

Acute Appendicitis – Update 2006

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Definition, Epidemiology and Clinical Course

Acute appendicitis, defined as an acute inflammation of the vermiform appendix, is the most frequent condition leading to emergent abdominal surgery in children and young adults. The clinical course of the disease is characterized by loss of appetite, nausea, mild fever, and pain in the lower-right abdominal quadrant. Although signs and symptoms are typical in many patients, there are about 20% of atypical presentations.

Noninvasive Diagnostics

Laboratory investigations are considered to be a standard in any patient with abdominal pain. Other diagnostic tests may be used additionally depending on symptoms. Ultrasonography has been studied extensively, but as yet no definitive conclusions can be drawn, most probably owing to the large interobserver variability of the technique. Computed tomography is being used at increasing rates. The diagnostic accuracy in terms of sensitivity and specificity is about 95%, but there is no comparison yet with diagnostic laparoscopy.

Invasive Diagnostics

There are no new data available on the value of diagnostic laparoscopy; therefore, the consensus statement is correct in recommending diagnostic laparoscopy in patients with symptoms and diagnostic findings suggestive of acute appendicitis. Of course, the potential benefit of diagnostic laparoscopy is greater the larger the uncertainty of the diagnosis is.

Operative Versus Conservative Treatment

Acute appendicitis generally requires appendectomy, although some cases may resolve without therapy or under conservative treatment [14]. Controversy surrounds those situations, where the surgeon finds a normal-appearing appendix. If no other cause for the patient's problem can be detected, re-

removal of the appendix is considered to be the safest option. However, if the patient's symptoms can be ascribed to an abdominal pathology other than appendicitis, it is better to leave a normal-appearing appendix, as stated in the EAES recommendations.

Choice of Surgical Approach and Procedure

The relative advantage of laparoscopic over conventional appendectomy has been under debate for more than a decade. According to the most recent Cochrane review [12], laparoscopic appendectomy offers certain advantages, although the difference from open appendectomy is not large. Accordingly, the EAES recommends laparoscopic over open appendectomy. This statement holds true, although some new data have been published recently. In 2006, paediatric trials comparing laparoscopic and open appendectomy were summarized in a meta-analysis [2], which mainly confirmed the findings of the Cochrane review. However, some advantages of laparoscopic appendectomy reached statistical significance, because nonrandomised trials were also included in the meta-analysis.

One randomized controlled trial (RCT) published on appendectomy in adults by Katkhouda et al. [8] only concluded that "choice of the procedure should be based on surgeon or patient preference", because postoperative pain was similar in both therapy groups of this blinded trial. Other results were in line with previous studies. A trial from Israel compared inflammatory markers after open and laparoscopic appendectomy [1], but no clinical data were collected (M. Almagor, personal communication). A third new trial, by Olmi et al. [11], failed to have a formal randomization, as the admission code numbers were used to assign patients to treatment groups. The results of this pseudo-randomized trial, however, clearly favoured laparoscopic appendectomy.

In summary, the relative advantages of laparoscopic over open appendectomy are small but well-proven; therefore, the EAES recommendation holds true, although in everyday practice surgical expertise, patient expectations and cost considerations also need to be considered [6]. Hospital costs of laparoscopic appendectomy are still slightly higher than those for open appendectomy [4, 5].

Technical Aspects of Surgery

Needlescopic instruments were used in a recent RCT from Hong Kong [10]. Pain levels were similar in needlescopic and conventional laparoscopic appendectomy, but operating time was longer. This is not in full agreement with the first RCT on this topic [7], but in general needlescopic appendect-

omy seems to offer few additional advantages compared with standard laparoscopic appendectomy.

Appendix stump closure is another important aspect of the laparoscopic technique. An inspection of more recent data suggests that wound infection is less likely to occur if the appendiceal base is secured with staples [3, 9, 13]. Again, cost considerations will have a strong impact on the acceptability of the ENDO GIA.

Peri- and Postoperative Care

No new data are available.

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