De Garengeot’s hernia: a surgical surprise

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ABSTRACT

De Garengeot’s hernia is a femoral hernia containing the appendix. Awareness of this hernia is essential to prevent misdiagnosis and wrong choice of an operative procedure. The status of appendix dictates the choice of approach and nature of repair for the hernia. The pathophysiology, diagnosis and management of De Garengeot’s hernia is presented in this article to create an awareness of this rare hernia.

Keywords: De Garengeot’s, Hernia, Pathophysiology, Management

INTRODUCTION

The vermiform appendix though described as a vestigial organ in humans can cause a wide range of surgical diseases.

When the appendix occupies the space within the hernia sac in the groin it poses both a diagnostic and surgical challenge to the attending surgeon. Femoral hernia by itself is quite an uncommon entity seen predominately in the female population. A complicated femoral hernia containing the appendix can pose a serious challenge to both the diagnostic and surgical skills of the surgeon. Rene Jacques Croissant de Garengeot was first to describe the presence of the appendix in a femoral hernia. The pathophysiology, diagnosis and management is discussed.

Pathophysiology

The appendix usually lies in right iliac fossa. The presence of the appendix in a femoral hernia is an enigmatic situation. Various theories have been postulated to explain the aetiology. Migration of the appendix into a femoral hernia is possible by virtue of an abnormal anatomic position. It may depend on abnormal intestinal rotation during early development or be related to abnormality of the caecum. Abnormal mobility of caecum by virtue of altered attachments of the caecum can predispose to lower than normal position of the caecum along with the appendix. Once the appendix finds its way into a femoral hernia, the natural history of disease may follow a variable course. The appendix usually gets inflamed in the hernia sac giving rise to a typical picture of an incarcerated and inflamed hernia. The aetiology of inflammation may range from intraluminal obstruction by a faecolith or hypertrophy of lymphatic tissue to inflammation caused by ischemia due to strangulation by the narrow neck of the femoral ring.

Clinical features

The clinical features may range from vague abdominal pain to severely painful and erythematous swelling in the groin. In advanced presentations the patient may have systemic symptoms such as fever accompanied with abdominal signs of distension and tenderness in the lower abdomen.
The severity of such clinical features may depend on the severity of the inflammatory process. It could either be early inflammation or perforation leading to an abscess, which could complicate the presentation.

**Diagnosis**

Haematological investigations will reveal neutrophilic leukocytosis. A contrast enhanced CT of the abdomen may help in identifying the contents of the femoral hernia sac. However CT may not always be diagnostic in all cases. The presence of a low position of the caecum with an adjacent fluid filled tubular structure entering into the hernia sac is typical of De Garengeot’s hernia.

Sonographic findings may be confusing and may not always be able to diagnose the condition. Therefore majority of such cases are usually diagnosed intraoperatively.

**Surgical approach**

The presence of the appendix in a femoral hernia sac poses the biggest surgical dilemma. The status of the appendix dictates the choice of therapeutic options. If the appendix is inflamed it becomes extremely difficult to remove the appendix through the limited groin incision. The chances of avulsion of a friable and inflamed organ are extremely high. Therefore it is a safe practice to perform a lower mid line laparotomy.

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At laparotomy the contents can be reduced safely from within. A critical assessment of viability can be done after reduction of the caecum and appendix. Formal appendectomy can then be done with ease.

The next dilemma which the surgeon confronts during the management of such cases is the choice of repair for the femoral hernia. This choice should be decided based on the status of the appendix. In cases of inflamed appendix it would be a safe practice to avoid any prosthetic repair. A simple closure of the femoral ring with a non-absorbable suture will suffice. However if the appendix is absolutely normal there is no indication to perform an appendectomy. In such cases reduction of contents through the groin incision can be easily accomplished. As there is no breach in the lumen of the gastrointestinal tract during the course of surgery, the surgeon can go ahead with mesh plug repair. Though various case reports have described mesh repair with appendicectomy it would be a risky proposition as chances of mesh infection are high. Laparoscopic approach has also been described to manage such cases. But in the presence of a severely inflamed appendix, a laparoscopic approach may not always be successful. Such cases may require conversion to open surgery causing contamination of the operative site predisposing to surgical site infection.

**CONCLUSION**

Although, De Garengeot’s hernia is an extremely rare type of a hernia. High index of suspicion by virtue of awareness of this condition can enable the surgeon to make a presumptive preoperative diagnosis. Majority of such cases are diagnosed intra operatively. Open approach is the safest. If the appendix is inflamed with severe surrounding sepsis it is a safe practice to tackle the disease by performing a lower mid line laparotomy. A mesh repair should be avoided in cases that undergo appendectomy.

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