

Gone but Not Forgotten: Acute Appendicitis Postappendectomy

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A 33-year-old man presented for evaluation of a 3-day history of progressive and radiating right lower quadrant abdominal pain.

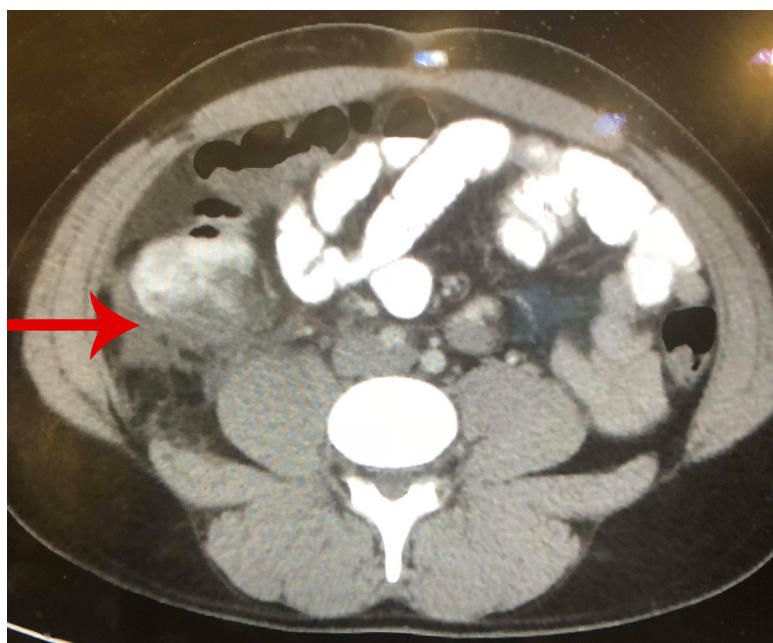


Figure 1. Axial view of computed tomography scan showing phlegmonous process in the right lower quadrant.

Acute appendicitis is a common condition emergency physicians (EPs) encounter in the ED, and it is also one of the most common general surgeries.¹ Although stump appendicitis is a rare, long-term complication of appen-

dectomy, it should always be included in the differential diagnosis of patients presenting with right-sided abdominal pain and a history of appendectomy. Delays in diagnosing stump appendicitis can lead to perforation, gangrene, and sepsis.²

Case

A 33-year-old previously healthy man, whose medical history was significant for an appendectomy 6 months earlier, presented to the ED with progressive and worsening right lower quadrant abdominal pain that radiated to his right testicle. The patient stated that the pain started 3 days prior while he was lifting a bale of hay. He further noted having a fever of 102°F, nausea, and vomiting hours prior to his arrival at the ED.

Upon presentation, the patient's vital signs were: heart rate, 89 beats/min; respiratory rate, 17 breaths/min; blood pressure, 132/84 mm Hg; and temperature, 98.9°F. Oxygen saturation was 98% on room air. Physical examination revealed exquisite tenderness in the right lower quadrant and suprapubic region. The testicular examination and the remainder of the physical examination were normal.

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Author's Disclosure Statement: The author reports no actual or potential conflict of interest in relation to this article.

DOI: 10.12788/emed.2018.0089

Laboratory evaluation included a complete blood count and urinalysis, the results of which were significant for an elevated white blood cell count of $17 \times 10^9/L$, microscopic hematuria, trace leukocyte esterase, and ketones.

A computed tomography (CT) scan of the abdomen and pelvis with intravenous (IV) and oral contrast demonstrated a phlegmonous process surrounding the surgical site, which was concerning for stump appendicitis. The terminal ileum and colon were noted to be normal (**Figures 1 and 2**).

The patient was started on IV fluids and IV antibiotics, and received Zosyn in the ED. Surgical service was consulted, and the patient was admitted to the hospital where he continued nonoperative treatment with IV ciprofloxacin and metronidazole. The patient was discharged home on hospital day 3 without further complication. A repeat CT scan was taken of the abdomen and pelvis 3 weeks after discharge, and demonstrated complete resolution of the inflammatory process at the appendiceal stump with chronic scarring.

Discussion

Approximately 7% of patients who present to the ED with abdominal pain are diagnosed with appendicitis.³ Although appendectomy is one of the most common surgical procedures, stump appendicitis is a rare postsurgical complication, with a reported incidence of 1 in 50,000 cases.^{4,5}

Stump appendicitis is an acute inflammation of the residual appendicular stump; the incidence of stump perforation is approximately 60% to 70%.^{4,6} Thus, stump appendicitis has a high morbidity and complication rate. Unfortunately, though stump appendicitis is a condition in which timely diagnosis and intervention are essential to prevent morbidity, due to its rarity and low occurrence, there is often a delay in diagnosis. It is therefore important that EPs include stump appendicitis in the differential diagnosis of patients present-

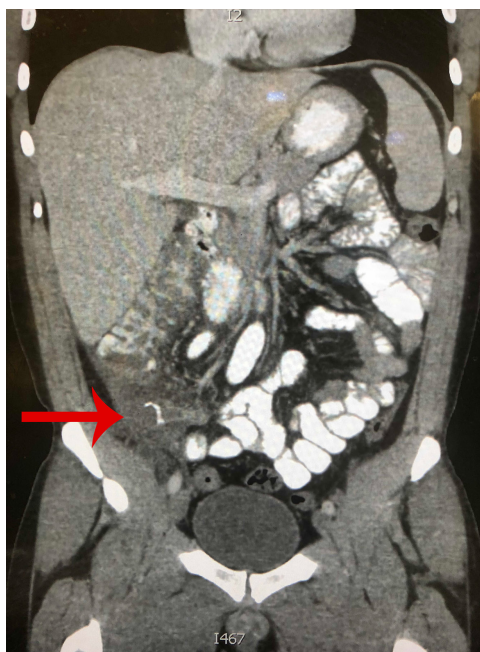


Figure 2. Coronal view of computed tomography scan showing area of concern for stump appendicitis around the previous surgical site.

ing with right-sided abdominal pain and a history of appendectomy.

Stump appendicitis was initially described by Rose et al in 1945.² This condition is underreported, and the exact causes are still unclear. Of the reported cases of stump appendicitis, approximately 66% developed following an open surgical appendectomy;⁵ therefore, complicated surgery or difficult dissection of the appendix is considered a risk factor for stump appendicitis. Conversely, adequate visualization of the appendiceal base during appendectomy and a stump measuring less than 3 to 5 mm^{1,4} are associated with a lower risk for stump appendicitis.

Stump appendicitis can develop as early as a few days postappendectomy or as late as 50 years postappendectomy. Patients with stump appendicitis present with signs and symptoms similar to that of acute appendicitis.^{2,4,7} Diagnosis can be made through ultrasound or CT studies, though CT is the preferred modality due to its higher speci-

ficity and ability to exclude other causes of right-sided abdominal pain.⁴

Management

Surgical intervention to remove the appendiceal stump is typically the preferred treatment. However, as with our patient, cases of successful and uncomplicated medical management have been reported.^{1,2,4}

Conclusion

While stump appendicitis is rare, there has been a rise in the number of reported cases over the past few years due to the increasing use and availability of CT.⁴ The diagnosis of stump appendicitis is time-critical to prevent associated complications of stump perforation, gangrene, and sepsis. It is therefore imperative that EPs consider this condition in the differential diagnosis despite a patient history of appendectomy. Our patient presented with a sudden onset of right lower quadrant abdominal pain ra-

diating to his testicle and microscopic hematuria, and stump appendicitis was not in our initial differential diagnosis.

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