CASE REPORT

Inflamed Appendix in an Incarcerated Femoral Hernia

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ABSTRACT

The presence of appendicitis in an incarcerated femoral hernia is an extremely rare occurrence, known as De Garengeot's hernia, with potentially serious complications. An incarcerated femoral hernia was noticed intraoperatively, and the hernial sac, closely fused with femoral blood vessels, contained the phlegmonously inflamed vermiform appendix. Appendectomy and mesh hernioplasty were carried out. The postoperative period was uneventful.

Keywords: Appendix, femoral blood vessels, femoral hernia

Apéndice inflamado en una hernia femoral incarcerada

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RESUMEN

La presencia de apendicitis en una hernia femoral incarcerada es una condición extremadamente rara, conocida como hernia de Garengeot, la cual presenta complicaciones potencialmente serias. Una hernia femoral incarcerada fue observada intraoperativamente, y el saco herniario, estrechamente fusionado con los vasos sanguíneos femorales, contenía el apéndice vermiforme con una inflamación flemónica. Se realizaron una apendicectomía y una hernioplastia con malla. El período postoperatorio se desarrolló sin problemas.

Palabras clave: Apéndice, vasos sanguíneos femorales, hernia femoral

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INTRODUCTION

Appendicitis presenting in an incarcerated femoral hernia is an extremely rare occurrence, known as De Garengeot's hernia. The incidence of acute appendicitis in external herniae, according to Ryan, amounted to 0.13% of all cases of acute appendicitis (1). A hernial sac may contain omentum, small intestine or large intestine, but very rarely does it contain the vermiform appendix. According to the literature, the presence of appendix in a hernial sac is recorded in 0.8% of all herniae, and it is most frequently found in an inguinal and, more rarely, in a femoral hernia (only about 70 reported cases) (2).

CASE REPORT

This report presents a case of a 75-year-old male patient who was transferred to our clinic after having been examined by a family doctor. The physical examination showed a 3 x 3 cm swelling in the right of the inguinal area, which was tender to touch, irreducible and throbbing. The patient complained of nausea, and he had a

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high temperature. He had been hypertensive and diabetic for several years. The abdomen was palpably tender, and peristalsis was audible.

The results obtained from laboratory tests were mostly within acceptable levels. An increase in leukocytes (14.7 x 10^9/L, with neutrophil predominance of 83%) was noted. On the basis of the patient's anamnesis, physical examination and laboratory tests, the assumption of an incarcerated femoral hernia was made, and an urgent operative treatment was considered.

The patient was operated under spinal anaesthesia. With an oblique incision made at the level of the right inguinal ligament, the inguinal canal was opened, and it was observed that the hernial sac was passing under Poupart's ligament towards the femoral canal. After dissecting Poupart's ligament, we proceeded to separate the hernial sac which had been closely fused with the large femoral blood vessels (femoral artery and femoral vein) (Fig. 1).

The hernial sac was opened. Its contents showed a section of the greater omentum and the phlegmonously altered appendix (Figs. 2, 3).

After appendectomy, the reduced hernial sac was put back into the abdomen. This was followed by a prolene mesh implantation, carried out subsequent to a reconstruction of Poupart's ligament.

The excised appendix and the resected part of the hernial sac were sent for histology (Fig. 4).

The immediate postoperative period was uneventful. Following the removal of sutures, the patient was discharged on the seventh postoperative day.

Fig. 1: Hernial sac and femoral blood vessels.

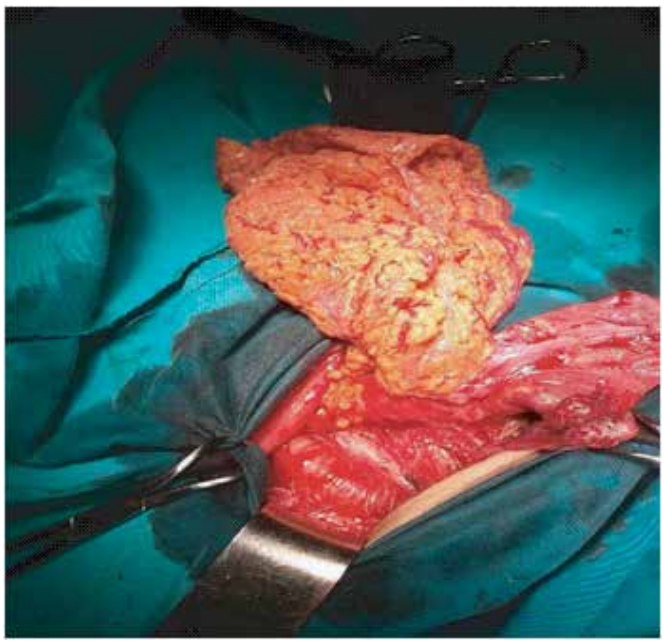

Fig. 2: Greater omentum in hernial sac.

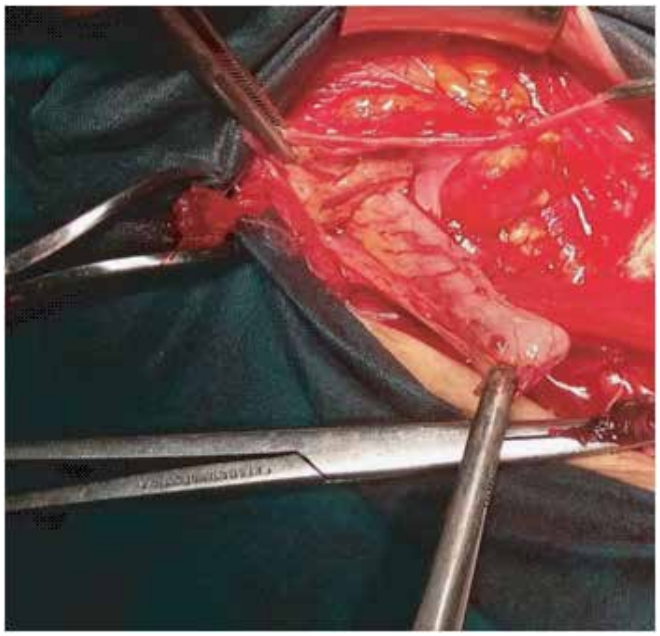

Fig. 3: Appendix in hernial sac.

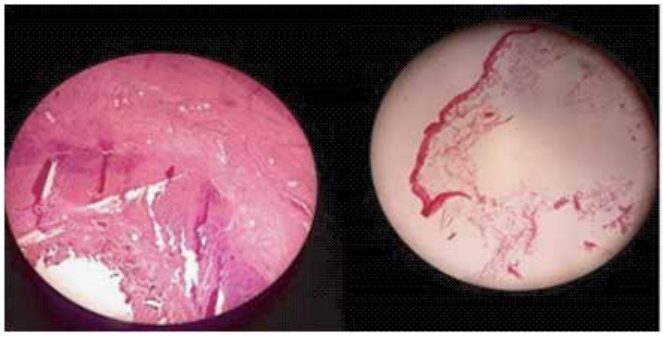

Fig. 4: Phlegmonously altered appendix and a section of the hernial sac (pH results).

DISCUSSION

René-Jacques Croissant de Garengeot was a French surgeon from Vitré, Brittany, France. He was the first to describe an acutely inflamed vermiform appendix within a femoral hernia, although the first appendectomy was performed by Hevin on a patient with De Garengeot's hernia in 1785 (3). Femoral herniae are more common in female patients, and their incidence accounts for about 5% compared to inguinal herniae (2). This type of hernia is a very rare clinical entity, with no guidelines on recommended surgical treatment published yet. It has to be differentiated from Amyand's hernia, which is a form of inguinal hernia containing a vermiform appendix (4). Clinical findings of a De Garengeot's hernia are most commonly identified by the presence of a painful swelling in the right side of the inguinal area, without the presence of occlusive syndrome (5).

Computed tomography (CT) has a low sensitivity in the diagnosis of appendicitis within a femoral hernia, with only 44% of the reported cases subjected to a pre-operative CT, whereas ultrasonography is not very useful for reliable pre-operative diagnosis (6).

The treatment of this hernia lies in an urgent operation. It can be stated that there is no consensus on the surgical management of De Garengeot's hernia which requires urgent surgery. The literature data cite an inguinal incision in 48% of cases, a lower medial laparotomy in 10% of cases, and a vertical femoral incision in only 3% of cases (7). The most frequent approach starts with inguinotomy, followed by the hernial sac opening, appendectomy and hernia repair through the same incision (5).

In comparison with tension-based techniques, the use of meshes in hernia repair decreases the risk of its recurrence by half (8). It has been acknowledged that it is possible to use a mesh without increasing the chances of infection or a hernia recurrence (7).

The main complications, more common in older patients, of De Garengeot hernia repair include wound infection with a 14–29% prevalence and, rarely, necrotising fasciitis or death (9, 10).

CONCLUSION

A De Garengeot's hernia is an extremely rare type of femoral hernia, and early diagnosis and prompt operative treatment are crucial for the successful recovery of these patients, as well as for the prevention of postoperative complications.

In most instances, cases are diagnosed by an experienced surgeon only on the basis of clinical results, for pre-operative diagnosis can rarely be made by means of modern imaging techniques, such as ultrasound or CT scan.

It is very important for a surgeon to become familiar with this type of femoral hernia, because it is most commonly diagnosed intraoperatively and it requires a more complicated surgical intervention than a normal femoral hernia does.

Our case presents an older man with an inflamed and intraoperatively diagnosed De Garengeot's hernia. He was subjected to appendectomy, with mesh implantation through inguinotomy in the same surgical procedure. After a short stay in the hospital, the patient recuperated well without wound infection, even though both appendectomy and mesh implantation were performed through the same surgical incision.

AUTHORS' NOTE

The authors declare no conflict of interest.

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