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De Garengeot's Hernia: Case Report of Appendicitis Within an Incarcerated Femoral Hernia

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Abstract

We present the case of a 64-year-old Caucasian female who was admitted to our emergency department with a 3-day history of a painful mass in her right inguinal area. The lump had increased in size over the previous two days and an overlying skin discoloration was also noted. With the diagnosis of an incarcerated hernia, an infrainguinal incision was carried out and a femoral hernia containing an inflamed appendix was identified, a rare condition known as de Garengeot's hernia. This is a rather uncommon finding at surgery that is seldom diagnosed in the preoperative context.

Key words: *Femoral Hernia, Appendicitis, de Garengeot's hernia*

Introduction

Owing to the intestinal rotation during embryonic development and the diversity of the anatomical location of the vermiform appendix, clinical presentation of the diseased appendix varies accordingly. Moreover, because of the structural characteristics of the femoral canal (width, length), the reported rate of incarceration is 14-56% (versus 6-10% in inguinal hernias) [1]. The reported incidence of an appendix within a groin hernia sac is reported to be around 0.51%-1% while inflammation is encountered in 0.10% of all acute appendicitis cases [2, 3]. We present a case of an incarcerated appendix in a femoral hernia sac presenting as a painful inguinal mass.

Case Report

A 64-year-old Caucasian female was admitted to our emergency department with a 3-day history of a painful mass in her right inguinal area. The pain had begun to increase exponentially over the past five hours and was of a sharp nature. The lump had increased in size during the past two days and an overlying skin discoloration was also noted. Her daily bowel habits remained unchanged. The skin over the lump was very tender to palpation and erythematous, and the pain radiated to the right lower abdominal quadrant. Attempts to reduce the hernia sac were unsuccessful. Nausea and mild fever (37.5°C) were reported. Further physical examination did not reveal anything further.

Complete blood count and biochemical analysis revealed a mild leukocytosis. Abdominal X-ray in upright position was normal. Apart from mild hypertension and Diabetes Mellitus, her past medical history was unremarkable.

Since the patient had normal vital signs, it was decided to proceed with surgery. An infrainguinal incision was made revealing a femoral hernia that contained an inflamed appendix (Figure 1). The femoral ring was dilated by incising the lower part of the inguinal ligament in order to exteriorize the mobile caecum. A formal appendectomy was performed and the defect, along with the Poupart's

Figure 1. Intraoperative photo demonstrating the incarcerated appendix protruding through the femoral canal

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ligament, was reconstructed with interrupted Prolene 0 sutures. No drainage was used.

The postoperative course was uneventful and the patient was discharged 2 days after surgery.

Discussion

Femoral hernias account for 3-4% of all hernias [4]. The borders of the femoral canal through which they occur are the femoral vein laterally, the lacunar ligament medially, the iliopubic tract (most internally) and the inguinal ligament (more externally) superiorly and the Cooper's ligament inferiorly. A large variety of abdominal viscera have been found inside the femoral hernia sac, with the appendix being one of the rarest herniating organs. Less than 90 cases have been described in the literature [5,6]. Rene Jacques Croissant de Garengeot first described the presence of the appendix within a femoral hernia in 1731 [7].

The diagnosis is very challenging and difficult to make preoperatively; most cases are incidental findings during surgery. Nevertheless, there have been two cases in the literature in which the appendix was identified inside the hernia sac preoperatively with the use of computed tomography [8, 9].

Clinical symptoms indicative of incarceration include vague inguinal pain, swelling and erythema on the affected side. In the even rarer event of perforation, signs of peritonitis are absent owing to the limited anatomical surroundings. This highlights the fact that acute inflammation of the appendix inside the femoral hernia sac results from incarceration and strangulation rather than the common causes of intraperitoneal appendicitis [9, 10].

Given the rarity of the condition, no consensus has yet been reached as to the ideal approach. Femoral hernias can be repaired with four different approaches, namely infrainguinal, anterior inguinal (through the posterior inguinal floor), preperitoneal and transperitoneal via an endoscopic approach. In the case of de Garengeot's hernia, various surgical strategies have been proposed ranging from incision and drainage with delayed appendectomy to immediate appendectomy followed by hernia repair as performed in our case [5, 10]. Furthermore, we chose not to use prosthetic materials due to the risk of the infection, although there are a few reported cases where mesh repair was employed in the presence of an inflamed appendix without postoperative infection. Delayed intervention considerably increases associated morbidity and is mainly due to wound infection. Moreover, a few cases of necrotizing fasciitis have also been reported in the literature [9].

Conflict of Interes

The authors declare that they have no conflict of interest.

Informed Consent

Written informed consent obtained from the patient for publication of her medical data

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Κήλη de Garengeot: Μια Περίπτωση Οξείας Σκωληκοειδίτιδας Μέσα σε Μηροκήλη

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Περίληψη

Παρουσιάζουμε περίπτωση μιας 64 ετών γυναίκας, η οποία προσήλθε στο τμήμα επειγόντων με μια επώδυνη μάζα στη δεξιά μηροβουβωνική χώρα από 3ημέρου. Η μάζα αυτή αυξήθηκε σε μέγεθος τις δυο προηγούμενες ημέρες, ενώ παρατηρήθηκε μια υπέρχρωση του υπερκείμενου δέρματος. Με τη διάγνωση της περισφιγμένης κήλης, διενεργήθηκε μια χαμηλή λοξή βουβωνική τομή οπότε αναγνωρίσθηκε ο σάκος της μηροκήλης, ο οποίος περιείχε τη φλεγμαίνουσα σκωληκοειδή απόφυση, μια κατάσταση γνωστή και ως de Garengeot's Hernia. Πρόκειται για ασυνήθιστο διεγχειρητικό εύρημα, το οποίο σπάνια διαγιγνώσκεται προεγχειρητικά.

Λέξεις κλειδιά: *Μηροκήλη, σκωληκοειδίτιδα, κήλη de Garengeot's*

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