Case Report

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Acute appendicitis in an incarcerated hernia sac at the laparoscopic trocar entrance

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Abstract

Rarely, appendix vermiformis can be detected in abdominal wall hernias such as inguinal, obturator, umbilical and incisional hernias. Detection of the appendix in the hernia formed at the laparoscopic trocar entrance is extremely rare. We treated a 58-year-old female patient with acute appendicitis in an incarcerated hernia sac at the laparoscopic trocar entrance with laparoscopic appendectomy and laparoscopic mesh hernioplasty. In order to prevent the development of hernia at the trocar entrance, the fascia at this place should be sutured in laparoscopic operations.

Introduction

Adipose tissue, omentum, small intestine, colon and sometimes different organs are most commonly obtainable in the hernia sac [1, 2]. Acute appendicitis is accepted as a common surgical emergency. Appendix vermiformis can be detected in abdominal wall hernias such as inguinal, obturator, umbilical and incisional hernias, with an incidence of 0.008-1% [3]. If the appendix is located in the inguinal hernia sac or in the femoral hernia sac, they are specially named as Amyand and Garengeot, respectively [1-3]. In this case report, we aimed to evaluate acute appendicitis detected in an incarcerated hernia sac at the trocar entrance, in light of the literature.

Case presentation

A 58-year-old female patient who underwent laparoscopic total abdominal hysterectomy and bilateral salpingo-oophorectomy with the diagnosis of myoma uteri 4 months ago was admitted to the emergency service with complaints of swelling, redness and abdominal pain at the old trocar entrance in the right lower quadrant, which had been going on for 2 days. The patient had no comorbidity, and she had nausea and gas-stool discharged. During the physical examination, incarcerated incisional hernia at the trocar entry site in the right lower quadrant and widespread tenderness in this region. Laboratory results were unremarkable except for the fact that WBC (leukocyte) was 12.800 cell/µL. There was minimal air-fluid level in the standing abdominal X-ray of the patient (**Figure 1**). In the superficial USG examination of the right lower quadrant of the abdomen, a fascia defect and a herniated intestinal loop in it were observed. It was decided to operate on the patient. Under intratracheal general anaesthesia, pneomoperitoneum was created with a 10-mm trocar inserted through the umbilicus, and the abdomen was entered with a camera. It was observed that the appendix and part of the cecum were in the incarcerated hernia sac (**Figures 2** and **3**). Subsequently, 2 more 5-mm trocars were inserted. The cecum was removed from the defect with the aid of a Grasper. It was observed that the appendix was adherent, inflamed and erectile within the hernia wall. The appendix was carefully separated from the hernia with the aid of a harmonic device. Laparoscopic appendectomy was performed by double ligating the appendix radix with 2/0 VICRYL suture. Then, the appendix was removed from the abdomen through the trocar. After that, mesh hernioplasty was performed laparoscopically and a drain was placed and the layers were closed anatomically and the operation was completed. The patient's drain was removed on the second postoperative day, and the patient was discharged with full recovery. In the postoperative outpatient clinic controls, it was not detected any surgical site infection or recurrence.

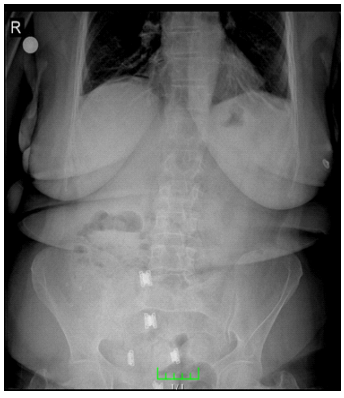

Figure 1: *Abdominal X-ray of the patient.*

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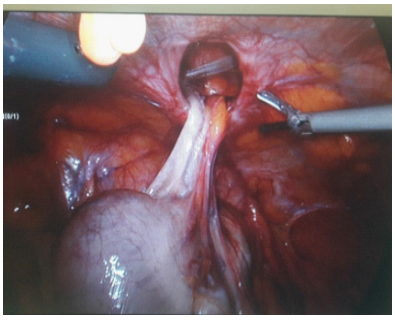

Figure 2: *Laparoscopic view of acute appendicitis in hernia sac.*

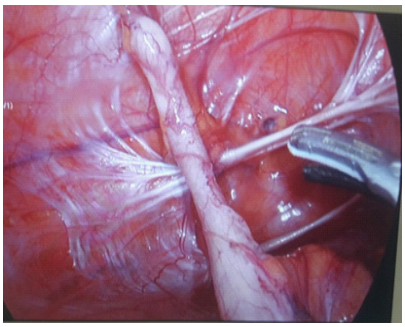

Figure 3: *Appearance of appendix in hernia sac (adhesive to the hernia sac wall).*

Discussion

The treatment of acute appendicitis is surgery, but conservative treatment with antibiotics can be applied in selected patients for whom surgery is contraindicated [4]. Treatment of incarcerated hernia is also exploration of the hernia sac and emergency repair of the defect with or without mesh [5]. Anterior abdominal wall hernias including appendix, which are rarely seen, are usually detected in the right side inguinal region and femoral canal. Although it is encountered by chance during elective repairs, it can also be encountered with appendicitis [6]. Encountering with the appendix is rare in incisional hernias. In most of these cases, the appendix is detected in Phannenstiel incision, and upper midline incisions of the abdomen such as open cholecystectomy [3, 7]. Detection of appendix is much rarer in hernias at the laparoscopic port site, and when we search at the literature, we encounter only three cases similar to our study. In the first case, appendix was found at the umbilical trocar entrance after laparoscopic sterilization on the 12th postoperative day; in the second case, it was found at the 5-mm trocar entrance after laparoscopic cholecystectomy, and in the third case, it was found in the incisional hernia sac at the right iliac fossa level where a 5-mm trocar drain was placed [3, 8, 9].

Conclusion

In conclusion, it is possible to detect the appendix in the hernia sac formed at the laparoscopic trocar entrance. In order to prevent the development of hernia at the trocar entrance, the facia at this region should be sutured in laparoscopic operations.

Declarations

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Conflict of interest: All authors declare no conflict of interest.

Patient consent statement: A written permission to publish has been obtained from the patient.

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