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De Garengeot hernia: Case report and review



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ABSTRACT

INTRODUCTION: Rene De Garengeot, a French surgeon, was the first to describe the presence of the appendix inside a femoral hernia sac in 1731. It is a rare entity that has fewer than 100 cases reported in literature.

PRESENTATION OF CASE: An 86 years-old male patient, comes to Emergency Department complaining of painful bulging in the right inguinal region, associated with local inflammatory signs. He was initially diagnosed as incarcerated femoral hernia and underwent emergency open surgery. Inguinotomy was performed and after hernia sac dissection it was possible to observe the presence of the appendix incarcerated in its interior, without clinical signs of appendicitis. Surgeons performed appendectomy and inguinal repair of the femoral hernia with placement of a polypropylene mesh.

DISCUSSION: De Garengeot hernia is a rare entity that requires early treatment in order to avoid possible complications. When facing a patient with incarcerated hernia emergency surgery must be indicated even if it is not possible to determine the contents of the hernia.

CONCLUSION: This paper presents a case report of a De Garengeot hernia patient who presented a good evolution after surgery.

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1. Introduction

Femoral hernia consists in a projection of the sac through the femoral triangle, below the inguinal ligament and presents with incarceration in about 50% of cases [1]. This hernia has higher risk of incarceration and strangulation (5–20%) because of its narrow and rigid ring [2]. The migration of the appendix into the hernia sac in an inguinal hernia is a rare event (Amyand hernia) and even rarer in incarcerated femoral hernias, which are called De Garengeot hernia [3].

Rene Jacques Croissant De Garengeot, a French surgeon, was the first to describe the presence of the appendix inside a incarcerated femoral hernia in 1731. But only in 1785, Hevin performed the first appendectomy in an incarcerated femoral hernia [4]. Abnormal implantation of the appendix in the cecum, leading to a pelvic appendix, or a large cecum with increased mobility extending into

the pelvis can allow incarceration of the appendix in the femoral hernia [4,5]. It is a rare entity that has fewer than 100 cases reported in literature. Its incidence varies between 0.5 and 5% of all femoral hernias [5]. This paper reports a rare case of incarcerated femoral hernia containing the appendix inside his sac.

2. Case report

JD, male, 86 years, referred to the emergency department of a reference service in General Surgery with complaints of painful bulging in the right inguinal region during the last four days. Patient reported that four days before going to the hospital, after major physical effort evolved with an irreducible bulging in right inguinal region. Two days later, it evolved with progressive pain associated with local erythema. He denied previous symptoms of hernia. Showed unchanged bowel habit in this period, denied emesis or other associated symptoms. His previous medical history includes hypertension and smoking. Physical examination revealed an irreducible groin bulge, measuring about 4 cm, below the inguinal ligament, associated with erythema and severe pain (Fig. 1). An incarcerated femoral hernia was diagnosed and he underwent emergency surgery.

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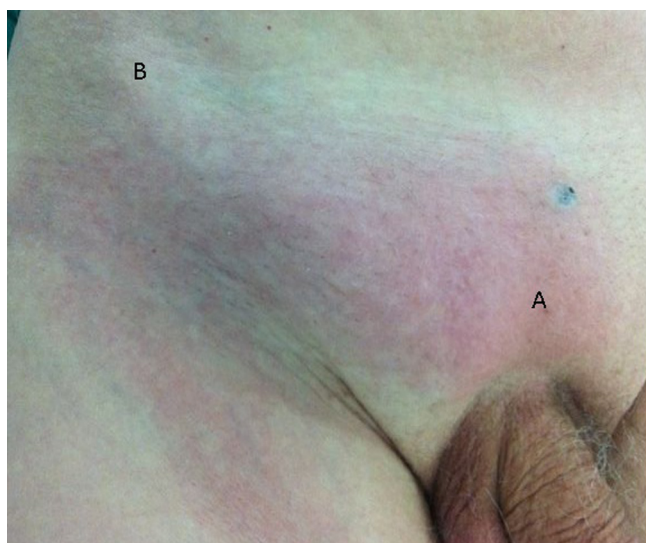


Fig. 1. Physical evaluation–groin bulge with inflammatory signs.

Inguinotomy was performed and after opening the posterior wall of the inguinal canal and hernia sac dissection it was possible to observe the presence of the appendix incarcerated in its interior, without clinical signs of appendicitis (Fig. 2). Surgeons decided to perform appendectomy and inguinal repair of the femoral hernia with placement of a polypropylene mesh to provide a tension free repair. The appendix was sent for histological analysis that showed no signs of appendicitis. The patient evolved clinically well without postoperative complications or signs of recurrence four months after surgery.

3. Discussion

The presence of the appendix within a femoral hernia sac is uncommon and is generally found only during surgery. The preoperative diagnosis is difficult, and most patients end up being taken to the operating room with the nonspecific diagnosis of incarcerated hernia.

There is a predisposition for females (1:13 women), probably following the higher frequency of femoral hernia in postmenopausal women [6,7]. The high prevalence among women has been attributed to body changes during pregnancy and other risk factors, including increased intra-abdominal pressure, smoking, advanced age and collagen defects [7]. It occurs most frequently on the right side [7].

This entity clinically presents as a nonspecific incarcerated hernia, with irreducible groin bulge, usually painful and associated with inflammatory signs [7,8]. Patients may present fever, signs and symptoms that suggest obstructive acute abdomen and laboratorial exams may show non-specific results [8].

Radiological findings are often non-specific. Computerized tomography can help defining the preoperative diagnosis and surgical planning as well, but it does not change the surgical approach that is indicated to cases of incarcerated hernia. Typical findings include intramural density inside an incarcerated hernia sac (demonstrating intestinal involvement) with mild associated distention of the small intestine and, in some cases, it is possible to visualize the tubuliform structure surrounded by fat and projected just below the cecum into the hernia sac [6,9].

Treatment consists of emergency surgery. As for the technique to be used, due to the rarity of this disease, it was not possible to establish a standard conduct yet. Several surgical tactics were used previously and considered acceptable, such as

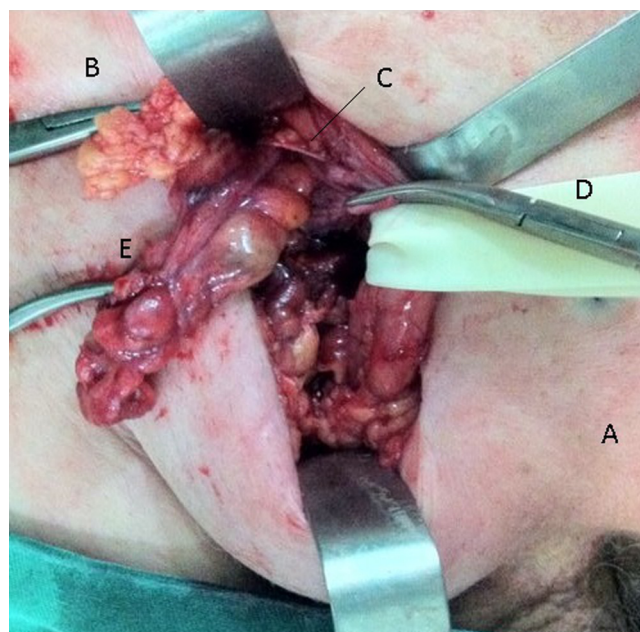


Fig. 2. Intraoperative– (A) pubis, (B) iliac crest, (C) inguinal ligament, (D) hernia sac, and (E) appendix.

appendectomy followed by hernia correction in a second time, laparotomy for appendectomy and hernia correction by inguinotomy or even appendectomy through the hernia sac itself with correction of femoral hernia at the same surgical time [10]. In this case, we performed the appendectomy using the inguinotomy incision.

The appendectomy through the hernia sac in a single surgical procedure is an accepted approach but laparoscopy remains controversial [8]. A combined approach in which appendectomy was done laparoscopically and the hernia correction by open surgery was recently described for the first time. In that case the diagnosis of De Garengeot hernia was determined preoperatively and the patient underwent open surgery via inguinotomy, however dissection of the appendix base presented technical difficulties and the surgeon opted for laparoscopy to solve that problem [11].

Regarding the use of polypropylene mesh there is consensus that if there is no abscess or appendix perforation it is possible to use it without increasing chances of infection or hernia recurrence [7]. Wound complications were specially related to older patients with delayed diagnosis and treatment [2]. Reported infection rates reach 29% while severe complications such as necrotizing fasciitis and death were rarely described [4].

4. Conclusion

De Garengeot hernia is a rare entity that requires early treatment in order to avoid complications. When facing a patient with incarcerated hernia, emergency surgery must be indicated. This case reports an elderly man with incarcerated hernia diagnosed with De Garengeot hernia intraoperatively and submitted to open inguinal hernia repair with mesh and appendectomy through the inguinotomy at same surgical procedure.

Conflicts of interest

No conflicts of interest.

Sources of funding

No sources of funding. No sponsors.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Carolina Talini – literature review, data analysis, writing.
Luan O. Oliveira – data collections, literature review.
Andre P. Westphalen – study design, data analysis, writing.
Fernando A.C. Spencer Netto – writing.
Allan C.F. Araújo – literature review, writing.

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