

# Evaluation of Outcome of Laproscopic Appendectomy for Treatment of Complicated and Uncomplicated Appendicitis

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## Abstract

**Background:** Acute appendicitis is the most common emergent abdominal condition requiring surgical intervention. The present study was conducted to evaluate outcome of laproscopic appendectomy for treatment of complicated and uncomplicated appendicitis. **Subjects and Methods:** This study was conducted on 68 patients of appendicitis. Patients were divided into 2 groups. Group I comprised of 34 uncomplicated appendicitis patients group II comprised of 34 complicated appendicitis patients. Following standardized procedure, laproscopic appendectomy was performed. **Results:** Both groups had 34 patients. Group I consisted of 20 males and 14 females and group II consisted of 18 males and 16 females. The number of patients with operation time (45-60 mins) in group I was 8 and in group II was 10, with 60-90 mins in group I was 9 and in group II was 14, with 90-120 mins in group I was 7 and in group II was 8, with <120 mins in group II was 10 and in group II was 12. The difference was non-significant ( $P > 0.05$ ). Complications were wound infections 2 in group I and 3 in group II, incisional hernia 2 in group II, intra-abdominal abscess 1 in group I and 3 in group II and ileus 1 in both groups. The difference was significant ( $P < 0.05$ ). **Conclusion:** Complications such as wound infections, incisional hernia, intra-abdominal abscess and ileus was more common in complicated appendectomy cases.

**Keywords:** Acute appendicitis, laproscopic appendectomy, incisional hernia.

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## Introduction

Acute appendicitis is the most common emergent abdominal condition requiring surgical intervention. Appendicitis is inflammation of the appendix. 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.<sup>[1]</sup>

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 nonelective 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.<sup>[2]</sup>

There has been a dramatic reduction in the mortality rate attributed to acute appendicitis over the past 50 years from nearly 26% to less than 1%. However, the morbidity rate, which has heavily impacted health care costs, has not experienced a similar drop. Identifying risk factors that

predict the likelihood of complications associated with appendicitis is a crucial step in managing these patients.<sup>[3]</sup> The use of laproscopic appendectomy for complicated appendicitis is controversial, especially with regard to the rate of postoperative infectious complications including wound infection and abscess formation in abdominal cavity.<sup>[4]</sup> The present study was conducted to evaluate outcome of laproscopic appendectomy for treatment of complicated and uncomplicated appendicitis.

## Subjects and Methods

This study was conducted in department of general surgery. It comprised of 68 patients of appendicitis. Patients were informed regarding the study and written consent was taken. Ethical approval was obtained prior to the study. 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 comprised of 34 uncomplicated appendicitis patients group II comprised of 34 complicated appendicitis patients. Following standardized procedure, laproscopic appendectomy was performed. Results thus obtained were subjected to statistical analysis using chi-square test. P value < 0.05 was considered significant.

Results

Table 1: Distribution of patients

Group	Group I (complicated appendicitis)	Group II (complicated appendicitis)
Male	20	18
Female	14	16

[Table 1] shows that both groups had 34 patients. Group I consisted of 20 males and 14 females and group II consisted of 18 males and 16 females.

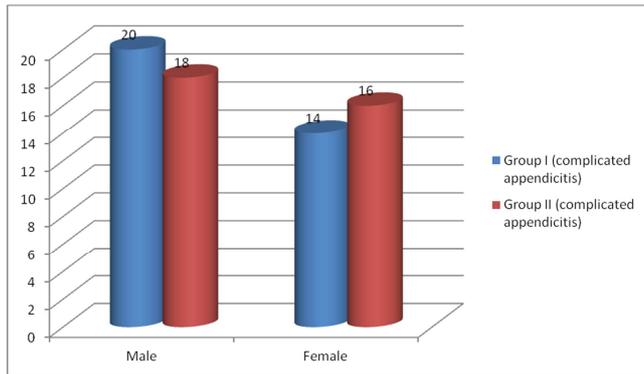


Figure 1: Distribution of patients

Table 2: Comparison of parameters in both groups

Parameters	Group I	Group II	P value
Operation time 45-60 mins.	8	10	0.41
60-90 mins.	9	14	0.05
90-120 mins.	7	8	0.91
<120 mins.	10	12	0.82
Complication Wound infection	2	3	0.92
Incision hernia	0	2	0.04
Intrabdominal abscess	1	3	0.01
Lieus	1	1	1

[Table 2, Figure 2] shows that number of patients with operation time (45-60 mins) in group I was 8 and in group II was 10, with 60-90 mins in group I was 9 and in group II was 14, with 90-120 mins in group I was 7 and in group II was 8, with <120 mins in group I was 10 and in group II was 12. The difference was non-significant ( $P > 0.05$ ). Complications were wound infections 2 in group I and 3 in group II, incisional hernia 2 in group II, intra-abdominal abscess 1 in group I and 3 in group II and ileus 1 in both groups. The difference was significant ( $P < 0.05$ ).

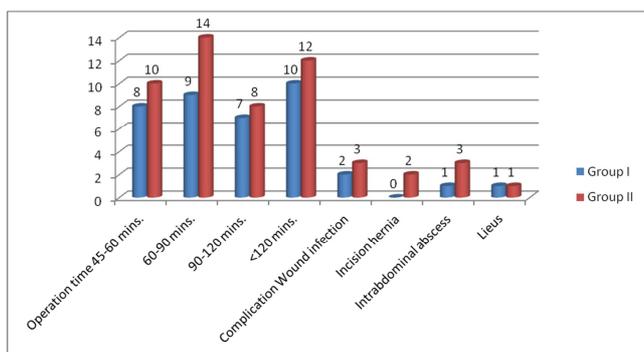


Figure 2: Comparison of parameters in both groups

Discussion

Laparoscopic appendectomy has become an increasingly prevalent intervention for acute appendicitis since its introduction in 1983.<sup>[5]</sup> Laparoscopic appendectomy has several advantages over open appendectomy, including a shorter post-operative recovery, less post-operative pain, and lower superficial surgical site infection rate. However, the occurrence of intra-abdominal abscess is almost three times more prevalent in laparoscopic appendectomy than open appendectomy.<sup>[6]</sup>

Appendicitis is a common disease seen in the emergency department. It is normally treated with appendectomy by either a laparoscopic or an open approach. Therefore, appendectomy is a frequent surgical procedure. Every operation has potential complications on both short and long term. The main short-term complications of appendectomy such as infections and intra-abdominal abscesses have already been investigated.<sup>[7]</sup> However, it is important to assess the risk of long-term complications for abdominal procedures such as ileus and incisional hernia. Finally, also death may be the undesired result of surgery. Appendix is part of the digestive tract, but the exact function of the appendix is yet to be clarified. The appendix might have an immunological role in the intestine.<sup>[8]</sup> The present study was conducted to evaluate outcome of laproscopic appendectomy for treatment of complicated and uncomplicated appendicitis. We included 68 patients who underwent laproscopic appendectomy. Both groups had 34 patients. Group I consisted of 20 males and 14 females and group II consisted of 18 males and 16 females. Pokala et al,<sup>[9]</sup> included a total of 4282 patients. There were 1928 (45%) women and 2354 (55%) men with a median age of 29 years. Nine hundred and seven (21.2%) patients underwent an abdominal CT scan, 1856 (43.3%) patients an US, and 285 (6.7%) patients both CT scan and US. A total of 4097 (95.7%) patients underwent surgery; 1809 (42.2%) underwent open appendectomy and 2215 (51.7%) had laparoscopic appendectomy. One hundred eighty-five (4.3%) patients were managed conservatively. Major complications occurred in 199 patients (4.6%). The overall mortality rate was 0.28%.

We found that number of patients with operation time (45-60 mins) in group I was 8 and in group II was 10, with 60-90 mins in group I was 9 and in group II was 14, with 90-120 mins in group I was 7 and in group II was 8, with <120 mins in group I was 10 and in group II was 12. The difference was non-significant ( $P > 0.05$ ). Complications were wound infections 2 in group I and 3 in group II, incisional hernia 2 in group II, intra-abdominal abscess 1 in group I and 3 in group II and ileus 1 in both groups.

Chang et al,<sup>[10]</sup> analyzed the variables gender, age, evolutionary phase, length of hospital stay, pathological diagnosis, use of antibiotics, use of drains, complications and mortality in patients with Acute appendicitis. AA was more prevalent in young adults (19-44 years) and males (65.20%). The mean hospital stay was seven days and phase II was the most prevalent. We found the histopathological diagnosis of primary tumor of the appendix in six patients (0.94%), adenocarcinoma being the most common histologic type (66.7%). Regarding the use of antibiotics, 196 patients

underwent antibiotic prophylaxis and 306 received antibiotic therapy. Eighty-one patients used some kind of drain, for an average of 4.8 days. Seventeen patients died (2.67%), predominantly males (70.59%), with mean age of 38.47 years.

## Conclusion

Authors found that complications such as wound infections, incisional hernia, intra-abdominal abscess and ileus was more common in complicated appendectomy cases.

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