded by a constriction ring which resulted in ischaemic necrosis. The distal tip, lying intra-peritoneally, was normal in appearance. Appendicectomy and repair of the femoral ring were performed and the lower half of the skin incision left open. She made an uneventful recovery. Histopathology revealed necrosis and perforation affecting the mid-portion of the appendix only, the distal portion being normal in appearance.

DISCUSSION

Strangulated femoral hernia is a common surgical emergency. The contents of the hernial sac commonly include omentum and small bowel, but occasionally strangulation of other organs such as Meckel's diverticulum, stomach, ovary or appendix may occur, resulting in unusual clinical presentations. The presence of the appendix in a femoral hernia was recognised as early as 1731 [2], but the small number of cases reported since then indicate that this is an extremely rare presentation [3].

The appendix has been found in other abdominal wall hernias, including inguinal, umbilical, obturator and incisional hernias [4,5,6]. Although the majority of these cases have been reported as "appendicitis" it is difficult to determine from the reports whether the pathological process is one of primary visceral inflammation in the appendix, which could be described as appendicitis, or secondary strangulation and ischaemic necrosis. It is possible that an appendix which was situated in a femoral hernia could become primarily inflamed and then present with local signs in the hernial sac. This is the proposed pathological mechanism in the majority of reported cases [7]. It is also possible that the primary event which leads to presentation is irreducibility with subsequent strangulation of the sac contents [8]. This is supported by the operative and histological findings in our series, with ischaemia and necrosis of the appendix in each case. In addition, in one of our cases, only the mid-portion of the appendix was strangulated while the distal tip, lying intraperitoneally, was normal in appearance.

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