

Appendicitis: Clinical Pearls

A recent review article in the New England Journal of Medicine on Appendicitis contained several relevant pearls for the emergency physician:

1. Approximately 70-90% of patients with acute appendicitis have an elevated leukocyte count; leukocytosis has poor specificity for the diagnosis of acute appendicitis. The duration of pain has been shown to be an important predictor, since patients with appendicitis have a significantly shorter duration of pain than do patients with other disorders
2. In approximately 20% of patients who undergo exploratory laparotomy because of suspected appendicitis, the appendix is normal. When advanced age or female sex confounds the usual signs and symptoms of appendicitis, the error rate in managing pain in the right lower quadrant can approach 40 percent.
3. In a retrospective study of signs & symptoms that differentiated appendicitis from pelvic inflammatory disease in women with abdominal pain who were seen in the ED, the findings that were most predictive of PID included a history of the disorder, a history of vaginal discharge, vaginal discharge on examination, urinary symptoms/abnormalities on urinalysis, tenderness outside the right lower quadrant, and cervical-motion tenderness. A history of anorexia was not helpful in differentiating appendicitis from pelvic inflammatory disease
4. A carefully performed ultrasonographic study has a sensitivity of 75-90%, a specificity of 86-100%, and a positive predictive value of 89-93% for the diagnosis of acute appendicitis, with an overall accuracy of 90-94%. In addition, ultrasonography may identify alternative diagnoses, such as pyosalpinx or ovarian torsion, in as many as 33% of female patients with suspected appendicitis. Although appendicitis may be ruled out if the appearance of the appendix is normal on ultrasonography, a normal appendix is seen in less than 5 percent of patients. Therefore, the failure to see the appendix, whether it is diseased or normal, fundamentally limits the usefulness of ultrasonography for the diagnosis of appendicitis.

5. For patients with suspected appendicitis, spiral CT has a sensitivity of 90-100%, a specificity of 91-99%, a positive predictive value of 95-97%, and an accuracy of 94-100%. Among patients who did not have appendicitis, an alternative diagnosis was detected more frequently with CT than with ultrasonography. In cases in which there were conflicting interpretations of the CT and ultrasonographic findings, the CT findings were more frequently correct. CT has demonstrated superiority over transabdominal ultrasonography for identifying appendicitis, associated abscess, and alternative diagnoses. The use of ultrasonography is best reserved for the evaluation of women who are pregnant and women in whom there is a high degree of suspicion of gynecologic disease.

6. Whether CT should be performed with the use of intravenous iodinated contrast material or enteric contrast material is a controversial matter. Recent work indicates that intravenous contrast material improves the delineation of a thickened appendiceal wall, as well as the detection of inflammation within and surrounding the appendix, leading to improved diagnostic accuracy. The primary purpose of using enteric contrast material is to permit definitive identification of the terminal ileum and cecum, since terminal ileitis can mimic appendicitis both clinically and radiographically. The enteric contrast material can be delivered orally or rectally. Some suggest scanning solely in the region of the appendix; others suggest scanning the entire abdomen and pelvis. The spiral CT technique with slice thicknesses of no more than 5 mm is critical for accurate imaging of acute appendicitis.

Source: Paulson EK, et al. Suspected Appendicitis NEJM 2003; 348:236-242