Editorial

Laparoscopic Versus Open Appendectomy

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Appendectomy is the most common emergent operative procedure performed worldwide.[1] Almost 6–7% of individuals will develop acute appendicitis during their lifetime. Appendectomy has been the standard care for the treatment of acute appendicitis since it was introduced in 1894 by McBurney. The first laparoscopic appendectomy (LA) was performed in 1981 by German gynecologist, Semm.[2] Many studies comparing laparoscopic versus open appendectomy (OA) have been focused on inpatient outcomes.[3-7] Furthermore, the benefits of LA remain imperceptible,[8-12] and not as obvious as in the case of laparoscopic cholecystectomy.[13-15]

The study by Khalil *et al*,[16] in the Saudi Journal of Gastroenterology is a randomized control trial that attempted to examine the differences between laparoscopic and open appendectomy in terms of primary outcome measures including operative duration, length of hospital stay, and postoperative complications. Here, 147 patients were randomized into a LA group (72 patients) or an OA group (75 patients). The authors found a longer operative duration in LA group which was statistically significant. This has been shown in many previous studies and mostly attributed to additional steps involved in laparoscopic surgery.[17] The study reported no significant difference in the length of hospital stay in both groups, also reflected by two large studies done in Europe.[18,19] The authors concluded that LA was an equivalent procedure and not superior to OA in terms of primary outcome measures.

The main drawback of the study was the small number of patients included. The size of the study population was not justified by any sample size calculations to examine any given primary outcome. Thus, it is likely that the results obtained are not an accurate representation of the true figures. The assessment of pain and other outcomes should be done in a blinded manner. As mentioned by the authors, investigator blinding was not done. Hence, this could have led to bias in conducting the procedures by the surgeon. Bias could also have been introduced in the postoperative course of patients, especially that the authors did not follow a postoperative pathway for their management. This is crucial for comparing postoperative pain and length of hospital stay. Furthermore, the authors used the visual analog scale which as an instrument which is not sensitive enough to detect differences. Further grouping of the scores into arbitrary groups leads to additional quantification errors which could be why no differences in pain were noted. Assessing the need for pain medication may also have strengthened the pain analysis.

Although the authors reported a non-statistically significant difference in wound infections, this could have been due to the small number of patients they had. In a recent Cochrane review, it was shown that, from nearly 6000 operated cases, wound infections were about half as likely after LA than after OA.[17] Moreover, they failed to report data on deep infections which have been reported to be nearly threefold higher after LA.[17] It would also have been more valuable if the authors had compared the time taken to return to normal activity between the two groups. This has been shown to be significantly shorter in the LA group versus the OA group.[18,20-22]

Despite these drawbacks, Khalil *et al*,[16] made a reasonable effort in assessing the usefulness of LA in developing countries like Pakistan. Similar studies should include larger number of patients supported with sample size calculations in order to draw more accurate conclusions. The Cochrane review suggests that LA for suspected appendicitis has diagnostic and therapeutic advantages compared to conventional surgery. OA should not be considered unbeneficial since the difference between the two techniques is small and depends on the treating surgeon's expertise and patient characteristics.[17] Moreover, although the overall benefits of LA may seem small currently, it should be employed in special cases such as a young female or obese patients as the diagnostic and therapeutic advantages of laparoscopy are larger in these cases.[19] As the costs of LA are an important factor in developing countries, more studies should be done to assess the need for LA in such healthcare settings.

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