

Laparoscopic resection of appendicular stump after recurrent appendicitis.

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Abstract

Stump appendicitis is a rare entity not usually considered as a possibility when evaluating a patient with right lower quadrant pain and previous appendectomy, leading to delay in diagnosis and resulting in a high rate of morbidity.

Herein, we describe two cases of stump appendicitis that were managed laparoscopically and realized a brief review of the literature.

Key words: Appendicitis. Appendectomy. Stump appendicitis. Laparoscopy. Laparoscopic.

Introduction

Stump appendicitis is defined as the interval repeated inflammation of remaining residual appendiceal tissue after an appendectomy. This rare entity of unknown incidence was first described by Rose in 1945 (1). The interval between appendectomy and onset of stump appendicitis can range from weeks to many years (2). Patients typically are seen with signs and symptoms similar to appendicitis; however, the diagnosis is often delayed resulting in a high rate of perforation (3). Herein, we describe two cases of stump appendicitis that were managed laparoscopically and realized a brief review of the literature.

Case presentation 1:

A 18-year-old man presented in June 2008 with a history of diffuse abdominal pain, nausea, vomiting and fever (39°C). Abdominal ultrasound (US) revealed an acute appendicitis and an open appendectomy was performed. Final pathology revealed acute suppurative appendicitis.

Three months later, presented with diffuse abdominal pain, nausea, vomiting and diarrhea. The white blood cell count was 24000 cells/mm³ and the C reactive protein 490 mg/l. US and computed tomography (CT) revealed inflammatory changes in ileum. The patient was discharged from the emergency department with the diagnosis of ileitis and antibiotic therapy (Ciprofloxacin) was inserted.

Some days later returned to the emergency room with increased of abdominal pain, fever and leukocytosis. US revealed some mild thickening of the ileum terminal and the cecum with an inflamed appendiceal stump of 3 cm and a small leakage between the stump appendicitis and the ileum terminal. Intravenous fluid resuscitation and antibiotic therapy was initiated and the patient was hospitalized. A colonos-

copy was realized until the last 30 cm of the ileum and a Crohn's disease was ruled out.

Five months later a programme laparoscopy was performed. The stump appendix was subserous and quite adherent to the cecum. Laparoscopic appendectomy was performed with a stapler without incident. Final pathology revealed a 3 cm appendiceal stump with acute suppurative appendicitis (Fig. 1). He was discharged from the hospital on two days without complication and is now asymptomatic.



Fig.1: Inflamed appendiceal stump.

Case presentation 2:

A 65-year-old woman with surgical history of open appendectomy many years earlier, right inguinal hernia repair, hysterectomy with double adnexectomy and incisional hernia repair, was seen at the emergency department with a 12-hour history of right lower abdominal pain and febrile. The abdomen was diffusely tender with rebound tenderness, with maximal guarding over the appendectomy scar and a small periumbilical incisional hernia that was reduced.

The white blood count was 11300 cells/mm³ and the C

reactive protein was 125 mg/l. CT scan of the abdomen revealed marked inflammatory changes surrounding the tip of the cecum, with a high density lesion consistent with appendicolith and acute appendicitis (Fig 2).

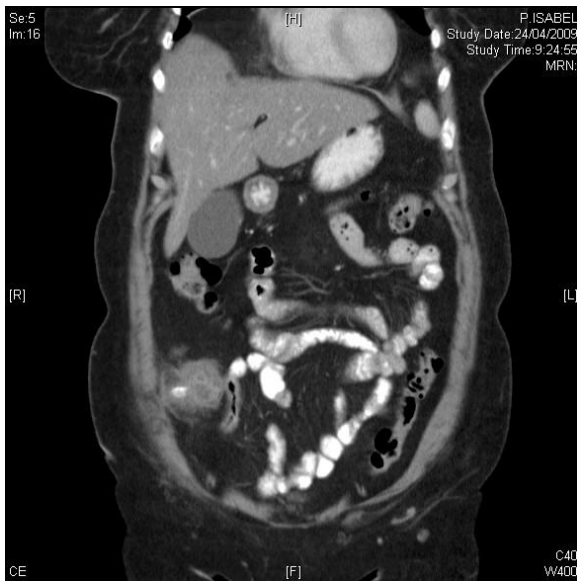


Fig 2. High density lesion consistent with appendicolith and acute appendicitis.

Intravenous fluid resuscitation and antibiotic therapy was initiated and the patient was hospitalized during 4 days. A colonoscopy was realized and a cecum cancer was ruled out. One year later a programme laparoscopy was performed, finding a retrocecal and subserous appendicular stump of approximately 3 cm with many adhesions to the right inguinal region. A laparoscopic incisional hernia repair and appendectomy was performed with a stapler without incident. She was discharged from the hospital on three days without complications and is now asymptomatic.

Discussion

Stump appendicitis is a rare entity not usually considered as a possibility when evaluating a patient with right lower quadrant pain and previous appendectomy, leading to delay in diagnosis and resulting in a high rate of morbidity (3-5).

Typically, patients present with signs and symptoms similar to acute appendicitis. However, despite the newer technology, pre-operative diagnosis of appendiceal stump pathology remains extremely difficult (2,6,7). In this way, in our first case, even the performing of an US and CT scan was firstly negative for stump appendicitis.

The suggested causes of stump appendicitis include insufficient inversion of the stump, a remnant of excessive length or insufficient laparoscopic appendectomy (2,3,8).

Mangi and Berger (9) suggest that the incident can be minimized by identification of the base of the appendix and by leaving an appendiceal stump less than 3 mm long.

Stump appendicitis may occur after either open or laparoscopic appendectomy. Recent reports indicate that it may become more common with widespread use of the laparoscopic technique (3,8,10). However, the majority of reported cases (76%) have occurred after previous open appendectomy (3). In our opinion, laparoscopic may provide a better visualization of the field, so we think the incidence should not be increased if laparoscopic appendectomy is performed properly.

Although some studies demonstrate that intramural abscess, intussusception, and postoperative adhesions can be avoided by simple ligation, others believe that inversion of the stump decreases contamination, secures closure of the cecal wall, decreases adhesions and minimizes bleeding (2,3,5). In our institution, the stump is routinely inverted during open appendectomies and simply stapled with the laparoscopic approach. Nowadays, prospective trials have shown no advantages gained by inverting the appendiceal stump.

Once the diagnosis has been made, the treatment of choice of stump appendicitis is the completion appendectomy but an ileocecectomy may be performed if the appendiceal base is not identified and the inflammation of the base involves the cecum (3,5). In spite of the successful of laparoscopic surgery, in case of stump appendicitis, open appendectomy is the most common intervention. Laparoscopic surgical treatment for stump appendicitis has rarely been reported (3,6,7,10,11), however, we consider it the best approach for this pathology.

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