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Case Report

CASE REPORT

Femoral hernia with vermiform appendix herniation: a case report and review of the literature

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Abstract

Femoral hernias constitute 2–4% of all groin hernia repairs. Herniation of the vermiform appendix into the femoral hernia sac is rare. The majority of patients with appendix hernias are asymptomatic and diagnosis is made intraoperatively. We report about a case of a female patient presenting with an irreducible right-sided femoral hernia without symptoms.

INTRODUCTION

Femoral hernias constitute 2–4% of groin hernia repairs [1]. Herniation of the vermiform appendix into the femoral hernia sac is rare, observed in 0.5–5% of the femoral hernias [2]. Appendix herniation occurs predominantly in females and right-sided hernias [3]. Until 2020, ∼140 cases have been described [1–10]. The majority of patients with appendix hernias are asymptomatic and diagnosis is made intraoperatively [3]. Clinical signs and symptoms are usually in favor of an incarcerated femoral hernia or appendicitis [4]. As only few cases have been reported, there is no consensus about its optimal surgical treatment [3]. Open surgical repair is preferred. We report about a patient, who presented with an irreducible right-sided femoral hernia with vermiform appendix herniation. We discuss the surgical considerations through a literature review.

CASE REPORT

A 95-year-old woman with suspected right-sided inguinal hernia presented for an elective surgical treatment. There was no abdominal pain, history of bowel symptoms, nausea or vomiting. Medical history included an urge incontinence, arterial hypertension, hypercholesterolemia, deep vein thrombosis, atrial fibrillation, ischemic brain insult and gastritis. She was on apixaban. She had no known allergies. Laboratory values showed no signs of infection and normal renal function.

On clinical examination, an unclear groin mass was found, with no erythema. Her abdomen was otherwise soft, without pain on palpation.

The sonography suspected an incarcerated femoral hernia.

The patient was taken to the operating theater for hernia repair. An open surgical exploration was chosen. Intraoperative findings revealed a femoral hernia with swollen vermiform appendix in the sac. An appendectomy and therefore a simple herniorrhaphy was performed.

The patient recovered postoperatively without complications. She was discharged on the third postoperative day. Histology revealed a fibrotic fat tissue with older necrosis, compatible with longer-lasting incarceration of the fat tissue and an uninflammed appendix with a sessile serrated adenoma without dysplasia, completely through the appendectomy removed.

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DISCUSSION

We report about a case of a femoral hernia with vermiform appendix herniation presenting without abdominal pain and bowel symptoms. Femoral appendix hernia was first described by Rene Jacques de Garengeot in 1731 [de Garengeot hernia (GH)] and is a rare clinical finding [3]. This condition has been reported in literature, primarily in the form of case reports and case series. An unlimited literature search of PubMed data base was performed on 25 July 2020. We found 139 cases.

The varying degrees of rotation of midgut during development, size and position of caecum and having a pelvic appendix are proposed risk factors for developing GH [5]. The female-to-male incidence ratio of GH is ∼5:1 with age range from 29 to 92 years old [3, 6]. GH has been attributed to body changes during pregnancy. Other risk factors include increased intra-abdominal pressure, smoking, age and collagen disease. Weakening of transversalis fascia is thought to play a role. Most GHs occur on the right side.

The clinical presentation usually takes the form of a groin mass. Abdominal pain, nausea, vomiting and diarrhea are not usually reported. In addition to inguinal hernia the differential diagnosis should include adnexitis, ectasia of the vena saphena magna, lymphomas, lipomas or other soft tissue tumors or a varix node. Because of the rarity of the entity and the absence of typical symptoms, achieving preoperative diagnosis is very difficult. Most GHs are diagnosed intraoperatively. Preoperative diagnosis by computed tomography has been reported in the minority of cases and by ultrasound extremely rare.

To our knowledge, the combination of GH and sessile serrated adenoma has not been described in the literature. We found a case with GH and low-grade mucinous neoplasm [7], two cases with appendiceal diverticulosis [8] and a case with a small lymphocytic lymphoma within GH [9].

Due to the rarity of the condition there is no standard procedure. The options available include open or laparoscopic approaches either with a simple herniorrhaphy or mesh, with or without appendectomy [3]. A primary simple herniorrhaphy is recommended to avoid the risk of infection with implanted materials [10]. Appendectomy via the hernial sac is considered appropriate; in case of perforation and abscess formation, transabdominal access is preferred. Laparoscopy may be a valid technique for determining the condition of the hernia, but due to the difficulty of preoperative diagnosis it is unlikely to be the first choice for the surgical approach.

The appendectomy is also controversial. It has been suggested that in the presence of a normal appendix appendectomy is not required. However, the surgery is not excessively complicated and even in the absence of macroscopic inflammation the presence of microscopic inflammation from compression and ischemia within the hernia neck cannot be ruled out; for this reason, appendectomy should be performed.

Another controversial point is the use of a mesh. In the absence of abscess formation or perforation, the mesh-implantation could be performed.

The most important contributing factor to the increase in wound infection is delayed diagnosis. Severe complications such as necrotizing fasciitis and death were only rarely described [3].

Femoral hernias with appendix herniation are rare. They are often difficult to diagnose and remain a surgical challenge. With increasing published case reports it may be possible to systematically review the cases and reach a consensus as to what the optimal surgical management may be.

CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest relevant to this article.

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