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Treatment of De Garengot's hernia using De Oliveira's technic: A case report and review of literature



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ABSTRACT

INTRODUCTION: The French surgeon Rene Jacques Croissant de Garengot first described the finding of the Appendix inside a femoral hernia sac in 1731. The De Garengot's hernia is a rare entity, comprehending only 0.5–5% of the femoral hernias. The pathogenesis of this entity is still controversial, and in the same way, there are different theories to explain the occurrence of appendicitis inside the De Garengot's hernia. There is no standard technique in the treatment of this entity.

PRESENTATION OF CASE: W.P.S., 84, female, admitted for medical assistance due to claims of edema and flogistic signs in the right inguinal region, noted four days prior. There was no abdominal pain, discomfort, or other symptoms. The physical examination showed hard edema and bulging on the right inguinal region, collaborating for the hipotesis of incarcerated hernia. Patient was then submitted to inguinoscopy and the vermiform Appendix was discovered inside the femoral hernia without signs of appendicitis. The case was conducted using the De Oliveira's technique to femoral hernia repair and Liechtenstein for the inguinal hernia repair.

DISCUSSION: The De Garengot's hernia is a rare entity, comprehending only 0.5–5% of the femoral hernias², it represents an unusual finding and is, in the majority of cases, diagnosed intraoperatively. It's pathogenesis is yet matter of discution. There is no standard approach for this hernia, possibly by the few numbers and variability of presentation of cases described.

CONCLUSION: This paper presents a case of a 84yo female with De Garengot's hernia that was submitted to a correction using the De Oliveira's technic. A low cost technic with great results without use of polypropylene mesh.

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1. Introduction

The French surgeon Rene Jacques Croissant de Garengot first described the finding of the appendix inside a femoral hernia sac in 1731. This entity was since then called De Garengot's hernia [1–4]. However, it was only in 1785 that Hevin performed an appendec-

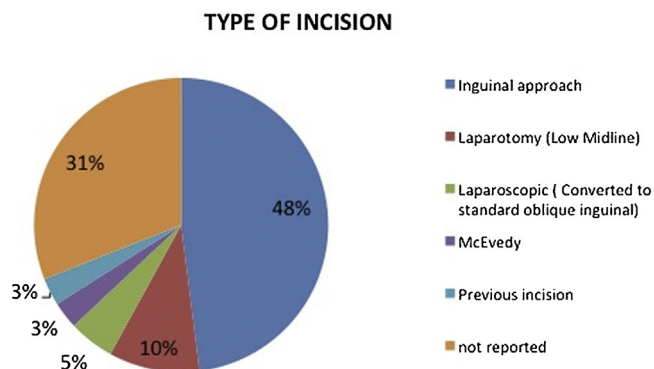
tomy on a patient presenting an incarcerated De Garengot's hernia [2,5].

The femoral hernia represents 3% of the abdominal hernias [6]. The De Garengot's hernia is a rare entity, comprehending only 0,5 to 5% of the femoral hernias [2]. The incidence of appendicitis concomitant to a De Garengot's hernia is described as ranging from 0,08 to 0,13% [1]. There is less than a hundred described Garengot's hernias' cases in the literature since 1960. It is more usual in post-menopausal women, having an occurrence ratio of 2:1 in women, due to the statistical occurrence of femoral hernias being larger in this sex [3,5,7].

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Graphic 1. Types of Incision (Keller et al., 2013–adapted).

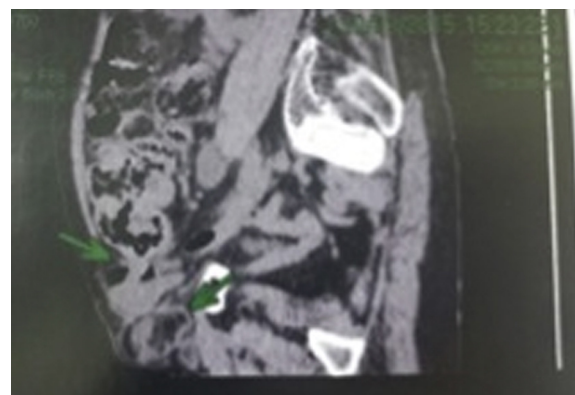


Fig. 1. CT Showing femoral and inguinal hernia.

The pathogenesis of this entity is still controversial. Some authors suggest that a large cecum can push the appendix through the hernia sac. Others advocate that the presence of the appendix in the hernia is due to different bowel rotation degrees during the embryonic development [8,9]. In the same way, there are different theories to explain the occurrence of appendicitis inside the De Garengeot’s hernia. Some say that the appendicitis occurs before the migration of the appendix to the sac. Other authors say that the strangulation of the appendix by the narrow and rigid femoral ring causes the appendicitis [3].

Its diagnosis is difficult. Signs and symptoms usually suggest an incarcerated femoral hernia, such as abdominal pain and discomfort, associated with inguinal erythema. [5] The classical appendicitis signs are obscured by the narrow femoral ring, which avoids the inflammation to reach the abdomen. Rarely, a perforated appendicitis in a De Garengeot’s hernia demonstrates classical and evident signs and symptoms. In a review of 36 cases of the literature [5], Kalles found the per operator diagnosis in 86% of the times [10].

There is no standard technique in the treatment of that entity: appendectomy with further hernia treatment or hernia and appendix treatment in the same surgery [2]. The use of polypropylene mesh is adequate in the absence of local inflammation [4].

Kalles describes in a review of 36 patients that there is no consensus in which incision should be used to the hernia access and treatment. The most used is inguinitomy (Graphic 1).

Subaie describes the treatment of De Garengeot’s hernia through a laparoscopic approach (TAPP – Trans Abdominal Pre Peritoneal), performing appendectomy and hernia treatment with polypropylene mesh [11].

2. Case report

W.P.S., 84, female, looked for medical assistance due to edema and flogistic signs in right inguinal region, noted four days before. She presented with no abdominal pain, discomfort or others symptoms.

The physical examination showed hard edema and bulging on the right inguinal region, collaborating for the hipotesis of incarcerated hernia. She remained hemodinamically stable during the evaluation and following process. The differential diagnosis included inguinal adenopathy, but the Computerized Tomography (CT) scan showed right femoral and inguinal hernias (Fig. 1). There was no certainty of the hernia content. The patient was then conducted to the operation room, after preliminary preparation.

For the surgical approach a right inguinitomy was performed. After the transversallis fascia opening, it was evidenced the presence of the appendix inside the femoral hernia (Fig. 2).



Fig. 2. Presence of vermiform appendix in femoral ring.



Fig. 3. Suture of lower lateral portion of the transversallis fascia to the pectineal ligament. (Melo [12]).

A conventional appendectomy was performed and a femoral hernia treatment by the De Oliveira’s technique was realized in the same procedure. The technique consists in the suture of the lower lateral portion of the transversallis fascia to the pectineal ligament with separated polypropylene 3-0 stitches (Fig. 3) and reconstitution of the posterior wall of the inguinal canal approaching the superior lateral portion of the transversallis fascia to the Thomson ligament with separated polypropylene 3-0 stitches (Fig. 4). Then, a Lichtenstein’s technique for inguinal herniorraphy was performed.



Fig. 4. Reconstitution of the posterior wall of the inguinal canal (Melo [12]).

The patient recovered well, being discharged from the hospital after two days of surgery. Eight months after discharge, the patient is still being followed up, without signs of complication or recurrence.

3. Discussion

The De Garengeot's hernia is a rare entity, comprehending only 0,5 to 5% of the femoral hernias², it represents an unusual finding and is, in the majority of cases, diagnosed intraoperatively. That occurs due to the atypical clinical presentation of symptoms as well as the non-specific radiological findings, or it's presentation in an emergency being overshadowed by it's symptomatological resemblance to incarcerated femoral and inguinal hernias. It's diagnosis may be based on several criteria, and the studies reviewed showed that confirmation is obtained when there is the finding of either normal or inflamed, and even gagnrenous/perforated appendix inside the hernial sac [3,5,10].

It's pathogenesis is yet matter of discussion. Some studies claim that the appendix's unusual attachment to the caecum, added by abnormal intestinal rotations, provides increased risk to a pelvic appendix and, therefore, its deslocation to the hernial sac. It is also suggested that an anatomically large caecum could push the appendix into the, already present, hernial sac. To justify the large occurrence of appendicitis within De Garengeot's hernias, a group of studies that the inicial inflamation of the appendix causes a gradual migration into the hernia sac, others, however say that the deslocation of appendix occurs prior to the inflamation and that the neck of the hernia sac leads to obstruction and inflamation, being this theory more widely accepted, due to the increasing identification of non inflamed appendix intraoperatively during inguinal e femoral hernia repairs [3,5].

There is no standard approach for this hernia, possibly by the few numbers and variability of presentation of cases described. In this case we opted for the De Oliveira's technique, which is low cost technique and doesn't require use of mesh, reducing the risk of complications, like mesh infection's, in case of appendicitis.

4. Conclusion

The De Garengeot's hernia is a rare entity of difficult diagnosis in the pre operatory evaluation. Its treatment can be realized through an inguinotomy or a laparoscopic approach. This report demonstrates the feasibility of the De Oliveira's technique, a simple, low cost and effective technique in the treatment of femoral

hernias without using of mash. In this case specifically we used Liechtenstein's technique with de Oliveira's.

Conflicts of interest

No conflits of interest.

Study Conducted at the Department of General Surgery, Felício Rocho Hospital – HFR – Belo Horizonte – Minas Gerais – Brazil.

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Ethical approval

This paper required no ethical approval.

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

Luiz Ronaldo Alberti; Diego Paim Carvalho Garcia; Heros Souza Couto Junior; Luiza Ohasi de Figueiredo; Renata Castro Meira—manuscript writing, picture art, data collections.

Antônio Sérgio Alves; Thiago de Almeida Furtado; Claudio Almeida de Oliveira—Study design, literature revision and manuscript revision.

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