

**Original article**

## **A Retrospective study of a retrospective study of colorectal liver metastasis (CRLM) and its outcome**

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### **Abstract:**

**Introduction:** Colorectal cancer (CRC) is the most common type of malignancy in Gastrointestinal tract. Liver is most common site for metastasis from Colorectal Cancer. Mortality rate from Colorectal Liver Metastasis(CRLM) has been slightly lower due to combination of colorectal cancer screening, improved diagnostic tests, improved standardized surgical techniques, improved medical support, neoadjuvant chemotherapy and radiation treatment.

**Methods:** In this retrospective study of 30 patients, all patient were admitted in our department and fully investigated. The present study includes 30 patients of CRLM treated with different modalities. Operative procedure for colorectal liver metastasis depends upon site of lesion, number of liver metastases, extra hepatic metastasis and general condition of the patient.

**Observation and Result:** The incidence of colorectal liver metastases (CRLM) is more in males and it increases with increasing age being more common in 6th decade of life. Most common extrahepatic metastases is in lung. The most common histological type of colorectal carcinoma was moderately differentiated adenocarcinoma. In resectable CRLM classical approach is used but as the liver metastasectomy is delayed incidence of recurrence is more with this type of approach. The most common histological type of colorectal carcinoma was moderately differentiated adenocarcinoma. More complications were seen in two-staged surgery compared to one-staged surgery.

**Conclusion:** The patients which had unresectable liver metastasis underwent chemotherapy. The patient which underwent resection had better outcome compared to patients kept conservatively.

### **INTRODUCTION**

Colorectal cancer is the most common malignancy in Gastrointestinal tract. It is 3rd MC type of cancer in terms of both gender-specific and mortality after lung and prostate or breast cancer.<sup>1</sup> There is age dependent increase in incidence with each decade and increases sharply after 5th decade. Incidence for colorectal cancer with liver metastasis has remained unchanged since past 30 years but mortality rate has been slightly lower due to combination of colorectal cancer screening, improved diagnostic tests, improved standardized surgical techniques, improved medical support, neoadjuvant chemotherapy and radiation treatment.<sup>2</sup> Risk factors for colorectal cancer include lifestyle, diet (high fat intake, red meat, alcohol, and smoking), older age and inherited genetic disorders and other inflammatory bowel diseases like Crohn's disease and ulcerative colitis increase the risk of colorectal cancer. Sign and symptoms of colorectal cancer with liver metastasis depend on location of tumor in bowel and whether has spread elsewhere in body. Symptoms include: abdominal pain, vomiting, altered bowel habits and blood in stools, weight loss. Appropriate cardiopulmonary investigations, preoperative evaluation includes proctoscopy, ERUS, CT, MRI & decisions be made whether tumor is suitable for local

therapy, neoadjuvant therapy is required & whether permanent stoma is necessary or not. Approach for colorectal cancer with liver metastasis depends on site of tumor located, extent of liver metastasis, symptoms following colorectal carcinoma and liver metastasis and extrahepatic metastasis. Once investigations done it will help to determine 1. Stage of tumor 2. Patient's general health condition & comorbidities 3. Which treatment Option is best suited to the patient.

#### **MATERIALS AND METHODS**

- Study Settings: Department of General Surgery, M P Shah Government, Medical College, Jamnagar, Gujarat in a large teaching public health hospital.
- Study period: One year
- Sample Size: 30 Cases
- Study Type: Retrospective Study

#### **INCLUSION CRITERIA:**

- Patient presenting with
  1. Liver metastasis.
  2. Active mucus / blood discharge per rectum
- Patients who give informed consent

#### **EXCLUSION CRITERIA:**

As such there is no exclusion criteria but in patients

- Those who do not give consent
- Patients with uncorrected coagulopathies are excluded from the study.

#### **METHODS**

All the patients fulfilling the inclusion criteria will be admitted. A detailed history of the symptoms like pain in abdomen, vomiting, abdominal distension, fever, alteration of bowel habits, jaundice etc. will be taken. Collection of blood will be done and detailed haematological and biochemical investigation will be done like haemoglobin, total and differential counts, serum bilirubin, SGPT, Alkaline phosphatases, serum blood urea nitrogen, serum total proteins, serum creatinine, serum electrolytes, coagulation profile, urinary bile salts and bile pigments, stool routine and microscopic, stool ova cyst.

#### **RESULTS:**

In this study one patient (3.33%) is in age group of 31-40 years. (13.34%) patients are in age group of 41-50 years. 9 (30%) patients are in age group of 51-60 years. 10 (33.33%) patients are in age group of 61-70 years. 6 (20%) patients are in age group of 71-80 years. This suggests peak incidence of colorectal cancer with liver metastasis is after 5th decade.

In this study, number of patients having right lobe metastasis is 14 (46.67%), left lobe liver metastasis is 7(23.33%) and both lobes are 9 (30%).

**Table 1) PRESENTATION OF COLORECTAL CARCINOMA IN PATIENTS**

<b>Symptoms</b>	<b>Number of patients having left sided colorectal carcinoma (21)</b>	<b>Number of patients having right sided colon carcinoma (09)</b>
<b>Abdominal pain</b>	16	05
<b>Vomiting</b>	08	0
<b>Black colored stool</b>	10	06
<b>Altered Bowel Habits</b>	05	07
<b>Weight loss</b>	09	06

In this study, patient having right sided colon carcinoma presents with altered bowel habits in 77.78% and black coloured stool (66.66%) while left sided colorectal carcinoma patients presents with abdominal pain (76.2%), vomiting (38.08%). In all cases 71.42% patients came with complain of weight loss.

Out of 30 cases, colorectal carcinoma with liver metastasis is present in 16 cases of rectosigmoid colon,9 of the cases in ascending colon and remaining 5 cases in descending colon and transverse colon. Below table the liver metastasis frequency is 30% in right sided tumours and 70% in left sided tumours. In this study of 30 cases, 8 patients had extra hepatic liver metastasis out of which 5 had lung metastasis, 3 had peritoneal metastasis and 1 had distant lymph node metastasis. In study of 30 cases, liver metastasis was seen in 70% of hindgut tumours and 30% of midgut tumours. In this study, the patient having single metastasis were seen in 12 cases, two and more than two metastases are seen in 18 cases.

In study of 30 cases, CEA levels were raised upto 4-7 ng/dl in 50% of patients while more 7 ng/dl was seen in 26.67% of patients.

In study of 30 cases, 10 patients on presentation had resectable liver metastasis while 20 patients had unresectable liver metastasis.

In this study, out of 10 resectable patients 05 were operated by classical approach i.e. colorectal surgery was done first followed by liver metastasectomy, in 03 patients simultaneous approach was done and in two cases liver metastasectomy was done first followed which colorectal surgery was done.

In this study 30 case, 60% of patient histopathology of colorectal carcinoma s/o moderately differentiated adenocarcinoma, 26.67% patient had mucoid carcinoma while anaplastic and melanocytic came out to be 3.33%.. In this study,73.34% had stage IVA and stage IVB had 26.66% patients.

**Table 2) CHEMOTHERAPY / RADIOTHERAPY IN COLORECTAL LIVER METASTASIS**

	No. of patients	percentage
<b>Adjuvant</b>	08	26.67
<b>Neoadjuvant</b>	22	73.33
<b>Palliative</b>	14	46.66

In this study of 30 cases, 08 patients (26.67%) had post-operative chemotherapy, 22 patients (73.3%) had chemotherapy before surgery and 14 patients underwent palliative treatment.

In this study, out of 10 patients which were resected four patient had recurrence, four patient return to normal activity and two patients expired. Out of 20 unresectable patients, 15 patients were on treatment while five patients expired.

## DISCUSSION

Colorectal cancer remains the most common indication for hepatic resection in patients with metastatic disease. Up to 25% to 30% of patients with CRC will present with CRLM. The present study includes 30 patients of CRLM treated with different modalities. In our hospital different treatment modalities such as portal vein embolization ,thermal ablation ,radiofrequency ablation is not available.

Colorectal liver metastases is more common in males; the male preponderance is 3:2. In our study incidence of CRLM was found more in males than females and their ratio was found to be 3:2. Similar observation regarding sex distribution were made in studies by Jennie Engstrand et al, Mayo et al and Manfredi et al.

A study done by Jennie Engstrand et al shows as the age increases, the incidence of CRLM increases with mean age of 64 years. In our study there is similar type of result. Maximum number of patients were detected in 6<sup>th</sup> decade of life(33.3%).

Most of the patients of right sided CRLM presented with altered bowel habits and black tarry stools while left sided CRLM presented with abdominal pain (76%), vomiting (38%), bleeding per rectum (50%) and weight loss (50%). In our study the presentation of liver metastasis in both lobe is 30% while in right lobe is 46.6%. Similar findings were seen in studies by Jennie Engstrand et al. In this study, patient having liver metastases in single segment was found to be 16 (52.6%) and in more than 1 segment of liver was found to be 14 (47.4%). Lung is the most common site of extrahepatic metastases followed by peritoneum. In our study number of patients having lung metastases was 05 (16.6%) and those having peritoneal metastases was 03(10%). The study carried out by Jennie Engstrand et al. had 16.9% incidence followed by peritoneal metastasis seen in 7% of patients.

In this study 30% of liver metastases were from midgut tumours while 70% were from hindgut tumours. Similar findings were seen in Jennie Engstrand et al.

In this study 10 patients (33.3%) were found to have resectable CRLM and rest 20 patients (66.7%) had unresectable CRLM at presentation. In our study, 05 patients (50%) were operated by classical approach (stage 1-colorectal surgery F/B stage 2-liver metastasectomy), 03 patients (30%) underwent resection by simultaneous approach and 02 patients by reverse approach (liver metastasectomy F/B colorectal surgery). 18 patients (60%) had histopathology report suggestive of moderately differentiated adenocarcinoma and 8 patients (26.67%) had mucinous adenocarcinoma. In 10 operated cases of CRLM, colorectal surgery has more number of complications than liver metastasectomy. 3 patients of colorectal surgery had wound infection, 1 had septicaemia and anastomotic leak while after liver surgery recurrence was seen in 4 patients (40%) . In 10 operated cases of CRLM, 04 patients (40%) returned to normal activity, 04 patients were being treated by adjuvant chemotherapy and 02 patients expired in the post-operative period. In 20 unresectable patients, 15 patients were on treatment and 05 patients have expired during the treatment.

#### **CONCLUSION:**

The incidence of colorectal liver metastases (CRLM) is more in males and it increases with increasing age being more common in 6th decade of life. Most common extrahepatic metastases is in lung. Left sided colorectal carcinoma mostly presents with obstructive symptoms, while Right sided colon carcinoma has delayed presentation.

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