



LAPAROSCOPIC ASSISTED RIGHT HEMICOLECTOMY; AN INITIAL EXPERIENCE

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ABSTRACT... Objective: Experience with Laparoscopic assisted Right Hemicolectomy is presented. **Study Design:** Prospective study. **Setting:** Surgical Unit-I, Holy Family Hospital, Rawalpindi, Pakistan. **Period:** 2010 to 2014. **Materials and Methods:** 20 patients underwent laparoscopic assisted right hemicolectomy. Duration of operation, postoperative pain, duration of post operative analgesia, frequency of surgical site infection and length of hospital stay were noted. **Results:** There were 13 male and 7 female patients with the age range of 25-70 years (45±11years). Eleven (11) patients were suffering from carcinoma colon whereas nine (09) were suffering from Tuberculosis. Mean operative time was about 92 minutes. Only four opioid injections were required as post-operative analgesia. Oral intake was started after 24 hours. The mean length of hospital stay was 5.5 days with no case of surgical site infection. **Conclusion:** Laparoscopic assisted right hemicolectomy is a safe and viable option in our setup.

Key words: Colonic cancer, Ileocecal tuberculosis, Laparoscopic assisted colonic surgery

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INTRODUCTION

Laparoscopic surgery has been proven as a gold standard in cholecystectomy even in our setup despite of lack of training facilities and availability of equipment.¹ However, the advanced laparoscopic procedures have been slow to develop in our setup. One of such surgeries is laparoscopic colonic surgery, which is complex and frequently involves the treatment of a malignancy.² Jacobs first reported laparoscopic colon resection (XCR) in 1991.³

Adequacy of the lateral and distal margins, lymph node clearance and early reports on high incidence of port site recurrence were the main hurdles of this technique.⁴ Last decade has seen a widespread application of minimal invasive surgery in colonic pathologies.⁵ Advantages of laparoscopic colonic surgeries (LCS) include a smaller scar, reduced analgesic requirements, lower risk of surgical site infections, earlier return of bowel function and routine activities and shorter hospital stay.⁶

Based upon these findings, we conducted a study

on laparoscopic assisted right hemicolectomy, thereby sharing our initial experience.

PATIENTS AND METHODS

From 2010 to 2014, 20 patients were operated by laparoscopic assisted right hemicolectomy in Surgical Unit-I of Holy Family Hospital, Rawalpindi.

Inclusion Criteria

- a) Ileocaecal tuberculosis presenting with repeated episodes of sub-acute intestinal obstruction with no response to anti-tuberculous therapy
- b) Early stage carcinoma of caecum and ascending colon (T1, T2)
- c) ASA class I and II

Exclusion Criteria

- a) Ileocaecal tuberculosis with peritoneal involvement and dense adhesions
- b) Advanced carcinoma of caecum and ascending colon (T3, T4)
- c) ASA class III and IV
- d) Patients converted to open procedure

Detailed history and clinical examination of each patient was done, followed by routine laboratory investigations. Biopsy and staging investigations were undertaken after clinical assessment. Anaesthesia evaluation was done in all patients. No formal gut preparation was done. An informed consent was taken and patients were counseled about the merits and demerits of the procedure. All patients underwent laparoscopic assisted right hemicolectomy in Trendelenberg position with left tilt under general anaesthesia. Lateral to medial approach was used for dissection of the colon.

We employed four port technique for the procedure. Dissection was facilitated by the use of the harmonic shears (Harmonic Scalpal, Ethicon Endo-Surgery, Inc, Cincinnati, OH, USA). Terminal ileum and caecum were mobilized first, followed by the ascending colon through the white line of Toldt. Hepatic flexure of the transverse colon was mobilized next by cutting the hepatocolic and gastrocolic omentum. Port site incision was extended by 3-4 cm and the specimen along with the terminal ileum and colon were delivered through the wound. Resection and end to end ileocolic anastomosis was performed using Vicryl 2/0. Check laparoscopy was done after the anastomosis. Peritoneal cavity washed with normal saline containing povidone-iodine solution and incision closed. Post-operatively nasogastric tube was not used. Third generation cephalosporin with metronidazole was given and analgesia achieved utilizing tramadol hydrochloride.

Duration of operation, post-operative analgesia requirement, duration of post-operative ileus, frequency of surgical site infection and length of hospital stay were noted. Patients were advised to return to normal activities after removal of stitches. Follow up of all patients was performed on an out-patient basis.

Operative period was recorded from the time of incision to the completion of wound closure. The post-operative hospital stay was noted with the day of surgery being day zero. Surgical site infection was defined as purulent discharge from

the incision line accompanied by microbiological growth in the wound culture.

All the data was recorded and results analyzed using S.P.S.S. (Version 17).

RESULTS

The study consisted of 13 male (65%) and 07 female (35%) patients, with a mean age of 45 ± 11 years (range 25–70 years). Mean operative time was 92 minutes (range 85-109 minutes). Only four (04) intramuscular opioid injections were given as post-operative analgesia. Clear fluids were started 24 hours after surgery and soft diet allowed after 48 hours. The mean length of hospital stay was 5.5 days. None of the patients developed surgical site infection in the post-operative period. The distribution of patients according to demographic characteristics, operative time, and duration of hospital stay are given in Table-I. The indications of surgery are shown in Table-II.

Characteristics	Total (n=20)
Age (years)	45±11 (25–70)
Gender	
Male	13
Female	07
Operative time (minutes)	92 (85-109)
Post-operative hospital stay (days)	5.5 (4.2-8)
Surgical site infection	Nil

Table-I. Demographic characteristics, operative time, duration of hospital stay and complication rate in all patients

Pathology	No. of cases (n=20)
Carcinoma caecum	07
Carcinoma ascending colon	04
Ileocaecal tuberculosis	09

Table-II. Indications of surgery

DISCUSSION

This study presents twenty cases of Laparoscopic assisted right hemicolectomy, representing our initial experience. Laparoscopic colorectal carcinoma surgery is a sound procedure, oncologically comparable to open surgery,⁷ and a suitable substitute to routine colorectal cancer resection. Since its first report, numerous studies

have demonstrated its benefits.⁸

Anthony et al⁹ demonstrated the mean operative time of 85 ± 32 minutes. In our study, the range was 85 to 109 minutes which was quite comparable to it, regardless of a limited experience. This time will likely improve with gaining experience.

Our study has shown that patients had a significantly shorter post-operative hospital stay, decreased analgesic requirements and quicker bowel recovery. Literature has shown the use of post-operative parenteral or epidural analgesia for 48 hours.¹⁰ In our patients, post-operative opioid injections were required for 48 hours as well.

Zheng et al¹¹ reported a mean hospital stay of 13.9 ± 6.5 days. The total duration of hospital stay was observed to be shorter in our study as compared to them. Post-operative hospital stay in our study was 5.5 days, which is comparable to 5 days and 6 days stay quoted in local and international studies by Maher et al¹² and Senogore¹³ respectively. One can infer from this data that a patient will suffer a shorter period of incapacitation, owing to shorter hospital stay and early wound healing.

We started clear fluids after 24 hours of surgery in our patients and allowed soft diet after 48 hours. In our study, no patient required insertion of nasogastric tube. However, Literature showed 6% rate of re-insertion of nasogastric tube.¹⁴ Similarly, the time to first bowel movement in our study was 48 hours which is comparable with that, published in literature i.e., 3.5 ± 1.3 days.¹⁴

Our study documented no case of surgical site infection. These results matched to the trial done by Fabozzi et al.¹⁵ who reported no post-operative complication in his subjects. The main limitation of our study is the inclusion of small number of cases since most of these, whether malignancy or tuberculosis, presented in advanced stage where laparoscopic surgery was not feasible.

CONCLUSION

Our results of laparoscopic assisted right

hemicolectomy are comparable to studies worldwide, hence it is a feasible approach in our setup with a number of benefits.

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“The art of being wise
is the art of knowing
what to overlook.”

William James



AUTHORSHIP AND CONTRIBUTION DECLARATION

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1	Dr. Jahangir Sarwar Khan	Paper writing and article analysis	
2	Dr. M. Salman Shafique	Literature review, data collection and paper writing	