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Research Paper

To Study The Comparison Between open Appendicectomy, Laparoscopic Appendicectomy And Lap Assisted Appendicectomy in Appendicitis Patients

Medical Science

KEYWORDS : Laparoscopic surgery, Open appendicectomy, Gall bladder

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ABSTRACT

Background: Laparoscopic appendicectomy is yet to become acceptable as a procedure of choice for interval appendicectomy, unlike laparoscopic cholecystectomy which has been accepted as the gold standard of treatment of gall bladder stone disease. Open appendicectomy (OA) is usually performed through a single, small incision in right iliac fossa. In comparison, laparoscopic appendicectomy requires two to four multiple incisions for port entry, is likely to be more time consuming and requires special training. Laparoscopic appendicectomy can be performed either laparoscopically assisted (LAA) or totally laparoscopic (TLA).

Objective: To study the intraoperative variability of different factors in open appendicectomy, laparoscopic assisted appendicectomy and total laparoscopic appendicectomy.

Methods: Prospective observational study .Detailed record of each patient's data was obtained from case papers. Written informed consent of procedures was checked from each patient for necessary surgical procedure appendicectomy

Results: In all 60 patients were included in the study. Open appendicectomy (OA) group had 20 patients, laparoscopy assisted appendicectomy (LAA) group had 20 patients and total laparoscopic appendicectomy(TLA) group had 20 patients. Overall in about 80% cases the appendix could be found easily or after some manipulation. In approximately 20% cases, appendix was difficult to find and required further dissection for exposure of the appendix. almost 90% cases in each study group were completed as planned. The difference was not statistically significant. The need for change of plan was felt in 2cases of LAA. One case was required to be converted to open because the appendix could not be visualized due to excessive adhesions. The procedure was completed by open technique. In another case the length of the appendix was too short to be able to be delivered from the umbilical port. The plan was changed in 1 cases of LA. In one case the procedure had to be changed to open due to excessive adhesions. Overall, out of 40 cases of laparoscopic appendicectomy, 2 cases only had to be converted to open due to excessive adhesions, one each in LAA and TLA. Whereas, in 3 cases of open appendicectomy, the incision was inadequate and the incision had to be changed from muscle splitting to muscle cutting for adequate access.

Conclusion: Laparoscopic surgery has lead to many changes in the management of surgical patients. . In our study also maximum numbers of patients were in the second and third decade of age group.

INTRODUCTION-

Laparoscopic appendicectomy is yet to become acceptable as a procedure of choice for interval appendicectomy, unlike laparoscopic cholecystectomy which has been accepted as the gold standard of treatment of gall bladder stone disease. Open appendicectomy (OA) is usually performed through a single, small incision in right iliac fossa. It is often done by relatively inexperienced surgeons who can complete it safely in most cases. In comparison, laparoscopic appendicectomy requires two to four multiple incisions for port entry, is likely to be more time consuming and requires special training. Laparoscopic appendicectomy can be performed either laparoscopically assisted (LAA) or totally laparoscopic (TLA).

Potential advantages of laparoscopic appendicectomy over open appendicectomy are many. It allows a more thorough exploration of abdominal cavity than that would be possible through a small right lower quadrant incision. It also allows definitive treatment of other abdominal or pelvic pathology as deemed appropriate by the operative finding conversion to a midline laparotomy may be avoided if the entire abdomen can be examined under laparoscopic guidance. It shortens hospitalization & recovery period[1]. post operative discomfort is also minimal. Almost minimum postoperative pain is experienced after laparoscopic appendicectomy[2].

The present study is designed to assess these conflicts. Our goal is to compare the open appendicectomy with laparoscopic assisted appendicectomy and laparoscopic appendicectomy

OBJECTIVE

To study the intraoperative variability of different factors in open appendicectomy, laparoscopic assisted appendicectomy and total laparoscopic appendicectomy.

MATERIALS AND METHODS

Place of study- Swami Ramanand Tirth Rural Govt. Medical College[1], Ambajogai, India

DURATION

One year – (Jan 20015 to Jan2016).

DESIGN

Prospective , open labeled , comparative , three armed study.

INCLUSION CRITERIA

All patients undergoing interval appendicectomy with

- Past history of acute appendicitis
- Chronic right iliac fossa pain
- Chronic abdominal pain
- Patient ready to give written inform consent for the procedure.

EXCLUSION CRITERIA

When imaging techniques such as ultrasound, imaging studies and CT scan (in some cases) revealed some non-appendicular pathology, the patients were excluded.

All patients unfit for pneumoperitoneum / laparoscopy were excluded. This mainly included patients with cardiac diseases

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(myocardial infarction, ischemic heart disease, etc), respiratory diseases (bronchial asthma, COPD, etc), renal or hepatic disorders, bleeding disorders, etc.

Patients' not willing or not giving consent for the surgery.

OPERATIVE TECHNIQUES :

1) Open appendicectomy : A Mcburney's incision is taken (oblique incision perpendicular to the spino-umbilical line passing through the Mcburney's point which lies at the junction of the median two-third and lateral one-third of the spino-umbilical line.The external oblique aponeurosis and the internal oblique muscle are split along the direction of their fibres. The peritoneum is opened and the appendix is traced. The appendix is delivered out through the incision. The mesoappendix is serially clamped, crushed, cut and ligated taking care that the appendicular artery is well secured . The appendix is amputed at its base and the stump is ligated. The mucosa of the stump is cauterized. The peritoneal cavity is irrigated. The wound is closed in layers .

2) Laparoscopy assisted appendicectomy (LAA) : The patient is supine with both upper limbs besides the trunk. A urinary catheter is placed prior to obtaining pneumo-peritoneum. This is done to avoid injury to the urinary bladder while inserting the supra-pubic trocar. A spring loaded Verres' needle is inserted through an incision in the umbilicus and pneumoperitoneum is created . A 10 mm trocar is inserted through the umbilical port . Another 10 mm trocar is inserted through a suprapubic incision under vision . The camera is then introduced through the surapubic port. A quick and thorough examination of the peritoneal cavity is performed to look for any other pathology.

3) Laparoscopic appendectomy (TLA) : In this procedure, after the creation of pneumo-peritoneum, three ports are inserted. Two ports, each of 10 mm through the umbilical and suprapubic position and the third port of 5 mm through the left lower quadrant. The camera is inserted through the suprapubic port. A quick and thorough examination of the abdomen is done to exclude any other pathlogy.

RESULTS:

In all 60 patients were included in the study. Open appendicectomy (OA) group had 20 patients, laparoscopy assisted appendicectomy (LAA) group had 20 patients and total laparoscopic appendicectomy(TLA) group had 20 patients. There was no mortality or surgery related complication in any of the patients. Thus, there was no significant difference in the mean age of patients in either study group.

Table no 1 : Mean age of patients (in years)

SN	Name of Procedure		
1	Open	LAA	TLA
2	27.55±11.70	30.15±11.74	27.05±14.59

ANOVA p value 0.071

Thus there was no significant difference in the mean age of patients in either study group and overall mean eas 28.22 years.

Table no 2 : Sex distribution (%)

SN	Distribution of Patients	Open	LAA	TLA
1	Male	11(55)	08(40)	11(55)
2	Female	9(45)	12(60)	09(45)

Thus, there was no statistically significant difference in the sex distribution of the three groups. However there were a higher percentage of female patients in the LAA groups.

Table no 3 : Chief complaints of the patients (%)

SN	Type of Complain	Open	LAA	TLA
1	Past h/o appendicitis	5	7	6
2	Chronic RIF pain	12	9	7
3	Chronic abdominal pain	3	4	7

Thus, maximum patients in all the three groups had chronic right iliac fossa pain as the chief complaint, followed by past history of acute appendicitis. But, the difference was not statistically significant.

Table no 4 : Ease of finding appendix

SN	Ease of Appendix	Open	LAA	LA
1	Easy	5	7	7
2	Visible with some manipulation	11	8	9
3	Difficult to find –further dissection	4	4	3
	Impossible to find	-	1	1

Thus, there was no significant difference in the ease of finding appendix in both open as well as laparoscopic procedures. Overall in about 80% cases the appendix could be found easily or after some manipulation and in approximately 20% cases, appendix was difficult to find and required further dissection for exposure of the appendix. It was impossible to find the appendix in one case of LAA &TLA due to excessive adhesions, and hence it had to be converted into open.

Table no 5 : Degree of adhesions to the surroundings

SN		Open	LAA	LA
1	None	2	6	3
2	Some adhesions	12	11	10
3	Multiple adhesions	6	4	7

Thus, there was no significant difference in the degree of adhesions of the appendix to the surroundings.Thus all three groups were well matched as far as age, sex distribution, indication for surgery and difficulty level. Hence further analysis can be assumed to be free of any bias.

Table no 6 : Need for change of plan

SN	Need for change of plan	Open	LAA	TLA
1	No	20	18	19
2	Yes	0	2	1

Thus, almost 90% cases in each study group were completed as planned. The difference was not statistically significant. The need for change of plan was felt in 2 cases of LAA. One case was required to be converted to open because the appendix could not be visualized due to excessive adhesions. The procedure was completed by open technique. In another case the length of the appendix was too short to be able to be delivered from the umbilical port. Hence the case was completed by TLA technique. Thus only in one patient of 20 in whom LAA was planned, the procedure had to be converted to open technique.

The plan was changed in 1 cases of LA. In one case the procedure had to be changed to open due to excessive adhesions.

Overall, out of 40 cases of laparoscopic appendicectomy, 2 cases only had to be converted to open due to excessive adhesions, one each in LAA and TLA. Where as, in 3 cases of open appendicectomy, the incision was inadequate and the incision had to be changed from muscle splitting to muscle cutting for adequate access.

DISCUSSION:

Laproscopic surgery has lead to many changes in the manage-

ment of surgical patients. This is mainly been possible due to minimal invasive nature of laproscopic surgery. It has significantly reduced the morbidity associated with surgical procedures. This is manily due to the significant decrease in the size of the incision. As a result, there is decrease in the post operative pain and hence early ambulation of the patients. The morbidity associated with wound infection is also lower in laproscopic surgery as compared to open surgery.

In the Present study, a comparative prospective study between open appendectomy, TLA and LAA was done. The study was done in SRTRGMC AMBAJOGAI on patients who underwent appendectomy. The patients were admitted with diagnosis of acute appendicitis, recurrent appenditis or those kept for interval appendectomy. 20 patients underwent open appendectomy, 20 underwent TLA and 20 underwent LAA. Patients for either procedure were chosen without any bias.

The age group of the patients varied from 9 to 60 yrs. Three groups were comparable in the age and sex. The mean age in open appendectomy group was 27.55, in TLA it was 27.05 and in LAA it was 30.15. the distribution in age was consistent with the fact that acute appendicitis is rare in infant and becomes increasingly common in childhood and early, reaching a peak incidence in second and third decade[3] .

De utpal[4] also recorded mean age of 25.1 years in the patients undergoing laproscopic appendectomy in his study. In our study also maximum numbers of patients were in the second and third decade of age group.

Sex ratio observed was 01.22 in open appendectomy group, 1.22 in TLA group and 0.66 in LAA group. There were 11 males and 9 females in open and TLA group and there were 8 males and 12 females in LAA group. As there is no difference in conduction of both the procedure between males and females so the difference in sex ratio among two groups does not affect the results of the study. It was a co-incidence that more of female patients reported for the study.

Valious I. et al[5] also had 60.5 % females as compared to 39.5% males in their study of laproscopic assisted appendectomy.

CONCLUSION: Laproscopic surgery has lead to many changes in the management of surgical patients. . In our study also maximum numbers of patients were in the second and third decade of age group.

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