



## A STUDY ON LAPAROSCOPIC REPAIR OF COLO-RECTAL DISEASES

**Dr. S.B. Ratna  
Kishore**

Assistant Professor

**Dr. N.Sunanda\***

Post Graduate\*Corresponding Author

**ABSTRACT** **Background:** Laparoscopy is an example of surgical innovation with a rapid implementation in many areas of surgery. A large number of controlled studies and meta-analyses have shown that laparoscopic colorectal surgery is associated with lesser pain, earlier recovery of bowel transit and shorter hospital stay. **Aim:** To assess the accessibility, intra-operative complications, postoperative complications, clinical outcome, prognosis in Laparoscopic repair for colorectal diseases. **Materials and Methods** This prospective study comprised of 40 patients with an Colorectal diseases. A total of 40 cases were included in the study. Of the 40 cases, 15 cases were operated by the Laparoscopic method and 25 by open method. **Result:** Laparoscopic approach though it has an accelerated learning curve due to which the duration of surgery is more with the laparoscopic approach, but because of less intraoperative and postoperative complications like less intraoperative blood loss, shorter postoperative ICU stay, fewer postoperative opiates use, shorter postoperative stay in hospital and early appearance of bowel sound postoperatively signifies its superiority over open approach.

**KEYWORDS :** Colorectal disease, laparoscopic approach, open method

### INTRODUCTION

Colorectal diseases include a wide diversity of conditions and their severity ranging from mildly irritating to life-threatening presentations. Early screening and treatment of colorectal diseases can significantly improve the outcome and survival rates. This requires expertise in the diagnosis and both surgical and non-surgical treatment. The laparoscopic approach is used increasingly to treat benign and malignant colorectal surgical diseases. Though it has positively accelerated the learning curve once we master the curve laparoscopic approach is a boon. We can minimize intraoperative blood loss, postoperative complications like pain, time to pass flatus, time to start oral feeding, ICU stay Wound infection, Anastomosis leakage, Ileus, Uroschisis, Pneumonia, Pelvic abscess, Arrhythmia, Pleural effusion, delayed gastric emptying, Bacteraemia, faecal fistulas and conversion to open, surgical margin and number of retrieved lymph nodes

### AIMS AND OBJECTIVES:

The purpose of this study was to compare the traditional open method and laparoscopic repair in colorectal diseases. To assess the accessibility, intra-operative complications, postoperative complications, clinical outcome, prognosis in Laparoscopic repair for colorectal diseases

### MATERIALS AND METHODS:

This prospective study was conducted in the Department of General Surgery, Government General Hospital, Kakinada from December 2019 to November 2021. The study material comprised OF15 cases were operated by the Laparoscopic method and 25 by open method forming a total of 40 patients admitted to General surgery department with colorectal diseases. After preliminary investigations, confirmation of diagnosis and pre-anesthetic check-up, the patients were subjected to the required surgery

### INCLUSION CRITERIA:

All patients undergoing emergency or elective surgery for Laparoscopic repair of colorectal diseases which include ascending colon, transverse colon, descending colon, and rectum, and confirmed after CECT abdomen and pelvis or colonoscopy and biopsy or diagnostic laparoscopy and biopsy.

### EXCLUSION CRITERIA:

- 1) Diseases of the anus, appendix, ileocecal junction, caecum, small intestine, stomach, and esophagus.
- 2) Rectal bleed caused by trauma
- 3) Patients not underwent CECT abdomen or colonoscopy and biopsy or diagnostic laparoscopy and biopsy.
- 4) Patients treated by palliative surgery
- 5) Patients treated by neoadjuvant therapy before surgery. Of the 40 cases, 15 cases were operated by the Laparoscopic method and 25 by open method. All the surgeries were performed under controlled conditions.

### STUDY VARIABLES:

The Patients were grouped according to surgical approach (laparoscopic vs open). The following variables were evaluated for each patient: age, gender, ICD code for the admission related to the surgery: cancer status, use of chemotherapy and radiotherapy, extent of the surgery (multivisceral resection vs simple procedures), need for perioperative blood transfusion, length of stay (LOS), intensive care unit (ICU) admission, 30-day readmission, the use of antibiotics, mortality, the occurrence of anastomotic leakage.

Perioperative transfusion was defined as the use of a concentrate of red blood cells between the date of surgery and the following 30 days.

### STATISTICAL ANALYSIS:

Statistical methods applied are Mean, Standard deviation, Chisquare test, Mann Whitney U test in the Microsoft Excel software.

### COMMON PROCEDURES FOR BOTH TECHNIQUES:

ÿ All patients were given intravenous antibiotic prophylactically: Cefotaxime 1 g intravenous single dose at the time of induction of anesthesia and Cefotaxime 1g i.v. BD for a period of 5 days postoperatively.

- Diclofenac 75 mg intramuscular injection was given 8th hrly for first 24 hrs, followed by diclofenac (oral) 50 mg 8th hrly for next 24 hrs
- Time was recorded using a stopwatch. The time taken from initial skin incision to skin closure with complete homeostasis was recorded
- Check dressing was carried out after 48 h. Assessment of wound infection if present, was done as per Southampton scoring system. Wound inspection was done daily and observations were recorded as per the criteria.
- Drain was removed if discharge was less than 10 ml in 24 h
- Suture removal was carried out on the 14th post-operative day, and patients were discharged on the 15th post-operative day if no complications were observed. At discharge, patients were advised to avoid carrying heavy weights and advised to wear an abdominal belt.

Post-operative visits were scheduled at 1 month, 3 months, and 6 months. Patients were examined. Wound assessment was done and recurrence if any was recorded.

### RESULTS:

This study "STUDY ON LAPAROSCOPIC REPAIR OF COLORECTAL DISEASES" was done to compare the laparoscopic approach with the open approach for the treatment of colorectal diseases. Age distribution (p-value <0.001) plays a significant role. Based on socioeconomic status (p-value=0.102) can be interpreted because, in this study, all the cases are from the lower socioeconomic

status as it is the only tertiary care government hospital of the district. Therefore, the majority of cases will be from low socioeconomic status. Major of them are with nutritional deficiency. Iron deficiency anemia being the most common of all. Following parameter like gender distribution (p-value=0.412), tumor location (p-value=0.453), tumor differentiation (p-value=0.679) ASA class (p-value=0.449), preoperative Hb% and albumin (p-value=0.191), and preoperative CEA levels (p-value=0.452) doesn't show any significant role in this study. The majority of the total study population have comorbidities (p-value=0.026) either hypertension or diabetes mellitus does play a role that is significant in this study. Postoperative complication (p-value=0.951) like SSIs, anastomotic leak, pneumonia, AF, pulmonary embolism etc., and according to Clavein-Dindo classification (p-value=0.261) doesn't show any significant role in this study.

**Table I: Age wise distribution of cases**

Age group	No. of cases	percentage
31-40	0	
41-50	0	
51-60	6	15%
61-70	12	30%
71-80	18	45%
81-90	4	10%

**Table II: Sex wise distribution of cases**

Sex	Laparoscopy	Percentage	Open	Percentage
Male	7	46.7%	15	60%
Female	8	53.3%	10	40%

**Table III: Operating time**

Parameter	Laparoscopy	Open
SD	16.74	18.57
Mean time	224.6	198.6

**Table IV: Occurrence of post-operative complications**

Complication	Laparoscopy	Open
Anastomotic leak	1	5
Ileus	1	2
Pneumonia	1	3
Pulmonary Embolism	1	2
Arrhythmia	0	1
Total	4	14

**DISCUSSION:**

This study conduction for purpose of increasing the use of the laparoscopic approach over the open approach. The study is conducted with the help of the following parameters like Age, Gender, Comorbidities, Benign or malignant diseases, Incision size, Access to the contents, Time taken for surgery, Intraoperative complication (bleeding), SSIs, Anastomotic leakage, and other general complications, Length of hospital stay, time taken for return to work. All those patients who were anemic and with hypoalbuminemia and other comorbidities were optimized preoperatively with blood transfusions and proper nutrition support either enterally or parenterally etc., depending upon their preoperative status. Prior ethics committee approval from the institution was obtained. After taking all the necessary consent from the patient and their attenders, they were included in this study. A total of 40 patients, who met all those criteria for the study and those who gave consent to participate in this study, are included. Among those 40-study population, 15 were included in the laparoscopic study group and 25 were included in the open approach group.

**CONCLUSION:**

Laparoscopic approach though it has an accelerated learning curve due to which the duration of surgery is more with the laparoscopic approach (p-value=0.0001), but because of less intraoperative and postoperative complications like less intraoperative blood loss (p-value=0.001), shorter postoperative ICU stay (p-value=0.0001), fewer postoperative opiates use (p-value=0.032), shorter postoperative stay in hospital (p-value<0.0001), and early appearance of bowel sound postoperatively (p-value=0.003) signifies its superiority over open approach. Though there are a few limitations like a smaller number of study population included in this study majority of the significant factors showing a p-value of <0.001 show their statistical significance to a greater extent.

**REFERENCES:**

- Greene, F.L. Laparoscopic management of colorectal cancer. *A Cancer Journal for Clinicians*, 1999; 49, pp.221-228.
- Biondi A, Grosso G, Mistretta A, Marventano S, Toscano C, Drago F, Gangi S, Basile F. Laparoscopic vs. open approach for colorectal cancer: evolution over time of minimal invasive surgery. *BMC Surgery*. 2013; S12.
- Kaiser AM. Evolution and future of laparoscopic colorectal surgery. *World Journal of Gastroenterology*. 2014; 20(41).
- Zhou S, Wang X, Zhao C, Liu Q, Zhou H, Zheng Z, Zhou Z, Wang X, Liang J. Laparoscopic vs open colorectal cancer surgery in elderly patients: short- and longterm outcomes and predictors for overall and disease-free survival. *BMC Surgery*. 2019; 19(1), pp.137.
- Jordan J, Dowson H, Gage H, Jackson D, Rockall T. Laparoscopic versus open colorectal resection for cancer and polyps: A cost-effectiveness study. *ClinicoEconomic and Outcomes Research*, 2014; 6, pp.415-22.
- Veldkamp R, Kuhry E, Hop WC, Jeekel J, Kazemier G, Bonjer HJ, Haglind E, Pahlman L, Cuesta MA, Msika S, Morino M, Lacy AM. Colon cancer Laparoscopic or Open Resection Study Group (COLOR). Laparoscopic surgery versus open surgery for colon cancer: short-term outcomes of a randomised trial. *Lancet Oncology*, 2005; 6(7): pp.477-84.
- Sirohi B, Shrikhande SV, Perakath B, Raghunandharao D, Julka PK, Lele V, Chaturvedi A, Nandakumar A, Ramadwar M, Bhatia V, Mittal R, Kaur T, Shukla DK, Rath GK. Indian Council of Medical Research consensus document for the management of colorectal cancer. *Indian Journal of Medical and Paediatric Oncology*, 2014; 35(3): pp.192-6.
- Umar S. Intestinal stem cells. *Current Gastroenterology Reports*. 2010; 12(5), pp.340-8.
- Thomas Sferra, Brent Polk, Daniel Kamin, Christine Waasdorp Hurtado. Embryology and Anatomy of the Gastrointestinal Tract. *NASPGHAN Physiology Lecture Series*, 2018.
- Vincent T. DeVita jr, Theodore S.Lawrence, Steven A. Rosenberg, DeVita Hellman, and Rosenberg's Cancer Principles & Practice of Oncology, 2020, 11th Edition, pp.900-1052.