

# A Comparative Study between Resection and Anastomosis Versus Ostomy In Emergency Colorectal Malignancies Presenting As Acute Abdomen In An Emergency Department In GRH Madurai.

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## Abstract:

**Background:** Colorectal cancer (CRC) is a heterogenous disease with a varied array of mutations and mutagens. The diagnosis and treatment of patients will be the most challenging tasks faced by general or specialist surgeon. Colorectal malignancies will be presented Emergency either as intestinal obstruction or perforation peritonitis. The goal of the initial evaluation should be to differentiate a complete obstruction with possible ischemia and impending perforation from a stable, partial obstruction. Early diagnosis of obstruction, skillful operative management, proper technique during surgery and intensive postoperative care carries a greatful result.

**Materials and Methods:** This study includes 50 patients admitted in the Department of General surgery, govt Rajaji hospital madurai, during the time period of November 2020 to November 2021. Patients more than 18yrs of age and less than 60yrs of age who are undergoing laparotomy surgeries (resection and anastomosis versus ostomy) for emergency colorectal malignancies presenting as acute abdomen who are admitted to general surgery ward in GRH madurai during the period November 2020 to November 2021. Data analysis and the benefits was compared based on Procedure performed, Duration of surgery, Intra operative vitals, Complications, Histopathological margins, Length of hospital stay.

**Results:** Total number of patients analysed for this study were 50, among which 25 were cases who underwent colostomy for emergency colorectal malignancies and remaining 25 who underwent resection and anastomosis. Duration of surgery is shorter with ostomy with a p value of 0.001 which is significant. Complications is comparatively lesser with ostomy with a p value of 0.001 which is significant. Hpe margin resection is better with ostomy with a p value of 0.003 which is significant. Recurrence / reintervention is lesser with ostomy with a p value of 0.01 which is significant. Length of hospital stay is shorter with ostomy with a p value of 0.014 which is significant

**Conclusion:** This study concludes that decompression of emergency colorectal malignancies presenting as acute intestinal obstruction or perforation peritonitis with ostomy over resection and anastomosis gives better outcomes, appears relatively safer, less time consuming procedure, lesser postoperative complications and morbidity, length of hospital stay shorter, improved oncological outcome.

**Key Word:** colorectal malignancies, ostomy, resection and anastomosis

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## I. Introduction

Colorectal cancer (CRC) is a serious lethal disease and ranks third for cancer-related mortalities globally. Malignancies of the large intestine assume a major importance because of their frequency in the general population. An extensive and comprehensive review of the worldwide information on colon carcinoma was collated by Correa and Haenszel. The goal of the initial evaluation should be to differentiate a complete obstruction with possible ischemia and impending perforation from a stable, partial obstruction. Acute presentation is more common in advanced stage disease and occurs most frequently in elderly patients.

## **II. Material And Methods :**

This randomized controlled study was carried out on patients of Department of General Surgery at Madurai medical college hospital, Madurai, Tamil Nadu from November 2020 to November 2021. A total 50 adult subjects (both male and females) were included in this study.

**Study Design:** Randomized controlled study.

**Study Location:** This was a tertiary care teaching hospital based study done in Department of General Surgery, at Madurai medical college hospital, Madurai, Tamil Nadu.

**Study Duration:** 1 year from November 2020 to November 2021.

**Sample size:** 50 patients.

**Sample size calculation:** The sample size was estimated on the basis of a single proportion design. The target population from which we randomly selected our sample was considered 20,000. We assumed that the confidence interval of 10% and confidence level of 95%. The sample size actually obtained for this study was 50 patients for each group. (Group I- cases, Group II- controls of 50 patients for each group) .

**Subjects & selection method:** The study population was drawn from consecutive patients who presented to Madurai medical college Hospital with colorectal malignancies presenting as acute abdomen in emergency department between from November 2020 to November 2021. Patients were divided into two groups (each group had 50 patients) according to the presentation of patient at admission.

Group A (N=50 patients) –Emergency colorectal malignancies treated with ostomy

Group B (N=50 patients) –Emergency colorectal malignancies treated with resection and anastomosis.

### **Inclusion criteria:**

1. Patients between 18-60 years of age groups in both sexes with colorectal malignancies presenting as acute abdomen in our emergency department.
2. Patients requiring emergency surgery ( resection and anastomosis versus ostomy ) for only emergency colorectal malignancies.
3. Histopathological report suggestive of malignancy.
4. Patients without associated co-morbid conditions.

### **Exclusion criteria:**

1. Patients less than 18 years and more than 60 years of age.
2. Patients with other gastrointestinal malignancies.
3. Patients with severe comorbidities [ uncontrolled diabetes mellitus, uncontrolled hypertension, immunosuppressive therapy, severe renal, cardiac and liver dysfunction ].
4. Traumatic abdominal emergencies.
5. Elective surgeries and patients who were previously worked up for suspected malignancies.

### **Procedure methodology:**

Patients more than 18 yrs of age and less than 60 yrs of age who are undergoing laparotomy surgeries (resection and anastomosis versus ostomy ) for emergency colorectal malignancies presenting as acute abdomen who are admitted to general surgery ward in GRH madurai during the period November 2020 to November 2021. Cases were patients undergoing ostomies for emergency colorectal malignancies. Controls were patients undergoing Resection and anastomosis for emergency colorectal malignancies.

The cases were selected by after detailed history, physical examination and radiological examination. Plain X-ray abdomen and chest pa view, ct abdomen and pelvis to look for air fluid levels (intestinal obstruction) ,air under diaphragm ( perforation peritonitis), identify site of obstruction and decision about tumour resectability will be taken for all the patients in the study.

Presentation at admission, Pre-operatively known metastasis or not, procedure performed, duration of surgery, intra operative vitals, complications, length of stay in hospital, recurrence or reintervention done or not were also accounted in the study.

Preoperatively correction of fluid and electrolytes will be done and appropriate antibiotics will be given.

Just before the onset of surgery. Midline laparotomy incision made and abdomen opened in layers, intraoperatively in confirmation of malignancy, and type of presentation, intervention is planned and proceeded, biopsy is taken, and based on intraoperative findings, site of malignancy, patients vitals, possibility of resection and case proceeded further. If resectable, tumor is resected and proceeded with anastomosis done in 4 layers fashion using 2-0 vicryl and 2-0 silk. If tumor not resectable, proximal to obstruction, ostomy is performed followed by definitive procedures. After achieving complete hemostasis in both procedures, abdomen closed in layers. Patient monitored post operatively for complications, duration of hospital stay, histopathological report, lymph nodal clearance .

During the operation, a record was kept regarding the time required for the surgery. Data of each patient was collected as per the proforma. Data analysis and the benefits in the treatment of emergency colorectal malignancies presenting as acute abdomen between ostomy and Resection and anastamosis was compared based on ,

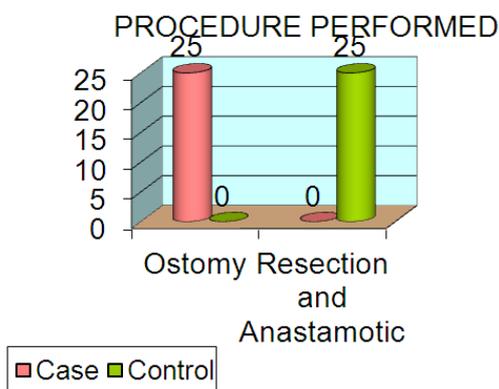
1. Procedure performed.
2. Duration of surgery.
3. Intra operative vitals.
4. Complications.
5. Histopathological margins,
6. Length of hospital stay.

**Statistical analysis**

Analysis of data was done by personal computer using SPSS (Statistical program for social science) as follows : Description of quantitative variables as mean, standard deviation(SD) and range.

Description of qualitative variables as number and percentage. Statistical difference between quantitative variables were assessed using unpaired student t test. Chi-square test was used to compare qualitative variables. Correlation between two continuous variables were evaluated using the Spearman correlation coefficient. Statistical significance was set as P value of 0.05 or less.

**III. Results**

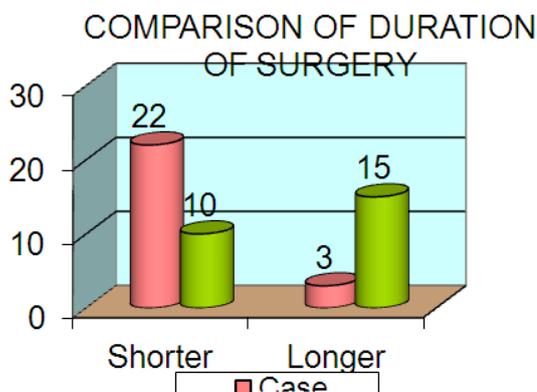


Procedure Performed	Case	Control
Ostomy	25	0
Resection and Anastamosis	0	25
Total	25	25

Table 1: PROCEDURE PERFORMED.

In our study , cases who underwent ostomy and controls who underwent resection and anastomosis were mostly presented as intestinal obstruction.

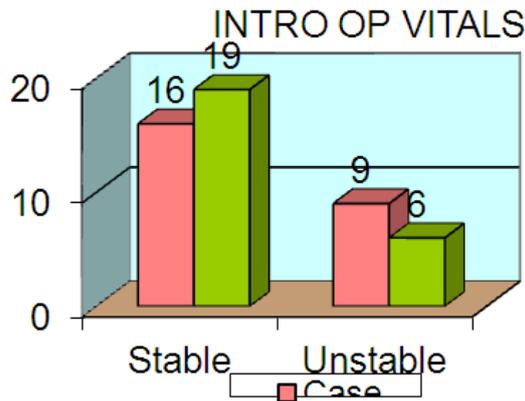
TABLE 2 – COMPARISON OF DURATION OF SURGERY



Duration of Surgery	Case	Control
Shorter	22	10
Longer	3	15
Total	25	25
P'value	0.001 Significant	

In our study , cases who underwent ostomy and controls who underwent resection and anastomosis were mostly presented as intestinal obstruction. Duration of surgery were shorter with ostomy over resection and anastomosis with a p value of 0.001 which is significant.

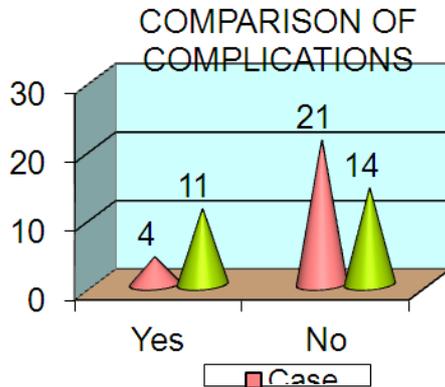
TABLE 3– INTRAOP VITALS.



Intra Op Vitals	Case	Control
Stable	16	19
Unstable	9	6
Total	25	25

In our study , cases who underwent ostomy,16 cases were stable and 9 were unstable patients and controls who underwent resection and anastomosis were presented as intestinal obstruction ,19 were stable cases and 6 were unstable cases.

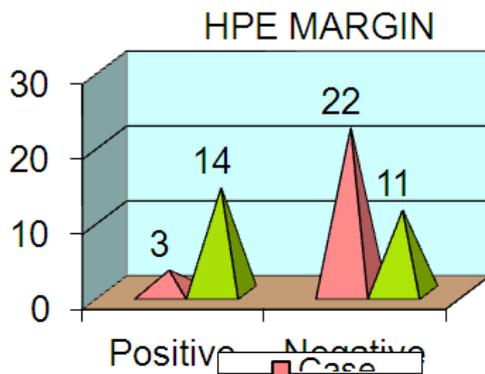
TABLE 4 – COMPARISON OF COMPLICATIONS



Complications	Case	Control
Yes	4	11
No	21	14
Total	25	25
P'value	0.064 Not significant	

In our study , cases who underwent ostomy .4 Had complications and 21 had no complications,and controls who underwent resection and anastomosis were presented as intestinal obstruction, 11 had complications and 14 had complications.Complications are lesser with ostomy with a p value of 0.005 which is significant.

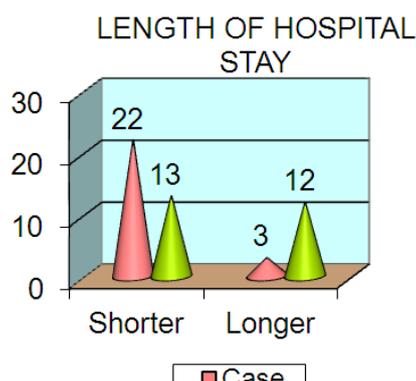
TABLE 5–HPE MARGIN



HpE Margin	Case	Control
Positive	3	14
Negative	22	11
Total	25	25
P'value	0.003 Significant	

In our study , cases who underwent ostomy .3 Had hpe margin positive and 22 had hpe margin negative and controls who underwent resection and anastomosis were presented as intestinal obstruction, 14 had hpe margin positive and 11 had hpe ,margin negative .HPE margins are more negative and oncological outcome are better with ostomy with a p value of 0.003 which is significant.

TABLE 6– LENGTH OF HOSPITAL STAY



Length of Hospital Stay	Case	Control
Shorter	22	13
Longer	3	12
Total	25	25
P'value	0.014 Significant	

In our study , cases who underwent ostomy .22 Had shorter hospital stay and 3 had longer hospital stay, controls who underwent resection and anastomosis were presented as intestinal obstruction, 13 had shorter hospital stay and 12 had longer hospital stay.Length Of hospital stay is lesser with ostomy with a p value of 0.014 which is significant.

#### IV. Discussion

Total number of patients analysed for this study were 50,among which 25 were cases who underwent colostomy for emergency colorectal malignancies and remaining 25 who underwent resection and anastomosis. In this study, in cases group ,25 patients underwent ostomy for the treatment of emergency colorectal malignancies and maximum no of patients were between 55 – 65 age group.In controls group, patients underwent resection and anastomosis,similarly as in cases group,maximum no of patients fall under 55 – 65 age group.Hence summing up both groups,incidence is more between the age group of 55 and 65 years of age.

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases group,18 were male and remaining 7 were female,similarly in control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies, 16 were males and 9 were females.Hence summing up both groups,incidence is slightly more in males.

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases group,21 presented as intestinal obstruction and remaining 4 presented as perforation peritonitis, similarly in control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies, 21 presented as intestinal obstruction and 4 presented as perforation peritonitis. Hence summing up both groups,most common presentation be intestinal obstruction.

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases groups most common side be left colonic malignancy similarly in control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies, there is equal distribution of right and left sided colonic malignancy.

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases group,6 presented with metastasis and remaining 19 presented without metastasis similarly in control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies, 4 presented with metastasis and 21 presented without metastasis. Hence summing up both groups,most of the patients presented without metastasis In this study out of 50 patients. 25 underwent ostomy for emergency colorectal malignancies in cases group, 25 underwent resection and anastomosis for emergency colorectal malignancies, 16 were males and 9 were females.

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases group,22 had shorter duration of surgery and remaining 3 had longer duration of surgery,similarly in control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies, 10 had shorter duration of surgery and 15 had longer dyration of surgery,.Hence summing up both groups,Duration of surgery is shorter with ostomy with a p value of 0.001 which is significant .

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases group,16 had stable vitals and remaining 9 had unstable vitals,similarly in control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies, 19 had stable vitals and 6 had unstable vitals.

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases group,4 had complications and remaining 11 had no complications,similarly in control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies, 11 had complications and 14

had no complications Hence summing up both groups,Complications is comparatively lesser with ostomy with a p value of 0.001 which is significant.

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases group,3 had margin positive and remaining 22 had margin negative,similarly in control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies, 14 had margin positive and 11 had margin negative.Hence summing up both groups,Hpe margin resection is better with ostomy with a p value of 0.003 which is significant .

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases group,2 had recurrences/reintervention remaining 23 had no recurrences/reinterventions, similarly in control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies, 11 had recurrences/reintervention 14 had no recurrences/reinterventions.Hence summing up both ggroup.Recurrence / reintervention is lesser with ostomy with a p value of 0.01 which is significant .

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases group,22 had shorter hospital stay and remaining 3 had longer hospital stay,similarly in control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies, 3 had shorter hospital stay and 22 had longer hospital stay.Hence summing up both groups.Length of hospital stay is shorter with ostomy with a p value of 0.014 which is significant .

In this study, out of 25 patients who underwent ostomy for emergency colorectal malignancies in cases group,and control group,out of 25 patients who underwent resection and anastomosis for emergency colorectal malignancies,most of the patients won't recieve radiotherapy and chemotherapy.

## V. Conclusion

This study concludes that decompression of emergency colorectal malignancies presenting as acute intestinal obstruction or perforation peritonitis with ostomy over resection and anastomosis gives better outcomes, appears,relatively safer,less time consuming procedure,lesser postoperative complications and morbidity, length of hospital stay shorter,Improved oncological outcome.

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