Improving outcomes in Laparoscopic Appendicectomy

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Aim: To identify modifiable pre-operative and operative variables in patients undergoing emergency laparoscopic appendectomy (LA) with a view to improving outcomes.

Methods: All emergency LAs carried out a London university hospital between March 2007 and January 2012 were analyzed. Exclusion criteria were LA with missing data and elective LA. Two independent assessors blinded to the study outcomes identified cases retrospectively using informatics and theatre records then captured data from medical records. Variables included time from onset of symptoms to presentation, time from presentation until operation, admission inflammatory markers, intra-operative findings, laparoscopic technique, and histopathology of the appendix specimen. Outcomes included post-operative complications, readmission and length of post-operative stay.

Results: 107 LAs were identified. Seven cases were excluded due to incomplete data. Of the 100 LAs analyzed, 64 were endoloop, 17 were endoGIA and 19 were converted to open appendectomy. There was no difference in duration of operation between endoloop and endoGIA LAs. In those who underwent LA for acute uncomplicated appendicitis within 24 hours of presentation, mean post-operative stay was 55 hours (95% confidence interval 43.6 to 66.4; $p<0.05$) vs. 83 hours (95% confidence interval 61.3 to 104.7; $p<0.05$) if the patient underwent LA more than 24 hours after presentation. For patients whose intra-operative findings showed acute uncomplicated appendicitis (i.e. after exclusion of perforated, purulent, and minimally inflamed appendices), the use of endoGIA to transect the appendix base significantly reduced post-operative stay, 35 hours (95% confidence interval 15 to 55; $p<0.05$), when compared to the endoloop technique, 59.7 hours (95% confidence interval 20.2 to 99.2; $p<0.05$).

Conclusion: In acute uncomplicated appendicitis use of endoGIA significantly reduced length of post-operative stay in comparison to endoloop. Early surgery following diagnosis is another factor which is significantly associated with decreased length of post-operative stay.