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Original Research Article

A Comparative Study of Open versus Laparoscopic Appendectomy in Patients with Acute Appendicitis: A Retrospective Analysis

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ABSTRACT

Background: Acute appendicitis is the most common intra-abdominal condition requiring emergency surgery and carries a lifetime risk of 6% to 7%. The present study was conducted to compare open versus laparoscopic appendectomy in patients with acute appendicitis.

Materials & Methods: 60 patients of acute appendicitis were randomly divided into 2 groups of 30 each. Group I were treated with open appendectomy and group II were treated with laparoscopic appendectomy.

Results: Group I had 20 males and 10 females and group II had 16 males and 14 females. The mean operative time was 38.2 minutes in group I and 32.4 minutes in group II, post-operative pain score was 3.2 in group I and 2.01 in group II, hospital stay was 2.1 days in group I and 1.5 days in group II, satisfaction score was 7.2 in group I and 8.4 in group II. Complications were hemorrhage seen 5 in group I and 2 in group II, appendix perforation 4 in group I and 2 in group II, paralytic ileus 5 in group I and 3 in group II, intra - abdominal abscess 3 in group I and 1 in group II, seroma seen in 2 in group I and wound gape seen in 5 in group I and 1 in group II.

Conclusion: Laparoscopic appendectomy found to be better as compared to open appendectomy.

Key words: Laparoscopic Appendectomy, Hospital, Perforation.

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INTRODUCTION

Acute appendicitis is the most common intra-abdominal condition requiring emergency surgery and carries a lifetime risk of 6% to 7%.[1] It commonly presents with abdominal pain, fever, nausea and vomiting, although 40% of the patients lack this typical presentation. Diagnosis of acute appendicitis is mainly by clinical examination, supported by raised neutrophil count in blood.[2] Appendectomy is the most commonly performed operation in the world, 6% of all the surgical procedures and is done as emergency procedure wherever possible, the only exception is formation of appendicular mass or abscess. In these cases, interval appendectomy is performed as elective procedure.[3]

Open appendectomy remained the gold standard for the treatment of acute appendicitis. Laparoscopic appendectomy (LA), which was first performed by Semm in 1983, has recently become a well-accepted surgical approach and has been reported to shorten the duration of hospital stay, improve postoperative recovery time, yield better cosmetic outcomes, and mitigate pain.[4]

However, the authors of several studies in which LA was used for treating complicated appendicitis warn of the risk of infection, with particular reference to intra-abdominal abscess (IAA) and superficial wound infection. Thus, the use of LA for complicated appendicitis has remained a subject of debate.[5]

The present study was conducted to compare open versus laparoscopic appendectomy in patients with Acute appendicitis.

MATERIALS & METHODS

The present study was conducted among 60 patients of acute appendicitis of both genders. All were informed regarding the study and their written consent was obtained. Patients' information such as name, age, gender etc. was recorded. A thorough clinical examination was done, and they were randomly divided into 2 groups of 30 each. Group I were treated with open appendectomy and group II were treated with laparoscopic appendectomy. Parameter such as operative time, duration of hospital stay, post-operative pain, complication rate, time taken to resume routine activity and cosmetic satisfaction of the patients was recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I shows that group I had 20 males and 10 females and group II had 16 males and 14 females.

Table II shows that mean operative time was 38.2 minutes in group I and 32.4 minutes in group II, post- operative pain score was 3.2 in group I and 2.01 in group II, hospital stay was 2.1 days in group I and 1.5 days in group II, satisfaction score was 7.2 in group I and 8.4 in group II. The difference was significant (P< 0.05). Table III, graph I shows that complications were hemorrhage seen 5 in group I and 2 in group II, appendix perforation 4 in group I and 2 in group II, paralytic ileus 5 in group I and 3 in group II, intra - abdominal abscess 3 in group I and 1 in group II, seroma seen in 2 in group I and wound gape seen in 5 in group I and 1 in group II. The difference was significant (P< 0.05).

Table I: Distribution of patients

Groups	Group I	Group II
Method	Open appendectomy	Laparoscopic appendectomy
M:F	20:10	16:14

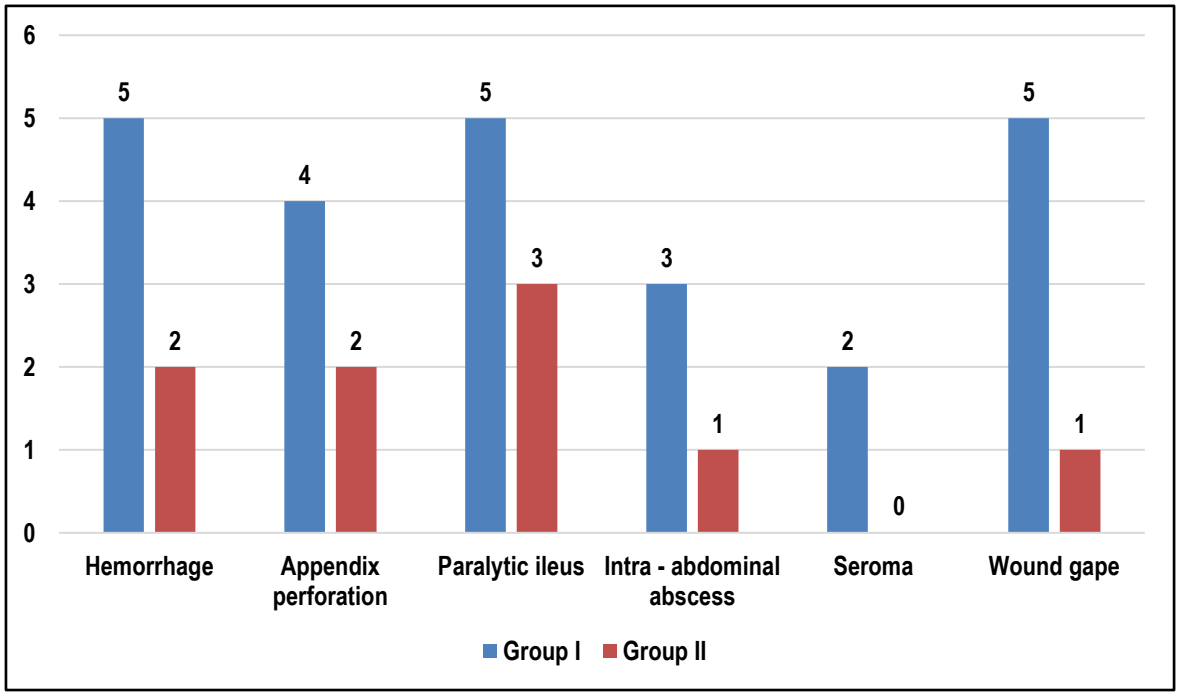
Table II: Comparison of parameters

Parameters	Group I	Group II	P value
Operative time (minutes)	38.2	32.4	0.07
Post- operative pain score	3.2	2.01	0.02
Hospital stay (Days)	2.1	1.5	0.04
Satisfaction score	7.2	8.4	0.01

Table III: Comparison of complications

Complications	Group I	Group II	P value
Hemorrhage	5	2	0.03
Appendix perforation	4	2	0.04
Paralytic ileus	5	3	0.05
Intra - abdominal abscess	3	1	0.01
Seroma	2	0	0.05
Wound gape	5	1	0.01

Graph I: Comparison of complications



DISCUSSION

Acute appendicitis is a common condition that occurs in all age groups. Among them, complicated appendicitis requires surgical intervention within the abdomen.[6] First described by McBurney in 1894, open appendectomy (OA) is an established safe and effective procedure for treating acute appendicitis for over a century. The most frequently occurring intra-abdominal condition that requires emergency surgical treatment is acute appendicitis.[7] Recently, several authors have proposed the advantages of using laparoscopy for the treatment of cholelithiasis could also be applicable in the treatment of appendicitis. Furthermore, the effectiveness of the laparoscopic approach for complicated appendicitis has been extensively investigated.[8] Several studies have shown that the main benefits of LA for complicated appendicitis include prevention of wound infection and shortened duration of hospitalization.[9] On the other hand, operative time and postoperative complications associated with LA have been identified as potential drawbacks of this surgical approach. Regarding operative time, some reports have stated that LA takes longer than OA.[10] The present study was conducted to compare open versus laparoscopic appendectomy in patients with Acute appendicitis. In present study, group I had 20 males and 10 females and group II had 16 males and 14 females. We found that mean operative time was 38.2 minutes in group I and 32.4 minutes in group II, post- operative pain score was 3.2 in group I and 2.01 in group II, hospital stay was 2.1 days in group I and 1.5 days in group II, satisfaction score was 7.2 in group I and 8.4 in group II. Martin LC et al compared open and laparoscopic appendectomy in a randomized fashion regarding length of operation, complications, hospital stay, and recovery time. There was a total of 169 patients randomized, 88 to the open and 81 to the laparoscopic group. The operative time was significantly longer in the laparoscopic group (102.2 minutes vs. 81.7 minutes, $p < 0.01$). The hospital stay of 2.2 days in the laparoscopic group and 4.3 days in the open group was statistically ($p = 0.007$). There was no difference in the hospital stay for those with acute appendicitis (1.89 days vs. 2.61 days, $p = 0.067$) compared with those with a normal appendix but with pelvic inflammatory disease (1.1 days vs. 2.3 days, $p = 0.11$). Laparoscopic appendectomy is comparable to open appendectomy regarding complications, hospital stay, cost, return to activity, and return to work.[11]

We observed that complications were hemorrhage seen 5 in group I and 2 in group II, appendix perforation 4 in group I and 2 in group II, paralytic ileus 5 in group I and 3 in group II, intra - abdominal abscess 3 in group I and 1 in group II, seroma seen in 2 in group I and wound gape seen in 5 in group I and 1 in group II. Kumar et al[12] in their study a total of 400 patients of acute appendicitis were operated, 200 by laparoscopic appendectomy and 200 by open method. The two groups were compared with respect to operative time, duration of hospital stay, post-operative pain, complication rate, time taken to resume routine activity and cosmetic satisfaction of the patients. Results were found to be better with the laparoscopic technique. There was significantly less pain in the postoperative period with faster recovery, early resumption to work, reduced postoperative complications and better cosmetic satisfaction of the patients operated by the laparoscopic appendectomy technique as compared to open surgery.[12]

CONCLUSION

It can be concluded that laparoscopic appendectomy found to be better as compared to open appendectomy.

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