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Treating the Patient With Appendicitis, Not Just the Appendicitis

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The option to avoid an appendectomy and potential complications of an operation is appealing (especially for patients) in the management of acute, uncomplicated appendicitis (AUA).¹⁻³ A meta-analysis⁴ demonstrated that 73.4% of patients treated with antibiotics and without appendectomy were cured without major complication, including recurrence of appendicitis and need for operative management. Many questions remain unanswered, including whether a specific patient subpopulation would be better treated one way or another.⁵

In this issue of *JAMA Surgery*, the retrospective analysis by Sceats et al⁶ evaluated the real-world application of non-operative management of AUA in a cohort of more than 58 000 patients. Interestingly, of the 4.5% of patients who were treated with nonoperative management, only 3.9% required an appendectomy during a mean follow-up of 3.2 years. This rate is substantially less than the 27.3% of patients who eventually required an appendectomy in the largest and most recent randomized clinical trial,¹ but similar to those in prior retrospective studies.⁷ Moreover, the cost of the index hospitalization was lower with nonoperative management. These findings in isolation would support the nonoperative management of AUA.

Sceats et al⁶ also demonstrated that the operative cohort had statistically significant lower numbers of readmissions, office visits, and subsequent complications such as abscess formation. This result led to lower overall costs for patients. These findings would generally support the continued use of routine operative management for AUA.

This study is informing, because surgeons and patients should consider the total burden of care associated with each option. Additional societal costs of increased subsequent care and hospitalizations were not within the scope of this investigation. The notion of surgery is daunting for many patients, and short-term consequences can often be seen with more clarity than longer-term consequences, thus contributing to the appeal of nonoperative options. However, the onus is on surgeons to consider and educate patients about all aspects and costs of care associated with each option. This study only included insured patients, but insured and uninsured patients alike will often make decisions based on direct costs and time out of work, especially when the benefit and risks of treatment options approach equivalence.

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The authors acknowledge several additional limitations, including the retrospective nature of the study, the statistically significant differences in cohort age and Charlson comorbidity index, and the inability to measure indirect societal costs. Nonetheless, these data support that operative and nonoperative management are options to treat AUA. However, when treating the patient with AUA, the findings of Sceats et al⁶ should be considered in the conversation between surgeon and patient, and the subsequent recommendation for operative or nonoperative management should be tempered by whichever strategy is most likely to achieve the additional goals and priorities of the patient beyond cure.

REFERENCES

1. Salminen P, Paajanen H, Rautio T, et al. Antibiotic therapy vs appendectomy for treatment of uncomplicated acute appendicitis: the APPAC randomized clinical trial. *JAMA*. 2015;313(23):2340–2348. doi:10.1001/jama.2015.6154 [PubMed: 26080338]
2. Vons C, Barry C, Maitre S, et al. Amoxicillin plus clavulanic acid versus appendectomy for treatment of acute uncomplicated appendicitis: an open-label, non-inferiority, randomised controlled trial. *Lancet*. 2011;377(9777):1573–1579. doi:10.1016/S0140-6736(11)60410-8 [PubMed: 21550483]
3. Hansson J, Körner U, Khorram-Manesh A, Solberg A, Lundholm K. Randomized clinical trial of antibiotic therapy versus appendectomy as primary treatment of acute appendicitis in unselected patients. *Br J Surg*. 2009;96(5):473–481. doi:10.1002/bjs.6482 [PubMed: 19358184]
4. Wilms IMHA, de Hoog DENM, de Visser DC, Janzing HMJ. Appendectomy versus antibiotic treatment for acute appendicitis. *Cochrane Database Syst Rev*. 2011;(11):CD008359. doi:10.1002/14651858.CD008359.pub2 [PubMed: 22071846]
5. Di Saverio S, Birindelli A, Kelly MD, et al. WSES Jerusalem guidelines for diagnosis and treatment of acute appendicitis. *World J Emerg Surg*. 2016;11:34. doi:10.1186/s13017-016-0090-5 [PubMed: 27437029]
6. Sceats L, Trickey A, Morris A, Kin C, Staudenmayer K. Nonoperative management of uncomplicated appendicitis among privately insured patients [published online November 14, 2018]. *JAMA Surg* doi:10.1001/jamasurg.2018.4282
7. McCutcheon BA, Chang DC, Marcus LP, et al. Long-term outcomes of patients with nonsurgically managed uncomplicated appendicitis. *J Am Coll Surg*. 2014;218(5):905–913. doi:10.1016/j.jamcollsurg.2014.01.003 [PubMed: 24661850]