

# Acute Appendicitis: Atypical Presentations and Mimics

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Diagnostic Imaging



# Disclosure Statement

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# Introduction

- 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

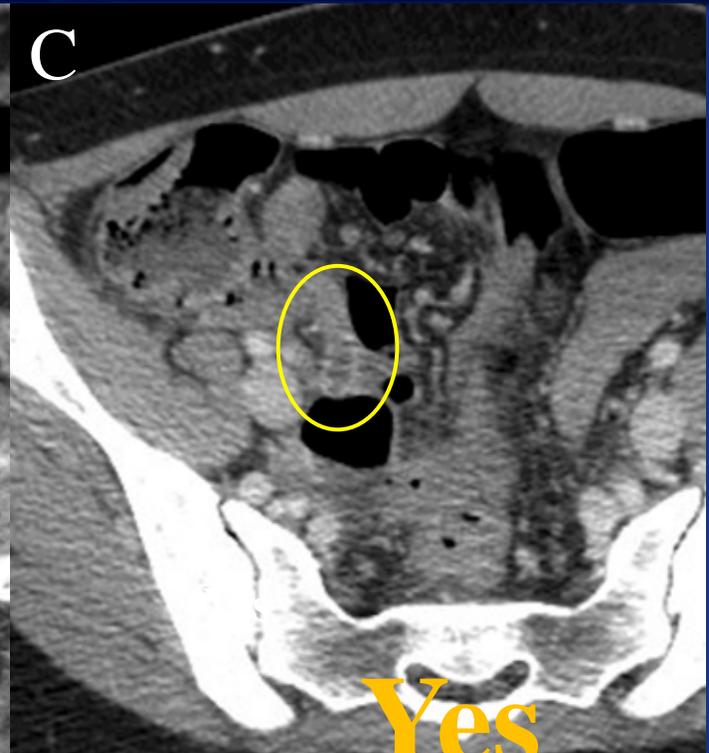
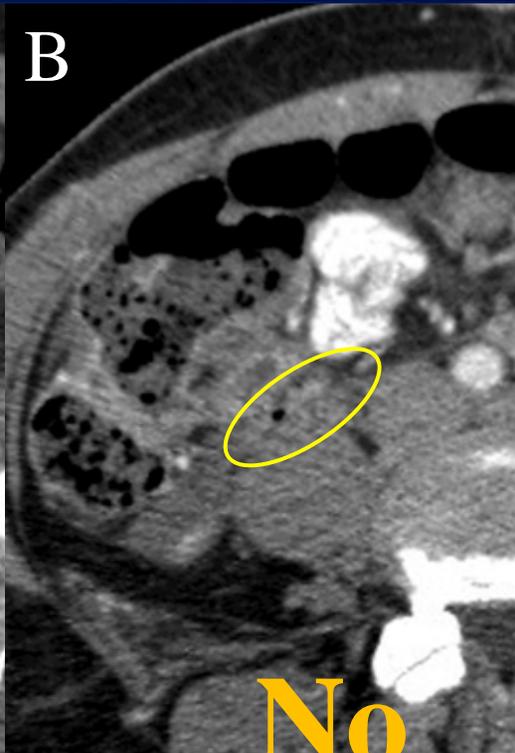
# Learning Objectives

- 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%**

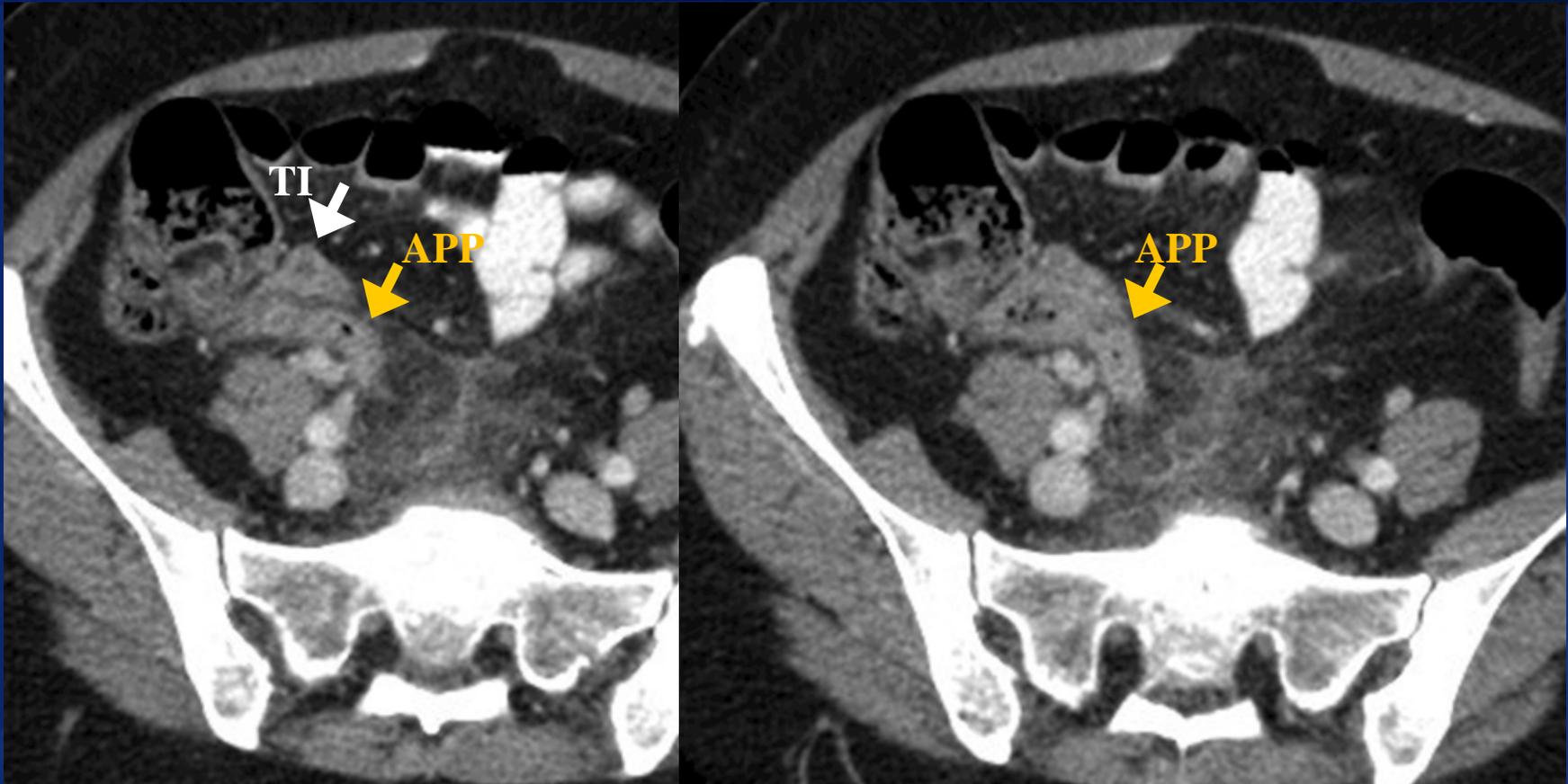
# Quiz Question: Who Has Acute Appendicitis?





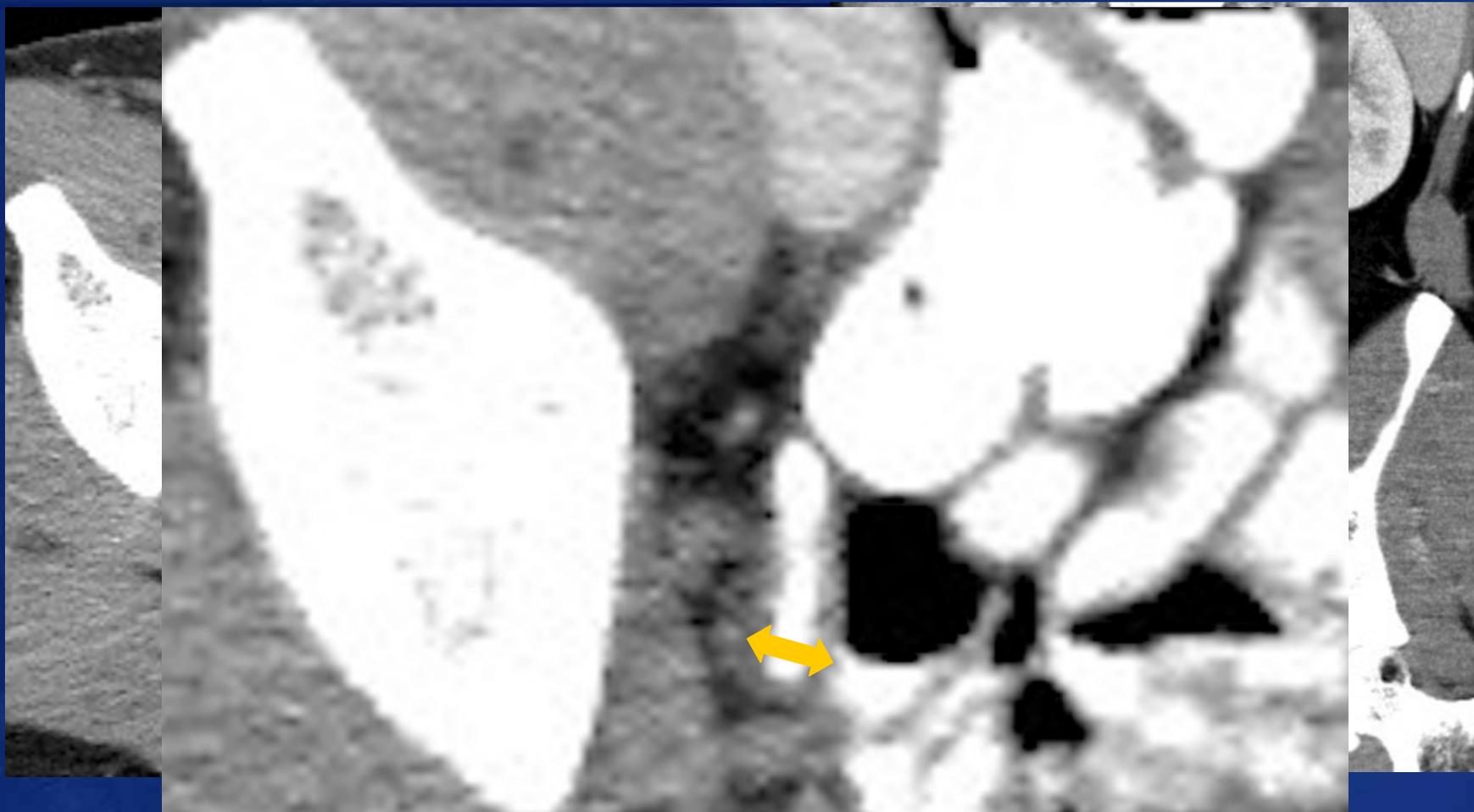
**Multi-Planar Reformations Make it Easier  
(same patients as on prior slide)**

# Crohn's Disease???



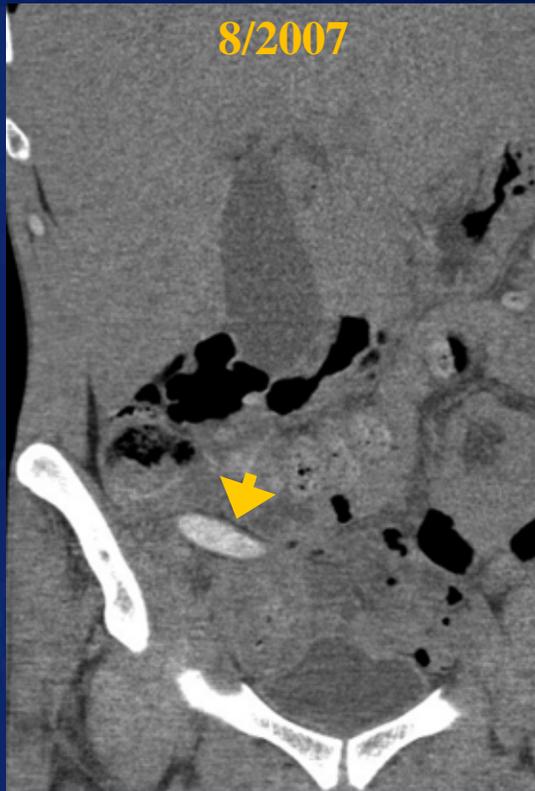
**Teaching Point: Inflamed appendix was misinterpreted as terminal ileitis**

# Distended Appendix Does Not Equal Appendicitis



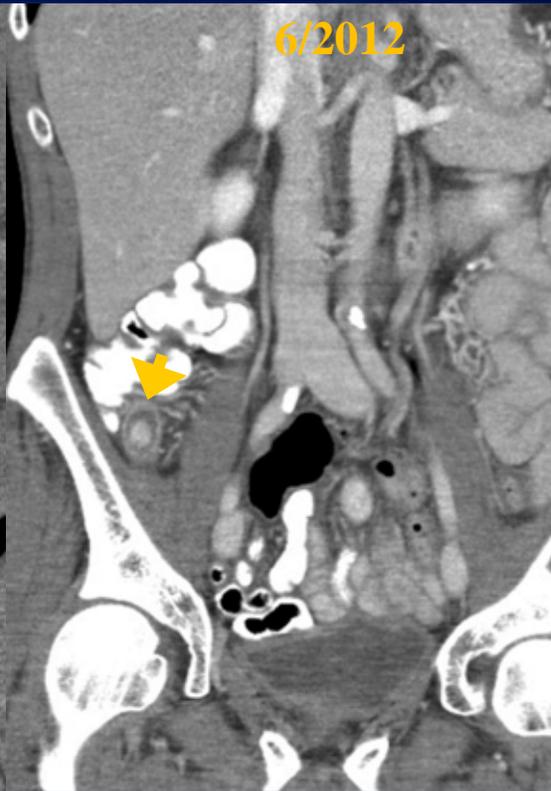
12 mm

# Note Interval Change in Caliber

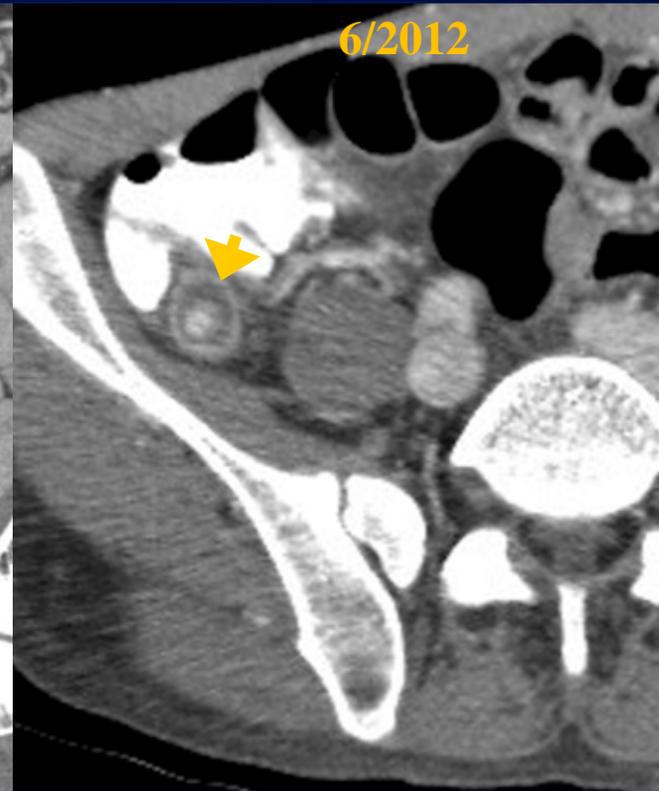


**12mm**

**Distended Appendix  
without Evidence of  
Inflammation**



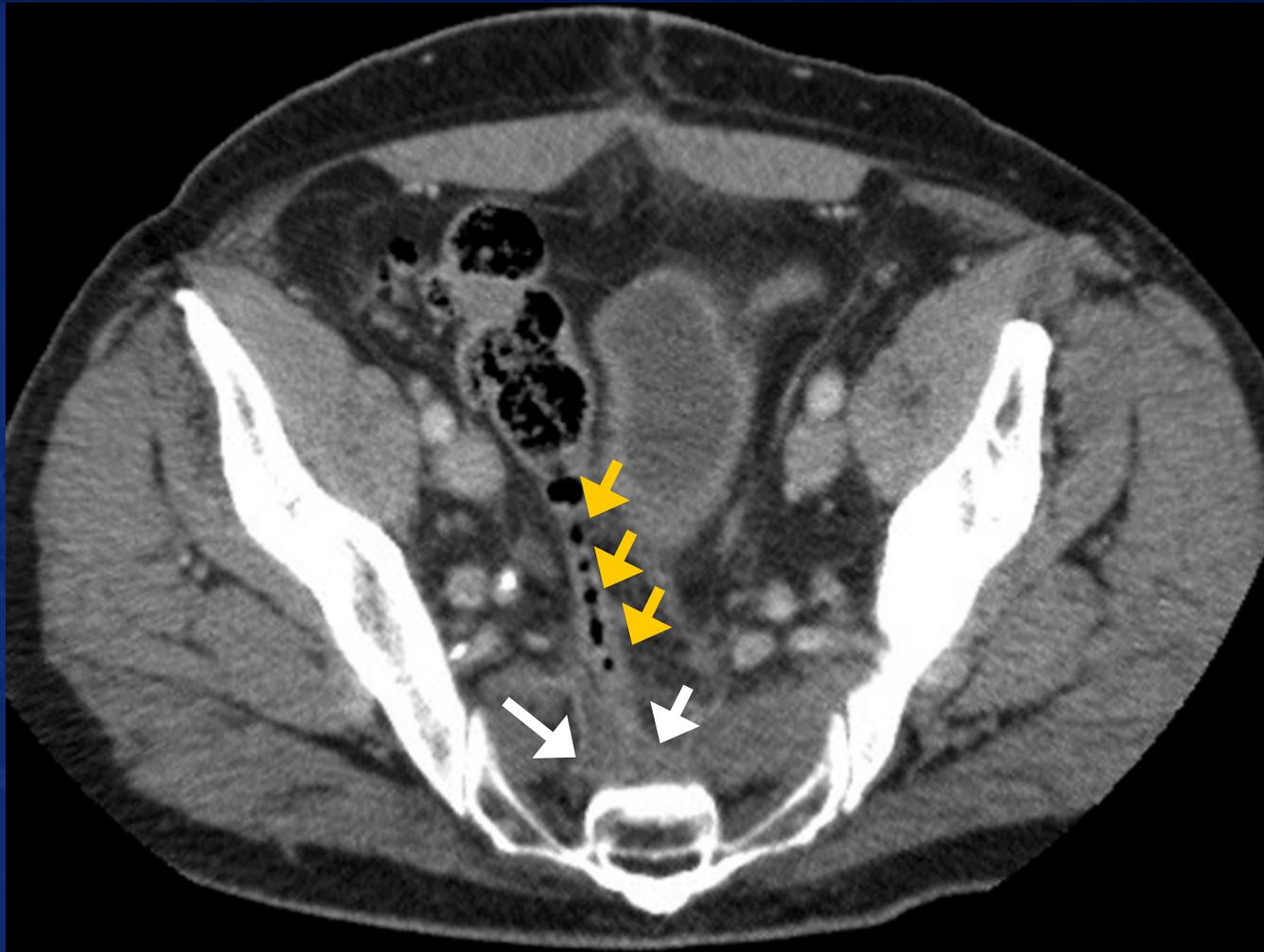
**15mm**



**15 mm**

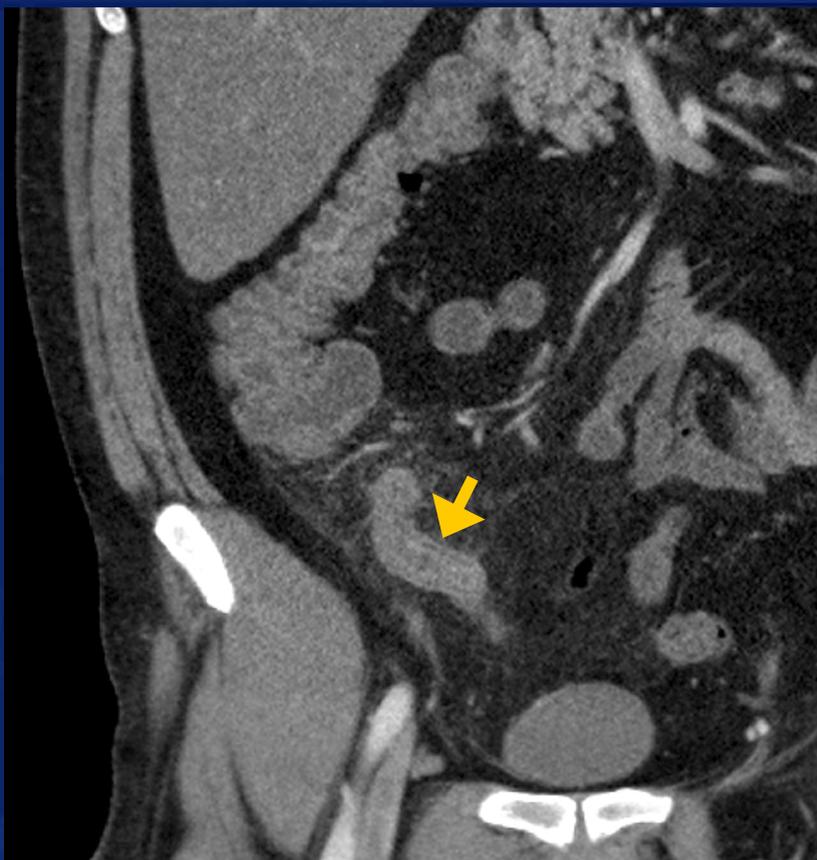
**Acute Appendicitis**

# Tip Appendicitis Complicated by Abscess

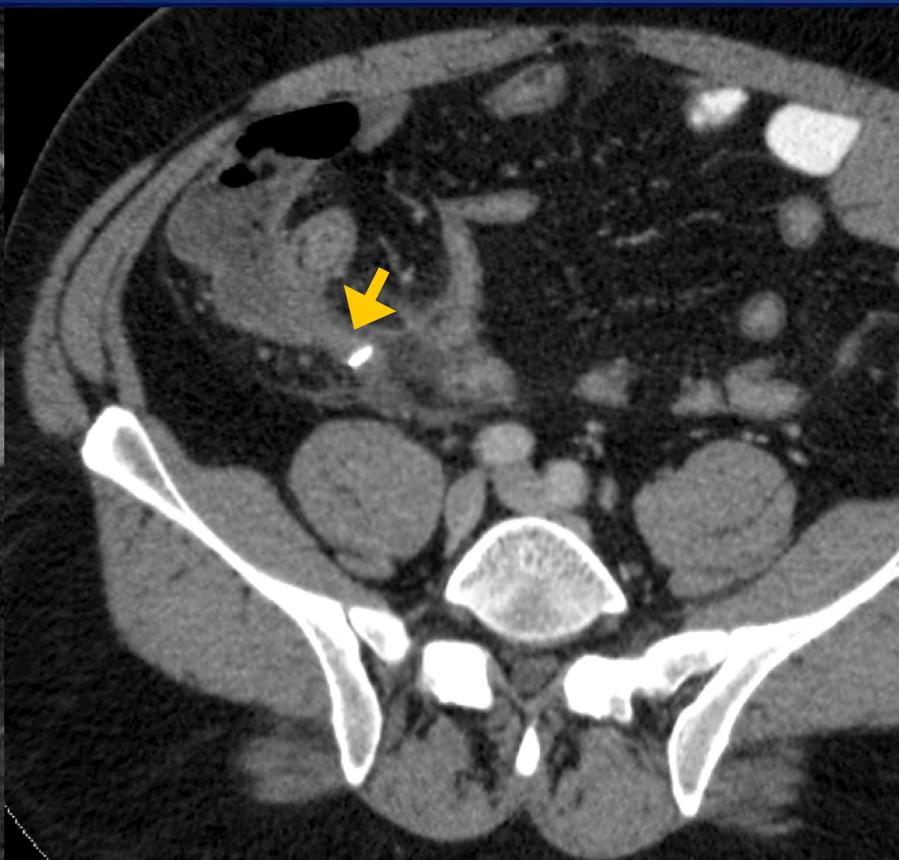


# Tip Appendicitis

- 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**

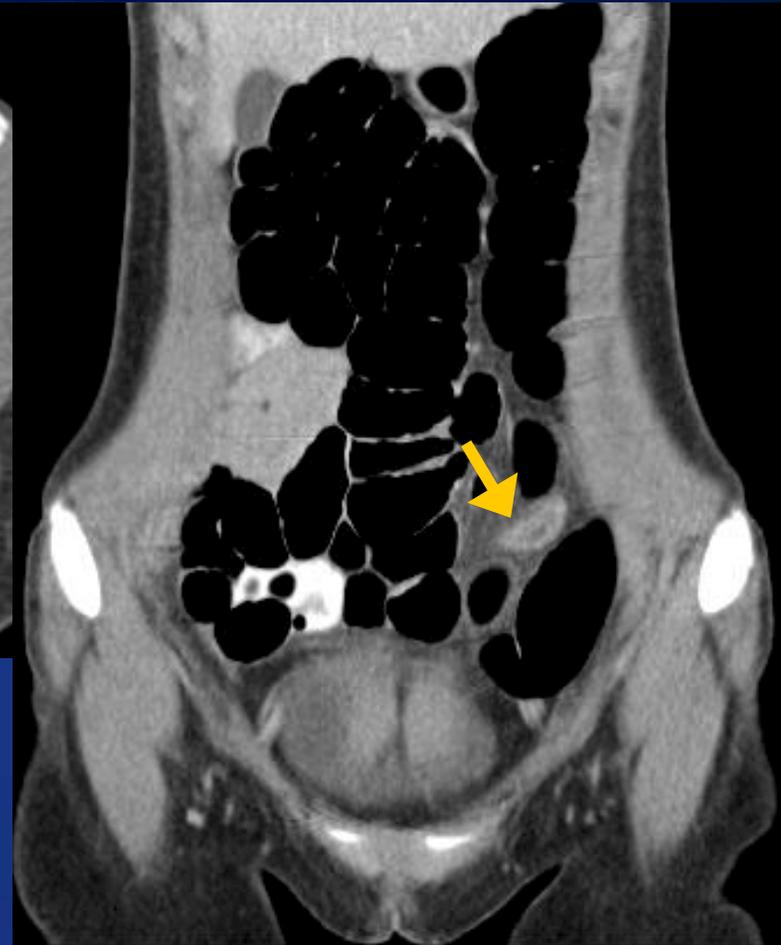
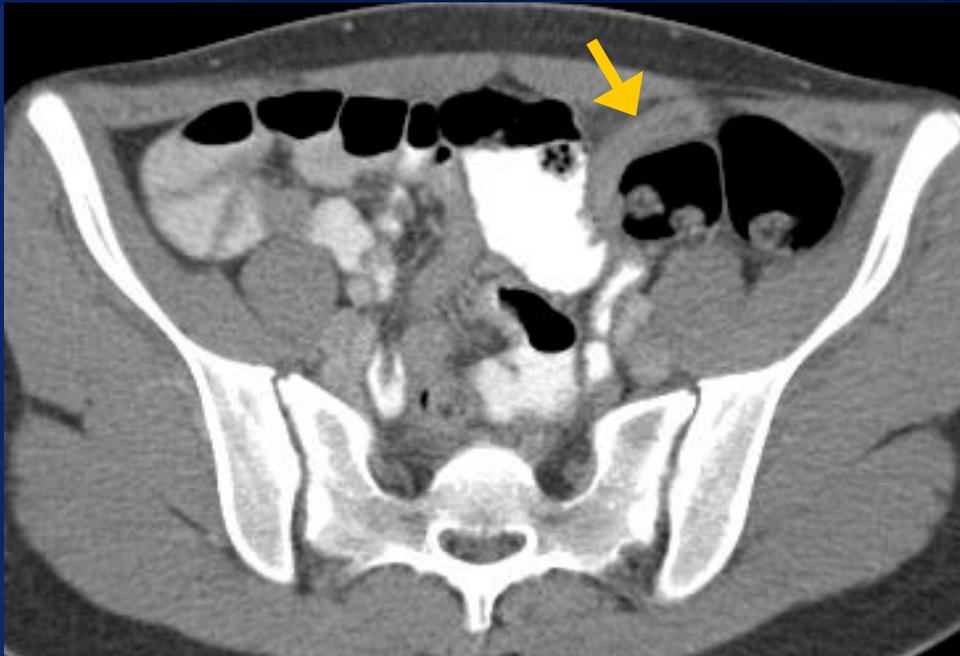


**Stump Appendicitis  
two months later**

# 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**

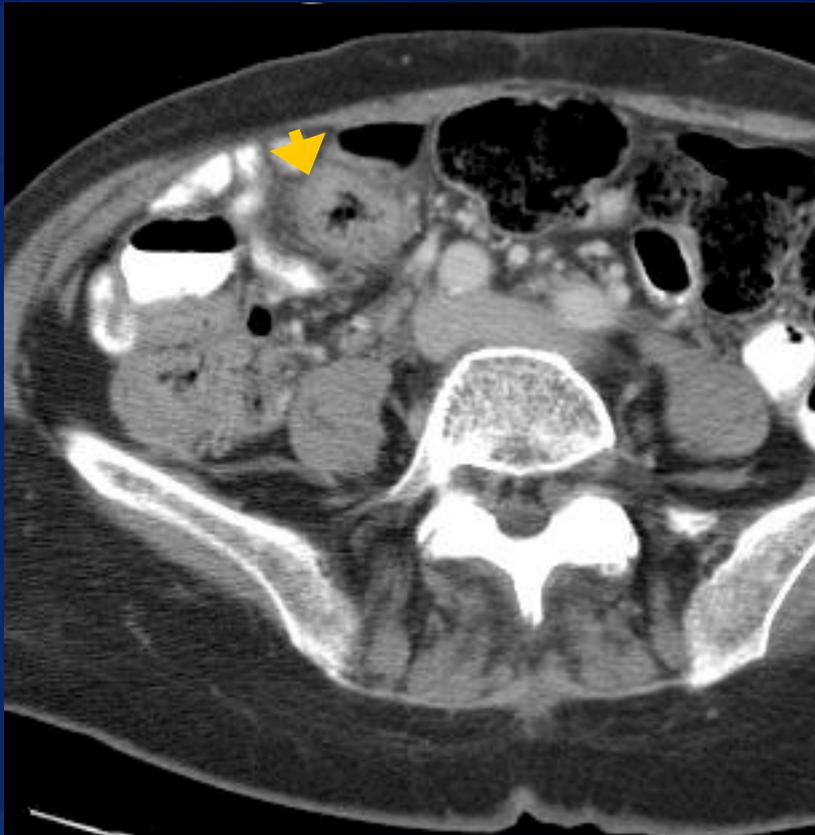
# Appendicitis in Hernia



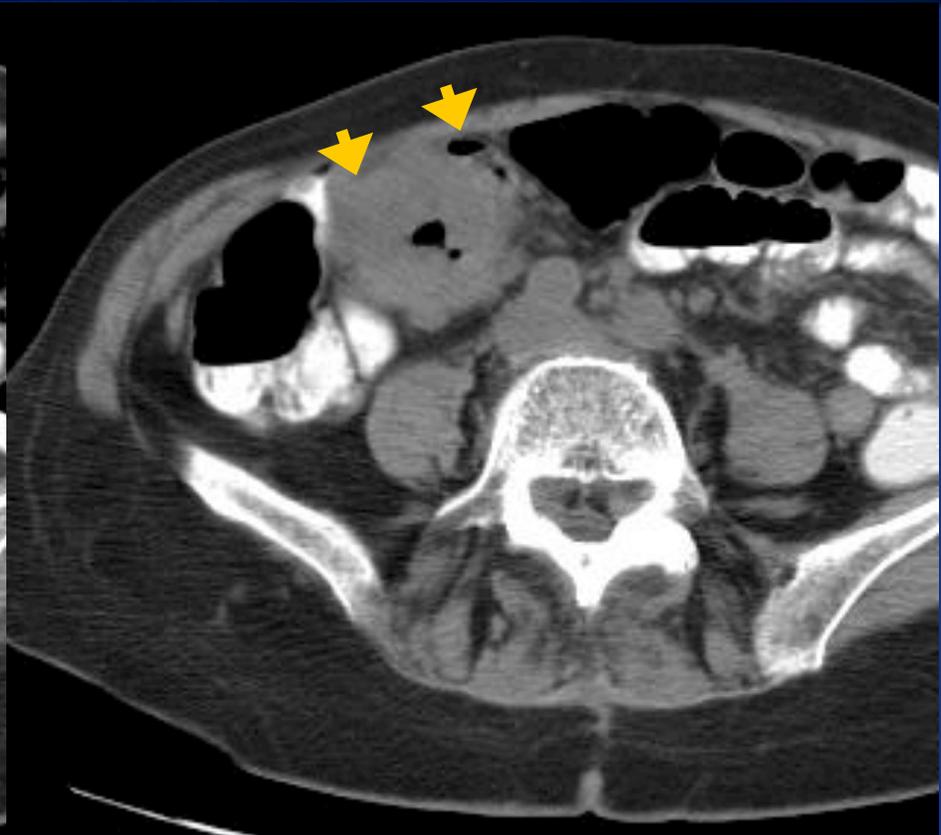
# Appendicitis in Hernia

- 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: Colon Cancer

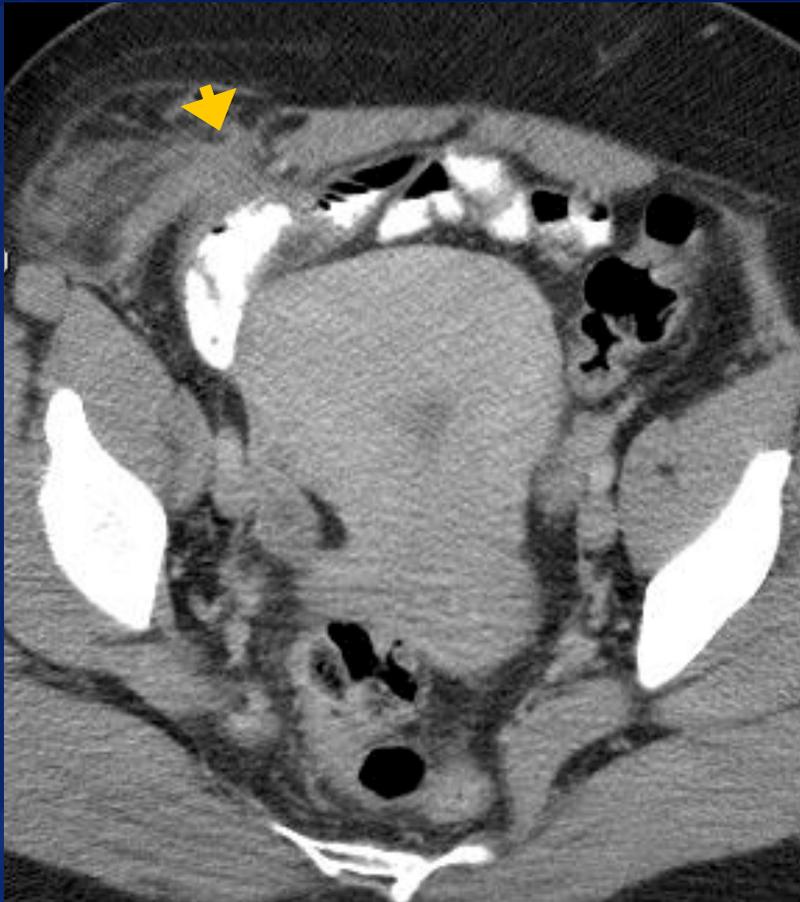


June 2011



December 2011

# Mimics: Hernia

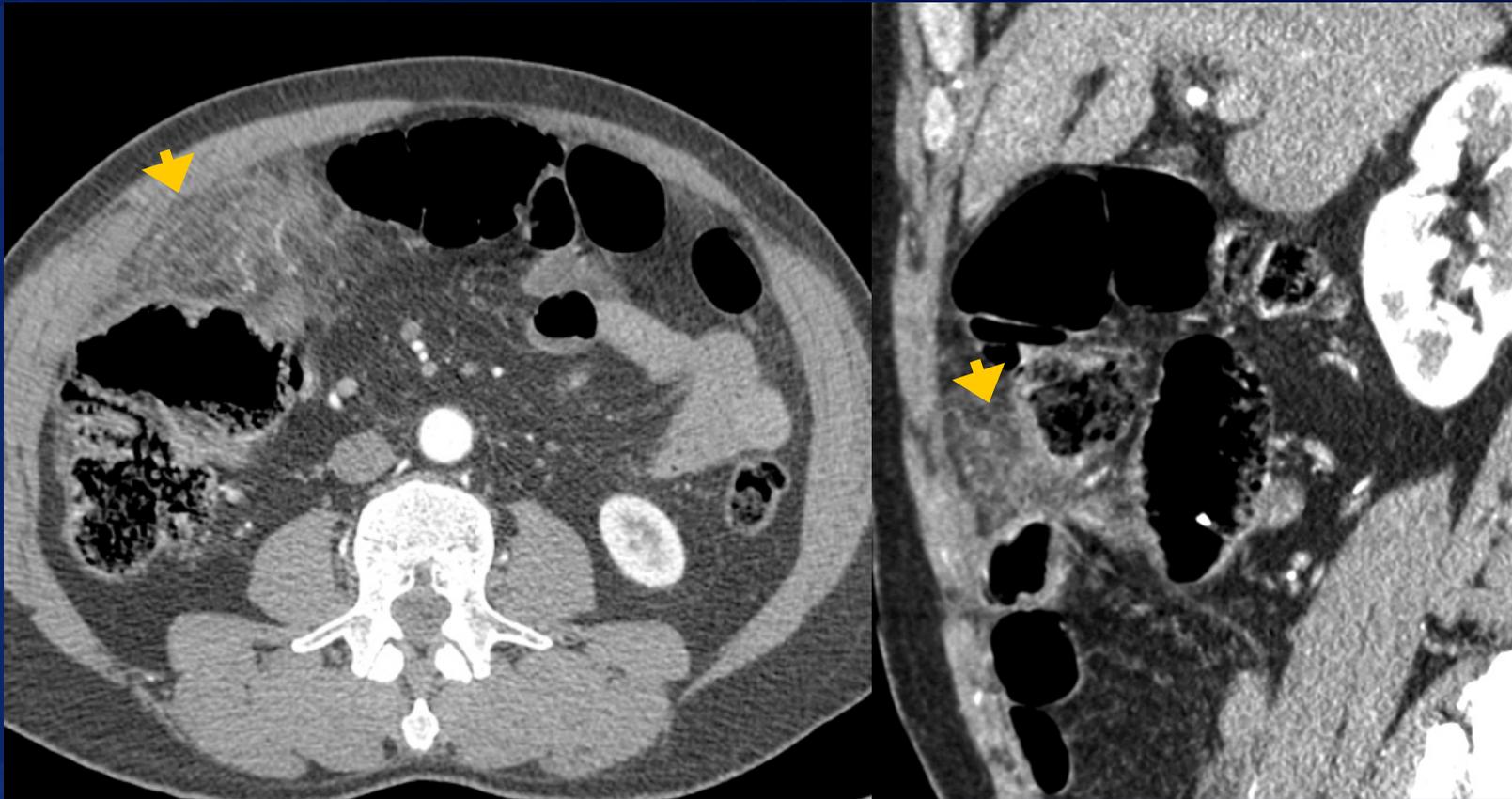


Spigelian hernia

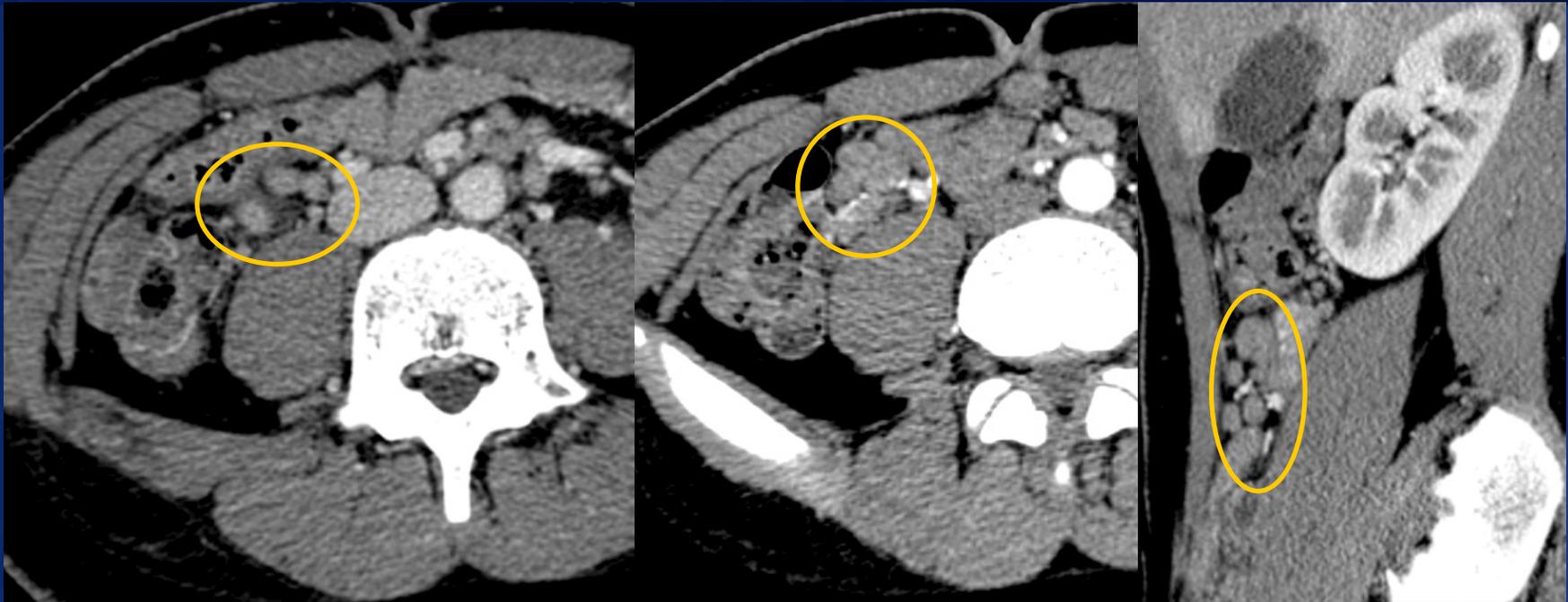


Obturator hernia

# 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

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