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Letter to Editor

How to treat acute appendicitis: To resect or preserve?

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Dear Editor,

Acute appendicitis (AA) is an ancient problem and appendectomy has remained the first-line treatment since the first appendectomy was performed by Scotsman Robert Lawson Tait in Edinburgh in 1880, and Abraham Groves in 1883.¹ A century later, in 1980, Kurt Semm performed the first laparoscopic appendectomy (LA) ushered in a new age of appendectomy with minimal trauma resulting in lower morbidity, shorter length of hospitalization, and less postoperative pain². The pandemic of the novel coronavirus SARS-CoV-2 (COVID-19) strain is having a dramatic impact on healthcare systems worldwide which have led to delayed treatment of non-COVID related pathology. While the attention of the much of the healthcare sector was focused on high-risk patients due to shortage of medical resources, low-risk patients were encouraged to avoid emergency surgeries. Many surgical societies, including the American College of Surgeons, have issued guidelines on elective case triage, recommending the postponement of

elective surgical procedures such as appendectomy. In recent years, there is growing evidence that appendicitis can be treated medically (antibiotics). Despite comprehensive review and meta-analysis showing that antibiotics are a viable and effective treatment option for image-proven AUA,^{3,4} antibiotic treatment faces unavoidable problems as patients with appendiceal fecaliths remain at risk of acute peritonitis because subsequent appendiceal perforation and experience varying levels of pain during antibiotic treatment. Antibiotics therapy has two potential problems as it cannot identify and resolve the main cause of the appendicitis, appendiceal luminal obstruction. Secondly, recurrent appendicitis remains a major problem and antibiotics therapy does not immediately relieve the painful symptoms.

Endoscopic retrograde appendicitis therapy (ERAT) is a novel appendiceal sparing alternative treatment of acute uncomplicated appendicitis (AUA) which involves colonoscopy and irrigation and/or stenting of the appendix (Fig. 1).⁵ ERAT can flush the fecoliths out and thus remove the obstruction and relieve symptoms immediately, and reduce the risk of recurrence of appendicitis. ERAT typically provide relieve pain immediately after the procedure as well. ERAT is not only an effective treatment for appendicitis but also has an important value in diagnosing appendicitis and identifying related diseases. During ERAT, visual endoscopic observation and endoscopic retrograde appendicography can confirm the diagnosis of acute appendicitis; which can exclude other lesions such as appendiceal tumors and ileal diverticula; some asymptomatic colon and rectal polyps or early carcinomas can be detected unexpectedly, and endoscopic treatment can be performed simultaneously.

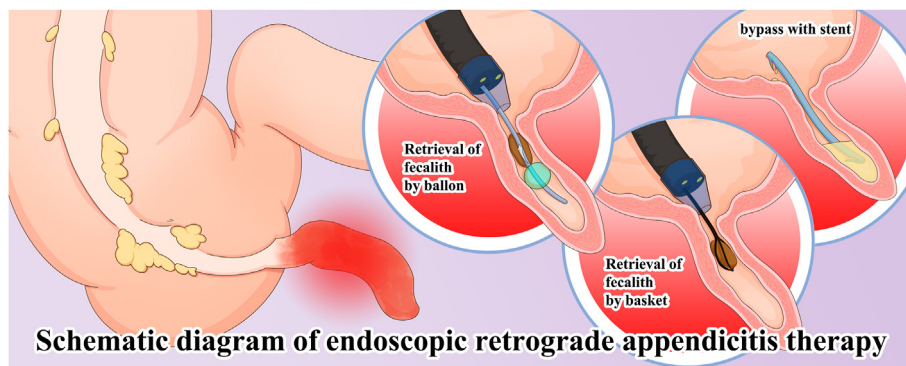


Fig. 1. Schematic of endoscopic retrograde appendicitis therapy (ERAT) procedure.

Abbreviations: AA, Acute Appendicitis; AUA, Acute Uncomplicated Appendicitis; LA, Laparoscopic Appendectomy; ERAT, Endoscopic Retrograde Appendicitis Therapy.

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Therefore, ERAT has both diagnostic and therapeutic value, which is not available for other examinations. Many short-term prospective trials showed that ERAT is a safe and effective technique in managing AUA. Whether this technique can be an alternative for appendectomy or antibiotics remains to be answered in clinical trial studies with larger sample size. Although the technique is creative, caution should be taken to avoid appendiceal lumen perforation. Currently, ERAT is recommended for patients who have AUA. We can extend the indications of this technique to specific patients who cannot tolerate surgical treatment (e.g., pregnant women, children, patients with poor conditions, and most importantly elderly patients unfit for surgery).

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Declaration of competing interest

The authors disclose no conflicts.

References

1. Harris CW. Abraham Groves of Fergus: the first elective appendectomy? *Can J*

- Surg.* 1961;4:405–410.
2. Semm K. Endoscopic appendectomy. *Endoscopy.* 1983;15:59–64.
3. CODA Collaborative, Flum DR, Davidson GH, et al. A randomized trial comparing antibiotics with appendectomy for appendicitis. *N Engl J Med.* 2020 Nov 12;383(20):1907–1919.
4. Talan DA, Di Saverio S. Treatment of acute uncomplicated appendicitis. *N Engl J Med.* 2021 Sep 16;385(12):1116–1123.
5. Liu BR, Song JT, Han FY, Li H, Yin JB. Endoscopic retrograde appendicitis therapy: a pilot minimally invasive technique (with videos). *Gastrointest Endosc.* 2012 Oct;76(4):862–866.

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