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CASE REPORT

Gastroenterology

Endoscopic diagnosis of asymptomatic appendicitis in a pediatric patient

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Abstract

Incidental diagnosis of asymptomatic appendicitis is exceptionally rare, even more so when identified endoscopically. This is among the first reported cases of appendicitis incidentally diagnosed during colonoscopy in a pediatric patient. Most notably, the identification of subclinical appendicitis allowed for early referral to pediatric surgery for management, which in turn may have prevented progression to acute symptomatic appendicitis.

KEYWORDS

colonoscopy, incidental diagnosis, inflammatory bowel disease, intervention, management

1 | INTRODUCTION

Acute appendicitis is believed to be a complication of obstruction of the appendiceal lumen, most often by fecalith (hard stools), appendicolith (calcified stone of the appendix), or lymphoid hyperplasia.[1] In the United States, approximately 250,000 cases of appendicitis are reported annually, equaling a 1 in 15 lifetime risk of developing appendicitis.[2] While appendicitis can occur at any age, it occurs most commonly in adolescence and early adulthood. Here, we present a case of appendicitis diagnosed incidentally during routine colonoscopy in an otherwise asymptomatic pediatric patient with a history of ulcerative colitis.

2 | CASE REPORT

A 14-year-old female with a past medical history significant for ulcerative pancolitis diagnosed at 12 years of age, presented for routine colonoscopy to reassess disease activity while on sulfasalazine therapy, as per standard care. At the time of endoscopy, the patient was clinically and hemodynamically stable with no reports of fever, chills, abdominal pain, nausea, vomiting, constipation, diarrhea, hematochezia, melena, weight change, or other signs concerning for extraintestinal manifestations of inflammatory bowel disease.

The procedure was initiated without complication and found grossly normal rectum and colon. Upon initial visualization of the appendix, there appeared to be mild peri-appendiceal inflammation (Figure 1). Immediately after the terminal ileum was successfully intubated for visualization and biopsies, a large amount of purulent drainage was seen coming from the appendiceal orifice (Figure 2). For these reasons, the pediatric surgical team was contacted and recommended that the patient undergo abdominal imaging following completion of the procedure. The terminal ileum and remainder of the colon appeared otherwise normal.

An abdominal ultrasound was obtained shortly after the colonoscopy was completed. The appendix was not visualized nor was there evidence of bowel wall thickening or peri-appendiceal fat stranding. However, a moderate volume of free intraperitoneal fluid was visualized. Through shared decision-making with the patient/patient's family and pediatric surgery, the decision was made for the patient to be discharged home from the endoscopy suite with magnetic resonance imaging (MRI) planned for the following day. Return precautions were discussed with the patient and family in the event she developed symptoms concerning for acute appendicitis in the interim.

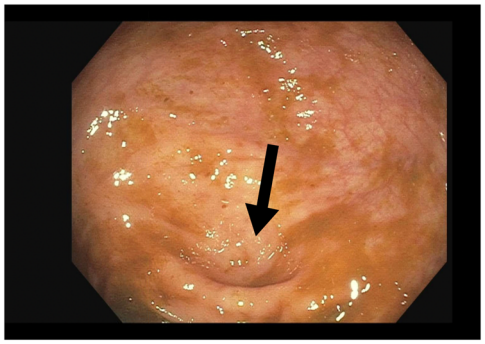

FIGURE 1 Appendiceal orifice upon initial inspection showing mild peri-appendiceal inflammation (outlined by arrow).

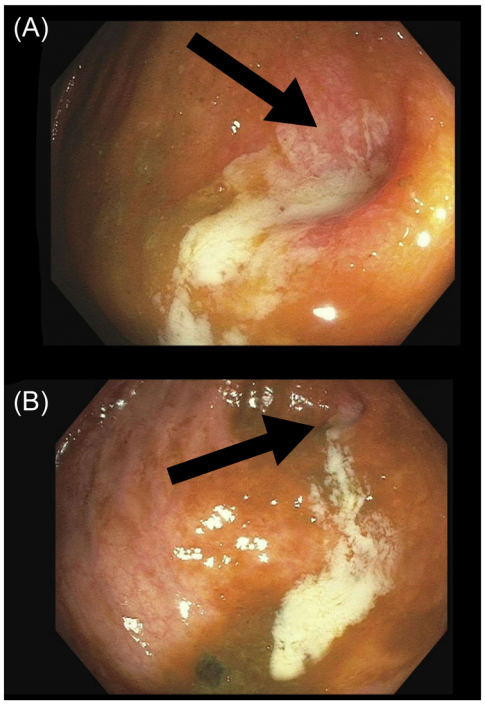

FIGURE 2 (A) Appendiceal orifice (outlined by arrow) upon repeat inspection showing more prominent inflammation and (B) purulent drainage into cecum.

At the time of MRI, the patient remained asymptomatic and clinically stable. MRI abdomen/pelvis demonstrated mild thickening and enhancement of a dilated appendix measuring up to 8 mm in transverse diameter, suggestive of appendicitis (Figure 3). Based on the colonoscopy and MRI findings, the pediatric surgery team recommended oral antimicrobial therapy as well as elective surgical appendectomy.

The patient underwent uncomplicated laparoscopic appendectomy within the week. Grossly, the appendix appeared mildly inflamed without apparent gangrene or signs of perforation. The patient was discharged the same day following appendectomy. Pathology results from the colonoscopy, including peri-appendiceal

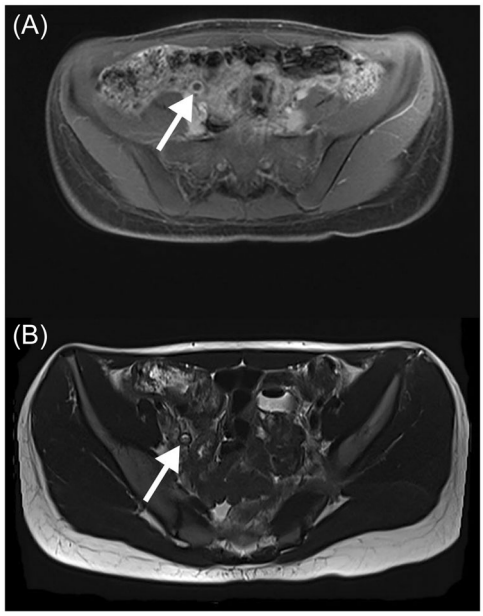

FIGURE 3 MRI Image demonstrating acute appendicitis. The (A) axial T1-weighted and (B) axial T2-weighted images reveal a dilated, fluid-filled appendix (outlined by arrow) with thickened and enhancing walls, consistent with acute appendicitis. MRI, magnetic resonance imaging.

office, were unremarkable. Pathology results from appendectomy were notable for focal cryptitis consistent with appendicitis, with fibrous obliteration of the appendiceal tip (a benign incidental finding) and without dysplasia or granulomas frequently seen in inflammatory bowel disease.

3 | DISCUSSION

Diagnosis of acute appendicitis is made primarily based on the presence of consistent clinical history and physical exam findings, including nausea, vomiting, periumbilical and/or right lower quadrant abdominal pain. The diagnosis is often further supported by laboratory tests and imaging demonstrating signs of inflammation and infection. An incidental finding of appendicitis is quite rare and is felt to reflect subclinical disease that, if left untreated, could progress to acute illness.

Diagnosis of incidental appendicitis through colonoscopy is exceptionally rare, with only a few cases having been presented previously in adult patients.[3–7] This is, to the best of our knowledge, among the first reported pediatric cases of incidentally diagnosed appendicitis during routine colonoscopic evaluation. In prior reports, patients have been found to have erythema and edema involving the appendiceal orifice. In this case, we similarly observed mild findings at the appendiceal orifice. Interestingly, in this case, we

initially visualized the appendiceal orifice without drainage and then subsequently visualized a large amount of purulent drainage following intubation of the terminal ileum. This suggests that the patient had subclinical appendicitis present at the time of the endoscopy rather than development of appendicitis as a complication of the procedure itself.

The potential role of colonoscopy as both a diagnostic and therapeutic intervention for appendicitis, particularly for those with atypical presentations, has been questioned previously but not yet investigated sufficiently. There have been reports in which providers have utilized an endoscopic retrograde cholangiopancreatography catheter to intentionally intubate and aspirate the appendix, while others have utilized forceps to repeatedly take biopsies at a single location in an attempt to induce drainage.[8,9]

This patient's appendicitis is unlikely directly related to her diagnosis of ulcerative colitis. First, the patient did not have evidence of a cecal patch or right-sided colitis, which are commonly associated with ulcerative appendicitis.[10] Additionally, the histopathology from the appendectomy showed signs of inflammation but no evidence of chronicity, which if present would have been supportive of ulcerative appendicitis.

In our case, the appendix spontaneously began draining with only standard colonoscopic maneuvering to intubate the terminal ileum. Patient ultimately underwent surgical intervention following shared decision-making between the patient, patient's family, and pediatric surgery. Early identification of subclinical appendicitis during this patient's routine colonoscopy allowed for temporizing measures including initiation of oral antibiotics as well as coordination of outpatient elective surgical appendectomy. It is plausible that had this not been identified, the patient could have gone on to develop acute appendicitis requiring more emergent evaluation and management.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

ETHICS STATEMENT

Verbal consent was obtained by the patient's parent/legal guardian for this case report. All identifying information has been removed.

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