



TO REVIEW THE OUTCOME OF LAPAROSCOPIC APPENDICECTOMY VERSUS OPEN APPENDICECTOMY

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ABSTRACT

Summary and Background: Acute appendicitis is one of the common emergency surgical problems and appendicectomy has been the treatment of choice. Yet laparoscopic appendicectomy has struggled to prove its superiority over the open appendicectomy.

Aims: Our aim is to compare the outcome of laparoscopic appendicectomy versus open appendicectomy in a prospective randomized study.

Material and Methods: In our study total 50 patients (25+25) were analyzed. After relevant preoperative checkup and investigations diagnosis would be confirmed by Alvarado score and high resolution sonography abdomen. The main outcome measures are duration of surgery, post operative complications and hospital stay.

Results: The mean duration of surgery was slightly shorter in open appendicectomy group (46.40 ± 13.57 min) as compared to laparoscopic group (49.12 ± 12.70 min), but was statistically not significant, p value=0.46. In open appendicectomy 12% patients developed complications like surgical site infection and paralytic ileus, but in laparoscopic appendicectomy group no patient developed any complication in our study. The mean duration of hospital stay was shorter in laparoscopic appendicectomy (3.72 ± 1.061 days) than open appendicectomy (5.72 ± 1.1 days), which was statistically significant.

Conclusion: Though laparoscopic appendicectomy takes slightly longer operative time as compared to open appendicectomy however laparoscopic appendicectomy have advantages of shorter hospital stay, less post operative pain and negligible post operative complications, so our study hereby concludes that laparoscopic appendicectomy is a better procedure than open appendicectomy in cases of acute appendicitis.

KEYWORDS : Appendicectomy, Laparoscopy, Surgery

INTRODUCTION

Beginning with its initial description by Fitz in the 19th century, acute appendicitis has been a significant long-standing medical challenge; today it remains the most common gastrointestinal emergency in adults. Already in 1894, McBurney advocated for the surgical removal of the inflamed appendix and is credited with the initial description of an Open Appendicectomy (OA). With the introduction of minimally invasive surgery, this classic approach evolved into a procedure with multiple, smaller incisions; a technique termed Laparoscopic Appendicectomy (LA). There is much literature describing the advantages of this newer approach. To name a few, patients have significantly less wound infections, reduced pain, and a reduction in ileus compared with the Open Appendicectomy (OA). In the past few years, Single Incision Laparoscopic Appendicectomy (SILA) has gained popularity as the next major evolutionary advancement in the removal of the appendix. Described as a pioneer in the era of "scarless surgery," it involves only one transumbilical incision. Patients are postulated to have reduced post-operative complications such as infection, hernias, and hematomas, as well as a quicker recovery time and less post-operative pain scores, in comparison to its predecessors. In this review, we explore the advancements of the appendicectomy from open to laparoscopic.

AIMS AND OBJECTIVES

Major:

To review the outcome of Laparoscopic appendicectomy versus open appendicectomy at M.L.B MEDICAL COLLEGE JHANSI.

Minor:

1. Determine the number of patients who underwent Laparoscopic appendicectomy.

2. To compare and contrast laparoscopic versus open appendicectomy in appendicitis considering following parameters:
 - a. length of operation
 - b. intra operative and post operative complications
 - c. hospital stay
 Time duration between symptom and operation

MATERIALS AND METHODS

All patients admitted to surgery department from October 2017 to March 2019 with probable diagnosis of appendicitis would be included in the study.

After matching for Age/Sex and disease, patient would be randomly taken for Laparoscopic or open appendicectomy.

Inclusion criteria:

- Patients of age group 10 years to 60 years will be included.
- All varieties of symptomatic appendicitis will be taken in study.

Exclusion criteria:

- Pregnant females and obese patients (BMI >30) are not included in study.
- Complications associated with appendicitis like perforation peritonitis, carcinoma of appendix etc. will be excluded from the study.

After relevant preoperative checkup and investigations, diagnosis would be confirmed by

1. ALVARADO score
2. High Resolution Sonography Abdomen

Randomization:

Random allocation of age and sex matched patients (sample

size =50) presenting with symptoms suggestive of acute appendicitis with confirmatory ultrasonographic study will be done into two groups. The two groups were as follows
 Group1: Laparoscopic Appendicectomy (n=25)
 Group2: Open Appendicectomy (n=25)

PROCEDURE:

I. Open appendicectomy would be performed by standard right iliac fossa approach. The incision would be either Mc-Burney or Lanz.

Ligation of meso-appendix including the appendicular artery would be carried out by 2-0 vicryl and appendicular stump would also be ligated with 2-0 vicryl.

Stump would not be buried. If indicated 18 French pelvic drain is introduced and left in situ. Indication would be-

1. Peritoneal soiling
2. Peritoneal contamination
- II. Laparoscopic appendicectomy would be done by three ports technique. One 10mm infraumbilical port, two 5/10 mm ports in left iliac fossa and hypogastrum.

Ligation of meso-appendix would be carried out by using 2-0 vicryl suture. Appendicular stump would be managed by intra-corporeal ligation with 2-0 vicryl. Drain to be left if indicated in conditions mentioned earlier.

Statistical analysis:

All statistical calculation/descriptive analyses (except t-test value) were made with the help of data analysis tool of Microsoft Excel 2007. The p-value of < 0.05 for one - tailed hypothesis was considered statistically significant to reject the 'null hypothesis'.

RESULTS:

Parameters	Laparoscopic Appendicectomy Group	Open Appendicectomy Group	P value
Mean time duration of surgery (in minutes)	49.12±12.706	46.4±13.576	0.4681
• Complication	00	02	-
• Surgical Site Infection	00	01	-
• Paralytic ileus			
Mean hospital stay	3.72±1.061	5.72±1.1	0.0001

DISCUSSION:

A total of 50 (25 laparoscopic and 25 open) patients underwent surgery for appendicular pathology from October 2017 to March 2019. All patients who underwent Laparoscopic Appendicectomy (LA) and Open Appendicectomy (OA) were included in the study.

The mean duration of operation was slightly shorter in the Open Appendicectomy group (46.4±13.576 min.) compared to Laparoscopic group (49.12±12.706 min) and was statistically not significant.

These findings are similar to study of Naraintran S. et al, published in 2018; they noted that operation time was longer in laparoscopic Appendicectomy group compared to open Appendicectomy.

Patients who underwent laparoscopic Appendicectomy had a shorter hospital stay. The average duration of hospital stay for laparoscopic Appendicectomy group in the study was 3.72±1.061 days while for the open Appendicectomy group was 5.72±1.1 days, which was statistically significant. When compared with a study done by Jochanan G et al, found that

the average hospital stay was 2.5 days in the laparoscopic Appendicectomy group and 2.7 days in the open Appendicectomy group.

With similar results found in another study, done by Anderson DG et al, when they found the duration of hospital stay was lower in the laparoscopic Appendicectomy group compared to open Appendicectomy group.

In the laparoscopic Appendicectomy group, no patient developed iatrogenic complication. For those undergoing Open appendicectomy, 12% patients had complications. The most common being wound sepsis, which occurred, in 8% (2 out of 25) of the patients. One patient developed paralytic ileus which was diagnosed 4 days after the surgery. Both of these complications were managed conservatively. These results are comparable with the study done by Liping Dai and Jian Shuai et al in that there were minimal complications after laparoscopic Appendicectomy as compared to open appendicectomy. Complications in these procedures vary upon variations in skill level and experience of surgeon in different centers.

CONCLUSIONS

Though laparoscopic appendicectomy takes slightly longer operative time as compared to open appendicectomy in acute appendicitis, however this surgery has advantages of shorter hospital stay, less post operative pain and negligible post operative complications.

Our study hereby concludes that laparoscopic appendicectomy is a better procedure than open appendicectomy in case of acute appendicitis.

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