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Acute appendicitis secondary to appendiceal endometriosis: A case report and literature review

Apendicitis aguda secundaria a endometriosis apendicular: reporte de caso y revisión de literatura

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ABSTRACT

Endometriosis is a common gynecological disorder that affects 6 to 10% of women of reproductive age. Endometriosis implants can be located within the gastrointestinal tract, mainly in the rectum and sigmoid colon, with rare appendicular involvement. We present a patient experiencing clinical symptoms of acute appendicitis, incidentally diagnosed with appendicular endometriosis during laparoscopic appendectomy.

RESUMEN

La endometriosis es un trastorno ginecológico frecuente que afecta de 6 a 10% de las mujeres en edad reproductiva. Los focos de endometriosis se pueden localizar dentro del tracto gastrointestinal, principalmente en recto y colon sigmoides, siendo poco frecuente la afectación apendicular. Presentamos el caso clínico de una paciente que cursa un cuadro clínico de apendicitis aguda, la cual fue diagnosticada de manera incidental con endometriosis apendicular durante la apendicetomía laparoscópica.

INTRODUCTION

Endometriosis is a gynecological disorder in which endometrial tissue is outside the uterine cavity. Foci of endometriosis can be found in various organs (extragenital endometriosis), the most frequent gastrointestinal.[1] Gastrointestinal involvement is rare, while acute appendicitis secondary to endometriosis lesions is even less frequent.[2] Appendiceal endometriosis is generally asymptomatic; however, it may develop clinical manifestations such as chronic pelvic pain, lower gastrointestinal bleeding, intussusception, or appendicitis.[1] In 1952, the first patient with a preoperative diagnosis of acute appendicitis and postoperative diagnosis of appendiceal endometriosis was reported.[2]

CASE PRESENTATION

A 32-year-old female patient came to the emergency department with abdominal pain of 12 hours of evolution, located in the epigastrium and with posterior migration to the right iliac fossa. The picture was accompanied by nausea and fever (38.2 ºC) as well as anorexia and general malaise. On physical examination, the abdomen had decreased intensity and frequency peristalsis, muscle resistance in the right hemiabdomen, and pain on superficial and medial palpation at McBurney's point. Von Blumberg, psoas, obturator, and Rovsing signs were also positive.

Laboratory tests were performed, which reported the presence of leukocytosis in 18.5 $\times$ 10^3/µL, neutrophilia 88%, bands 8%, and PCR of 3.8 mg/dl.

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Due to the high clinical suspicion of acute appendicitis (score eight on the Alvarado scale), it was decided to perform a laparoscopic appendectomy. During the surgical procedure, appendicular inflammatory data equivalent to the diagnosis of acute appendicitis in the suppurative phase were found, as well as the presence of multiple endometriosis implants in the cecal appendix *(Figure 1)*, ovaries, fallopian tubes, and sigmoid colon. Samples of these implants were taken and sent for histopathological studies and the cecal appendix. The appendectomy was performed without complications with a satisfactory evolution and hospital discharge the following day. The histopathological report highlighted the presence of endometrial glands and stroma in the excised appendix.

DISCUSSION

The leading cause of acute appendicitis is secondary to obstruction of the appendiceal lumen.[2] Such obstruction is usually due to fecaliths, lymphoid hyperplasia, plant debris, parasites, or neoplasms; however, approximately one-third of cases of acute appendicitis occur without the obstruction of the appendiceal lumen.[2] Endometriosis is described as a common benign gynecological disorder divided into internal and external, depending on the location of the endometrial tissue.[3] It affects 6 to 10% of women of reproductive age and can develop equally in premenopausal and postmenopausal women.[4] In internal endometriosis, the endometrial tissue is within the uterine layers. In contrast, in the external form, the endometrial tissue can be in genital organs, pelvic peritoneum, gastrointestinal tract, greater omentum, mesentery, and liver, among others.[3]

Figure 1: *Laparoscopic image showing cecal appendix with inflammatory data and presence of endometriosis implants.*

It has been estimated that 10% of patients with endometriosis have intestinal endometriosis, which is more frequent in the rectum and sigmoid colon.[5] The incidence of appendicular endometriosis is close to 3% of all cases of intestinal endometriosis.[4] Collins reported 355 cases of appendiceal endometriosis in 71,000 postoperative appendectomy patients (0.05%).[6] Appendiceal endometriosis is usually asymptomatic, although it may manifest as appendicitis, perforation, intussusception, and lower gastrointestinal bleeding.[5] Hakoda et al. described the case of a patient with appendiceal intussusception to the cecum, subsequently diagnosed with appendiceal endometriosis.[7] A relationship between appendiceal endometriosis and the presence of uterine leiomyomatosis and menstrual cycle abnormalities has also been demonstrated.[4]

In the case of our patient, the clinical picture manifested severe abdominal pain in the right iliac fossa; a history of menstrual abnormalities was denied, and the presence of uterine leiomyomas was ruled out at the surgery. Since the clinical picture was compatible with a classic picture of acute appendicitis (score of eight on the Alvarado scale), imaging studies were not requested for economic reasons. The diagnosis of preoperative appendiceal endometriosis is complex since endometriosis can manifest itself in many ways without pathognomonic signs.

Endometriosis is diagnosed through a detailed anamnesis, pelvic examination, biomarkers, imaging studies, and laparoscopically.[8] Within the anamnesis, it should be suspected when data such as cyclic pelvic pain, dysmenorrhea, periovulatory pain, dyspareunia, dyschezia, and dysuria are manifested.[7] Pelvic examination (in skilled hands) is considered an effective clinical maneuver for diagnosing endometriosis.[8] Extreme pain on bimanual palpation of the utero-vesical cul-de-sac and the cul-de-sac of Douglas is considered suspicious for endometriosis, as is the painful mobilization of the uterus itself.[8] No biomarkers have been validated to diagnose endometriosis, but the

CA-125 marker has been reported to be helpful in postoperative follow-up as a marker of possible recurrence.[8] Transvaginal ultrasound is the first choice of imaging study to visualize ovarian endometriomas. It has the advantage of being low-cost, while a computerized axial tomography scan is reserved for a few cases.[8] The gold standard for diagnosing endometriosis is laparoscopy, which verifies lesions' presence and extent.[8]

The treatment strategy consists mainly of surgery and hormonal therapy (the application is determined depending on the patient's age and symptomatology).[5] Surgical treatment is preferably performed laparoscopically since its use allows exploration of the entire peritoneal cavity.[5] In 2001, using laparoscopy, Nezhat described the first intestinal resection for endometriosis.[9] Rodriguez-Wong and Rodriguez-Medina reported the case of a patient with appendicular endometriosis, managed by infraumbilical right paramedian laparotomy and appendectomy with the Ochsner technique. The patient had a favorable clinical course and received six-month complementary hormonal therapy.[10]

CONCLUSIONS

Appendicular endometriosis is a rare pathology and challenging to diagnose preoperatively, so initiating the suspicion using a detailed anamnesis is essential. The diagnosis is made by laparoscopy, and if appendicular endometriosis is found to cause acute abdomen, it is suggested to intervene by laparoscopic appendectomy.

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