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A prospective Comparative Study between Open Appendicectomy with Laparoscopic Appendicectomy in Distict Hospital Belagavi

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Abstract

Appendicitis is a most common surgical condition encountered by the most of the surgeons all over the world. laparoscopic appendicectomy is the preferred surgical procedure in emergency and elective appendicitis cases now a days.

Aim: The aim of the study is to show the advantages of laparoscopic appendicectomy over conventional open appendicectomy

Materials and methods: This was a prospective study that was carried out from june 2021 to may 2022 in Belagavi Institute Of Medical Sciences Belgavi IN District Hospital Belgavi. A total of 100 patients were studied, Cases were randomly selected for laparoscopic and open appendicectomy after routine blood investigations, ultrasonography of the abdomen and pelvis, chest x ray, ecg. and the results obtained were tabulated. The statistics were analyzed using SPSS package 16.0. Ethical clearance was obtained from the institutional ethics committee.

Results: Most of patients operated laparoscopically had short hospital stay, less pain and early recovery Wound infection was seen commonly in open surgeries .

Conclusion: Our study shows the advantages of laparoscopic appendicectomy over conventional open appendicectomy

Keywords: Appendicitis, Laparoscopic appendicectomy, Open appendicectomy,

Introduction

Appendicitis is a most common surgical condition seen all over the world at all ages. It requires proper history taking and clinical examination supported by investigations to diagnose appendicitis. [1]. approximately 6% of the population suffers from acute appendicitis during their lifetime, that's why early diagnosis and treatment is needed [2]. In appendicitis, appendectomy is the treatment of choice, which can be done either by open or laparoscopic approach. Conventional appendectomy was most commonly performed surgery both elective and emergency cases which has been taken over by advent of laparoscopic surgery in last decade. With diagnostic laparoscopy the negative appendectomy rate in which was almost in the range of 25-30% has been decreased now. Laparoscopic appendectomy is nowadays preferred and commonly performed surgery today [3]. The objective of this study is to show advantages of laparoscopic surgery over conventional open appendectomy.

MATERIALS and METHODS

This was a prospective study carried out from June 2021 to May 2022 in Belagavi Institute Of Medical Science Belagavi In District Hospital for a period of one year. A detailed history was collected and a thorough clinical examination was done. The study subjects consisted of 100 patients, who underwent appendectomy at district hospital in Bims Belagavi Karnataka, India for appendicitis. These patients were divided into two groups of 50 each on random basis, Open or Conventional appendectomy (OA) and Laparoscopic appendectomy (LA)

Inclusion criteria

Aged between 20-70years
Both male and female patients

Exclusion criteria

Paediatric patients
Pregnant patients
Patients with blood dyscrasia

Informed consent was taken from all the patients. Approval was obtained from the institutional ethics committee before commencing the study. Diagnosis of appendicitis was based on history taking ,clinical findings, blood counts and ultrasonography. Data was collected from each patient on the basis of clinical, preoperative findings as well as postoperative recovery and follow up. After ruling out other differential diagnosis and concluding preoperatively as appendicitis, treatment was planned. preoperative preparation consisted of bed rest, nil per oral, intravenous fluids, and preoperative dose of antibiotics. Anaesthesia was either general or spinal. In open appendectomies, abdomen was opened either by Mcburney's or lanz incision or occasionally by right paramedian incision. In laparoscopic appendectomies 10mm camara port ,5mm ,5mm ports were used after pnuemo insufflation using CO2, diagnostic laparoscopy was done and clinical diagnosis of appendicitis confirmed. Mesoappendix was separated using cautery and base of appendix was ligated using end loop (catgut) and the specimen delivered out using endobag. Intraoperative findings were noted down. The final diagnosis of appendicitis was confirmed by histopathology report. The appendicular specimen was examined and reported by the pathologist. Post operatively patients were managed as follows: parenteral antibiotic, intravenous fluids, analgesics, parenteral nutrition until bowel activity returned, monitoring of temperature, pulse, blood pressure and respiratory rate. Operating time (time from initial incision to closure), intraoperative findings and complications were recorded. Postoperative pain was quantified 24 hours after the surgical procedure using Visual Analogue Scale

(VAS, 0 to 100, 0 being no pain and 100 unbearable pains). Time of resuming oral feeds and length of postoperative hospital stay were recorded. Stitches were removed on 7th postoperative day. On discharge patients were advised for regular follow-up. Time until return to work or normal activities was determined by the examination of the discharge summary sheet or outpatient cards and 3-4 weeks postoperative follow up.

All the statistical calculations were done through SPSS (Statistical Presentation System Software) for Windows Version 16.0 Evaluation version

Table 1: Age-group of patients who underwent appendicectomy

age	Open (n=50)	%	Laparoscopy(n=50)	%
20–30	18	36	15	30
31–40	12	24	16	32
41–50	13	26	10	20
51–60	3	6	5	10
61–70	4	8	4	8

2: Gender of patients who underwent appendicectomy

gender	open	%	laparoscopy	%
male	34	68	38	76
female	16	32	12	24

Table 3: Presentation of patients with appendicitis

Presentation	No. of patients	Percentage
Abdominal pain over the right lower quadrant	72	72
Nausea	34	34
Vomiting	30	30
Fever	28	28

Table 4: Duration of hospital stay for patients who underwent appendicectomy

Duration of hospital stay after surgery (days)	Open appendicectomy (n = 50)	Percentage	Laparoscopic appendicectomy (n = 50)	Percentage
3 days or less	20	40	43	86
4–7 days	25	50	5	10
8–15 days	5	10	2	4

Table 5: Duration of surgery for patients who underwent appendicectomy

Duration of surgery (minutes)	Open appendicectomy (n = 34)	Percentage	Laparoscopic appendicectomy (n = 67)	Percentage
60 minutes or less	30	60	20	40
61–90 minutes	15	30	24	48
91–120 minutes	5	10	6	12

Table 6: Return to routine work time for patients who underwent appendicectomy

Return to routine work (days)	Open appendicectomy (n = 50)	Percentage	Laparoscopic appendicectomy (n = 50)	Percentage
7 days or less	8	16	25	50
8–14 days	20	40	15	30
More than 15 days	22	44	5	10

Table 7 : Wound infection in patients who underwent appendicectomy

Wound infection	Open (n=50)	percentage	Laparoscopic (n=50)	percentage
present	10	20	3	6
absent	40	80	47	94

DISCUSSION

With advent of laparoscopic surgery tremendous changes are seen in the surgical world, now a days almost all conventional open surgical procedures are being done laparoscopically with lots of advantages. The relative advantages and disadvantages of open and laparoscopic appendectomy are measured in terms of duration of surgery, need for conversion into open appendectomy, treatment of coexisting pathology, intraoperative and postoperative complications, postoperative pain assessment and recovery, return to normal work and cost factors involved in both groups are compared on random basis. The mean duration of surgery in the laparoscopic group was 43.00 minutes as compared to 40.00 minutes in the open group ($p< 0.001$), because of longer incision, stretching or cutting of muscles and wound infection. Similar observations have also been reported by other authors [8,19,20]. In postoperative recovery, oral feeds were resumed after surgery on an average of 3.00 days in open group compared to 1.5 days in laparoscopic group ($p < 0.001$). Duration of postoperative hospital stay was 7 days v/s 2 days in open and laparoscopic group respectively ($p < 0.000$). Austin et al [4] has reported mean postoperative stay as 4.8 days and 2.2 days for open and laparoscopic group respectively. Other workers [5,6,9,14,20-22] also have reported longer postoperative hospital stay in open group as compared to laparoscopic group Return to normal activity was 15 days in open group as compared to 8 days in the laparoscopic group ($p < 0.001$). Pendersen AG et al [14] reported the median time to return to normal activity as 7 v/s 10 days in laparoscopic and open group respectively. Others [7, 9,11,19,23] have also shown that laparoscopic group patients returned to normal work earlier.

Laparoscopic appendectomy has several advantages over the conventional open method of appendectomy. In the laparoscopic method, the patient's recovery is quicker, and the patient can also return to his or her routine work at the earliest. The amount of pain that the patient may endure is far less in the laparoscopic method than in the open method. Ortega et al., in their study of 135 patients, showed that the pain level was much less in the laparoscopic method as compared to the open method. The problem of wound infection is also much less in the laparoscopic method. Marzouk et al. also showed in his study that the postoperative wound infection rate was much less in the laparoscopic method. The length of hospital stay is significantly reduced if a laparoscopic appendicectomy is done as compared to the open method. In their studies, Ray-Offor et al., Rbihat et al., and Vellani et al., showed that the length of hospital stay was much shorter for the patients who underwent laparoscopic appendectomy. Shaikh et al. also showed in their study the need for lesser requirement of analgesia following laparoscopic appendicectomy. Li et al. also reported similar findings in their meta-analysis. In the case of young women, further care is needed while making a diagnosis of appendicitis since the

differential diagnosis of right lower quadrant pain is extensive and includes gynecologic pathology as well. In addition, Azaro et al. had previously conducted studies to show that laparoscopic appendicectomy is a safe procedure. The port placement and the sites of the incisions are extremely important while performing laparoscopic appendicectomy. Studies have been done to improve cosmesis in cases of laparoscopic appendicectomy

CONCLUSION : Between conventional and laparoscopic appendectomy the laparoscopic appendectomy was better than open appendectomy with respect to wound infection rate, pain score, lesser use of antibiotics and analgesics, duration of postoperative hospital stay and return to normal activity.

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