Post-appendectomy appendicitis: A case report

Ali Safar, Abdulrahman Al-Aqeeli, Ahmad Al-Mass, Bader Al-Shaban

ABSTRACT

Introduction: Acute appendicitis is a common surgical emergency that requires intervention. The accurate diagnosis remains challenging in some cases despite advances in both minimally invasive surgery and radiology. Stump appendicitis is a rare complication after appendectomy. It is defined as the acute inflammation of the residual appendix. A small number of stump appendicitis cases have been reported.

Case Report: We report a case of stump appendicitis in a 42-year-old female, nine months following a laparoscopic appendectomy. She presented with a 24-hour history of abdominal pain, which started periumbilically and then localized to the right lower quadrant. Physical examination showed tenderness in the right iliac fossa with evidence of rebound and guarding. Laboratory studies were remarkable for leukocytosis. Computed tomography scan of the abdomen and pelvis showed a remnant appendicular segment with a maximum cross diameter of about 1.2 cm, associated with local inflammatory changes and surrounding fat stranding. An open stump appendectomy was performed uneventfully.

Conclusion: Stump appendicitis is a rare but serious complication of appendectomy. It can represent a diagnostic dilemma if the treating clinician is unfamiliar with this rare clinical entity. Prompt recognition is important to avoid serious complications. Proper identification of the appendicular base intraoperatively and leaving the appendix stump shorter than 5 mm decrease the risk of stump appendicitis.

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CASE REPORT

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Introduction: Acute appendicitis is a common surgical emergency that requires intervention. The accurate diagnosis remains challenging in some cases despite advances in both minimally invasive surgery and radiology. Stump appendicitis is a rare complication after appendectomy. It is defined as the acute inflammation of the residual appendix. A small number of stump appendicitis cases have been reported. **Case Report:** We report a case of stump appendicitis in a 42-year-old female, nine months following a laparoscopic appendectomy. She presented with a 24-hour history of abdominal pain, which started periumbilically and then localized to the right lower quadrant. Physical examination showed tenderness in the right iliac fossa with evidence of rebound and guarding. Laboratory studies were remarkable for leukocytosis. Computed tomography scan of the abdomen and pelvis showed a remnant appendicular segment with a maximum cross diameter of about 1.2 cm, associated with local inflammatory changes and surrounding fat stranding. An open stump appendectomy was performed uneventfully. **Conclusion:** Stump appendicitis is a rare but serious complication of appendectomy. It can represent a diagnostic dilemma if the treating clinician is unfamiliar with this rare clinical entity. Prompt recognition

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Keywords: Acute appendicitis, Completion appendectomy, Stump appendicitis

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INTRODUCTION

Acute appendicitis is a common surgical emergency that requires intervention. The lifetime risk of developing appendicitis is about 7% [1]. The accurate diagnosis of appendicitis remains challenging in some cases despite advances in both minimally invasive surgery and radiology [2]. One rare complication after appendectomy is stump appendicitis, which is defined as the acute inflammation of the residual appendix [3]. Although the signs and symptoms do not differ from those of acute appendicitis, the diagnosis is often not considered because of the history of previous appendectomy [4]. A small number of stump appendicitis cases have been reported [5]. We report a 42-year-old female with preoperatively diagnosed stump appendicitis by computed tomography scan, who underwent a laparoscopic appendectomy nine months ago.

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CASE REPORT

A 42-year-old female presented to Mubarak Al-Kabeer hospital on 13/4/2017 with a 24-hour history of abdominal pain. The pain started periumbilically and then localized to the right lower quadrant. It was associated with nausea and episodes of chills and rigors. Her medical history was noncontributory, but surgical history was notable for a laparoscopic appendectomy that was performed nine months earlier at the same hospital.

On admission, the patient was afebrile and her vital signs were otherwise normal. Physical examination revealed tenderness in the right iliac fossa with evidence of rebound and guarding. Routine laboratory studies were remarkable for a white blood cell count of $16 \times 10^9/L$ with 84% neutrophils. Urinalysis was negative.

Computed tomography (CT) scan of the abdomen and pelvis was performed with rectal and intravenous contrast, which showed a remnant appendicular segment at the base with a maximum cross diameter of about 1.2 cm (Figure 1). It also showed local inflammatory changes and surrounding fat stranding (Figure 2). A preoperative diagnosis of stump appendicitis was made on the basis of the CT study.

Surgical exploration performed after completion of the CT scan showed a 1–2 cm long inflamed appendiceal stump. An open stump appendectomy was performed uneventfully. Stump appendicitis was also confirmed on gross pathologic and histologic examination of the resected specimen. No evidence of gross perforation was present. The postoperative course was uneventful, and the patient was discharged 72 hours later.

Figure 1: Coronal view showing the cross diameter of the appendix stump (about 1.2 cm).

Figure 2: Contrast-enhanced computed tomography scan of the abdomen showing enlarged appendix stump with local inflammatory changes.

DISCUSSION

Appendectomy is one of the most commonly performed emergent surgical procedures. The first appendectomy was performed by Claudius Amyand in 1735. The clinical features and pathological abnormalities of appendicitis were described by Reginald Fitz in 1886. In 1945, Rose was the first to describe stump appendicitis in two patients who had undergone appendectomy for acute appendicitis [6].

The appendix arises from the postero-medial wall of the cecum about 3 cm below the ileocecal valve. The base of the appendix can be misidentified intraoperatively. The variable position and subserous length of the appendix, combined with acute inflammation, may result in this misidentification. Following the teniae coli on the cecum helps in identifying the true appendicular base. Generally, an appendix stump shorter than 5 mm is associated with a lower risk of stump appendicitis [7, 8].

Stump appendicitis can represent a diagnostic dilemma if the treating physician is unfamiliar with this rare clinical entity. Patients present with signs and symptoms of appendicitis or acute abdomen along with a history of previous appendectomy. The presence of an appendectomy scar does not rule out the possibility of stump appendicitis [9]. Prompt recognition is important to avoid serious complications like perforation and peritonitis [8].

Radiological evaluation by ultrasound and CT scan helps in the preoperative diagnosis of stump appendicitis

[5, 10]. Computed tomography scan of the abdomen is more specific than ultrasound for the accurate preoperative diagnosis of stump appendicitis because it excludes other causes of acute abdomen. Computed tomography findings include pericecal inflammatory changes, abscess formation, fluid in the right paracolic gutter and cecal wall thickening [7]. Completion appendectomy either by open or laparoscopic technique is the treatment of choice for stump appendicitis [11].

CONCLUSION

Stump appendicitis is a rare but serious complication of appendectomy. Patients present with signs and symptoms of appendicitis or acute abdomen along with a history of previous appendectomy. The diagnosis can be missed or delayed if the physician is unaware of this rare clinical entity. Prompt recognition is important to avoid serious complications. Proper identification of the appendicular base intraoperatively and leaving the appendix stump shorter than 5 mm decrease the risk of stump appendicitis.

Author Contributions

Ali Safar – Substantial contributions to conception and design, Drafting the article, Final approval of the version to be published

Abdulrahman Al-Aqeeli – Acquisition of data, Revising it critically for important intellectual content, Final approval of the version to be published

Ahmad Al-Mass – Acquisition of data, Revising it critically for important intellectual content, Final approval of the version to be published

Bader Al-Shaban – Acquisition of data, Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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