

THE OUTCOMES OF LAPAROSCOPIC VERSUS OPEN APPENDECTOMY FOR COMPLICATED APPENDICITIS

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Introduction

Complicated appendicitis is associated with longer hospital stays and increased morbidity. In addition, open surgery has its complications such as surgical site infection, incisional hernia, and wound dehiscence. Therefore, the laparoscopic approach is gaining much support as minimally invasive with the benefits of laparoscopic surgery. However, the role of laparoscopic appendectomy remains controversial in the setting of complicated appendicitis in comparison with uncomplicated appendicitis in the general surgical community.

Aim of the work

The aim of this study was to compare the outcome of laparoscopic versus open appendectomy in patients with complicated appendicitis regarding operative time, morbidity specifically postoperative pain and ileus, hospital stay and need for readmission.

Patients and Methods

In the period from April 2020 to May 2022, 52 patients with complicated appendicitis were admitted to the GIT Surgical Unit in Alexandria University Medical Hospital. A total of 12 patients were excluded, 5 patients for having lower abdominal scar from previous surgeries, 4 patients for having immobile appendicular mass on examination under general anesthesia and 3 patients for having severe cardiopulmonary comorbidities. The remaining 40 patients constituted our study pool which were randomly allocated to LA(laparoscopic appendectomy)and OA(open appendectomy) groups with 20 patients per group.

Preoperative assessment: Thorough history, clinical examination, laboratory investigation, imaging as US and CT abdomen.

Results

In this study, a significant difference was noted in the domains of postoperative pain, return of peristalsis, time to start oral, length of hospital stay, and return to daily activities in favor of LA group.

The mean operative time was shorter in OA 91.4 ± 11.99 min than LA 109.1 ± 16.71 min. No statistically significant difference between both groups was calculated as regard occurrence of intra-abdominal collection.

Table 1: Comparison between the two studied groups according to postoperative pain score

	Laparoscopic (n = 20)	Open (n = 20)	t	p
Pain				
Min. – Max.	1.0 – 5.0	3.0 – 8.0	5.859*	<0.001*
Mean ± SD.	2.75 ± 1.29	5.45 ± 1.61		
Median (IQR)	3.0 (2.0 – 4.0)	5.50 (4.0 – 7.0)		

Table 2: Comparison between the two studied groups according to return of peristalsis, time to start oral, postoperative hospital stay and return to normal activity

	Laparoscopic (n=20)	Open (n = 20)	Test of sig.	P
Return of peristalsis(days)				
Min. – Max.	1.0 – 5.0	3.0 – 8.0	U= 62.500*	<0.001*
Mean ± SD.	2.80 ± 1.28	5.10 ± 1.74		
Median (IQR)	2.50 (2.0 – 4.0)	5.0 (3.50 – 6.50)		
Time to start oral (days)				
Min. – Max.	1.0 – 5.0	3.0 – 8.0	U= 60.500*	<0.001*
Mean ± SD.	2.75 ± 1.21	4.95 ± 1.67		
Median (IQR)	2.50 (2.0 – 4.0)	5.0 (3.50 – 6.0)		
Length of stay (days)				
Min. – Max.	3.0 – 7.0	4.0 – 10.0	t= 4.559*	<0.001*
Mean ± SD.	4.75 ± 1.25	7.05 ± 1.88		
Median (IQR)	4.50 (4.0 – 6.0)	7.0 (5.50 – 8.50)		
Return to normal activity (days)				
Min. – Max.	12.0 – 18.0	18.0 – 28.0	U= 9.622*	<0.001*
Mean ± SD.	14.80 ± 1.94	22.15 ± 2.81		
Median (IQR)	14.0 (13.0 – 16.50)	22.0 (20.0 – 24.0)		

The mean operative time was shorter in OA 91.4 ± 11.99 min than LA 109.1 ± 16.71 min. No statistically significant difference between both groups was calculated as regard occurrence of intra-abdominal collection.

Table 3: Comparison between the two studied groups according to operative time

Operative time (min)	Laparoscopic (n = 20)	Open (n = 20)	t	p
Min. – Max.	85.0 – 135.0	70.0 – 110.0	3.838*	0.001*
Mean ± SD.	109.1 ± 16.71	91.40 ± 11.99		
Median (IQR)	111.0 (92.50 – 123.0)	93.0 (81.0 – 101.0)		

Conclusion

From the results of this study, laparoscopy is recommended in the setting of complicated appendicitis. The risk of intra-abdominal collection should not be a barrier against the widespread practice of this surgical procedure among laparoscopic surgeons if adequate precautions are employed.