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De Garengeot hernia complicated by appendicitis: A case report

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Abstract

The De Garengeot hernia is a rare subset of femoral hernia which is defined by the appendix within the hernia sac. The De Garengeot hernia is usually found incidentally intra-operatively and can result in complex surgical repair. We present the case of an 80-year-old female with a right, irreducible groin lump with pre-operative computed tomography confirming a De Garengeot hernia. The patient underwent an open femoral hernia repair. Intraoperatively the appendix was found to be gangrenous and appendicectomy was performed during the hernia repair. Her post-operative recovery was uneventful. This case highlights the rarity of appendicitis in a femoral hernia and demonstrates the utility and importance of pre-operative imaging for surgical planning.

Keywords

Femoral hernia; de garengeot hernia; appendicitis

Abbreviations

CT: Computed tomography; US: Ultrasound

Introduction

Femoral hernias make up 3-5% of all groin hernias [1]. Due to the narrow neck of the femoral canal, patients with femoral hernias are more likely to present with strangulation, resulting in emergency surgery [1]. The De Garengeot hernia is a rare subset of femoral hernias, making up <1% of all hernias. It is defined by the presence of the appendix within the hernia sac and is usually only found incidentally intraoperatively, which can present a dilemma during surgical repair [2]. We present the case of a patient with a pre-operative radiological diagnosis of De Garengeot hernia which was complicated by the finding of gangrenous appendicitis intraoperatively. Consent was gained from the patient for the use of their details and clinical imaging (Figures 1 & 2) in this report.

Case Report

An 80-year-old previously well female presented with a three day history of a small, mildly tender lump in the right groin, with no reported obstructive symptoms of nausea, vomiting, or distension. She was otherwise systemically well. Her background history includes a hysterectomy for prolapse more than 30 years ago and no other surgical history.

On examination, she was haemodynamically stable and afebrile. Her abdomen was soft and non-tender, and there was a small right groin lump which was slightly tender to palpation. A cough impulse was present, and the lump was unable to be reduced. There were no significant overlying skin changes and a clinical diagnosis of an incarcerated right femoral hernia was made. Blood tests were unremarkable. A groin ultrasound (US) showed a hernia with a cystic lesion, suspicious for a mucocoele. Computed tomography (CT) of the abdomen confirmed the presence of a tubular structure within the hernia sac, most likely the appendix (Figure 1). There was no evidence of extraluminal air or fluid suggesting perforation or complications of appendicitis.

The patient subsequently underwent an open right femoral hernia repair. The sac was opened which revealed a gangrenous appendix from tip to mid-body (Figure 2). The appendix was then resected. The femoral ring defect was closed with interrupted non-absorbable sutures. No mesh was used during the repair to reduce the risk of prosthetic infection. The patient made an uncomplicated post-operative recovery. She was discharged home the following day. Histopathology results one week later showed acute appendicitis with no evidence of invasive malignancy.

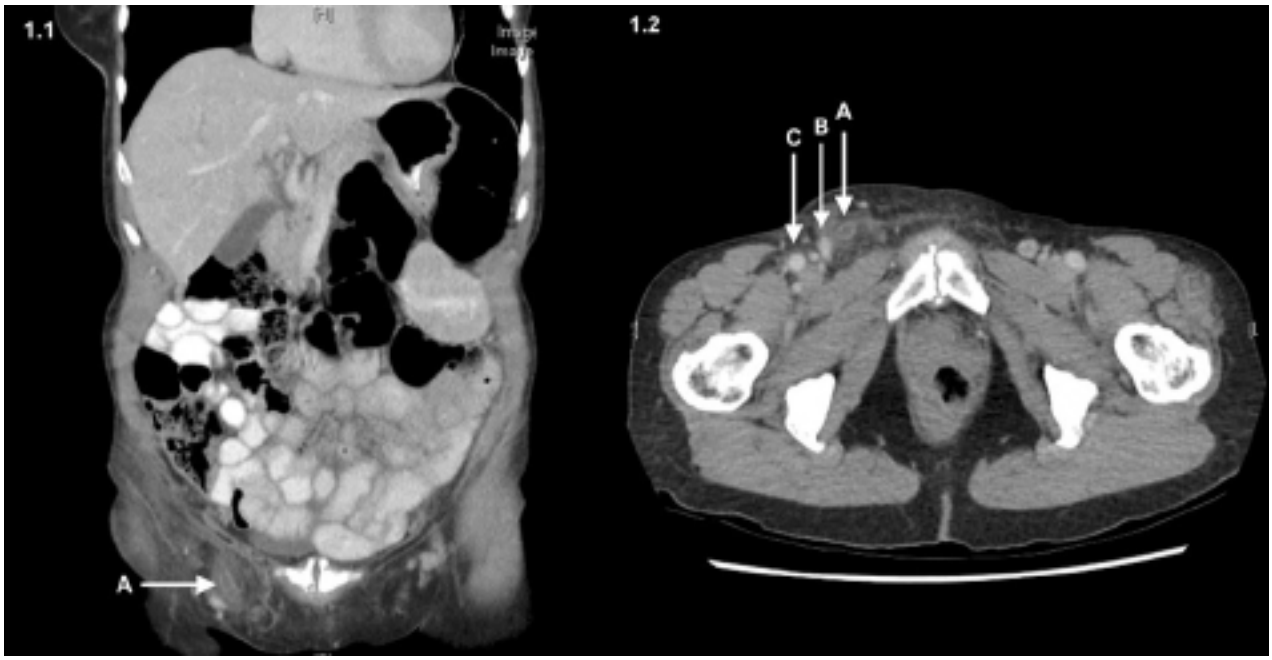

Figure 1: CT abdomen sagittal (1.1) and coronal (1.2) sections.
A: Appendix evident within the femoral hernia.
B: Right femoral vein.
C: Right femoral artery.

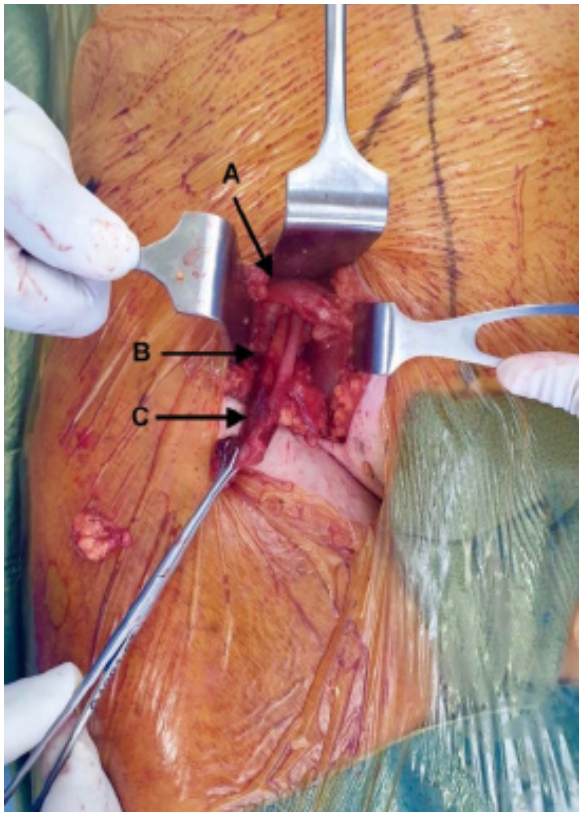

Figure 2: Intraoperative findings.
A: Right inguinal ligament.
B: Right femoral vein
C: Gangrenous appendix.

Discussion

De Garengeot's hernia is a rare entity first described by Rene Jacques Croissant de Garengeot in 1731 [3]. Superimposed appendicitis within a De Garengeot's hernia is even more rare, estimated to be 0.08 – 0.13% of all hernias [4]. Typically the presence of the appendix within the hernia sac is found incidentally during surgery, with less than 10 case reports of imaging diagnosed as De Garengeot's hernia [2]. In our patient, there was radiological evidence demonstrating an appendix within the hernia sac, which enabled pre-operative planning prior to surgery (Figure 1).

Femoral hernias can be repaired via either open or laparoscopic techniques. Three common approaches to open femoral hernia repairs have been classically described in the literature: Lockwood's infrainguinal approach, Lotheissen's transinguinal approach and McEvedy's high approach [8]. There is little evidence regarding which approach is best. However, strangulated femoral hernias are typically repaired with a high or transinguinal approach, and elective femoral hernias are usually repaired with an infrainguinal incision. Laparoscopic repair of femoral hernias has been shown to have lower recurrence rates compared to open repair [5], however Cox et al found post-operative quality of life, long-term outcomes and operative time to be similar for both approaches in their international multi-institution study [6]. The laparoscopic repair of complicated femoral hernias such as incarcerated or strangulated hernias is still in its infancy and limited to case reports [7].

In our patient, we opted for an open repair to prepare for a complex surgery given the pre-operative

CT imaging confirming an intra-hernial appendix, and the clinical examination confirming incarceration. This enabled us to inspect the appendix and the caecum, and perform the necessary appendicectomy. A major learning point from this case is that CT imaging was crucial to the pre-operative diagnosis of the De Garengeot hernia and the pre-operative planning for surgery. When in doubt that there may be complications from incarceration of the femoral hernia, we recommend an open approach to manage potential complications including appendicitis and perforation.

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