



COMPARATIVE STUDY BETWEEN BUTTON HOLE APPENDECTOMY AND LAPAROSCOPIC APPENDECTOMY

General Surgery

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ABSTRACT

Background :- The purpose of the study is to compare button hole appendectomy with laparoscopic appendectomy. **Method** :- A total number of 50 patients were selected from general ward of general surgery, pmch, patna from December 2020 to December 2021 for the study fulfilling inclusion and exclusion criteria. Among all patients, 40 undergone button hole appendectomy under spinal anaesthesia and 10 undergone laparoscopic appendectomy under general anaesthesia. **Results** :- Both the technique shows similar outcomes regarding hospital stay, recovery time and post operative complications. Button hole appendectomy had lesser scar, shorter duration of surgery, lesser risk of anaesthesia, needed lesser expertise and specialised equipment and very cost effective. Laparoscopic appendectomy is suitable for wider range of patients and had advantage of diagnosing and operating on other pathology also if appendix was found normal intraoperatively. **Conclusion** :- Both the technique shown very similar outcomes. Keeping in mind the cost effectiveness, comparatively simpler technique, we concluded that button hole appendectomy is better technique for finely selected patients in lesser and moderately developed centers and keeping the laparoscopic appendectomy for more complex appendix, suspicion of other pathology and obese patients.

KEYWORDS

INTRODUCTION

Appendicitis is the most common cause of acute abdomen requiring emergency admission particularly in young adult. It is the most frequently performed urgent abdominal operation. It is associated with significant morbidity (10 %) and mortality (2%). The diagnosis is mainly clinical although can be aided by radiological investigations. The choice to operate depends on patient's symptoms, age, other comorbidities and surgeon's choice.

There are two available method, open and laparoscopic appendectomy. Open appendectomy is most commonly done for appendectomy even in this era of minimally invasive surgery, laparoscopy is slowly gaining popularity particularly in highly equipped and sophisticated centers. Laparoscopic appendectomy has advantage of being less painful, shorter hospital stay, shorter recovery period, early return to daily activities and work place and lesser wound infection over open appendectomy. In spite of these advantages laparoscopic appendectomy did not get that popularity as it's other counterpart achieved.

There is a particular modification of open appendectomy known as button hole appendectomy popularly which comprise of an incision of 1.5 - 2.5 cm which promise comparable outcome to laparoscopic appendectomy. Our study is a prospective study comparing button hole appendectomy and laparoscopic appendectomy.

MATERIALS & METHODS

A prospective study was conducted on patients presenting to Patna Medical College & Hospital, Patna, Bihar from December 2020 to December 2021.

A total of 50 patients were selected with features of acute appendicitis, confirmed by clinical examination from general wards of PMCH, Patna, Bihar fulfilling the inclusion and exclusion criteria. The inclusion and exclusion criteria were for button hole appendectomy only. Laparoscopic appendectomy were not restricted by any criteria.

Inclusion Criteria

1. Lean individual
2. Appendicitis ≤ 24 hours
3. Alvarado score > 6
4. Supportive USG findings

Exclusion Criteria

1. Obese individual
2. Appendicitis ≥ 24 hours
3. Appendicular lump
4. Comorbidities
5. Perforated appendicitis
6. Unfavourable USG findings

Procedure

Button Hole Appendectomy

40 patients were undergone buttonhole appendectomy who fulfils inclusion and exclusion criteria. Under spinal anaesthesia, a 1 - 2 cm incision was given over McBurney's point, skin and subcutaneous tissue incised, external oblique aponeurosis incised and internal oblique and transverse abdominis split. Blunt dissection done to clear the field. All corners were retracted with small retractors for better vision. The peritoneum was identified, hold with two mosquito forceps and incised in between, the caecum was identified with Taenia and with the help of "pull & push" technique base of appendix was reached. A window was created between appendix and mesoappendix, mesoappendix was tied with vicryl 1 no round body, appendix was skeletonised, tied at it's base with vicryl 1 no round body and excised. The peritoneum was closed with vicryl 1 no, muscles opposed together and external oblique aponeurosis was closed. Skin was closed with subcutaneous suture. One stitch was enough for the wound. The specimen was sent for histopathological examination. The patients were allowed orally from the evening. Oral antibiotics and painkillers were given from next day. All patients were discharged on post operative day 2.

Laparoscopic Appendectomy

10 patients undergone laparoscopic appendectomy. Under general anaesthesia pneumoperitoneum created and three trocar inserted, one 10 mm umbilical port, one 10 mm right hypochondrial port and one 5 mm left lower quadrant port. Surgeon stands on the left side of patient. Caecum was retracted, appendix identified and hold from the tip. A window was created between appendix and mesoappendix with the help of bipolar cautery and mesoappendix was cauterised. Two endoloop suture were passed and placed at appendicular base 3 - 5 mm distance to each other. One more endo loop was passed and placed at 6 mm distance from second suture and appendix was incised between second and third suture. The cut end was cauterised. Peritoneal cavity was washed. Wound closed. The specimen was sent for histopathological examination. Intravenous fluids, antibiotics and painkillers were given. The patients were allowed orally once their bowel activity returned. All patients were discharged on post operative day 2.

RESULTS

In all the 40 cases of button hole appendectomy, only single stitch was enough while in the 10 laparoscopic appendectomy three stitches were required for three port. The hospital stay was same for both the operation. Incidence of post operative pain was also similar for both the operation. Wound infection was seen in 1 case of button hole appendectomy while wound infection was not seen in case of laparoscopic appendectomy. Post operative recovery and return to

daily activities were similar in both the cases. Laparoscopic appendectomy required general anaesthesia and hence risky in patients with several comorbidities and needs extra precaution while button hole appendectomy is done in spinal anaesthesia and comparatively safer. Button hole appendectomy cannot be done in obese people, here laparoscopic appendectomy falls superior. If appendix is found normal intra operatively, it's convenient to search for other pathology like meckel's diverticulum but cannot be done in button hole appendectomy. Post operative complaints were similar in both cases.

Comparison Between Laparoscopic Appendectomy And Button Hole Appendectomy :-

	Laparoscopic appendectomy	Button hole appendectomy
Stitches	3	1
Anaesthesia	General anaesthesia:- risky for patient with comorbidities	Spinal anaesthesia:- comparatively safer
Wound infection	Lesser	Slightly higher incidence
Hospital stay	Similar	Similar
Post operative recovery	Similar	Similar
Cost of operation	Costly	Very cost effective
Expertise	Need expert hands	Needs lesser expertise
Equipments	need special equipments	Nothing special needed
Duration of surgery	Longer	Shorter

DISCUSSION

In our study of 50 patients, 10 undergone laparoscopic appendectomy while 40 patients undergone button hole appendectomy. 30 patients were ≤ 20 years, 16 patients were between 20 - 30 and 4 patients were ≥ 30 years. 36 patients were female and 14 patients were male. The patients with button hole appendectomy were allowed orally on the same evening while patients with laparoscopic appendectomy were allowed orally the next day. Wound infection was seen in 1 case of button hole appendectomy while not seen in any case of laparoscopic appendectomy. All patients were discharged on post operative day 2. All patients returned to their work in similar span of time. No complications were observed in any group in 1 year of follow up.

In a similar study by AC Moberg et al on 163 patients between laparoscopic appendectomy and open appendectomy, they found no difference in recovery time, complication rates and mean hospital stay in both the operations.

In another study by Raphael SC et al, they found that laparoscopic appendectomy takes 31 % longer time than open appendectomy.

CONCLUSION

The post operative complications, the hospital stay and the recovery time were similar in both the cases.

The button hole appendectomy had lesser scar, shorter duration of surgery, relatively safer anaesthesia for comorbid patients, very cost effective and needs lesser expertise and less specialised equipments.

The laparoscopic appendectomy can be done in all patients of any body mass index can search for other pathology if the appendix was found normal intraoperatively.

So even in this modern laparoscopic era, if we cannot say button hole appendectomy better than laparoscopic appendectomy, it at least stands equivalent to that.

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