LAPAROSCOPIC ASSISTED RIGHT HEMICOLECTOMY

AN EXPERIENCE OF LAPAROSCOPIC ASSISTED RIGHT HEMICOLECTOMY IN BENIGN DISEASE---TUBERCULOSIS

ORIGINAL
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ABSTRACT : Objective: To assess the outcome of laparoscopic assisted right hemicolectomy in benign diseases like tuberculosis. **Study design:** Prospective observational study. **Setting:** Surgical unit –I of Jinnah Hospital Lahore. **Period:** Jan 2009 and June 2010. **Material and Methods:** This study included a series of twenty patients with preoperative clinical diagnosis of ileocecal tuberculosis. A three trocar technique was used to perform laparoscopic right hemi colectomy and anastomosis was performed outside the abdomen by extending the supraumbilical incision. **Results:** Data of 20 patients who underwent laparoscopic assisted right hemicolectomy was analyzed. Mean age of the patients was 27.5 years with male to female ratio 4:1 (Table-I). There was zero conversion(0%) to open surgery and no intra-operative complications(0%) were observed. Average hospital stay was 5.8 days. No patient had to be re operated. On histopathology of specimen final diagnosis was 95% ileo cecal tuberculosis and one patient (5%) turned out to be having lymphoma (Table-III). **Conclusions:** The laparoscopic colon surgery can produce excellent results in selected patients of abdominal tuberculosis. Advantages of laparoscopic over open surgery include less postoperative pain, short-term postoperative ileus, earlier return to daily activity.

Key words: Right Hemicolectomy, Ileoceacal tuberculcosis, Laproscopy.

INTRODUCTION

The laparoscopic approach to colectomy is a new way of minimal access surgery for the colorectal pathology introduced by Jacob et al[1]. Laparoscopic colo-rectal surgery has gained wide acceptance as a treatment in a variety of benign and malignant diseases. However due to relatively complicated anatomy and higher requirements of equipment and expertise, laparoscopic right colectomy develops relatively slowly[2]. It is useful for many benign conditions, including tuberculosis, diverticulitis, Crohn's disease, and rectal prolapse[3]. There are multiple points of preference for laparoscopic colectomy over traditional open colectomy. Smaller incision size leads to improved cosmesis and reduced postoperative pain[4]. The laparoscopic approach is also associated with less postoperative ileus and earlier diet tolerance. These factors contribute to earlier recovery of the patient with a reduced hospital stay and earlier return to normal activity[3].

MATERIAL AND METHODS

In this prospective study, carried out at Surgical Unit- I of Jinnah Hospital, Lahore, Pakistan, twenty patients were chosen with following criteria:

Inclusion Criteria

All patients of either sex having preoperative clinical diagnosis of ileocecal tuberculosis

Exclusion Criteria

1. Patients that are unfit for laparoscopic surgery and general anaesthesia
2. Previous surgery--adhesions
3. Complete obstruction of intestine
4. Tuberculous peritonitis
5. Preoperative diagnosis of abdominal malignancy

METHODS

A prospective analysis of a series of 20 cases of ileocecal tuberculosis who underwent laparoscopic right hemicolectomy performed between January 2009 and June 2010 is presented. Surgical indication in all these patients was ileocecal tuberculosis with history of pain in

right iliac fossa, raised ESR and frequent attacks of subacute intestinal obstruction and gola formation in the right iliac fossa after food intake.

The technical aspects of laparoscopic assisted right hemicolectomy

This is a three trocar technique. As for open cholecystectomy, only one surgeon and one assistant are required. First 10mm cannula is inserted in supra umbilical cutdown. Two more 5mm cannulas are inserted on left side of abdomen in upper and lower quadrants. Terminal ileum is mobilized first and then cecum and ascending colon are mobilized medially. Bowel anastomosis is performed outside the abdominal cavity delivering right hemicolon out through a 5 cm transverse incision made by extending supra umbilical trocar site used for telescope[5].

RESULTS

Data of 20 patients who underwent laparoscopic right hemicolectomy were analyzed. Mean age of the patients was 27.5 years with male to female ratio 4:1(Table-I). There was zero conversion(0%) to open surgery and no intra-operative complications(0%) were observed(Table-II). The mean operative time was 150 minutes. No case of early port-site hernia was observed. The patients had to use less analgesics, passage of first flatus and bowel movements was in 2 to 4 days. Patients returned to normal diet in 2 to 4 days. Average hospital stay was 5.8 days. No patient had to be re operated. On histopathology of specimen final diagnosis was 95% ileo cecal tuberculosis and one patient (5%) turned out to be having lymphoma (Table-III).

Table-I.

	Laparoscopic cases
Mean age (years)	27.5 (15-40)
Sex (Male: Female)	4:1
Mean weight (Kg)	55 (45-65)

DISCUSSION

This study estimates the clinical outcome of laparoscopic right hemicolectomy in clinically benign disease of distal ileum and right hemi colon, main focus being ileocecal tuberculosis.

Initial concern regarding laparoscopic colorectal surgery were related to technical difficulties, long learning curve, a need for specialized instrumentation, and longer operating times. Secondary concerns have developed, including increased hospital costs, questions about real improvements in outcome, and concerns regarding safety in neoplastic disease. These factors have led to the slower dissemination of the technique compared with other advanced laparoscopic procedures, like Nissen fundoplication or splenectomy. Recent reports of “fast-track” care for colectomy patients has further blurred the distinctions between outcome of laparoscopic and open colectomy because of the perception that length of stay can be dramatically reduced with open surgery[6,7,8].

Studies comparing costs from colectomy by the laparoscopic and open approaches report conflicting results. Although some[9,10] report costs for laproscopic assisted hemicolectomy to be greater than for open surgery, others found results to be equivocal[11,12,13,14]. Some have reported that laproscopic assisted hemicolectomy leads to reduced costs compared with open colectomy[15]. In our setup it is difficult to compare the economic aspects of laparoscopic versus open surgery due to Govt. facilities. Lap colectomy was done with lap equipment already present in our hospital without demanding any additional equipment. But because of quicker post operative recovery, fewer post operative complications and shorter hospital stay, the cost of drugs decreases considerably, which is similar to other cost effective analysis of laparoscopic procedures[16].

In our study laparoscopic right hemi colectomy showed results comparable to those of European studies.as far as operating time, postoperative ileus, postoperative pain and cosmesis are concerned(Table-II). According to Mayo Clinic Proceedings[17], average time to first flatus is 3 days and is equal to our results. Length of hospital stay was average five days and is comparable to Mayo Clinic results that is four days. Any immune suppression occurring after trauma is related to an increase in the incidence of septic complications[18]. It is now broadly accepted that the immune system is better preserved

Table-II. Recovery outcome after laparoscopic right hemi colectomy in benign disease time to event (Days)

Case No.	Use of Analgesic*	First Flatus (Days)	Bowel movements	Normal Diet	Hospital Stay	Re-admission	Re-operation	Conversion
1	Less	2	2	4	5	No	No	No
2	Less	2	2	4	5	No	No	No
3	Less	2	2	4	4	No	No	No
4	Moderate	3	3	5	7	No	No	No
5	Moderate	4	3	5	5	No	No	No
6	Less	2	3	5	5	No	No	No
7	Less	2	3	4	5	No	No	No
8	Less	4	3	4	4	No	No	No
9	Less	2	3	4	5	No	No	No
10	Less	2	3	4	5	No	No	No
11	Moderate	4	4	4	5	No	No	No
12	Moderate	4	3	4	5	No	No	No
13	Less	3	3	4	4	No	No	No
14	Less	2	3	4	4	No	No	No
15	Less	2	3	5	6	No	No	No
16	Less	4	2	5	5	No	No	No
17	Less	4	2	5	5	No	No	No
18	Less	3	2	4	5	No	No	No
19	Less	4	2	4	5	No	No	No
20	Moderate	5	2	4	6	Yes	No	No
Mean values		3.0	2.65	4.3	6	-	-	-

** Analgesic use; Less—two doses of diclofenac sodium injection. Moderate--- requiring more than BD dose of diclofenac sodium, Severe--- requiring some morphine derivative*

following significantly smaller tissue injury following laparoscopic than open surgery[19].

The demonstrated advantages of laparoscopic ileocolic resection with regard to cost and cosmesis, and the acceptable long-term results achieved (which are at least comparable to those achieved by conventional ileocolic resection) favor the use of laparoscopic ileocolic resection over conventional ileocolic resection in patients with benign disease of ileocolic region like tuberculosis and Crohn's disease[20]. Nowadays Single Incision Laparoscopic Surgery has evolved (SILS). Single incision laparoscopic colectomy with intra

Table-III. Diagnosis of Disease (Number of Patients)		
	Preoperative diagnosis	Post operative diagnosis (Histopathology)
Ileocecal TB	20	19 (95%)
Lymphoma	-	1 (5%)

corporeal anastomosis can provide satisfactory results[21].

CONCLUSIONS

The laparoscopic colon surgery can produce excellent results in selected patients. It is possible to perform a completely laparoscopic right hemicolectomy after an adequate training in advanced laparoscopy. Advantages of laparoscopic over open surgery include less postoperative pain, short-term postoperative ileus, earlier return to daily activity.

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