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ORIGINAL RESEARCH

Laparoscopic appendectomy versus open appendectomy for the treatment of perforated appendicitis

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ABSTRACT

Background: The most frequent emergency abdominal disease that necessitates surgery is acute appendicitis. The present study was conducted to compare open versus laparoscopic appendectomy in perforated appendicitis. **Materials & Methods:** The study was conducted at PMCH Patna, Bihar from August 2021 to August 2023.80patients withperforated appendicitiswere divided into 2 groups. Each group had 40 patients. Group I patients underwent laparoscopy appendectomy and group II patients underwent open appendectomy. Parameters such as operating time, hospital stay, complications were recorded. **Results:** Group I had 16 males and 14 females and group II had 13 males and 17 females. Symptoms were nausea/vomiting seen 29patients in group I and 31patients in group II, abdominal pain in 37patients in group I and 35patients in group II and fever in 36patients in group I and 32patients in group II. The mean operating time (minutes) was 45.2 in group I and 54.1 in group II, oral feed started postoperatively on 5.9 days and 2.6 days and hospital stay (days) was 4.6 and 3.7 in group I and II respectively. The difference was non- significant (P> 0.05). Complications were wound abscess seen in 2 in group I and 3 patients in group II and wound infection 3 in group I and 6 in group II. The difference was significant (P< 0.05). **Conclusion:** Compared to open appendectomy, laparoscopic appendectomy is a safer and more successful treatment for patients with acute appendicitis.

Key words: perforated appendicitis, Laparoscopic appendectomy, wound abscess

INTRODUCTION

The most frequent emergency abdominal disease that necessitates surgery is acute appendicitis. The inflammation of the appendix is called appendicitis.[1] Right lower abdomen pain, nausea, vomiting, and decreased appetite are typical symptoms. But about 40% of people don't exhibit these common symptoms. Sepsis and extensive, painful inflammation of the abdominal wall's inner lining are severe consequences of an appendix rupture.[2] In the US, appendicitis is the most prevalent cause of acute abdomen, with a lifetime risk estimated to be between 5 and 20%. Actually, the most common non-elective procedure that general surgeons undertake is appendectomy.[3] The most common surgical treatment worldwide, accounting for 6% of all procedures, is an appendectomy, which is always done as an emergency procedure with the exception offormation of appendicular mass or abscess. In these cases, interval appendectomy is performed as elective procedure.[4]In addition to providing a more accurate assessment of the peritoneal cavity than an open procedure, laparoscopic appendectomy also makes other differential diagnoses easier. The laparoscopic technique has several benefits, such as a shorter hospital stay, quicker recovery, less wound infection, less scarring, less postoperative discomfort, decreased analgesia, and fewer complications related to surgery.[5]The present study was conducted to compare open versus laparoscopic appendectomy in perforated appendicitis.

MATERIALS & METHODS

The study was conducted at PMCH Patna, Bihar from August 2021 to August 2023. The present study was conducted on 80patients with acute appendicitis. All patients were informed regarding the study and their written consent was taken.

Patient information such as name, age, gender etc. was recorded. Patients were divided into 2 groups. Each group had 40 patients. Group I patients underwent laparoscopy appendectomy and group II

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patients underwentopen appendectomy. Parameters such as operating time, hospital stay, complications were recorded. Patients were followed 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
Method	Laparoscopy appendectomy	Open appendectomy
M:F	16:14	13:17

Table I shows that group I had 16 males and 14 females and group II had 13 males and 17 females.

Table II Assessment of parameters

Parameters	Variables	Group I	Group II	P value
Symptoms	Nausea/vomiting	29	31	0.94
	Abdominal pain	37	35	
	Fever	36	32	
Intra- operative parameters	Operating time (minutes)	45.2	54.1	0.03
	Oral feed started postoperatively	5.9	2.6	0.01
	hospital stay (days)	4.6	3.7	0.02

Table II, graph I shows that symptoms were nausea/vomiting seen 29patients in group I and 31patientsin group II, abdominal pain in 37patientsin group I and 35patientsin group II and fever in 36patientsin group I and 32patientsin group II. The mean operating time (minutes)was45.2 in group I and 54.1 in group II, oral feed started postoperatively on 5.9 days and 2.6 days and hospital stay (days) was 4.6 and 3.7 in group I and II respectively. The difference was non- significant (P> 0.05).

Graph I Assessment of parameters

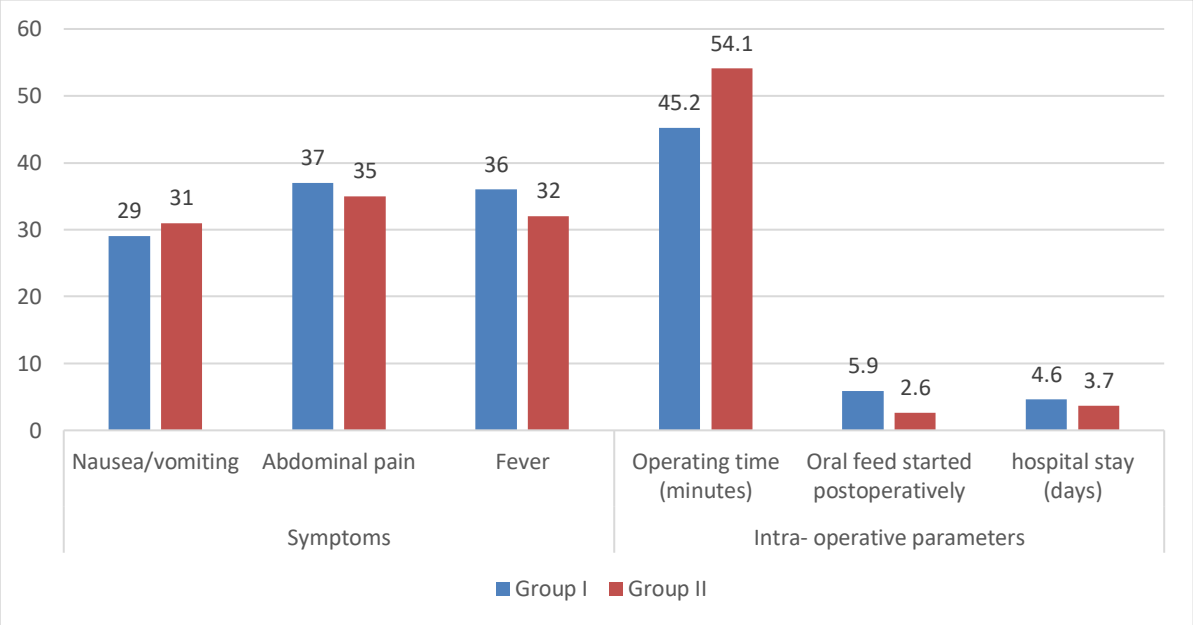

Table III Assessment of complications

Complications	Group I	Group II	P value
Wound abscess	2	3	0.85
Wound infection	3	6	0.01

Table III shows that complications were wound abscess seen in 2 in group I and 3 patients in group II and wound infection 3 in group I and 6 in group II. The difference was significant (P< 0.05).

DISCUSSION

It might be tough and demanding to diagnose acute appendicitis. Appendicitis is the most prevalent cause of surgical abdomen, affecting people of all ages.[6] The maximal incidence in the second and third decades of life is reported to be between 7 and 10% of the general population. The most common procedure that general surgeons undertake is an appendectomy.[7] With the advancement of technology over the last two to three decades, it has been more widely accepted as

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a means of diagnosing and treating acute appendicitis.[8] Since then, a lot of people have used this process. The best method for removing the inflamed appendix is still up for dispute in the literature, despite its widespread acceptance.[9,10]The present study was conducted to compare open versus laparoscopic appendectomy in perforated appendicitis. We found that group I had 16 males and 14 females and group II had 13 males and 17 females. Nazir et al[11]compared laparoscopic appendectomy and open appendectomy in cases of a perforated appendix by assessing surgical site infection, mean operating time, and length of hospital stay.The frequency of wound site infection was significantly higher in open appendectomy (27.69%) than in the laparoscopic approach (10.77%; p=0.01). Mean hospital stay was slightly longer in the laparoscopic approach (4.38 ± 1.09 days) than in open appendectomy (4.18 ± 0.77 days; p=0.23). Mean operating time for laparoscopic appendectomy and open appendectomy was 46.98 ± 2.99 minutes and 53.02 ± 2.88 minutes, respectively.

We found that symptoms were nausea/vomiting seen 29 patients in group I and 31 patients in group II, abdominal pain in 37 patients in group I and 35 patients in group II and fever in 36 patients in group I and 32 patients in group II. The mean operating time (minutes) was 45.2 in group I and 54.1 in group II, oral feed started postoperatively on 5.9 days and 2.6 days and hospital stay (days) was 4.6 and 3.7 in group I and II respectively. In evaluating and comparing the open and laparoscopic approaches to appendectomy for acute appendicitis, Gupta et al.[12] Age, sex, number of episodes, length of pain prior to hospital admission, surgical time, conversion rate, wound infection, formation of a post-operative intra-abdominal abscess, and length of hospital stay were all assessed for the participants undergoing appendectomy. The average operating time for open surgery was determined to be 67.5 minutes, while the average operating time for laparoscopic surgery was 104 minutes. Approximately 20% of the cases had an open conversion. In the open group, oral feeding began around day five, whereas in the laparoscopic group, it began around day two. The laparoscopic group had an average hospital stay of only approximately 5 days, while the open group had an average hospital stay of approximately 8 days.

We found that complications were wound abscess seen in 2 in group I and 3 patients in group II and wound infection 3 in group I and 6 in group II. In Burra et al.'s[13] study, a total of 140 patients were admitted with an appendicitis diagnosis, either acute or recurring. They were split into two groups: one for open appendectomy (OA), which included 70 patients, and another group for laparoscopic appendectomy (LA), which also included 70 patients. OA was carried out using a typical Mc Burney incision. The laparoscopic operation in this study was performed using a typical 3-port approach. It is discovered that laparoscopic appendectomy is equally safe and successful as open surgery. In laparoscopic procedures, the pain score was 3.4±1.8, but in open procedures, it was 4.2±1.4. At a p value of 0.05, the difference was determined to be statistically significant. During laparoscopic procedures, the analgesic duration was also shortened, with mean values of 4.81±3.6 and 10.32±4.2.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that compared to open appendectomy, laparoscopic appendectomy is a safer and more successful treatment for patients with acute appendicitis.

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