

Invited commentary on “Werkgartner G. et al.: laparoscopic versus open appendectomy for complicated appendicitis in high risk patients”

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The authors discuss a very important and controversial topic: Is laparoscopic appendectomy for complicated appendicitis in high-risk patients with an ASA score of 3 or 4 associated with a justifiable risk? Compared to open appendectomy, is the risk comparable or even less? On the one hand, the risk of post-operative complications in multimorbid patients is increased. On the other hand, the question is, whether or not the laparoscopic technique further and unnecessarily increases that risk.

To answer these questions, the authors retrospectively analyzed the appendectomies from their institution over a course of 8 years and extracted those patients with both complicated appendicitis and ASA score of 3 or 4. These were then analyzed after having been divided into two groups, namely open and laparoscopic procedures. A conversion rate is not available. Evaluated preoperative parameters were age, gender, and comorbidities, Leucocyte count, CRP, ASA score, and fever. Documented intra- and postoperative parameters were perforation, procedural time, hospital stay, complications rated according to Clavien/Dindo, as well as Leucocyte-count and CRP on the first and third postoperative day.

The flaw in this analysis can be seen in the missing comparability of the two groups. The choice of operative technique was left to the surgeons and was definitely influenced by the comorbidities. As the authors state, conventional appendectomy is the preferred method in their institution in case of severe cardiac or pulmonary comorbidities. Thus, it does not come as a surprise that these are overrepresented in the OA group. Almost half of the OA patients (45 %) were rated as NYHA IV. According to the authors, this was a contraindication for laparoscopy. Therefore, half of the patients in the OA

group would not have been operated upon laparoscopically, which forbids comparison of the two groups. Similar differences between the two groups appear for age and the fraction of the ASA 4 patients. Furthermore, a markedly higher amount of perforations appeared in the OA group. As a conclusion, the significant differences are certainly not based on a statistically randomized pattern, but possibly entirely on differences in both populations.

In order to allow a separate influence of the operative technique on the complication rate, a multivariate analysis is needed. However, for this statistical tool, the case number is too low. A multicenter trial is probably the most suitable method to extensively answer the proposed questions. As the authors correctly remark, a prospective, randomized trial would be hard to realize for this topic.

Also, especially in a retrospective analysis, utilization of the ASA classification seems questionable, since the ASA classification is too simplistic and highly subjective.

However, the authors' analysis impressively shows that for complicated appendicitis, the laparoscopic technique could be performed in ASA 3/4 patients, excluding those with a NYHA IV score, after subjective selection by the performing surgeon with an acceptable rate of complication in their institution. However, I find that the direct comparison with the open technique is limited for the reasons mentioned above.

A further interesting result of the study is that the rise in CRP value in case of a postoperative complication is not as high following a laparoscopic appendectomy as compared to an open procedure. Thus, a complication might take a more concealed course. This deserves further evaluation in future trials.

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