Acute Appendicitis: Atypical Presentations and Mimics

Michael N. Patlas, MD, FRCPC (1), Christine O. Menias, MD (2), Sanjeev Bhalla, MD (3), Abdullah Alabousi, MD (1), Douglas S. Katz, MD, FACR (4)

1. McMaster University, Hamilton, ON, Canada
2. Mayo Clinic, Scottsdale, AZ, USA
3. Mallinckrodt Institute of Radiology, St. Louis, MI, USA
4. Winthrop University Hospital, Mineola, NY, USA
Disclosure Statement

• The authors have no affiliations, sponsorships, honoraria, monetary support or conflict of interest from any commercial source
Appendicitis is a common entity

Decreasing emphasis on clinical and laboratory presentation (3 from 4 patients referred to CT do not have disease)

Preoperative diagnosis relies on imaging

Challenging diagnosis in some cases
Learning Objectives

1. To illustrate critical imaging findings of acute appendicitis on Multiple Detector Computed Tomography (MDCT)

2. To discuss common mistakes in interpretation of MDCT in patients with acute RLQ pain

3. To review potential mimics of acute appendicitis
Why MDCT?

• Very low negative appendectomy rate in patients with preoperative MDCT: 1.7%

• High NPV for MDCT even when the appendix is not clearly identified

• Non visualization of appendix negative for appendicitis in 98%
Quiz Question: Who Has Acute Appendicitis?

A. Yes
B. No
C. Yes
Multi-Planar Reformations Make it Easier
(same patients as on prior slide)
Teaching Point: Inflamed appendix was misinterpreted as terminal ileitis
Distended Appendix Does Not Equal Appendicitis

12 mm
Note Interval Change in Caliber

8/2007
12mm
Distended Appendix without Evidence of Inflammation

6/2012
15mm

6/2012
15 mm
Acute Appendicitis
Tip Appendicitis Complicated by Abscess
Tip Appendicitis

- Present in 4.5%-8% of patients with acute appendicitis
- Unclear pathophysiology
- Same degree of morbidity as inflammation of the entire appendix
- Close attention to all portions of appendix from its origin to the distal portion
Original Presentation                  Stump Appendicitis
two months later
Stump Appendicitis

• Interval re-inflammation of any residual appendiceal tissue after appendectomy

• 63 % after open appendectomy and 37 % after laparoscopic appendectomy

• Mean time between initial appendectomy and recurrent symptoms is 10 years; range is 4 days to 50 years
Left-sided Appendicitis
Left-sided Appendicitis

- Atypical clinical symptoms because of the altered anatomy

- The CT findings of left-sided appendicitis are very similar to those of right-sided appendicitis, except for the opposite location

- Association with two types of congenital anomalies-situs inversus and malrotation
Appendicitis in Hernia
Appendicitis in Hernia

• The appendix is found in up to 1% of external hernia sacs, but appendicitis is found in only 0.13% of such sacs

• Debate as to whether the hernia is incidental, or if appendicitis is caused by compression from the hernia

• Usually misdiagnosed on physical examination as incarcerated hernia
Mimics: Hernia

Spigelian hernia

Obturator hernia
Mimics: Omental Infarct
Mimics: Mesenteric Adenitis
Lessons Learned

• Normal appendiceal tip is bulbous in configuration and is expected to be wider in diameter than the majority of the appendix

• Presence of oral contrast within the appendix argues against acute appendicitis and can be used as supporting evidence in equivocal cases
Conclusions

• Preoperative diagnosis of acute appendicitis relies on imaging

• Oral contrast within appendix mitigates against “itis”

• Appendiceal caliber alone is not a reliable indicator of appendicitis
References


