

Visual Diagnosis in Emergency Medicine



PERFORATED APPENDICITIS DIAGNOSED AT THE BEDSIDE

Geoffrey E. Hayden, MD, RDMS,* W. Scott Russell, MD,† Daniel B. Park, MD,† and Bradley C. Presley, MD, RDMS*

*Department of Medicine, Division of Emergency Medicine, Medical University of South Carolina, Charleston, South Carolina and †Department of Pediatrics, Division of Pediatric Emergency Medicine, Medical University of South Carolina, Charleston, South Carolina

Reprint Address: Geoffrey E. Hayden, MD, RDMS, Department of Medicine, Division of Emergency Medicine, Medical University of South Carolina, 169 Ashley Avenue, MSC 300, Room 265E, Charleston, SC 29425

Acute appendicitis is the most common abdominal surgical emergency in both adults and children (1). It remains a diagnostic challenge, as evidenced by negative appendectomy rates of 2%–4% and a median appendiceal rupture rate of 35% in children (2). As an alternative to computed tomography, an “ultrasound first” approach is commonly described in the pediatric literature, including clinical practice guidelines regarding the work-up of pediatric patients with suspected appendicitis (3). We present a case of undifferentiated abdominal pain in an adult emergency department (ED) patient diagnosed as perforated appendicitis using clinician-performed ultrasound (CPUS).

CASE REPORT

An 18-year-old male presented to the ED with 5 days of progressive lower abdominal pain, worse in the right lower quadrant. The patient was anorexic but denied fever, vomiting, or diarrhea. His vital signs were normal, except for a heart rate of 109 beats/min. On physical examination, he was an ill-appearing male. His abdomen demonstrated diffuse lower quadrant tenderness to palpa-

tion, with guarding to the right lower quadrant. White blood cell count was 20,000/ μ L.

CPUS of the right lower quadrant was performed, with visualization of the appendix in a longitudinal axis (Figure 1, Video 1). In an axial (short-axis) plane, the appendix was noted to be 9.5 mm and noncompressible (Figure 2, Video 2). A curvilinear probe (5–2 MHz) was used to investigate an adjacent fluid collection notable for a disrupted appendiceal wall opening up into the fluid collection (Figures 3 and 4, Videos 3 and 4). A diagnosis of perforated appendicitis was made based on the CPUS examination.

An i.v. antibiotic (piperacillin-tazobactam) was initiated and the patient was subsequently taken directly from the ED to the operating room for laparoscopic appendectomy. The operative note and pathology report confirmed a perforated appendicitis. The patient was treated for 48 h with piperacillin-tazobactam and was then discharged home without complications.

DISCUSSION

Although there continues to be considerable practice variation in the imaging work-up of appendicitis, ultrasound remains an acceptable diagnostic modality in the evaluation of right lower quadrant pain with suspected appendicitis, according to the American College of Radiology Appropriateness Criteria (4). Studies generally estimate

Streaming video: Four brief real-time video clips that accompany this article are available in streaming video at www.journals.elsevierhealth.com/periodicals/jem. Click on Video Clips 1, 2, 3, and 4.

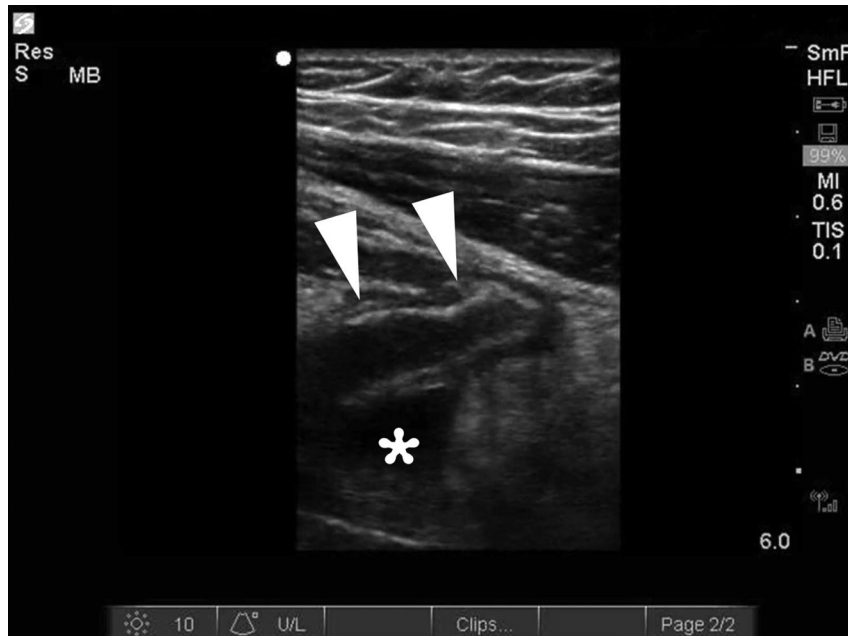


Figure 1. A linear probe is used to image the dilated appendix (arrowheads) in a longitudinal plane, with adjacent free fluid (asterisk).

a sensitivity of 70%–90% and a specificity of 93%–97% for the diagnosis of appendicitis (5,6). Fox et al. studied emergency physicians performing right lower quadrant ultrasounds on 132 patients with suspected appendicitis (7). The specificity of these clinician-performed studies was 90%, the sensitivity was 65%, positive predictive value was 84%, and negative predictive value was 76%.

For the appendix ultrasound, a high-frequency linear probe is placed over the right lower quadrant, or right iliac fossa, of the patient. A graded compression technique is applied to this region, with gentle and progressive compression to displace surrounding bowel and to assess appendiceal compressibility. The patient may be asked to place the probe directly over the area of greatest



Figure 2. A linear probe is used to view the dilated appendix (arrowheads) in a transverse plane, with calipers noting an anterior-posterior diameter of 9.5 mm. Peri-appendiceal free fluid is indicated by the asterisk.

Download English Version:

<https://daneshyari.com/en/article/3246228>

Download Persian Version:

<https://daneshyari.com/article/3246228>

[Daneshyari.com](https://daneshyari.com)