

Case Report

De Garegeot hernia in an elderly female: a case report

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ABSTRACT

A groin hernia is known as De Garegeot hernia when the appendix is located within the sac of a femoral hernia, with or without associated acute appendicitis. The true incidence of de Garegeot's hernia is difficult to assess due to its rarity. Most of the times, De Garegeot hernia are presented acutely when incarcerated which turn them indistinguishable from other incarcerated femoral hernias at clinical examination. Treatment of De Garegeot hernia is an emergency, as it is for any femoral hernia incarcerated. After initial resuscitation, surgical treatment is mandatory without further delay. The surgical approach and the options to consider are dependent on the presence of incarceration and of septic environment at the time of diagnosis.

Keywords: Appendix, General surgery, Femoral hernia

INTRODUCTION

Groin hernias can be classified into inguinal and femoral. Femoral hernias occur as the result of protrusion of abdominal content, covered by peritoneum, through the femoral canal, medial to the femoral artery and below the inguinal ring. Appendix can be included in the content of the sac of any of the groin hernias type. When located in the inguinal hernia sac, it's called Amyand hernia, whereas if included in the femoral sac content it is called De Garegeot hernia, after the first description in literature in 1731, by a French surgeon from Paris.^{1,2}

The true incidence of De Garegeot hernia is difficult to assess but a recent meta-analysis estimate that there are between 100-200 patients in literature.³ In fact, the incidence of De Garegeot hernia very according to different studies, such as high values of 0.15–5% of all femoral hernias to much lower on other reports, 0.08% and 0.13%.^{2,4,5}

De Garegeot hernia can occur with or without associated acute appendicitis. The femoral ring is a narrow and

fibrotic structure, with limited space, thereby increasing the risk of incarceration, so it's believed that the appendicitis may be caused more by incarceration at the hernia neck than by the presence of appendicoliths.⁶ According to the data available, the incidence of acute appendicitis in this type of hernias is as low as 0-08%-0.13%.⁷

Due to its rarity and lack of typical symptoms, preoperative diagnosis is very difficult, but whenever achieved surgical treatment should be done as soon as possible.^{8,9}

Herein the case of a De Garegeot hernia successfully treated at our hospital is presented.

CASE REPORT

A 87-year-old woman presented at our hospital complaining of pain the right groin area with a few hours of evolution. She had noticed a lump in her right groin for the past 3 days, which had increased in size and became not reducible. She denied nausea, vomiting or changes of her bowel motion.

At admission she had low grade fever (38.2°C) and a tender hard lump, painful and not reducible, could be palpated bellow the inguinal ligament. No signs of peritoneal irritation were present at that time.

A computed tomography (CT) documented a right femoral hernia, which contained a small bowel loop with signs of ischemia besides also describing free liquid (Figures 1 and 2).

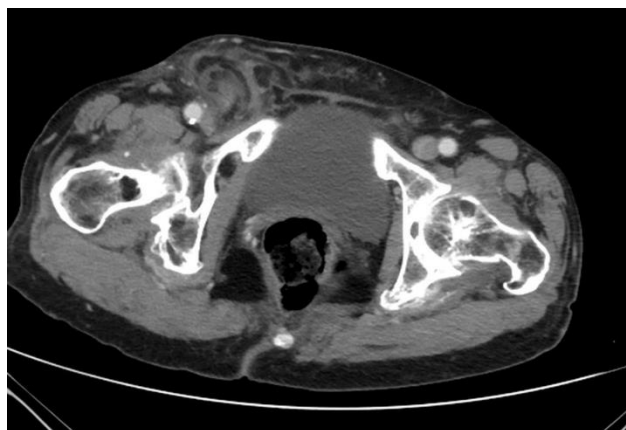


Figure 1: CT showing a right femoral hernia, which contained a small bowel loop with signs of ischemia besides also describing free liquid.

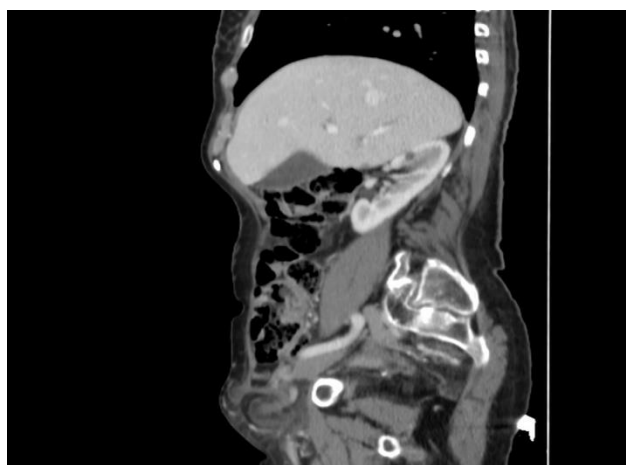


Figure 2: CT showing a right femoral hernia, which contained a small bowel loop with signs of ischemia besides also describing free liquid.

The patient was transferred immediately to the operating room for surgery. At the operating room, a right femoral hernia sac was identified, which contained an inflamed appendix, but no perforation could be identified. There were no signs of small bowel ischemia or contamination of the surgical site. An appendicectomy was performed and a femoral hernia repair with mesh was done.

The postoperative course was uneventful, and the patient was discharged three days after the surgery. The histopathological examination of the appendix only

revealed a congested appendix without perforation or dysplasia.

DISCUSSION

Femoral hernias constitute 2–4% of all groin hernia repairs.¹⁰ The presence of vermiform appendix within the hernia sac is very rare, but whenever occurs can be a changing clinical situation.

Reflecting the higher incidence of femoral hernias in women, the De Garengeot hernia affects predominately postmenopausal women, at least four times more comparing to men according to some studies.^{5,11–14} Two main theories try to explain this rare condition. The first one emphasizes on abnormal attachment of appendix to the caecum secondary to embryogenic rotations, and the second one claims that a large caecum can push the appendix into the femoral hernia sac.¹⁵

Most of the times, De Garengeot hernias are presented acutely when incarcerated, which turn them indistinguishable from other incarcerated femoral hernias at clinical examination. CT and ultrasound (US) are highly useful before surgery because they can obtain images of the entire appendix and surrounding structures.¹⁶ US as the advantage of being able to evaluate the vascularity of the appendix using the colour Doppler method.¹⁷

Sepsis and peritonitis are relatively uncommon because of the anatomical structure of the femoral canal which means that perforation is confined to this area and not spilled over to the peritoneal cavity.¹⁸

The treatment of De Garengeot hernia is an emergency, as it is for any femoral hernia incarcerated.^{9,19} After initial resuscitation, if needed, with intravenous fluid and analgesia, surgical treatment is mandatory without further delay. Often, it may be associated with acute appendicitis, regardless of the origin of the inflammatory process. Indeed, the acute appendicitis can be primary, due to obstruction by appendicoliths, or secondary to the neck hernia incarceration.⁶

The treatment of this kind of hernias can be a challenge to the surgeon.²⁰ The presence of appendicitis with or without local contamination must be strongly considered in the management of repair of the hernia defect. The presence of peritonitis, gross contamination, namely with faecal content, are considered formal contra-indications for the use of mesh repair and, in those cases, a tissue repair procedure must be the preferred option.^{11,12} In other cases, the hernioplasty seems to be a safe procedure and should be used.^{21,22}

In cases of peritonitis, some authors claims that a midline approach would be the best option in order to exclude intra-abdominal extension of the septic process.²³

On what concerns about the appendix-preserving elective herniorrhaphy/hernioplasty, according to some studies, it

seems to be an acceptable procedure if pre-operative imaging and intraoperative findings do not suggest acute appendicitis or circulatory compromise in the appendix.^{9,17,24}

CONCLUSION

Due to the rarity of this condition, there is no specific guideline as for surgical procedure. Thus, the optimal management of De Garengeot seems to be mainly dependent on the presence of incarceration and of the inflammatory/septic process present on the moment of diagnosis.

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