

A study of open appendectomy versus laparoscopic appendectomy in complicated appendicitis

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Abstract

Introduction: Laparoscopic appendectomy in cases of uncomplicated appendicitis has its merits like assisting in diagnosis, reduction of postoperative pain, decreased analgesic requirement and also decreased chances of wound infection. The role of laparoscopic appendectomy (LA) in cases of complicated appendicitis has also been gaining wider acceptance. Currently, choice of the operative approach is mostly at the discretion of the surgeons. Present study compares the laparoscopic appendectomy with open appendectomy in cases of complicated appendicitis. **Methods:** It was a retrospective study done over a period of two years at our tertiary care hospital. This study involved a total of 42 consecutive patients with perforated or gangrenous appendicitis who had undergone appendectomy during the study period. 26 patients underwent open appendectomy and remaining 16 patients underwent laparoscopic appendectomy. Parameters included in the study were operative time, wound infections, intra-abdominal abscess, duration of analgesic use and hospital stay. **Results:** The age of patients ranged from 8 to 61 years in laparoscopic group and 7 to 59 years in open appendectomy group. Time duration of surgery was more for Laparoscopic appendectomy i.e mean of 78 minutes compared to 65 minutes for open appendectomy. Mean duration of hospital stay was 5.1 ± 2.6 days in LA group and it was 7.9 ± 3.3 days in OA group. Analgesics were required over a median duration of 3 days in LA group and 5 days for OA group. Wound infection was seen in 2 cases (12.5%) in LA group and 9 cases (34.6%) in OA group. Intra-abdominal abscess was the complication in 1 case (6.25%) and 7 cases (26.9%) cases in LA group and OA group respectively. **Conclusion:** Laparoscopic appendectomy for complicated appendicitis was found to be feasible and safe. Although, it was associated with a longer operative time there was lower incidence of analgesic use, lower rate of wound infection as well as reduced length of hospital stay when compared with patients who had open appendectomy.

Keywords: Laparoscopic appendectomy, Open appendectomy, Complicated appendicitis.

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INTRODUCTION

Since the first laparoscopic surgery done for appendicitis in the year 1983, it has been now established as the gold standard surgery for cases of simple appendicitis. Gangrenous or perforated appendix either with or without the presence of periappendicular abscess, peritonitis and appendicular mass are the accepted features of complicated appendicitis¹. Laparoscopic appendectomy has the advantage of providing better access and also provides good visualization of the peritoneal cavity

through small incisions when compared to open appendectomy. Logically, Laparoscopic appendectomy should be beneficial in the management of complicated appendicitis cases which have more morbidity than simple appendicitis cases.² Currently, choice of the operative approach is mostly at the discretion of the surgeons. Present study compares the laparoscopic appendectomy with open appendectomy in cases of complicated appendicitis.

METHODS

It was a retrospective study done over a period of two years at our tertiary care hospital. All patients with confirmed intra-operative diagnosis of either perforated or gangrenous appendix or cases of acute appendicitis with pus formation were included in the study. Patients in whom the diagnosis was other than appendicitis were excluded from the study. All the patients received preoperative intravenous antibiotics. This study involved a total of 42 consecutive patients with perforated or gangrenous appendicitis who had undergone

appendectomy during the study period. 26 patients underwent open appendectomy and remaining 16 patients underwent laparoscopic appendectomy. Parameters included in the study were operative time, wound infections, intra-abdominal abscess, duration of analgesic use and hospital stay. Analgesics were given by the intramuscular route. Antibiotics were continued or stopped depending on the clinical findings in the patient. Oral intake was started in the patients who tolerated it and when the bowel function became adequate. Patients were discharged as soon as there was adequate oral intake and they were mobilized. Postoperative complications were recorded during hospitalization and also at the time of follow up visits.

RESULTS

The age of patients ranged from 8 to 61 years in laparoscopic appendectomy (LA) group and 7 to 59 years in open appendectomy (OA) group. Male: Female ratio was 1.6: 1 in Laparoscopic appendectomy group whereas it was 1.3:1 in open appendectomy group. Time duration of surgery was more for Laparoscopic appendectomy i.e. mean of 78 minutes compared to 65 minutes for open appendectomy. Oral feeds were started after a mean of 2 days in laparoscopic appendectomy group and after a mean of 3 days in the open appendectomy group. Mean duration of hospital stay was 5.1 ± 2.6 days in LA group and it was 7.9 ± 3.3 days in OA group. Analgesics were required over a median duration of 3 days in LA group and 5 days for OA group. Wound infection was seen in 2 cases (12.5%) in LA group and 9 cases (34.6%) in OA group. Intra-abdominal abscess was the complication in 1 case (6.25%) and 7 cases (26.9%) cases in LA group and OA group respectively. Thus, Laparoscopic appendectomy required more time for surgery but required less use of analgesics, short hospital stay and had low rate of wound infections. Intra-abdominal abscess also occurred less frequently in Laparoscopic appendectomy cases.

DISCUSSION

We studied and compared the laparoscopic appendectomy with open appendectomy in cases of complicated appendicitis. Laparoscopic surgeons recommend LA in patients with the diagnosis of acute appendicitis, but there remains a controversy regarding the treatment for cases with complicated appendicitis. Recent studies have suggested that LA is a feasible alternative to OA in cases with complicated appendicitis³ In our study, Laparoscopic appendectomy required more time for surgery. However, Yau *et al.*⁴ have reported that operating time in LA group was significantly less compared to OA group but the benefit of laparoscopic surgery should not be judged by

the length of the operation but by the fact that there is quicker healing of the smaller operative wounds leading to earlier recovery⁵. Another undisputed advantage of LA is the ability to perform a diagnostic laparoscopy prior to performing the procedure in doubtful cases². In our study, Laparoscopic appendectomy required less use of analgesics. Several other studies have also reported decrease in analgesic requirements and decreased post-operative pain in LA group.^{2,6,7} The decrease in incidence of wound infections has been described as the major advantage of LA. Other studies have also reported decrease in incidence of wound infections by LA as found in our study.^{2,6} In our study, Laparoscopic appendectomy required reduced length of hospital stay which is line with the results reported by Garg *et al*² and Yau *et al*⁴

CONCLUSION

Laparoscopic appendectomy for complicated appendicitis was found to be feasible and safe. Although, it was associated with a longer operative time there was lower incidence of analgesic use, lower rate of wound infection as well as reduced length of hospital stay when compared with patients who had open appendectomy.

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