

Laparoscopic Management of Stump Appendicitis after Open Appendectomy

Botianu Petre Vlah Horea¹, Botianu Ana Maria Voichita^{2*} and Boeriu Alina³

¹Surgical Clinic 4, University of Medicine and Pharmacy from Tirgu-Mures, Romania

²Department of Internal Medicine, University of Medicine and Pharmacy from Tirgu-Mures, Romania

³Gastroenterology Clinic, University of Medicine and Pharmacy from Tirgu-Mures, Romania

Abstract

Introduction: Stump appendicitis is a very rare complication after appendectomy with possible serious complications in the absence of a correct diagnosis.

Case Presentation: We present the laparoscopic diagnosis and treatment of an extremely rare complication after open appendectomy (remnant stump appendicitis). We report a female patient with a history of open appendectomy performed 7 months ago in another unit. She presented now with persistent typical signs of acute appendicitis, identical with those encountered before the open appendectomy. Repeated US and CT scans were normal. Due to the persistent complaints, a decision for exploratory laparoscopy was made. Intra-operatively we found some adhesions in the right iliac fossa and a 20 mm length appendicular stump which was adherent to the anterior abdominal wall. The stump was dissected, ligated at the base and removed using a 3 trocars approach and standard laparoscopy instruments. The postoperative course was favorable, resolution of the pain and no recurrence at a 3 years follow-up. The pathologic examination showed the typical histologic structure of an inflamed appendix.

Discussions: The diagnostic of stump appendicitis is a difficult one in the absence of a high index of suspicion. The case is interesting due to the rarity and the use of a laparoscopic approach to treat an incomplete open appendectomy.

Conclusions: Laparoscopy is useful in patients with persistent abdominal symptoms after open appendectomy. If an appendicular stump is present, it allows its identification and safe removal.

Keywords: Stump appendicitis; Appendectomy; Laparoscopy

Introduction

Appendicitis is a common disease with a highly standardised and simple treatment; however, in certain circumstances, its management may involve serious difficulties [1-3]. Stump appendicitis is a very rare complication of appendectomy that requires a reoperation and complete removal of the appendix [4,5]. We present a case of stump appendicitis after open appendectomy removed using a laparoscopic approach.

Case Presentation

We report a 41 years old female patient with a history of open appendectomy performed 7 months ago. According to the information gathered from the patient and the available medical records, it was a difficult open appendectomy that lasted 2.5 hours, performed for a gangrenous appendicitis with localized peritonitis. The patient received intravenous antibiotics for 7 days, being discharged on postoperative day 8. She presented now with persistent typical signs of appendicitis, identical with those encountered before the open appendectomy. At local examination, a healed 7 cm length scar was noted in the right iliac fossa, corresponding to a typical McBurney incision (Figure 1). Repeated US and CT scans were normal.

Due to the persistent complaints, a decision for exploratory laparoscopy was made (Figure 1). During the dissection of the adhesions from the right iliac fossa we found a 20 mm length appendicular stump whose tip was adherent to the anterior abdominal wall in the area of the scar from previous surgery, corresponding to the preoperative location of the pain. The stump was dissected with a hook and monopolar cautery, ligated at the base and removed using a 3 trocars approach and standard laparoscopy instruments. A left 20 mm diameter ovarian cyst with hemorrhagic content was also discovered and removed (Figures 2 and 3). The duration of the procedure was 90 minutes.

The postoperative course was favorable, with regain of transit after 24 hours and discharge after 4 days. The pathologic examination showed the typical histologic structure of an inflamed appendix (Figure 4). The complaints of the patient disappeared immediately after surgery, with no recurrence at a 3 years follow-up.

Discussions

The first case of stump appendicitis was published by Rose [6] in 1945, so at almost 50 years after this procedure has become widely accepted as the treatment of choice for acute appendicitis. The exact incidence of this complication is not known and many cases are probably not reported; however, in the published literature there are only case-reports and reviews. In a review of the English literature, Subramanian and Liang found only 61 cases, which demonstrates an obvious low incidence [7].

The main difficulty is the correct diagnosis [1,4,5]. Although many cases (including the one presented by us) may present with suggestive clinical signs, the diagnosis of appendicitis after appendectomy is difficult to accept by both the patient and the surgeon, which leads to a late diagnosis and an increased rate of complications [8]. As

***Corresponding author:** Botianu Ana Maria Voichita, 540139 Gheorghe Marinescu 66/1, Targu-Mures, Mures, Romania, Tel: +40741016626; E-mail: ancutaboti@yahoo.com

Received October 31, 2015; **Accepted** January 06, 2016; **Published** January 13, 2016

Citation: Botianu PVH, Botianu AMV, Boeriu C. Laparoscopic Management of Stump Appendicitis after Open Appendectomy. Journal of Surgery [Jurnalul de chirurgie]. 2016; 12(1): 37-38 DOI:[10.7438/1584-9341-12-1-8](https://doi.org/10.7438/1584-9341-12-1-8)

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Figure 1: Aspect of the abdomen of the patient showing the healed open appendectomy scar and the recently scars from the 3 trocars used to remove the appendicular stump using a laparoscopic approach.



Figure 2: Operative specimens – macroscopic aspect.



Figure 3: Macroscopic detail of the removed appendicular stump showing a clear lumen.

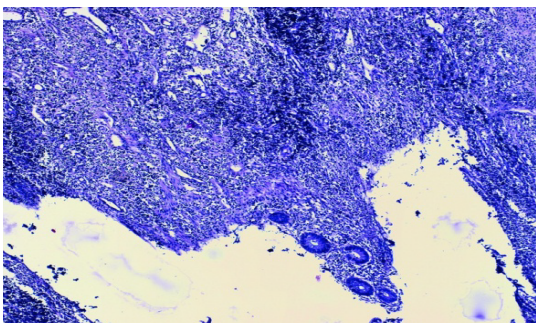


Figure 4: Microscopic aspect showing the typical structure of an inflamed appendix (H-E 20X).

demonstrated by our case, a high index of suspicion is the key to the early diagnosis of this entity [9]. In our patient, the exploratory laparoscopy proved to be a both diagnostic and therapeutic tool,

allowing an effective management before the occurrence of other complications.

Based on some case-reports, some authors suggest that this complication occurs more often after laparoscopic appendectomy due to the absence of a three dimensional field and the absence of tactile perception [10,11]. Although a steady statistical analysis is difficult to perform due to the rarity of this complication, the published reviews showed that this complication occurs after both laparoscopic and open appendectomy [4,8,12]. In fact, the laparoscopic approach is associated with a better visualisation due to the magnification. The key for preventing this complication is a clear visualisation of the base of the appendix [13]. In our case, laparoscopy was used to diagnose and treat a complication of open appendectomy.

Conclusions

The case is interesting due to the rarity and the use of the laparoscopic approach for the diagnosis and removal of the remnant appendicular stump after an open appendectomy. Laparoscopy is useful in patients with persistent abdominal symptoms after appendectomy. If an appendicular stump is present, it allows both an early diagnosis before the occurrence of other complications and its safe removal.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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