

CASE REPORT

Case study: diagnosis and operative management of de Garengeot hernia without appendectomy during the COVID-19 pandemic

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Abstract

de Garengeot herniae have been reported in <100 cases in literature. They are characterized by an incarcerated femoral hernia containing the appendix. We present the case of a 45-year-old female who, upon emergency intraoperative consultation to a general surgeon while having a right groin exploration by a plastic surgeon, was found to have an appendix incarcerated within a femoral hernia. There was no evidence of appendicitis; thus, appendix was reduced and the hernia was repaired with a mesh plug. The patient did well postoperatively, with no complications and returned to complete activities. This occurred during the coronavirus disease (COVID-19) pandemic. Due to the common failure in preoperative diagnosis, it is important for surgeons to have a clinical suspicion for de Garengeot herniae for patients, presenting with a right groin bulge. Appendectomy may be safely avoided, eliminating appendectomy-associated morbidity and avoiding hospital transfer and the associated risk of COVID-19 exposure.

INTRODUCTION

First documented in 1731 by Parisian surgeon Rene Jaques Croissant de Garengeot, the de Garengeot hernia is characterized by an incarcerated femoral hernia containing the appendix [1]. This case is rare, with <1% of surgically treated herniae containing the appendix [2]. This hernia is rarely diagnosed preoperatively and has been reported in <100 cases in literature [3]. This paper reports a case of de Garengeot hernia diagnosed intraoperatively during removal of a suspected cyst of the groin during the coronavirus disease (COVID-19) pandemic.

CASE REPORT

The patient, a 45-year-old female, had a several year history of a lump in the right groin. It had never become infected nor

had it ever drained. She saw a dermatologist who felt this was a cyst and scheduled excision. While dissecting the lump, the dermatologist appreciated that it was deeper than the skin, closed the skin and sent the patient to a plastic surgeon.

The plastic surgeon appreciated this lump with a scar overlying it limiting examination. The plastic surgeon brought the patient to an outpatient surgery center due to her desire to avoid the hospital since this operation took place during the COVID-19 pandemic. With the patient under sedation, the plastic surgeon performed a right groin exploration. Upon dissection, some normal sized lymph nodes but no cyst was found. Deeper dissection revealed a firm mass. Upon opening the enveloping tissue, the plastic surgeon encountered what looked like another lymph node. Emergent intraoperative consultation from a general surgeon was placed.

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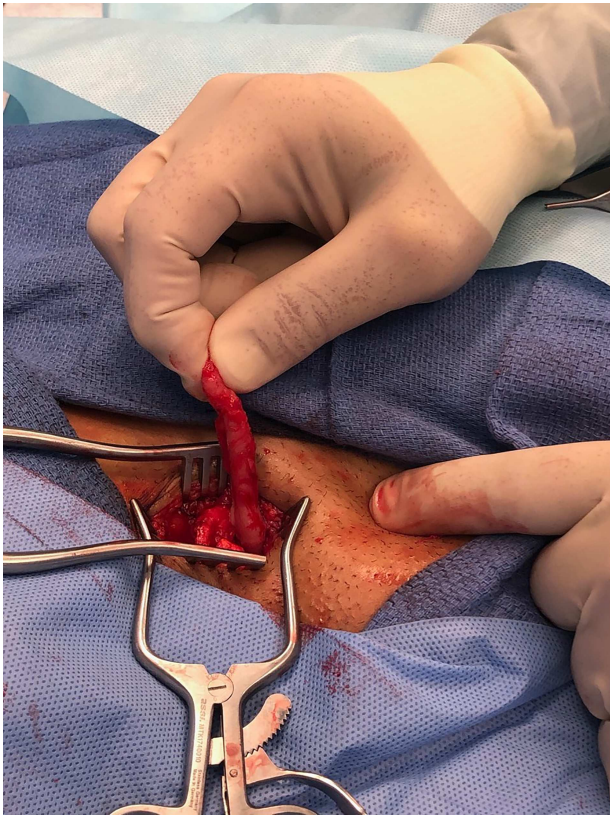


Figure 1: Lightly grasping the dissected appendix, freed from the femoral hernia sac in which it was incarcerated.

Upon further dissection by the general surgeon, it became clear that what the plastic surgeon found was not another lymph node, but rather, the distal tip of the patient's appendix. Dissection to the level of the fascia revealed that the enveloping tissue was a hernia sac and the entire appendix was incarcerated within a femoral hernia (Fig. 1).

Given the lack of any evidence of appendicitis and the lack of any past infection or drainage, the appendix was freed and reduced back into the abdominal cavity without injury. The hernia sac was closed with an absorbable suture and the hernia was repaired using a small polypropylene mesh. The wound was closed in layers and the patient was awoken.

Upon discharge, the patient was informed of her diagnosis and was advised to call immediately if she developed any abdominal pain as this could indicate appendicitis.

The patient never developed appendicitis and had almost no pain postoperatively. She had no postoperative complications. She returned to full physical activities with respect to both exercise and her duties as a nurse.

DISCUSSION

Unlike male predominant Amyand's herniae, characterized by an appendix within an inguinal hernia, de Garengeot herniae have been found to affect primarily postmenopausal females [4]. The anatomic position of the appendix produces de Garengeot herniae on the right side, associated with the potential for ischemia and appendicitis [5].

A full preoperative workup typically fails to diagnose de Garengeot herniae. Reports have shown diagnostic ultrasound and computed tomography to have low success rates in preoperative diagnosis, 20 and 44%, respectively [2]. As a result, it

is important to have a clinical suspicion of de Garengeot herniae for patients with a right groin bulge and incarcerated femoral hernia found intraoperatively, especially in female patients.

With limited reporting of de Garengeot hernia in literature, there has been little differentiation in the method of treatment of the appendix, with most case reports opting for appendectomy via laparotomy or laparoscopy. As this type of hernia is usually unexpected due to the failure of preoperative diagnosis, it is necessary for surgeons to be prepared with multiple treatment options, especially if the procedure was begun in an outpatient facility with limited resources to perform exploratory laparotomy or laparoscopy for appendectomy.

Due to the COVID-19 pandemic, many patients adamantly refuse going to the hospital for any reason, even for surgery, due to the increased risk of COVID-19 exposure. There are also hospital-associated restrictions limiting operations performed there. This creates an environment wherein more cases are being performed outside of the hospital. Surgery centers are usually free of COVID-19 infections, but can lack many of the more advanced surgical options found in hospitals, including laparoscopy or robotic equipment. Thus, surgeons need to keep in mind that they may be called in to help on an operation in an outpatient operating room not associated with a hospital. When this is the case, surgeons must have a full complement of options at their disposal, including appendix reduction with hernia repair in cases of de Garengeot herniae without evidence of appendicitis. Also, since some appendices are now not even being removed for acute appendicitis [6], for de Garengeot herniae without appendicitis, this provides even more reason to reduce rather than remove the appendix and perform hernia repair. The more antiquated idea of mandatory appendectomy during repair of a de Garengeot hernia can safely be retired in favor of treating each appendix as its presentation dictates saving appendectomy only for cases with acute appendicitis. Appendiceal reduction without appendectomy provides a treatment option that is more time efficient and can be performed with limited resources while the COVID-19 restrictions, which were created to save personal protective equipment and ventilators for the health care providers treating COVID-19 patients, are honored and accomplished [7]. This equally respects the patient's preference of avoiding transfer to a hospital and its inherent increased risk of COVID-19 exposure.

With a low success rate in preoperative diagnosis of de Garengeot herniae, it is important for surgeons to have a clinical suspicion of this rare type of hernia and to be prepared with a complete arsenal of options to treat the patient. This case shows successful treatment of a de Garengeot hernia via reduction of the appendix and hernia repair without the need for appendectomy. This treatment option simultaneously respected the COVID-19 pandemic surgical restrictions placed nationwide and the patient's desire to avoid a hospital during the pandemic.

CONFLICT OF INTEREST STATEMENT

None declared.

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