

Original Article

Laparoscopic Appendectomy

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ABSTRACT

Objectives: To evaluate our early experience with laparoscopic appendectomy in children, in terms of its safety, effectiveness, technical difficulties.

Methods: We reviewed the records of 60 cases involving laparoscopic appendectomy performed at Peoples University of medical & health science Nawabshah from January 2010 to December 2011. Patient age ranged from 5 to 12 years (mean, years). Forty-five patients had acute catarrhal appendicitis, seven with perforated appendicitis, five with normal appendix and three with appendicular abscess.

Results: Laparoscopic appendectomy done without any difficulty in 56 patients while 4 patients was converted to open appendectomies because of technical difficulties & dense adhesions. No major postoperative complications encountered except minimal bleeding in five patients, prolong ileus seen in four patients, & pelvic abscess in 2 patients.

Conclusions: Laparoscopic appendectomy is a safe and effective procedure. It takes longer operative time than open appendectomy. Length of hospitalization and incidence of postoperative complications are equivalent to those of open appendectomy. Economic benefits are difficult to assess at present. In sum, we believe that with better training, surgical techniques and equipment, laparoscopic appendectomy will eventually become the surgical procedure of choice in appendicitis.

Keywords: Pediatric, Appendectomy, Laparoscopy

INTRODUCTION

In children many surgical procedure are still performed by open methods but in recent years, laparoscopic techniques have been advanced greatly. There is still controversies on benefits of laparoscopic appendectomy over open appendectomy^{1,2,3}, as recovery is comparable with open appendectomy along with that there is problem of increase cost with laparoscopic appendectomy⁴.

In developing countries, laparoscopic surgery is challenging in pediatric population in terms of small sized children, on availability of appropriate size instruments & physiological care requiring competent pediatric anesthetist⁵.

The purpose of the present study was to review our early experience with laparoscopic appendectomy in children, in order to assess its safety, outcomes, & technical difficulties.

PATIENTS AND METHODS

60 cases of laparoscopic appendectomy, performed at PUMHS Nawabshah from January 2010 to December 2011 were reviewed. Patient age ranged from 5 to 12 years (mean 8.5 years). There were 39 males and 21 females. Forty-five patients had acute catarrhal appendicitis, seven with perforated appendicitis, five with normal appendix and three with appendicular abscess. Incidental findings during appendectomy included

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mesenteric lymphadenitis in three patients, mobile cecum in one patient, intra-abdominal testis seen in two patients, and Meckle's diverticulum in two patients. The Meckle's diverticulum left as such but intra-abdominal testis dealt in follow-up period.

OPERATIVE TECHNIQUE

In all cases, laparoscopic appendectomy was performed using general endotracheal anesthesia with the patient in the supine position. The abdomen was entered with the open Hasson technique through a supra-umbilical approach and a Pneumoperitoneum was created with carbon dioxide to a pressure of 12 mm Hg. A three-trocar technique was used, with one 5 mm trocars and two 3mm trocar. The mesoappendix was divided by using bipolar. After the appendix was freed, the appendix base dealt by pretied endo loop, intracorporeal knot or extracorporeal knotting done & then divided. The peritoneal cavity was irrigated with normal saline solution in perforated appendix. The trocar sites were closed with absorbable suture.

RESULTS

In our series of 60 cases were reviewed, out of these 56 laparoscopic appendectomy done without any major problem except four cases in which the laparoscopic procedures were converted to open appendectomy. One patient had perforated appendicitis with sloughing of appendix & three patients had an appendix with dense adhesions that could not be safely dissected. In all four of these patients, the appendectomy was uneventfully completed using the open technique.

There was postoperative complication in eleven patients among the remaining 56 patients who underwent laparoscopic appendectomy: five patient had minimal bleeding; four patient had a prolong ileus & two patient had a postoperative pelvic abscess that were dealt accordingly. (Table1)

The remaining 45 patients had successfully completed laparoscopic appendectomy with no complications. None of the patient died in our

series of 60 cases. Average operative time for laparoscopic appendectomy was between 60-100 minutes. The average time for open appendectomy, whose results are included in the present study, is 70 minutes. The hospital stay was variable ranging b/w 2- 6 days who had a laparoscopic appendectomy, compared with those who had gone conversion in which it was prolonged.

Table 01
Postoperative Complications seen in LA

Postoperative Complications	Number of Patients	Percentage %
Minimal bleeding	5	8.92%
Prolong ileus	4	7.14%
Pelvic abscess	2	3.57%
Total	11	19.6%

DISCUSSION

Even after advent of laparoscopic cholecystectomy, Open appendectomy was preferred method for appendicitis for many years as it was easy to perform in less time with safety. The lack of demand for laparoscopic appendectomy may be because of not well established studies related to its advantages in terms of cost, length of hospitalization, and early return to home with less complications^{1,6}.

Nowadays laparoscopic appendectomy has been popular & widely used method for the management of appendicitis^{2,4} in pediatric population. Many studies had shown that laparoscopic appendectomy is good in terms of less postoperative pain & shorter stay at hospital⁷⁻⁹.

Previous it had been found that there was increase incidence of postoperative intra-abdominal abscess in children with appendicitis who underwent LA.^{2,10} but recent studies shows decrease incidence of postoperative complications with LA^{1,3}.

In our study, we haven't found mortality,

neither there was major complication except in eleven patients & time was b/w 60-100mins. In recent literatures it has been seen that expertise in laparoscopic procedure requires learning curve, which comes by time & in many centers laparoscopic procedures done in shorter duration compare to open¹¹.

In our experience, length of hospitalization was variable ranging b/w 2-6 days, it is reported earlier that laparoscopic appendectomy is more effective than open appendectomy with shorter stay at hospital therefore laparoscopic appendectomy more effective^{12,13}.

On basis of our experience we suggest that, in children laparoscopic appendectomy is safe, cost effective with decrease rate of complications not only in simple but also in perforated appendicitis.

CONCLUSIONS

Early experience in our study with laparoscopic appendectomy in children gave us idea that it is a safe procedure, which provides therapeutic results comparable to those of open appendectomy. Although study contains limited number of patients with laparoscopic procedure, we are encouraged to continue to perform laparoscopic appendectomy. Comparing with studies done elsewhere we agree that with better training, improved surgical technique and nowadays availability of equipment, laparoscopic appendectomy will eventually become the surgical procedure of choice in appendicitis

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