Research Paper

Volume : 4 | Issue : 6 | June 2015 • ISSN No 2277 - 8179

Study of 200 Cases of Appendicectomy For Analysis of Laparoscopic Versus Open Appendicectomy.

Medical Science

KEYWORDS : Open appendicectomy, laparoscopic appendicectomy, purse string suture, endoloop, hospital stay.

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ABSTRACT

Introduction: comparative study of 120 cases of open appendicectomy (OA) versus laparoscopic appendicectomy (LA) done at GCS Medical College, Hospital and Research Centre, Ahmedabad.

Objectives: Compare operation time, patient's comfort, post operative complication, average post operative hospital stay, post operative course of antibiotics and analgesics' between open appendicectomy and laparoscopic appendicectomy.

Methodology: Randomized study between 80 cases of laparoscopic appendicectomy and 120 cases of open appendicectomy operated in last 2 years at GCS Medical College, Hospital and Research Centre, Ahmedabad. All age group patients were included in this study.

Results: No Mortality in both the series. Mean operative time was 40 minutes in L.A. While 25 minutes in O.A. Post operative hospital stay was 2 days in L.A. While 3-6 days in O.A. Post operative complications like wound infection, fever, Upper Respiratory Tract Infection (URTI), was 8% in L.A. While 12% in O.A. Not a single case of L.A. was converted in to O.A. And L.A. Was also found cost effective.

Conclusion: Results were compared with international study data and found that L.A. Is safe with good cosmetic result and with less complications and cost effective also. All medical college and district hospital should start basic laparoscopic surgery likes laparoscopic Appendicectomy.

Introduction:

Now a day's laparoscopic surgery is safe and most popular [1] and widely accepted by patients all over the world, due to small incision and better cosmetic results. As it is a minimal invasive surgery it gives less post operative pain [2] and less post operative stay. It also gives full exploration of peritoneal cavity. [3] Post operative I.V. fluid, Antibiotics and analgesic are required less in L.A. Small incision helps to start early peristalsis [4], early ambulation [5], less post operative stay and early discharge and early resumption of work [6].

Surgeons were also in the search of small incision method of operation of appendicectomy so they started lenz and bikini incisions. In less complicated cases laparoscope assisted appendicectomy was started in which with the help of laparoscope and making small incision in Right Iliac Fossa and delivering appendix base outside the abdomen and ligating the appendix at its base and appendicectomy was performed.

After 1992 many surgeons started laparoscopic Appendicectomy and compared both the methods of appendicectomy, Open Appendicectomy v/s Laparoscopic Appendicectomy.

Special set up like video endoscopy, hand instruments, CO_2 insufflations, General Aaesthesia and trained staff require for Laparoscopic Appendicectomy so it takes more time. Even though surgeons started Laparoscopic Appendicectomy.

Objective:

To compare operative time, patient's comfort, post operative complications, average post operative hospital stay, post operative course of antibiotics and analgesics and resumption of work between the cases of O.A. and LA.

Material & Methods:

In this study 200 patients were selected who underwent appendicectomy at GCS medical college, hospital and research centre, Ahmedabad. 80 post operative patients of L.A. and 120 post operative patients of O.A. were selected for this study.

Diagnosis of appendicitis was made with clinical examination, Right Iliac fossa Pain, Fever, vomiting, high pulse rate, raised total count and confirmed by abdominal ultrasound study. Confirmed cases of appendicitis were taken for L. A. and O. A.

Exclusion criteria: appendicular lump cases were not included in this study.

Incision size, post operative pain, peristalsis appearance, post operative I. V. Fluid, Injectable antibiotics and analgesics are studied in both series of L.A. and O. A.

All patients were called for two follow op examination on7th and 15th post operative days.

All L. A. performed under general anesthesia (G.A.) while O. A. performed under spinal or G.A.

Procedure:

After preoperative preparation and preoperative anaesthesia assessment and fitness, All L. A. performed in modular operation theater with all universal aseptic precautions. pneumoperitoneum was created after inserting veress needle at infra umbilical port with CO_2 gas, keeping pressure between 10-15 mm of Hg. According to operative findings this pressure was adjusted as per requirement. 30 degree camera and xenon light were used. 3 ports were made one infra umbilical 10 mm port made for scope and camera while two 5 mm ports were made in RIF and hypogastric region for hand instruments, cautery and suction.

Cauterization of mesoappendix was done and endoloop applied at the base of appendix and appendicectomy was performed and

appendix was delivered outside. All ports closed after evacuation of CO_2 gas.

Photograph 1: Port position for Laparoscopic appendicectomy

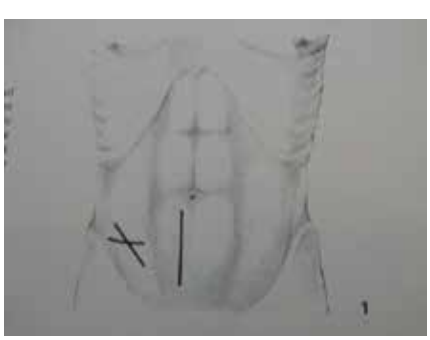
Port position for laparoscopic appendicectomy
1. Hypogastric port 5mm 2. Infraumbilical port 10mm
3. Right iliac fossa port 5mm

Photograph 2: Endoloop application at the base of appendix in L.A.

For open Appendicectomy gridiron, lenz and right lower paramedian incision are preferred.

Mesoappendix was ligated and appendicectomy was performed. In 15 patients retrograde appendicectomy was performed. Purse string suture at the base of appendix was taken and stump was buried. Tube drain was kept in the patients with appendicular abscess.

Photograph 3: Incisions of O.A.



Gridiron, Lenz and Right Lower Paramedian Incisions

Photograph 4: Purse string sutures and Invegination of stump

Observations:
Table 1: Gender Differentiation in Study Cases

Operative Method	Total no. of cases	Male	Female
L.A.	80	32 (40%)	48 (60%)
O.A.	120	65 (54.17%)	55 (45.85%)

Out of 80 cases of L.A. 48(60%) were female 32 (40%) were male. Female age group between 15 to 35 years preferred for L.A. Younger patients preferred for L.A. while patients above the age of 35 years preferred O.A.

Table 2: Age wise Distribution in Study Cases

Age Group	No. of cases in L.A. (80)	No. of cases in O.A. (120)
Below 10 years	1 (1.25%)	3 (2.5%)
11-20 years	38 (47.5%)	32 (26.66%)
21-30 years	27 (33.75%)	47 (39.17%)
31-40 years	11 (13.75%)	22 (18.33%)
Above 41 years	3 (3.75%)	16 (13.33)
Total	80	120

No mortality noted in both the series of O.A. and L.A.

O.A. operated by grid iron, lenz, right lower paramediam incision, while L.A. operated by 3 ports technique.

Operative time was more in L.A. (40-60 minutes) mean operative time 50 min compare to O.A. operative time 20-30 minutes) mean operative time 25 min. It was due to 3 port incision, connection of CO_2 insufflations, insertion of veress needle, creating pneumoperitoneum , inserting trocar and connecting with light source and video, but dissection takes same time as in O.A.

In O.A. 4-8cm long incision was required while in L.A. 3 ports of l cm length were made, which gives good cosmetic results. Wound infection was in 2 cases of L.A. while in O.A. 11 patients developed wound infection due to local peritonitis and infected appendix.

Position of appendix was found same in both series. Retrocaecal position was in 55 patients (68.75%) in L.A. and in 79 patients (65.84%) in O.A. while pelvic position was found in 19 cases (23.75%) in L.A. and 29 cases (24.16%) in O.A.

Table 3: Position of the Appendix

Volume : 4 | Issue : 6 | June 2015 • ISSN No 2277 - 8179

Position	Lap. Appendicectomy		Open Appendicectomy	
	No. of cases	% of cases	No. of cases	% of cases
Retrocaecal	55	68.75	79	65.84
Pelvic	19	23.75	29	24.16
Pre Ileal	6	7.5	12	10
Total	80	100	120	100

Peristalsis was started within 6 hours after the operation in L.A. so oral feeding was started on same evening while in O.A. peristalsis Started 18 to 24 hours post-operatively, so oral feeding started next day and solid food was started after 48 hours.

On intra operative finding in L.A. cases 3 patients had pus collection and 6 patients had bowel adhesion. Where in O.A. cases 16 patients having pus collection and 8 patients having adhesion with omentum and ileum and developed local peritonitis.

Table 4: Intra operative findings

Findings	Lap. Appendicectomy		Open Appendicectomy	
	No. of cases	% of cases	No. of cases	% of cases
Inflammed Appendix only	71	88.75	96	80
Pus collection	3	3.75	16	13.33
Bowel adhesions	6	7.5	8	6.67
Total	80	100	120	100

Patients of L.A. discharged after 48 hours while O.A. patients discharge from 3 to 6 post operative days.

2 patients developed wound infection in L.A. cases while 11 cases of O.A. developed wound infection due to perforated of appendix and local peritonitis. Out of that 11 patients, 2 patients developed small wound gap as one stitch was opened for drainage of pus.

Upper respiratory tract infection developed in 2 cases of L.A. and 3 cases of O.A. while post operative fever was noted in 3 cases of L.A. and 11 cases of O.A. so post operative complication noted in 7.5% cases of L.A. and 11.16% in O.A.

Table 5: Complication in O.A. L.A.

Complication	L.A.	O.A.
Wound Infection	2	11
URTI	2	3
Post operative fever	3	11

It is found that L.A. is cost effective due to short stay, less complication and early resumption of duty.

Discussion:

Laparoscopic surgery is gold standard in operative management of appendicectomy and all over the world surgeons are preffering this method of surgery.

Though the time taken for whole procedure is more than open method [7, 8] due to special arrangement of video laparoscopy, trocar insertion , CO_2 insufflations, and creation of pneumoperitoneum but actual procedure takes shorter time. Now due to wide experience of laparoscopic surgery the total time for L.A. is reduced considerably [9].

Patients with appendicular abscess, gangrene and adhesion can be well managed by laparoscopy without significant change in mean operative time, Complication, Hospital Stay and cost.

Due to early recovery of bowel movements oral fluids and food can be started earlier, use of injectable antibiotics, analgesic and I.V. fluid less and early discharge from hospital reduce overall hospital bill so L.A. is cost effective in comparison to O.A.

Small incision gives better cosmetic results so patients between 15 to 35 years prefer for L.A. method for appendectomy. So L.A. is a method of choice for younger generation.

Now L.A. is method of choice in both emergency and elective cases. Due to repeated and wide experience of laparoscopic Surgery now incidence of converting L.A. to O.A. are rare.

As the rate of wound infection and complication are very less in L.A. patients are able to resume their duty very early.

Conclusion:

A L.A. is gold standard in operative management of appendicectomy and widely accepted by surgeons and patients so now at district level hospital this basic laparoscopic surgery is also started and in last 30 years surgeons are also trained by wide experience of Lap. surgery. In medical college now advanced lap. Surgery is also started so to train Junior resident doctors for basic Lap. Surgery like L.A. is necessary.

So L.A. is now proved superior to O.A. as it gives good cosmetic results less post operative pain, less post operative complication, early discharge and early resumption of duty.

REFERENCE

1. Semm K: Endoscopic appendectomy. Endoscopy 1983, 15:59-64. | 2. Wei B, Qi CL, Chen TF, Zheng ZH, Huang JL, Hu BG, Wei HB: Laparoscopic versus open appendectomy for acute appendicitis: a metaanalysis. Surg Endosc 2011, 25:1199-1208. | 3. Loh A, Taylor RS: Laparoscopic appendectomy. Br J Surg 1992, 27:289-290. | 4. Vernon AH, Georgeson KE, Harmon CM: Pediatric laparoscopic appendectomy for acute appendicitis. Surg Endosc 2004, 18:75-79. | 5. Lintula H, Kokki H, Vanamo K: Single blind randomized clinical trial of laparoscopic versus open appendicectomy in children. Br J Surg 2001, 88:510-514. | 6. Kurtz RJ, Heimann TM: Comparison of open and laparoscopic treatment of acute appendicitis. Am J Surg 2001, 182:211-214. | 7. Jaffer U, Cameron AE: Laparoscopic appendectomy: a junior trainee's learning curve. JSLS 2008, 12:288-291. | 8. Nakhamiyayev V, Galldin L, Chiarello M, Lumba A, Gorecki PJ: Laparoscopic appendectomy is the preferred approach for appendicitis: a retrospective review of two practice patterns. Surg Endosc 2010, 24:859-864. | 9. Bennett J, Boddy A, Rhodes M: Choice of approach for appendicectomy: a meta-analysis of open versus laparoscopic appendicectomy. Surg Laparosc Endosc Percutan Tech 2007, 17:245-255.