

## Laparoscopy and Complicated Appendicitis: Risk and Safety. Our Experience in 30 Cases

Mohamed BM Kotb\*, Samer M Hosny and Mahmoud T Ayoub

Department of General Surgery, Faculty of Medicine, Assiut University Hospital, Egypt

\*Corresponding authors: Mohamed BM kotb, Department of General Surgery, Faculty of Medicine, Assiut University Hospital, Egypt, Tel: +01012127297, E-mail: kotb.kottb73@gmail.com

Received Date: October 16, 2022 Accepted Date: November 16, 2022 Published Date: November 18, 2022

Citation: Mohamed BM Kotb, Samer M Hosny, Mahmoud T Ayoub. (2022) Laparoscopy and Complicated Appendicitis: Risk and Safety. Our Experience in 30 Cases. J Digestive Disord Hepatol 1: 1-5.

### Abstract

**Background:** When the laparoscopic appendectomy (LA) procedure was first established, individuals with uncomplicated appendicitis were the majority of those who underwent it due to safety concerns. Concerns about the surgical difficulties of laparoscopic treatment of acute perforated appendicitis, probable post-operative complications, and conversion to an OA during the surgery[1-2] persist.

**Objective:** In this study, we looked at the effectiveness and safety of laparoscopy in treating perforated appendicitis.

**Methodology:** 30 individuals who undergone laparoscopic appendectomy procedures at Assiut University hospitals are included in the study. Following fulfilment of the requirements for enrollment from the department of general surgery, the study population was included. All of the patients enrolled in this trial gave their informed consent. Clinical observations, complete blood counts, and abdominal sonography were used to make the patient's diagnosis.

**Results:** For perforated appendicitis, thirty patients had laparoscopic appendectomy. Of the 30 patients, there are 27 cases of perforated appendix, 1 case of gangrenous appendix, and 1 case of appendicular abscess. Infection of the wound following surgery, conversion rates, and length of hospital stay are quite low.

**Conclusions:** The results of this study demonstrated that the BEST method for treating perforated appendicitis is laparoscopic appendectomy.

**Keywords:** Appendix; laparoscopy; risk; safety

## Introduction

The most frequent abdominal surgical emergency in the world, appendicitis can result in peritonitis, gangrene, appendicular abscess/mass, and perforation [3]. The most common abdominal operation is an appendectomy because appendicitis affects about 7% of people in their lifetime, with a peak incidence between the ages of 10 and 30. For more than a century, A dependable and effective treatment for treating acute appendicitis is an open appendectomy. By using laparoscopic surgery, the first appendectomy was performed in 1981 by German doctor Semm[4]. Despite being utilised even before laparoscopic cholecystectomy, LA has not yet shown to be the best method for appendectomy. Along with the renewed interest in minimally invasive surgery Shorter hospital stays, early mobilisation, quick bowel function recovery, and a manageable complication rate are some benefits that LA may offer. 20% to 30% of people with acute appendicitis go on to develop perforated appendicitis, which is linked to considerably higher risks of intra-abdominal abscess and wound infection as postoperative infectious sequelae[5-6]. In this investigation, we examined the efficacy and security of laparoscopy in the management of perforated appendicitis.

## Patients and Methods

Patients with acute perforated appendicitis undergoing laparoscopic management are included in this prospective study. All patients will undergo investigations, which will include:

- 1- Renal function tests, CBC, Prothrombin time and concentration
- 2- Ultrasound of the abdomen (Abd U/S).

### Inclusion criteria:

1. Patients with acute perforated appendicitis can be male or female.
2. Patients who are well enough for general anaesthesia and laparoscopy.
3. patients who sign an informed consent form in writing.
4. Patients who consent to submit contact information and short-term outcome statistics.

### Exclusion criteria:

1. Patients with severe comorbid conditions with high risk for general anesthesia.
2. Appendicular abscess and appendicular mass .
3. Patients suffering from an ongoing infections including chest infections .
4. Children and pregnant females .

### The Surgical technique:

Camera is introduced through the 12 mm periumbilical port. This port is placed using a Hassan technique or direct cut down method. A diagnostic laparoscopy is performed. A 5mm port is introduced in the right lower quadrant under vision[7]. A non traumatic grasper is introduced through this port to identify the appendix. At this point the small intestine is lifted out of the pelvis exposing the inflamed appendix. Careful manipulation is essential without directly grasping it to avoid bowel injury[8-9]. A suprapubic location receives a 10mm port. peritoneal bowel movement and pus aspiration following abdominal exposure. To separate the appendicular artery, a Maryland grasper is used, and a window is made in the mesentery. The isolated vessel is given three clips. Two clips are left on the patient's side after the vascular has been divided into clips. The remaining portion of the mesentery is subsequently divided using diathermy. The appendix was then transected with a stapler or ligated with Endoloops and separated at its base. To guarantee haemostasis, we now evaluate the divided vessel and stump of the appendix. The appendix can be retrieved from an endobag[10–11].

## Results

30 patients, including adult males and females, participated in the study. The age range of the patients under study was 18 to 65 years, with a mean age of 31.77 13.07 years. 30 patients were seen, of which 24 (80%) were female and 6 (20%) were male. The majority of patients had an increase in their total leucocytic count, or leukocytosis, and it was found that their mean WBCs ranged from 6 to 21.9 with a mean of 12.99 4.26. All 30 patients had the first diagnostic laparoscopy, and the following intraoperative findings were made: Appendicular mucocele, appendicular abscess, and gangrenous appendix all occurred once in seven patients (23.3%), while 20 patients (66.7%) had pus-free IPF col-

lection + PA (perforated appendicitis) (very inflamed appendix). According to conversion to open surgery, only three cases (10%) were converted to open surgery. The disorders in consideration were appendicular abscess, gangrenous appendix, and appendix mucocoele. In 27 cases (90%) the laparoscopic appendectomy was effectively performed first. Only one case (3.3%) of postoperative complications in the form of wound infection (appendicular abscess) was discovered following surgery on 30 individuals; the remaining 29 cases (96.7%) were free of complications. The average post-operative hospital stay for all patients was measured, and it was found that 23 cases, or 76.7% of the cases, were discharged within two days of admission, while 4 instances, or 13.3% of the cases, stayed one day at the hospital. 10% of the cases required a three- to four-day hospital stay, and those cases that required open surgery were those that required the longer hospital stay (appendicular abscess, gangrenous appendix and mucocoele of the appendix). The post-operative hospital stay's average was 2.00 0.59 standard deviations (1.0-4.0).

## Discussion

Thirty patients received laparoscopic appendectomy for perforated appendicitis. Out of 30 instances, 27 individuals (or 90%) had appendices that had ruptured; the other three cases (all 3.3%) had appendicular abscesses, gangrenous appendices, and appendix mucocoeles. Only one (3.3%) case of a surgical wound infection was documented. Only three cases (10%), including appendicular abscess, gangrenous appendix, and appendix mucocoele, required open surgery. Our research supports the much decreased frequency of wound-related issues following laparoscopic appendectomy. Our data show that after LA for perforated appendicitis, the post-operative hospital stay and conversion rate have dramatically lowered.

## Conclusion

According to the results of our study, laparoscopic appendectomy is a secure treatment for perforated appendicitis. Shorter hospital stays and a reduced conversion rate were the outcomes. The possibility of postoperative infections is decreased.

## Author Disclosure Form

The following additional information is required for submission. Please note that failure to respond to these questions/statements will mean your submission will be returned. If you have nothing to declare in any of these categories, then this should be stated.

### Please state any conflicts of interest

We don't have any conflict of interest

### Please state any sources of funding for your research

We don't have any sources of funding for our research

### Please state whether Ethical Approval was given, by whom and the relevant Judgement's reference number

This is a prospective non-randomized clinical study was conducted in the Department of General Surgery at Assiut University Hospitals from January 2019 to December 2019 and approved by the Institutional Research Board of Faculty of Medicine at Assiut University. IRB local approval number: 17100679.

### Research Registration Unique Identifying Number (UIN)

The World Medical Association's Declaration of Helsinki 2013 states in article 35: *'Every research study involving human subjects must be registered in a publicly accessible database before recruitment of the first subject'*. Editors of IJS require that all types of research studies involving human participants should be registered prospectively and failing that retrospectively. There are many places to register your research, and you can choose which is the most suitable for your needs:

- <https://www.clinicaltrials.gov/> - for all human studies - free
  - <http://www.chictr.org.cn/index.aspx> - for all human studies - free
  - <https://www.researchregistry.com/> - for all human studies - charge
  - <https://www.isrctn.com/> - for all human studies - charge
  - Prospero - for systematic reviews - free
  - There are many national registries approved by the UN that can be found here
- Elsevier does not support or endorse any registry.

1. Name of the registry:
2. Unique Identifying number or registration ID:
3. Hyperlink to your specific registration (must be publicly accessible and will be checked):

## Author contribution

Please specify the contribution of each author to the paper, e.g. study design, data collections, data analysis, writing. Others, who have contributed in other ways should be listed as contributors.

Authors shared equally in study design, data collection, data analysis, and writing.

## Guarantor

The Guarantor is the one or more people who accept full responsibility for the work and/or the conduct of the study, had access to the data, and controlled the decision to publish. Please note that providing a guarantor is compulsory.

## References

1. Bonanni F, Reed J 3rd, Hartzell G, Trostle D, Boorse R, et al (1994) Laparoscopic versus conventional appendectomy. *J Am Coll Surg* 179:273-8.
2. Krisher SL, Browne A, Dibbins A, Tkacz N, Curci M (2001). Intra-abdominal abscess after laparoscopic appendectomy for perforated appendicitis. *Arch Surg* 136:438-41.
3. D'Agostino J (2002) Common abdominal emergencies in children. *Emergency medicine clinics of North America*. 20:139-53
4. Gross E, et al (1998) Laproscopic versus conventional appendectomy - a comparison with reference to early postoperative complication. *Zentralbl Chir* 123: 858-62.
5. Andersson RE, Hugander A, Thulin AJG (1998) Diagnostic accuracy and perforation rate in appendicitis: Association with age and sex of patient and with appendectomy rate. *Eur J Surg* 158:37-41.
6. Krukowski ZH, Irwin ST, Denholm S, Matheson NA (1988) Preventing wound infection after appendectomy: A review. *Br J Surg* 75:1023-1032.
7. Frazee RC, Roberts JW, Symmonds RE, Snyder SK, Hendricks JC, et al (1994) A prospective randomized trial comparing open versus laparoscopic appendectomy. *Ann Surg* 219:725-8.
8. Guller U, Hervey S, Purves H, Muhlbaier LH, Peterson ED, et al (2004) Laparoscopic versus open appendectomy: outcomes comparison based on a large administrative database. *Ann Surg* 239:43-52.
9. Ortega AE, Hunter JG, Peters JH, Swanstrom LL, Schirmer B (1995) A prospective, randomized comparison of laparoscopic appendectomy with open appendectomy. *Laparoscopic Appendectomy Study Group. Am J Surg* 169:208-12.
10. Hellberg A, Rudberg C, Kullman E, Enochsson L, Fenyo G, et al (1999) Prospective randomized multicentre study of laparoscopic versus open appendectomy. *Br J Surg* 86:48-53.
11. Park JB, Sul JY (2007) Laparoscopic appendectomy: a safe primary procedure for complicated appendicitis. *J Korean Surg Soc* 72:51-6.

**Submit your manuscript to a JScholar journal and benefit from:**

- ¶ Convenient online submission
- ¶ Rigorous peer review
- ¶ Immediate publication on acceptance
- ¶ Open access: articles freely available online
- ¶ High visibility within the field
- ¶ Better discount for your subsequent articles

Submit your manuscript at  
<http://www.jscholaronline.org/submit-manuscript.php>