

Compare the Outcome of Clips Closure Versus Endoloop Closure of Appendicular Stump

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ABSTRACT

Objective: The aim of this study is to compare the outcomes of clip closure versus endoloop closure of appendicular stump.

Study Design: Prospective/randomized trial

Place and Duration: Study was conducted at Surgical department of Khyber Teaching Hospital Peshawar for six months duration from 1st January to 30th June, 2020.

Methods: Total 90 patients of both genders were presented in this study. Patients were aged between 18-60 years. Patients detailed demographics age, sex and BMI were recorded after taking informed consent. Patients of acute appendicitis underwent laparoscopic appendectomy were presented. Patients were equally divided into two groups A and B. Group A had 45 patients underwent for clip closure and group B had 45 patients and received endoloop closure. Post-operative complications, hospital stay and duration of surgery were measured among both groups.

Results: Total 54 (60%) patients were females (27 in each group) and 36 (40%) patients were males (18 in each group). Mean age of the patients in group A was 27.2 ± 2.48 years with mean BMI 24.4 ± 4.84 kg/m². Mean age in group B was 26.7 ± 2.77 years with mean BMI 23.4 ± 6.84 kg/m². Mean duration of the surgery in group A was 25.2 ± 6.08 minutes while in group B was 34.8 ± 8.45 minutes. Hospital stay of the patients of clips closure was 26 hours and endoloop was 30 hours with no significant difference was observed. There was no any difference observed in post-operative complications between both groups.

Conclusion: We concluded in this study that the clips closure method was safe and effective as compared to endoloop. Post-operative complications decreased by using clip closure. Reduction in operating time was observed in clip closure group while hospital stay was observed same in both groups.

Keywords: Clip closure, Endoloop, Appendicular stump, Appendectomy

INTRODUCTION

Appendicitis consists of inflammation of the appendix that accounts for about 25% of emergency surgery admissions and 40% of overall emergencies of laparotomy. [1] Acute appendicitis is the normal procedure by operating the removal of the appendix known as an appendectomy. The incision in the abdomen or the laparoscopy may be open. [2] Their services and benefits, such as reduced postoperative pain, quicker recoveries, shorter hospital stays, feeding problems and minimally size incisions/scars, increase the number of Laparoscopy appendectomy operations on a regular basis. [3,4]

The key problem with laparoscopic annexes is the closing of the annex or base. Many of these methods, including endoloop, double endoloop, ultrasonic cutting, tying with instruments, metal or plyometric clips, ligator and file, hemolocks, and the linear endostapler, have thus been suggested and examined to close the shutter. [5,6,7] Linear staplers and endoloops are today also used in laparoscopic appendectomy as alternative for closing appendixal stumps, as they are also healthy. [5,6 and 8] The topic of economics should also be considered as well as the issue of safety in regard to both of these approaches.

Closure of the appendicular stump is an issue of discussion and ongoing studies in laparoscopic

appendectomy. There are many techniques, including endoloops, intracorporeal knot binding, using ultrasounds, staplers etc., which are tried for this purpose. Every way has its own advantages and disadvantages. There have been no studies showing that either of the approaches are certainly superior. The ideal method for securing the appendix stump needs to be efficient, cost-effective, more adaptable and viable with minimal side effects. [9] In order to find the best way to close the stumps, several researchers have been forced to do research in this area. During this study, laparoscopic appendectomy patients were divided into two groups and two endoloop vs. vclips were compared. Post surgery discomfort, wound infection, stump leakage and operating time were key results variables.

MATERIAL AND METHODS

This prospective randomized trial study was conducted at Surgical department of Khyber Teaching Hospital Peshawar for six months duration from 1st January to 30th June, 2020. The sample was comprised of 90 patients. Patients detailed demographics were recorded after taking written consent. Patients who had peritonitis symptoms, improper anatomic conditions and those did not give written consent were excluded from this study.

Patients of acute appendicitis underwent laparoscopic appendectomy were presented. Patients were equally divided into two groups A and B. Group A had 45 patients underwent for clip closure and group B had 45 patients and received endoloop closure. Post-operative complications, hospital stay and duration of surgery were measured among both groups. Chi square and t test was used. Complete data was analyzed by SPSS 22.0 version.

RESULTS

Total 54 (60%) patients were females (27 in each group) and 36 (40%) patients were males (18 in each group). Mean age of the patients in group A was 27.2 ± 2.48 years with mean BMI 24.4 ± 4.84 kg/m². Mean age in group B was 26.7 ± 2.77 years with mean BMI 23.4 ± 6.84 kg/m². (Table 1)

Table 1: baseline details of enrolled cases

Variables	Group A (n=45)	Group B (n=45)
Sex		
Male	18 (20%)	18 (20%)
Female	27 (30%)	27 (30%)
Mean age (years)	27.2 ± 2.48	26.7 ± 2.77
Mean BMI	24.4 ± 4.84	23.4 ± 6.84

Mean duration of the surgery in group A was 25.2±6.08 minutes while in group B was 34.8±8.45 minutes. Hospital stay of the patients of clips closure was 26 hours and endoloop was 30 hours with no significant difference was observed. There was no any difference observed in post-operative complications between both groups. (table 2)

Table 2: Comparison of effectiveness outcomes among both groups

Variables	Clip Closure	Endoloop
Mean duration (minutes)	25.2±6.08	34.8±8.45
Hospital stay (hours)	26	30
Duration of symptoms (days)	3	3
Post- Operative complications		
Wound infection	1 (2.22%)	3 (6.7%)
Mean Pain (VAS)	2.48 ± 3.22	3.15 ± 0.08
Re-operation	0	0

DISCUSSION

The gold standard for acute appendicitis is anticipated to steadily increase laparoscopic Appendectomy, as the benefit of laparoscopic Appendectomy close to laparoscope Colectomy is already known. In laparoscopic appendectomy, despite variations in the different laparoscopic procedures, the security of the procedure used to close the appendicular stump is the main concern. Therefore, several methods with a certain superiority over others have been defined. The advantage of these approaches is commonly compared by operational time, hospital stay and postoperative complications.

Comparison of postoperative complications and easy implementation for the closed endoloop and appendicular stump closure cluster. Total 90 patients of both genders with mean age 27.2 ± 2.48 years were included in this study. Frequency of females were greater 54 (60%) than that of males 36 (40%) in this study. These findings were

comparable to the several previous studies. [10,11] One of the first techniques used to close an appendix stump is Endoloop. The main issue with the approach is that the knot might be loose due to the thread splitting when pulled by the surgeon. [12,13] This can lead to the appendix stump leaking, but they will not open after locking if clips are used. Several inquiries were carried out to investigate each of these approaches. However, a standard way to close stumps has not yet been introduced, so further studies seem to be required. The findings of this study showed that the total operating period for the endoloop community was 34,8 minutes and for the closed clips was 25,2 minutes, suggesting a statistical difference (P = 0.038).

There was no statistically significant difference in hospitality between the two groups, nor were there statistically significant problems in two groups (P > 0.048). In none of the classes there was a need to replicate the surgery and leakage. The disparity in the operating time of both groups was the most striking finding in our research. The average operating duration was significantly below the endoloop method for the endoclip community. This result is in line with other research comparing various stump closure approaches, whereby operating time in clip closure patients is substantially decreased. [14] In 40 patients with acute appendicitis a randomised trial was carried out comparing clips and staplers. The results of this analysis showed that the clip system was 47.8 minutes in use. This time our research was drastically reduced (25.2 min).

In 2015, Polat and Kinaci[18] compared time, hospital stay and post-operative complications by endoloop and polymer clip groups in an appendicular stump shutdown. In a 2014 study by Simşek et al. [19], similarities were made with operating time, stay in hospital, costs and postoperative complications of the endoloop and polymer clip groups in the appendicular stump closure.

Different studies have compared different stump closure methods' complications. [15,16]. [15 and 16]. A future research considered the serious complications of wound infection, surgery and technical complications. [17] [17] Of the 50 patients with endoclip closure, reoperation because of stump leakage was needed and six suffered from injury. This study showed that. The results of our research contradict these results because not one individual patient required surgery and only one patient developed wound infection. So in our analysis, the clip method seemed safe.

CONCLUSION

We concluded in this study that the clips closure method was safe and effective as compared to endoloop. Post-operative complications decreased by using clip closure. Reduction in operating time was observed in clip closure group while hospital stay was observed same in both groups.

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