

Original Research Paper

General Surgery

COMPARATIVE STUDY BETWEEN LAPROSCOPIC APPENDICECTOMY AND LAPROSCOPIC ASSISTED APPENDICECTOMY

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ABSTRACT Objectives: To evaluate the advantages of laproscopic assisted appendicectomy on laproscopic appendicectomy.	

ABSTRACT Materials and methods: this was a retrospective study evaluated conducted in ACPM medical and GMC, dhule. In total 50 patients were evaluated during a time period of 1 year from June 2017 to May 2018.

Results: here we compare the mean duration time and hospital stay in two different groups.

Conclusion: Laparoscopically assisted appendicectomy (LAA) can be done at a shorter operating time when compared to Laparoscopic appendicectomy (LA), and with less post operative hospital admission as opposed to open appendicectomy.

KEYWORDS : appendicitis, apppendicectomy, laproscopic appendicectomy, laproscopic assisted appendicectomy, post laproscopy exteriorization appendicectomy.

Introduction

Appendix is a blind-ended tube connected to caecum, from which it develops in the embryo. The human appendix averages 9 cm in length but can range from 2 to 20 cm. The diameter of the appendix is usually between 7 and 8 mm. The longest appendix ever removed was 26 cm long.^[1] The appendix is usually located in the lower right quadrant of the abdomen, near the right hip bone. The base of the appendix is located 2 cm beneath the ileocecal valve that separates the large intestine from the small intestine. Its position within the abdomen corresponds to a point on the surface known as McBurney's point. The appendix is connected to the mesonery in the lower region of the ileum, by a short region of the mesocolon known as the mesoappendix.^[2-3]

Inflammation of the appendix is called appendicitis and is usually acute in onset. Appendicitis is caused by a blockage of the hollow portion of the appendix⁴. Appendicitis is most frequent in children and young adults. Acute appendicitis is essentially a clinical diagnosis. About 6% of the population is expected to have appendicitis in their lifetime5. Routine history and physical examination still remain the most practical diagnostic modalities. Absolute diagnosis of course is only possible at operation and histopathologic examination of the specimen⁶.

Most cases require emergency surgery, in order to avoid rupture of the appendix into the abdomen⁷. During the operation, called appendectomy, the inflamed appendix is surgically removed⁸. The traditional surgical approach involves a small incision (about 5 cm or 2 inch) in the right iliac fossa. Alternatively, it is possible to perform the operation by laproscopy (2). This operation, called laproscopic appendectomy, requires 3 very small incisions (each about 1 cm or $\frac{1}{2}$ inch)⁹. The surgeon then introduces a camera and some instruments into the abdomen and removes the appendix as in the conventional operation^(10,11612).

Laproscopic appendectomy is a well-described surgical technique. However, concerns still exists regarding wheather the closure of the appendiceal stump should be done with a clip, staples, an endoloop, extracorporeal knot, intracorporeal knot¹³. Therefore, several modifications to the original technique with new materials have been introduced for appendiceal stump closure. The aim of this study was to compare extracorporeal stump fixation with endoloop suture in appendiceal stump closure during laproscopic appendectomy¹⁴. The aim of minimal access surgery is not only to minimize the number of ports but also the cost of surgery. Hence we adopted a laparoscopic assisted open appendicectomy approach using two non-disposable ports to save the cost and had no added morbidity. Two port assisted open appendicectomy has the advantage of diagnostic laparoscopy and open appendicectomy. It is simple and can be converted to open or intracorporeal approach when required^(5,16,17818).

Aims and objectives

Aims:

To study advantages and disadvantages of laproscopic appendiceal stump closure by extracorporeal transfixation

Objectives:

To study and compare the results of laproscopic appediceal stump closure by extracorporeal transfixation with endoloop suture taking parametes like operative time, cost and hospital stay.

Materials and Methods

The study was conducted in time duration of 5 years in the patient who came to GMC, dhule or in A.C.P.M. Medical college with elective or emergency presentation indicative for appendicectomy. The study is conducted in 50 patients which were included in the group after excluding patients who did not meet the inclusion criteria and those who met the exclusion criteria.

It was a prospective study in which two groups were made distributing them equally on random basis. One group patient underwent for laproscopic appendicectomy and other group of patient underwent with laproscopic assisted appendicectomy.

Source data is collected from specially designed case recording progress pertaining to selected patients after explaining them all the opinions of treatment to each patients in the language understood by them or their parents or guardians if minor, and taking their consent is subjected to detailed history of eliction followed by through clinical examination.

Inclusion criteria:

- 1. Age group-12 yrs to 35 yrs
- 2. Comorbid condition like diabetes, hypertension
- 3. Suitable for spinal anesthesia

Exclusion criteria:

- 1. Age group-below 12 yrs and above 35 yrs
- 2. Not willing for laproscopic surgery
- 3. Perforated appendicitis

Anaesthesia techniques and patient positioning were the same for both LA and LAA For Laparoscopic appendicectomy (LA), the

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following steps were observed: 1. An open access laparoscopic technique was used with a 10mm camera port in the umbilicus; a Verre's needle was not used. 2. A 5mm port was then inserted under direct vision at the suprapubic region and another 10mm port was inserted at the left iliac fossa also under direct vision and served as the main working port. 3. The appendix was picked up with a grasper through the suprapubic port, dissected out, the vascular pedicle clipped and transacted, two endoloops were then applied at the base of the appendix and the appendix was transected between the endoloops and inserted into a retrieval bag and delivered through the umbilical port. 4. Port site wounds were then closed with vicryl 0 suture.

The steps involved in laparoscopically assisted appendicectomy include: 1. An open access laparoscopic technique was used with a 10mm camera port in the umbilicus. 2. A second 10mm port was inserted in the RIF through which the appendix was grasped, peritoneal cavity desufflated, both appendix and port were delivered ("port exteriorization") on to the exterior and appendicectomy effected like in the open technique. 3. The appendiceal stump was then dropped and the peritoneal cavity inspected a second time before port site closure with vicryl 0 sutures. 4. Consumables like Endoloops and clips were not necessary. 5. A third port may be required in the left iliac fossa or suprapublic region to aid mobilisation of a difficult appendix.



Figure 1: appendix being taken out through the right iliac fossa port site



Figure 2: showing the appendix been clamped



Figure 3: the fixation of appendicular base been done post exteriorization.



Figure 4: appendix is being put back in pperitineum after proper fixation.

Results

A total of 50 patients were evaluated by dividing them in two groups of 25 each. Out of 25 patients, on 23 patients laparoscopically assisted appendicectomy were performed. In total of 50 patients, in 4 patients (2 of laproscopic appendidectomy and 2 of laproscopic assisted appendicectomy), conversion to open appendicectomy was done due to some intra abdominal pathologies.

Table 1: comparision of laproscopic appendicectomy and laproscopic assisted appendicectomy.

Procedure	Laproscopic appendicectomy	Laproscopic assisted appendicectomy
Hospital stay	48 hours	24 hours
Mean duraution	50 minutes	35 minutes

In our study, we have compared the hospital stay and mean duration of the procedure performed in two different groups. We have found that the duration of procedure is less in laproscopic assisted appendicectomy i.e., 35 minutes as compared to 50 minutes in laproscopic appendicectomy and the hospital stay is comparatively less i.e., 24 hours post procedure as compared to 48 hours in laproscopic appendicectomy. Follow up of 1 year had been done and no complication were observed in both groups.

Discussion:

The total of 50 patients were evaluated out of which in 23 patients laproscopic assisted appendicectomy were performed.

The advantages of laparoscopic appendectomy are well proven in several prospective randomized trials. In three ports approach the appendicular artery is ligated or clipped intracorporeally; the appendicular base ligated or endoloop or endoGIA stapler. Depending on the surgeon's choice and experience the use of clipper and endoloop adds in the cost of the operation in this approach. Compared to single port approach does not require expertise of operating telescope. Cost is minimized by using nondisposable port.

In our study what we found that in laproscopic assisted appendicectomy, procedure time is less preventing the chance of infection and the mobilization of patient is fast as the hospital stay time is shorter. The overall morbidity is low. There were no specific complication related to this technique and incidence of port site infection was similar to other approaches of laparoscopic appendicectomy. Cost is minimized by using non-disposable port. The overall morbidity is low. There were no specific complication related to this technique.

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