ORIGINAL ARTICLE

Laparoscopic Assisted Appendicectomy Versus Laparoscopic Appendicectomy

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ABSTRACT

Aim: To compare the mean duration of time in laparoscopic assisted appendectomy with laparoscopic appendectomy in patients of acute appendicitis.

Methods: This randomized controlled trial was carried out at the D.H.Q teaching hospital, Dera Ghazi Khan from January 2015 to December 2015. A total of 100 patients were included in this study. Laparoscopic assisted appendectomy used in 50 patients and Laparoscopic appendectomy was also used in 50 patients.

Results: In both groups most common age group was 20-30 years old. mean age of the patients was 18.80±3.08 and 27.30±8.22 in group-a and b, respectively. in group-a, 11 patients (22%) and in group-b 13 patients (26%) were male while 39 patients (78%) of group-a and 37 patients (74%) were female. mean operating time (minute) in assisted laparoscopic appendicectomy group was significantly less when compared with laparoscopic appendicectomy ($p < 0.001$).

Conclusion: The laparoscopic-assisted technique for appendicectomy incorporates the advantages of both the laparoscopic technique and the open technique. the laparoscopic appendectomy technique has the advantage of a laparoscopic exploration, diagnosis, and treatment that is unavailable through an open technique.

Keywords:- Appendicitis, appendectomy, Assisted Laparoscopic appendectomy

INTRODUCTION

Acute appendicitis the most common indication for abdominal surgery and appendectomy is one of the most common surgical procedures. Open appendectomy performed through the right lower quadrant incision was first described in 1894. It has become the standard treatment of choice for acute appendicitis, remaining mainly unchanged for 100 years due to its favourable efficacy and safety[1].

Laparoscopic surgery has gained in popularity and found application in almost every surgical specialty. Laparoscopic appendectomy is one such procedure increasing in popularity since initially reported by Semm in 1983. Advantages of laparoscopic surgery are in terms of shorter hospital stay, rapid postoperative recovery and better pain control[2].

A two port laparoscopic assisted appendectomy is now gaining popularity in adult patients with appendicitis. The appendectomy will be performed via an assisted two ports method using 10mm umbilical optical port and another 10mm port in right iliac fossa. The two ports assisted laparoscopic open appendectomy has the advantage of diagnostic laparoscopy and open appendectomy. It is simple and can be converted to open or intracorporteal approach when required[3]. The laparoscopic assisted approach has advantage of shorter operating time and hospital stay[4]. Cosmetic results were also excellent in this technique[5].

The laparoscopic assisted appendectomy technique has all advantage of laparoscopic method at less expense than the completely laparoscopic technique, with a shorter operating time and can also be performed under local anaesthesia in adults[6]. In laparoscopic assisted appendectomy, mean operating time was 25±14.75 (10-65 min)[3] and in laparoscopic appendectomy mean operating time was 48.78±14.634.

MATERIAL AND METHODS

This randomized controlled trial was carried out in the D.H.Q teaching hospital and Ghazi Khan Medical College Dera Ghazi Khan from January 2015 to December 2015. A total of 100 patients were included in this study according to inclusion criteria. Laparoscopic assisted appendectomy used in 50 patients and Laparoscopic appendectomy was also used in 50 patients.

RESULTS

In both groups, most common age group was 20-30 years old. Mean age of the patients was 18.80±3.08 and 27.30±8.22 in group-A and B, respectively (Table-1).In group-A, 11 patients (22.0%) and in group-B 13 patients (26.0%) were male while 39

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patients (78.0%) of group-A and 37 patients (74.0%) were female (Table-2). Mean operating time (minute) in assisted laparoscopic appendicectomy group was significantly less when compared with laparoscopic appendicectomy (P < 0.001) (Table-3).

Table 1: Distribution of patients by age

Age (yrs)	Group A	Group B
< 20	35(70%)	12(24%)
20-30	15(30%)	22(44%)
31-40		13(26%)
41-45		03(6%)
Total	50(100%)	50(100%)
Mean±SD	18.80±3.08	27.30±8.22

Table 2: Distribution of patients by gender

Gender	Group A	Group B
Male	11(22%)	13(26%)
Female	39(78%)	37(74%)
Total	50(100%)	50(100%)

Table 3: Comparison of mean operating time (minute)

Gender	Group A	Group B
Mean	11.50	31.42
Standard deviation	03.09	08.64
P-value -15.341	P value = < 0.001	

DISCUSSION

The advantages of laparoscopic appendectomy are well proven in several prospective randomized trials and it can be performed using one to several ports[7,8].

Each technique has its own merits and demerits. In three ports approach the appendicular artery is ligated or clipped intracorporeally; the appendicular base ligated or endoloop or endo GIA stapler. But since appendicectomy is an emergency procedure in the majority of patients a surgeon with experience of intracorporeal tying may not be available in odd hours. Depending on the surgeon's choice and experience, the use of clipper, endoloop and endo GIA adds in the cost of the operation in this approach[3].

In a single port approach, the operating telescope is introduced through the umbilical port and through the operating channel of the telescope the appendix is grasped and brought out along with the port. This approach may be beneficial in a straightforward early appendicitis, when appendix and its mesentry is not thick or in pediatric age group where the distance between the umbilicus and the appendicular base is small. This technique requires an experienced surgeon in laparoscopy and is difficult to control bleeding, obese patients and deal with other associated pathology. Others have combined the advantages of operating telescope in umbilical with a 5mm suprapubic port but experience is limited[3].

On the other hand the two port laparoscopic assisted open apendicectomy is simple, easy to learn and has the combined advantages of open appendicectomy and full laparoscopy of abdomen. It can be converted to open appendicectomy very quickly when required or to total intracorporeal approach by inserting accessory ports. Compared to single port approach does not require expertise of operating telescope. Cost is minimized by using non-disposable port. The overall morbidity is low. There were no specific complication related to this technique and incidence of port site infection was similar to other approaches of laparoscopic appendicectomy[3].

The percentage of patients having laparoscopic assisted appendicectomy has steadily increased and the conversion rate has decreased over the years[9]. Although controversial, we routinely removed the normal appendix if no other cause for acute pain was found during laparoscopy[10].

The disadvantages of the laparoscopic procedure are longer operating time[11] and greater cost[12]. A technique to reduce operating room time and cost is a combination of the laparoscopic and open technique called the laparoscopic-assisted technique[13].

This technique allows surgeons to use the advantages of the laparoscopic method including visual diagnosis, less postoperative pain, and quicker return to work. The laparoscopic-assisted appendectomy requires less operating room time and is less costly than the traditional intracorporeal laparoscopic treatment. In essence, it offers the advantages of both the laparoscopic and the open techniques[14].

Our results indicate that laparoscopic assisted appendectomy can be performed in less operative time than the laparoscopic appendectomy (11.50±3.09 vs 31.42±8.64). This is comparable with the study carried out[3]. Konstadoulakis et al also demonstrated less operative time in laparoscopic assisted appendectomy when compared with laparoscopic appendectomy[7].

Misauno et al in their study also advocated that laparoscopically assisted appendicectomy in adults can be done at a significantly reduced cost and shorter operating time when compared to laparoscopic appendicectomy[15].

CONCLUSION

The laparoscopic-assisted technique for appendicectomy incorporates the advantages of both the laparoscopic technique and the open technique.

REFERENCES

1. Li X, Zhang J, Sang L, Zhang W, Chu Z, Li X et al. Laparoscopic versus conventional appendectomy. BMC Gastroenterol 2010; 10: 129.

2. Khan MN, Fayyad T, Cecil TD, Moran BJ. Laparoscopic versus open appendectomy. J Soc Laparoendos Surg 2007; 11: 363–7.
3. Golash V. Laparoscopic assisted two port open appendicectomy. Oman Med J 2008; 23: 166–9.
4. Mattioli G, Castagnetti M, Jasonni V. Appendicectomy for simple appendicitis. J Laparoendosc Adv Surg Tech 2007; 17: 478-82.
5. Malik AM, Talpur AH, Laghari AA. Video-assisted laparoscopic extracorporeal appendectomy vs open appendectomy. J Laparoendosc Adv Surg Tech 2009; 19: 355-9.
6. Bharati S, Singh DK, Shukla VK. Two-port laparoscopic-assisted appendicectomy under local anesthesia in adults. J Surg Tech Case Rep 2011; 3: 84-6.
7. Konstadoulakis MM, Gomatos IP, Antonakis PT, Manouras A, Albanopoulos K, Nikiteas N, et al. Two-trocar laparoscopic-assisted appendectomy versus conventional laparoscopic appendectomy in patients with acute appendicitis. J Laparoendosc Adv Surg Tech 2006; 16: 27-32.
8. Fazili FM, Al-Bouq Y, El-Hassan OM, Gaffar HF. Laparoscope-assisted appendectomy in adults. Ann Saudi Med 2006; 26: 100-4.
9. Khan AR. Two port laparoscopically appendectomy in a child with use of the ultrasonically activated endo-sheer. Pediat Endosurg Innovative Tech 2003; 7: 193-7.
10. Chiarugi M, Buccianti P, Decanini L, Balestri R, Lorenzetti L, Franceschi M et al. What you see is not what you get. Acta Chir Belg 2001; 101 :243-5.
11. Fingerhut A, Millat B, Borrie F. Laparoscopic versus open appendectomy: time to decide. World J Surg 1999; 23: 835–45.
12. McCahill LE, Pellegrini CA, Wiggins T, Helton WS. A clinical outcome and cost analysis of laparoscopic versus open appendectomy. Am J Surg 1996; 171: 533-7.
13. Esposito C. One-trocar appendectomy in pediatric surgery. Surg Endosc 1998; 12: 177–8.
14. Katkhouda N, Mason RJ, Mavor E. Laparoscopic finger-assisted technique for treatment of complicated appendicitis. J Am Coll Surg 1999; 189: 131–3.
15. Misauno MA, Isichei MW, Ale AF. Laparoscopically assisted appendicectomy in adults: a comparative analysis. J Dental Med Sci 2013; 24-7.