

Acute appendicitis in an incarcerated femoral hernia

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A 69-year-old lady presented acutely to our surgical unit with a four-day history of a painful lump in her right groin. This was associated with nausea but no vomiting or obstipation. Systemically she was well. On examination she had a red tender irreducible mass in the right groin below the inguinal ligament. This was approximately 5x4cm in size. Clinically this appeared to be an incarcerated femoral hernia. She had a history of a prior open left femoral hernia repair two years earlier. Blood tests showed a normal white cell count and an elevated C-reactive protein of 79mg/L. A CT scan was performed which showed the presence of a right femoral hernia with the appendix incarcerated within (Figure 1). Extensive surrounding inflammatory changes were seen suggesting inflammation, however, infective changes could not be excluded.

She was taken to theatre for an acute open femoral hernia repair via a high approach. Operative findings were of an infarcted necrotic appendix within a femoral hernia sac (Figure 2). There was no contamination. A standard appendicectomy was performed and the hernial orifice was closed with a suture repair. The patient's recovery was uncomplicated. Histological findings were of global infarction of the appendix with extensive coagulative necrosis.

Discussion

The presence of the appendix within a femoral hernia was first described by the French surgeon Rene De Garengeot in 1731¹ and in modern surgical literature this clinical entity is often referred to as a De Garengeot hernia (DGH). In 1785, Hevin was credited with being the first surgeon to perform an appendicectomy for appendicitis within a femoral hernia. Femoral hernias account for only 4% of groin hernias and are five times more common in females.² They typically present as a painful swelling below the inguinal ligament and often contain preperitoneal fat or omentum. A femoral hernia containing the appendix is uncommon and is typically an incidental intraoperative finding occurring in 0.5 to 3% of all femoral hernias.³ Appendicitis within a femoral is rare with approximately 100 cases described within the literature. It is thought that a large, mobile pelvic caecum may predispose to the appendix lying within a femoral hernia.⁴ The narrow neck of the hernia may compress the appendix leading to secondary inflammation, "appendicitis", necrosis and perforation.

Typical presentation is non-specific, usually mimicking a standard incarcerated femoral hernia with an irreducible right-

Figure 1: Axial and Sagittal CT slices showing De Garengeot hernia.



Figure 2: Operative image of infarcted appendix after removal from hernial sac.



sided groin lump, pain and associated signs of inflammation.⁵ In a review of 36 patients presenting with a symptomatic DGH, Kalles et al noted that 97% of patients had a tender groin lump and 56% of patients had erythema of the overlying skin.⁶ Patients may also present with systemic symptoms such as fever and tachycardia.⁵ Rarely patients may present with bowel obstruction.⁴ Preoperative laboratory investigation typically shows leukocytosis and elevation of C-reactive protein. Radiological findings are non-specific⁵ and imaging is often not performed pre-operatively in the case of a suspected incarcerated femoral hernia. In their review, Kalles et al noted that pre-operative ultrasound had a diagnostic accuracy of 20% and CT had an accuracy of 44%.⁵

Operatively a high approach as for a femoral hernia is often recommended.⁶

This allows for entry into the peritoneum with reduction of the appendix and appendectomy, with subsequent repair of the femoral defect. This may be achieved via a suture or mesh repair with similar complication rates.⁵ Most authors tended to reserve mesh repair for cases where the finding was incidental.^{6,7} Some authors have reported a successful laparoscopic approach.⁷ Given the paucity of literature currently, there is no gold standard operative approach.

Conclusion

The presence of the appendix in a femoral hernia sac is known as de Garengeot hernia. The diagnosis should be considered in a patient with a red tender right-sided groin mass. Appropriate management consists of an appendectomy and hernia repair.

Competing interests:

Nil.

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