

# Clinical Correlation Recommended: Appendiceal Crohn's Masquerading as Acute Appendicitis on CT

Stacey C. Rolak, M.D., M.P.H.<sup>1</sup> Katie A. Dunleavy, M.B., B.Ch., B.A.O.<sup>2</sup> Philip D. Hurst, M.D.<sup>3</sup> Gary L. Keeney, M.D.<sup>3</sup> Xiao Jing (Iris) Wang, M.D.<sup>2</sup>

<sup>1</sup>Department of Internal Medicine, Mayo Clinic <sup>2</sup> Division of Gastroenterology and Hepatology, Mayo Clinic <sup>3</sup>Division of Laboratory Medicine and Pathology, Mayo Clinic

## INTRODUCTION

- Granulomatous appendicitis is uncommon
- Etiologies include Crohn's disease, infiltrative disease (ie sarcoidosis), or infections (ie Yersinia)

## PATIENT PRESENTATION

- 46 year old male presented to clinic for evaluation of **abdominal pain**
- **Location:** Intermittent epigastric and right upper quadrant
- **Timing:** Approximately four times per year
- **Duration:** Past eight years
- **Characterization:** Constant, pressure-like, gradually worsens over a three-day period
- **ROS:** No fevers, chills, nausea, vomiting. Endorses non-bloody diarrhea
- **Prior investigations:**
  - Previously diagnosed with Celiac disease; symptoms persisted despite gluten free diet & normalization of serologies
  - Recent EGD with normal small bowel mucosa without evidence of celiac sprue or inflammation on duodenal biopsies
  - Normal colonoscopy
- **Physical Examination:**
  - T 38 C, BP 111/73, HR 69, RR 20
  - Abdominal: Mild tenderness to deep palpation of the right upper quadrant
  - Rectal: Negative for fistula or abscess

## FURTHER EVALUATION

- CT Enterography: Wall thickening of the appendix up to 11mm; inflammation of the distal 6cm of the terminal ileum. Inflammation around the appendix, terminal ileum, and right ureter overall concerning for acute appendicitis (**Figure A**)
- Given the chronicity of his symptoms and incongruity with a radiographic diagnosis of appendicitis he underwent a colonoscopy
- Colonoscopy: Inflammation involving the appendiceal orifice, surrounding cecum, and distal rectum. Biopsies demonstrated active inflammation of the rectum and cecum without evidence of chronicity and normal terminal ileum
- He underwent **laparoscopic ileocecectomy with anastomosis**. The appendix was hard, thickened and distorted (**Figure B**), raising concern for tumor
- Pathology findings were consistent with moderately active Crohn's colitis of the appendix, with microscopic involvement of the terminal ileum with cecal sparing (**Figures C, D**)

Figure A.



Figure B.

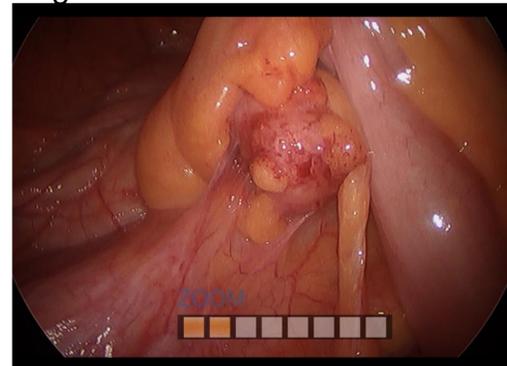


Figure C.

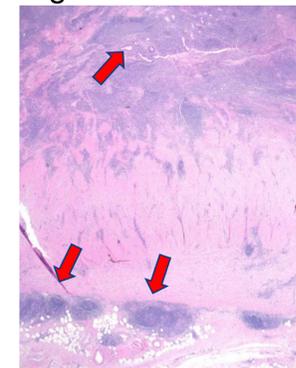
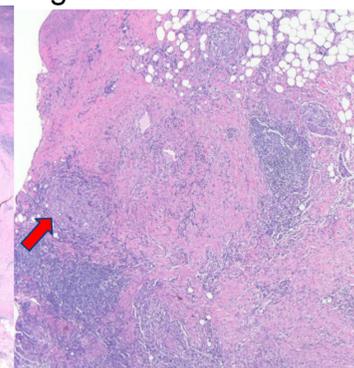


Figure D.



## OUTCOMES

- The patient's symptoms resolved after surgery. He did not develop signs/symptoms of extraintestinal manifestations of IBD
- Repeat CT enterography 6 months later demonstrated resolution of inflammation
- He remains asymptomatic and is not on treatment for Crohn's disease

## DISCUSSION

- The differential for appendiceal inflammation includes acute appendicitis, chronic appendicitis, appendiceal diverticulitis, infectious colitis, appendiceal mucocele, lymphoid hyperplasia, malignancy, and IBD of the appendix
- Isolated appendiceal Crohn's disease is rare (0.2-1.8%) of patients with IBD undergoing appendectomy<sup>1</sup>
- Patients with celiac disease have 9x higher risk of developing IBD; risk higher for Crohn's<sup>2</sup>
- No current recommendation for routine screening for IBD in patients with celiac disease; should be based on symptoms only
- No guideline consensus regarding surveillance and treatment of isolated appendiceal Crohn's disease
- Recurrence rates after appendectomy are low<sup>3</sup>

## REFERENCES

1. Machado NO, Chopra PJ, Hamdani AA. Crohn's disease of the appendix with enterocutaneous fistula post-appendectomy: An approach to management. *N Am J Med Sci.* 2010;2(3):158-161.
2. Pinto-Sanchez MI, Sellar CL, Santesso N, et al. Association Between Inflammatory Bowel Diseases and Celiac Disease: A Systematic Review and Meta-Analysis. *Gastroenterology.* 2020;159(3):884-903.e831.
3. Gnanaselvam P, Weerakoon DN, Wijayasuriya WAM, et al. Isolated Crohn's Disease of the Appendix Presenting as Acute Appendicitis in a 60-Year-Old South Asian Female: A Case Report, Review of Literature, and Follow-Up Recommendations. *Case Rep Surg.* 2019;2019:5285417.