Introduction

Acute bouts of appendicitis are the most common surgical emergency¹; unaddressed, serious complications will occur. This case will discuss the care for a ruptured appendicitis in a pediatric patient and how to properly diagnose appendicitis, thus preventing untoward outcomes.

Laparoscopic appendectomies are the current mainstay treatment for appendicitis cases². Uncomplicated appendicitis treatment in children specifically consists of intravenous rehydration, electrolyte abnormality correction, prophylactic antibiotics, and appendectomy within 24 hours of diagnosis³. However, in this case the appendicitis had previously ruptured and necessitated CT-guided drainage and acute inflammation resolution before the appendix could be surgically removed.

Case Description

HPI:

The patient is a 7-year-old female with no past medical history who presents to the emergency department with her parents for a 2-3 week history of fever, abdominal pain, and non-bloody diarrhea. 2-3 weeks prior to admission, patient developed cough, congestion, fever, and intermittent vomiting. Patient initially presented to the emergency department at that time and was diagnosed with the flu and promptly discharged home. After returning home, the abdominal pain waxed and waned but persisted. Pain was located periumbilically. Patient developed further worsening fevers (Tmax 104.0 F), chills, and daily episodes of diarrhea (1-2/day). Patient became increasingly tired with little energy or appetite. Patient presented to the emergency department again with these new long-standing symptoms.

Imaging:

Initial ultrasound and then subsequent CT imaging were taken in the ED which showed advanced perforated appendicitis with abscess formation (as seen marked with a red asterisk in both images to the right). Significant inflammatory changes in the lower abdomen and pelvis were seen. The appendix was dilated and extends to the anterior fluid collection. Mild left hydronephrosis with slightly delayed nephrogram secondary to compressive mass effect from the posterior rim-enhancing fluid collection was noted. Mild pelviectasis was seen on the right.

Pertinent Lab Findings:

Upon arrival to the ED, patient's temperature was 100.6 F, pulse was 140. CBC and CMP showed abnormal readings of Hgb at 10.3, Hct at 30.3, Plts at 643, Potassium at 3.2, and CRP at 18.5.

CT-guided drainage of numerous abscesses Grant Myres, OMS-IV & Chad Richards, OMS-IV 2020 ACOS Annual Clinical Assembly





Patient was admitted and underwent CT-guided percutaneous abscess drainage. Cultures of the fluid from drainage were sent and patient was started on Zosyn and Flagyl. Despite surgical drainage and IV antibiotics, patient's abscess and peritonitis complications persisted for 10 days until patient was stable and able to be discharged. After the inflammation had fully subsided, patient presented 1 month later for an uncomplicated follow-up appendectomy, resulting in complete resolution of symptoms.

Conclusion

This case, although seemingly trite, was selected because it highlights an important principle for attaining an ultimately accurate diagnosis in medicine. A healthy suspicion of each probable diagnosis must be maintained without presumptively narrowing in too quickly.

When the patient initially presented to the ED, the diagnosis of influenza lead to deleterious outcomes. A more comprehensive approach may have lead to the correct diagnosis of appendicitis before it ruptured, causing sepsis and abscess formation and necessitating surgical drainage. Appendicitis may variably present, with fever and RLQ pain as common symptoms but less regionally specific pain should not rule out appendicitis. Ultimately, drainage, antibiotics, and appendectomy lead to a fortuitous outcome. Recognizing the varied presentation of pediatric appendicitis could have prevented these complications.

1. Wesson, D. MD & Brandt, M. MD. "Acute appendicitis in children: Clinical manifestations and diagnosis," UpToDate article. Last updated: October 2019.

2. Martin, R. MD. "Acute appendicitis in adults: Clinical manifestations and diagnosis," UpToDate article. Last updated: April 2018.

3. Addiss, D, et al. "The epidemiology of appendicitis and appendectomy in the United States." American Journal of Epidemiology. November 1990;132(5):910-25



Outcomes / Hospital Course

References