

# Richter's type strangulated femoral hernia containing caecum and appendix masquerading as a groin abscess

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## ABSTRACT

Femoral hernias are challenging conditions, not only because their diagnosis is often missed, but also because if left undiagnosed and untreated, their complications are severe and often life-threatening. The authors present the second reported case of a femoral hernia of the Richter's variety containing caecum and appendix that, following strangulation and perforation, manifested as a groin abscess.

## INTRODUCTION

Femoral hernias are elusive conditions that despite having life-threatening complications are often undiagnosed in asymptomatic patients ([1,2](#)). They are less common than inguinal hernias and occur more frequently in females ([2,3](#)).

Anatomically, they represent herniations of the peritoneal sac through the femoral ring into the femoral canal, lying postero-inferiorly to the inguinal ligament. The hernia sac commonly consists of small bowel or omentum, but uncommon cases have been reported, where the herniating structures were caecum, appendix, colon, Meckel's diverticulum, ovaries, testes, stomach and kidneys ([2,4](#)).

We present a case of undiagnosed Richter's-type femoral hernia containing caecum and appendix that following strangulation and perforation, manifested as a groin abscess. The only other similar reported case was in 1966 ([5](#)). The rarity of this manifestation prompted this report.

## CASE REPORT

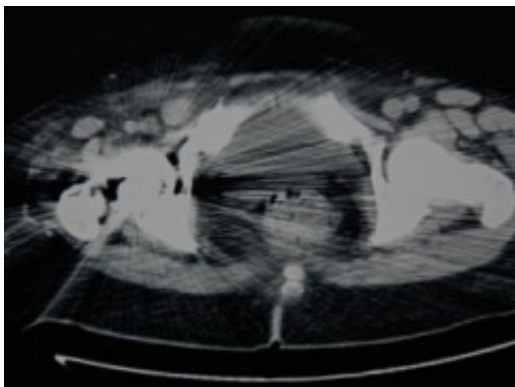
A 49-year old female patient was referred to our service from Medical Oncology, due to an abscess of her right groin. The patient was under the care of the oncologists for stage IV cancer of her left breast with metastases to the liver, lungs and bone and was in between chemotherapy cycles. The primary breast tumour had been resected three years previously and adjuvant chemoradiotherapy had been administered at the time. Other relevant past medical history includes a right total hip replacement for pathological fracture of the right femoral head due to the bony metastases one year previously.

On examination of the patient, there appeared to be a painful 3x3cm swelling of her right groin inferolaterally to the pubic tubercle with localised erythema, clinically resembling an abscess. The patient was systemically well and afebrile, with a slightly elevated white cell count with neutrophilia. Examination of her abdomen was normal.

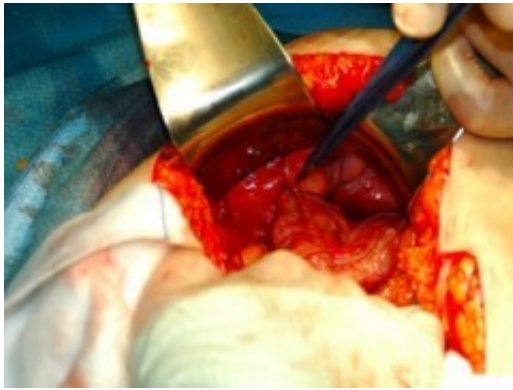
A diagnosis of groin abscess was established and the patient underwent incision and drainage under local anaesthetic, which produced small amounts of pus. The wound was left to heal by secondary intention.



During a routine wound review the following day, however, the presence of enteric material in the wound was noticed and it soon became apparent that an enterocutaneous fistula had developed (Figure 1), which immediately prompted a CT scan of the area; this revealed a round lesion medial to the right femoral vessels that was highly suspicious of a femoral hernia (Figure 2).



Subsequently, the patient was taken to theatre for an exploratory laparotomy, where the presence of the femoral hernia was confirmed, containing part of the caecal wall and the adjacent appendix (Figures 3,4). The caecum was perforated, but viable. The appendix was clear.



Following reduction of the caecum, the perforation was repaired in two layers and an appendicectomy was performed (Figure 5). The femoral ring defect was repaired internally by approximation of the iliopubic tract to Cooper's ligament. No mesh was required.



The patient's recovery and postoperative course were uneventful. She was discharged eight days following surgery, by which time her wound was healthy and well on its way towards recovery. No recurrence of the hernia or the enterocutaneous fistula has been found to date.

## DISCUSSION

Despite the fact that femoral hernias account for only 2-4% of all groin hernias, their timely and correct diagnosis is vital due to the increased mortality associated with emergency surgery for their complications (3). This, however, is not always easy. Femoral hernias are commonly missed or misdiagnosed as less serious conditions, leaving surgeons to deal with their complications in the acute setting, where mortality has been found to be 10fold (1-3). According to Dahlstrand et al, who published the largest series of femoral hernia repairs to

date (3), out of 3,980 femoral hernia repairs 1430 (35.9%) were emergencies, compared to just 5.4% for inguinal cases. Furthermore, 22.7% of the emergency procedures for femoral hernias required bowel resection compared to 5.4% for inguinal hernias, whereas that percentage of bowel resection in elective femoral hernia repairs was only 0.6%. Dahlstrand et al also demonstrated that women were more likely than men to require surgery for femoral hernias (5:3 ratio). The risk for emergency surgery for women was also significantly higher (40.6 vs 28.1%).

Strangulated femoral hernias vary significantly as to the contents and pattern, but caecum with or without appendix are rare. Frankau analysed 1487 cases of strangulated hernias (6), 680 of which were femoral (45.7%), but he only found caecum and appendix in 4 cases and only one case of Richter's femoral hernia with caput caecum, but not involving the appendix.

In the case of our patient, a cascade of events led to the development of the groin abscess: a Richter's type hernia with part of the caecum and the appendix was created, which subsequently became strangulated; this led to perforation of the caecal wall, which allowed the enteric content to travel through the femoral ring and fossa ovalis into the subcutaneous planes, where the abscess was established.

The only other similar case reported in literature is from Duari in 1966 (5). He presented the case of a 79-year old man with a right groin abscess that was incised by his GP and found to contain "evil-smelling pus". Duari obviously did not have access to modern abdominal imaging at the time and performed exploratory laparotomy on the patient, during which he discovered a femoral hernia containing part of the caecal wall and the base of the appendix. Duari had to expose and debride part of the hernia sac both externally through a groin incision and internally. He repaired the femoral ring using "one purse-string suture of catgut from above". His patient has a good recovery.

Our case, and that described by Duari, appear to be the only two of their kind, separated by almost half a century. Despite that, the presenting symptoms, diagnosis and surgical management of both patients are remarkably similar, with the exception perhaps of the use of CT-imaging in our patient, which still wasn't entirely conclusive. This attests to the fact that despite the advances in medicine and surgery, femoral hernias still remain insidious in their nature and should be repaired as a priority to avoid their many, life-threatening complications.

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