

Original Research

A comparative study of laparoscopic appendectomy versus open appendectomy for the treatment of acute appendicitis

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ABSTRACT:

Background: The present study was conducted to compare open versus laparoscopic appendectomy in acute appendicitis. **Materials & Methods:** 68 cases of acute appendicitis were divided into 2 groups. Group I patients were subjected to laparoscopy appendectomy and Group II patients subjected to open appendectomy. **Results:** Symptoms were nausea/vomiting seen 28 in group I and 26 in group II, abdominal pain 32 in group I and 33 in group II and fever in 25 in group I and 21 in group II. The difference was non-significant ($P > 0.05$). Oral feed started postoperatively at mean of 5.9 days in group I and 2.6 days in group II, average hospital stay was 5.6 days in group I and 4.2 days in group II. Wound abscess was seen in 3 days in group I and 4 days in group II and wound infection 2 days in group I and 8 days in group II. The difference was significant ($P < 0.05$). **Conclusion:** Laparoscopic appendectomy is effective method of acute appendicitis as compared to open appendectomy. **Key words:** Acute appendicitis, Laparoscopic appendectomy, Oral feed

Received: 11 September, 2020

Accepted: 16 November, 2020

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This article may be cited as: Haripriya A, Baghel A. A comparative study of laparoscopic appendectomy versus open appendectomy for the treatment of acute appendicitis. J Adv Med Dent Scie Res 2020;8(12):42-45.

INTRODUCTION

Acute appendicitis is the most common emergent abdominal condition requiring surgical intervention. Appendicitis is inflammation of the appendix.¹ Symptoms commonly include right lower abdominal pain, nausea, vomiting, and decreased appetite. However, approximately 40% of people do not have these typical symptoms. Severe complications of a ruptured appendix include widespread, painful inflammation of the inner lining of the abdominal wall and sepsis.²

Appendicitis is the most common cause of the acute abdomen in the United States, with an estimated lifetime risk between 5 and 20%. In fact, appendectomy is the most common non-elective operation performed by general surgeons. Although it has been over 115 years since Reginald Heber Fitz first demonstrated the

natural history and pathophysiology of appendicitis and advocated early appendectomy in his landmark article, appendicitis continues to present challenges for the surgeon today.³

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.⁴

Laparoscopic appendectomy gives a better evaluation of the peritoneal cavity than that obtained by open approach and also facilitates other differential diagnosis. Advantages of laparoscopic approach include less operative time, less postoperative pain, reduced analgesia, less surgery associated complications, shorter hospital stay, faster recovery, reduced wound infection

and minimal scarring.⁵ The present study was conducted to compare open versus laparoscopic appendectomy in acute appendicitis.

MATERIALS & METHODS

The present study was conducted in the department of general surgery in a medical college hospital. It comprised of 68 cases of acute appendicitis. Patients were informed regarding the study and written consent was taken.

Patient information such as name, age, gender etc. was recorded. Patients were diagnosed on the basis of physical examination, laboratory tests and ultrasound examination (USG). Patients were divided into 2 groups. Group I patients were subjected to laparoscopy appendectomy and Group II patients subjected to open appendectomy. Patients were monitored for pulse rate, blood pressure, temperature, respiratory rate, bowel sounds and urinary output. Patients were put on follow up at 1 week, 2 weeks and 4 weeks after surgery. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Number	Laparoscopy appendectomy	Open appendectomy
Number	34	34

Table I shows that group I patients were subjected to laparoscopy appendectomy and group II patients subjected to open appendectomy.

Table II Assessment of symptoms

Symptoms	Group I	Group II	P value
Nausea/vomiting	28	26	0.97
Abdominal pain	32	33	0.94
Fever	25	21	0.91

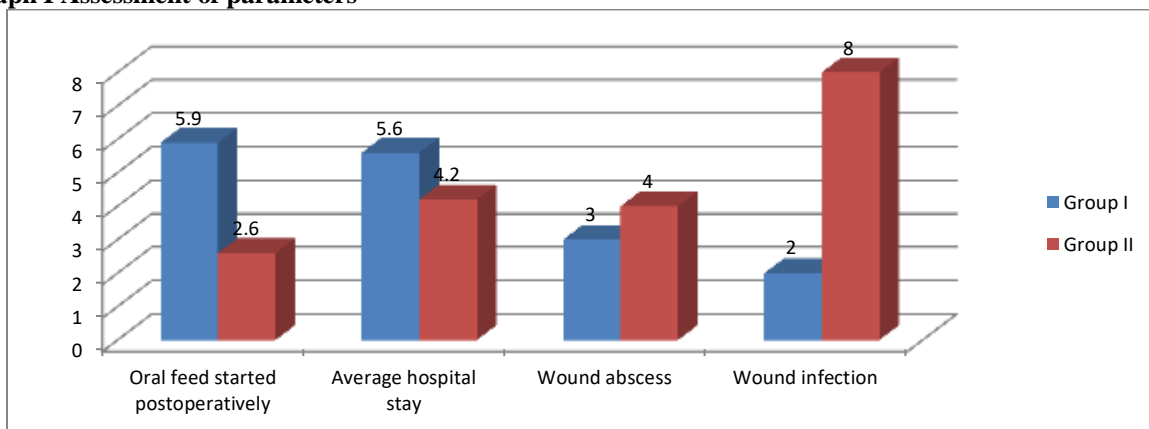
Table II shows that symptoms were nausea/vomiting seen 28 in group I and 26 in group II, abdominal pain 32 in group I and 33 in group II and fever in 25 in group I and 21 in group II. The difference was non-significant (P> 0.05).

Table III Assessment of parameters

Parameters	Group I	Group II	P value
Oral feed started postoperatively	5.9	2.6	0.01
Average hospital stay	5.6	4.2	0.05
Wound abscess	3	4	0.05
Wound infection	2	8	0.01

Table III, graph I shows that oral feed started postoperatively at mean of 5.9 days in group I and 2.6 days in group II, average hospital stay was 5.6 days in group I and 4.2 days in group II. Wound abscess was seen in 3 days in group I and 4 days in group II and wound infection 2 days in group I and 8 days in group II. The difference was significant (P< 0.05).

Graph I Assessment of parameters



DISCUSSION

The diagnosis of acute appendicitis is often difficult, and challenging. The most common cause of surgical abdomen is appendicitis affecting all the age groups.⁶ The maximum incidence is documented to be about 7-10 % of the general population in the second and third decades of life.⁷ Appendectomy is the operation which is most commonly performed by the general surgeons. The Laparoscopic appendectomy was first performed by Semm K, German Gynaecologist.⁸ It has gained acceptance with the technological advances of the past two to three decades as a diagnostic and treatment method for acute appendicitis. From that time, this procedure has been used widely. In spite of its wide acceptance, there remains a continuing debate in the literature related to the most appropriate way of removing the inflamed appendix.⁹ The present study was conducted to compare open versus laparoscopic appendectomy in acute appendicitis.

In present study, group I patients were subjected to laparoscopy appendectomy and group II patients subjected to open appendectomy. Burra et al¹⁰ in their study a total 140 patients admitted with clinical diagnosis of acute or recurrent appendicitis. They were divided into two groups: open appendectomy (OA) group with 70 patients in each) and laparoscopic appendectomy (LA) group (70 patients in each). OA was performed through standard Mc Burney incision. A standard 3-port technique was used in this study for the laparoscopic procedure. It is found that laparoscopic appendectomy is as safe and effective as the open procedure. The pain score was reduced in laparoscopic which is 3.4 ± 1.8 and in open 4.2 ± 1.4 . This difference was found to be statistically significant at p value of 0.05. The duration of analgesics was also reduced in laparoscopic with mean value of 4.81 ± 3.6 and 10.32 ± 4.2 and this difference was found to be statistically significant at p value of 0.05.

We found that symptoms were nausea/vomiting seen 28 in group I and 26 in group II, abdominal pain 32 in group I and 33 in group II and fever in 25 in group I and 21 in group II. Gupta et al¹¹ compared and evaluated the open and laparoscopic method of appendectomy in acute appendicitis. The subjects undergoing appendectomy were evaluated for age, sex, episode number, duration of pain before presentation in hospital, operative time, conversion rate, wound infection, post-operative intra-abdominal abscess formation, and stay in hospital. It was found that average operative time in open surgery was 67.5 minutes and 104 minutes in laparoscopic surgery, with a conversion to open in about 20% of the cases. Oral feeding in the open group was around the 5th day while it was around 2nd day in the laparoscopic group. Average hospital stay was also low in the laparoscopic group, being only around 5 days in laparoscopic group

and around 8 days in the open group. Overall complications were also low in the laparoscopic surgery group.

We observed that oral feed started postoperatively at mean of 5.9 days in group I and 2.6 days in group II, average hospital stay was 5.6 days in group I and 4.2 days in group II. Wound abscess was seen in 3 days in group I and 4 days in group II and wound infection 2 days in group I and 8 days in group II.

Another study by Garg CP¹² which studied a total of 110 patients, 61 of whom underwent open appendectomy and the rest 49 underwent laparoscopic appendectomy. Operative time was noted to be higher in laparoscopic surgery, also it was noted that laparoscopic surgery was associated with less analgesic use, shorter hospital stay.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that laparoscopic appendectomy is safer and effective method for patients of acute appendicitis as compared to open appendectomy.

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