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# Perioperative antibiotic prophylaxis and interval appendectomy

COMMENTARY

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Our 'Perspectives' article has triggered a discussion about the optimal treatment of acute appendicitis (1). The feedback we received during the Norwegian Autumn Surgical Meeting 2022 and during internal teaching at Østfold Hospital Trust has revealed two central themes that were not discussed in the article: antibiotic prophylaxis and interval appendectomy. We are grateful for the comments and would like to give our feedback on these.

In accordance with the Norwegian Directorate of Health guidelines, doxycycline 400 mg and metronidazole 1 g is the first-line prophylactic antibiotic treatment in surgery for acute appendicitis (2). Therapeutic serum levels are maintained for 24 hours with this regimen. Appendectomy is an emergency procedure in acute appendicitis, and intravenous administration is preferable, with the recommendation to complete treatment before the start of the procedure. In practice, this means that prophylaxis should start once the decision for appendectomy has been taken, unless there are clear grounds for starting a therapeutic antibiotic regimen instead (as standard: ampicillin, gentamicin and metronidazole) in case of a severe clinical condition or high suspicion of complicated appendicitis (perforation, abscess, peritonitis) (3).

There may be variations in practice between surgeons as regards preoperative antibiotic use. For example, sometimes patients with presumed uncomplicated appendicitis who are awaiting surgery may not have antibiotic cover as the intention is to administer antibiotics immediately prior to surgery. However, it can be difficult in a busy clinical environment to predict the start time of an operation, and it takes time to administer an intravenous infusion of doxycycline and metronidazole.

While awaiting surgery without prophylactic antibiotic cover, the clinical condition of some patients may progress to require the use of therapeutic antibiotics. In practice, many will consider it acceptable to delay surgery for several hours, depending on the patient's clinical condition, in favour of other more urgent conditions. However, correct prophylactic antibiotics maintain therapeutic serum levels for a long period and ensure adequate pre- and intraoperative antibiotic cover (4).

In summary, the recommendation is to routinely administer doxycycline 400 mg and metronidazole 1 g as soon as it has been decided to perform appendectomy, unless a more serious condition is suspected which would warrant therapeutic antibiotic treatment.

In recent years, interval appendectomy (also known as 'appendectomy à froid') within 3 months in patients > 40 years who have received conservative treatment for complicated appendicitis has gained increasing acceptance (5). This approach is not well documented and is largely based on a Finnish study of 60 patients with periappendicular abscess, which was prematurely terminated due to a high incidence of neoplasm (17 %) (6).

It is recommended that patients > 40 years managed with non-surgical treatment have a check-up with colonoscopy to the caecum or CT colonography within 6–8 weeks. Routine interval appendectomy to avoid recurrence of appendicitis or to rule out appendiceal neoplasm is controversial due to lack of evidence. There is a need for more and better studies to be able to clarify the indication for interval appendectomy in the treatment of complicated appendicitis.

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