

# Rectal Carcinoma, Mayo Hospital Experience

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For patients having rectal carcinoma, resection offers the only chance of cure. The approach to operation is influenced by the finding at sigmoidoscopy, degree of fixity of the growth as assessed by rectal examination and the histology of the tumor. In the study different operative option according to the site of tumor and demographic aspect of the rectal carcinoma in local community were studied. It is a prospective study carried out at Mayo Hospital, Lahore Pakistan to assist in the development of the management guideline. In this study, 50 patients with new diagnosis of carcinoma rectum were included. Out of the 50 patients 44% had tumor of the upper rectum 16% in the middle and 40% in the lower rectum. In 96% of the cases histology was adenocarcinoma and 2% each for melanoma and lymphoma. Resection of the primary disease in 92% of the cases, 20% of the cases presented with acute obstruction and 4% of the cases were inoperable. Curative resection was possible in 80% of the cases, palliation was achieved in 12% cases and 4% of the cases deemed inoperable at the time of operation. Incidence of rectal carcinoma is higher in younger age group being < 40 and resection of the primary tumor is the cure in early cases.

**Keywords:** Rectal carcinoma, Anterior resection, Hartmann procedure, Abdominoperineal resection.

Carcinoma of the large bowel is one of the most frequently encountered malignant tumours of the anatomic site<sup>1</sup>. Yet if precancerous lesions (inflammatory polyps, before any change has take place, or cancer) is treated during early states, patients can be prevented from or cured of the disease. Colorectal cancer is the most frequently abdominal visceral malignancy and accounts for the second most common visceral cancer in USA exceeded only by lung cancer<sup>2</sup>. It is also the second most common cause of cancer death in the United Kingdom accounting over 15,000- 16000 deaths per year<sup>3</sup>. Rectal cancer in Norway has increased from 6.5 per 100,000 in 1953 to 15/100,000 in 1992 and expected to reach 21.5 by 2012<sup>4</sup>.

## Materials and methods

This prospective study was conducted in Surgical Unit of Mayo Hospital, Lahore for the period of 4 years i.e. 1997 to 2000. The medical record of 50 patients is available. Parameters examined were age, sex, history of pre-malignant disease, presenting signs and symptoms, location of primary tumour, extent of tumor, histopathology, rate of resection, operative morbidity, mortality and survival. Patients were followed for 1 ½ year. Diagnostic techniques were digital rectal examination, proctosigmoidoscopy, and contrast studies. Colonoscopy, computerized tomography and intravenous urography were performed in selected cases. Rectum was defined in to three parts, upper 1/3<sup>rd</sup> was upto 15 to 20 cm from anal verge, middle 1/3<sup>rd</sup> upto 10 cm from anal verge and lower 1/3<sup>rd</sup> upto 10 cm from the anal verge.

A modified Dukes classification was used and divided the patient in early (A&B) and advanced (C&D) cases. Mechanical bowel preparation was used in all elective cases without obstruction. Antibiotic prophylaxis including first generation cephalosporin, aminoglycoside

and metronidazol was prescribed pre-operatively in all elective cases.

Emergency patients underwent staged procedures with decompression as first stage and then resection 2-3 weeks later. Average hospital stay was 2 ½ weeks (ranged from 2-4 weeks). All biopsies and surgical specimen were reported by the Consultant, Histopathologist at King Edward Medical College. All operations were performed by the visiting surgeons.

## Results

Fifty patients with the diagnosis of carcinoma rectum were included in the study 18 female and 32 male showing a male: female ratio of 2.2:1. Age distribution of these patients ranged from 22 to 85 years. Ten patients were less than 40 years of age including 6 males and 2 females. Forty patients were more than 40 year of age. Mean age of the patients was 56 years.

The common mode of presentations was bleeding per rectum, change in bowel habits, weight loss and debility, acute and sub-acute obstruction, pain abdomen and mass abdomen. The digital rectal examination was diagnostic in 40(80%) patient while proctosigmoidoscopy revealed tumour in all cases. Contrast studies were performed in elective patient to rule out any synchronous lesion in the gut. Colonoscopy was performed in 6 cases.

Upper rectum was involved in 22 (44%) patient while middle rectum in 8 (16%) patients and lower rectum was involved in 20 (40%) of patients.

Out of 50 cases of carcinoma rectum 48(96%) of patients had adenocarcinoma in which 22(47.83%) were well differentiated, 18(36%) patients were moderately differentiated and 8(17.39%) patients were poorly differentiated. Remaining 2 cases one was malignant melanoma and one lymphoma. According to modified Duke classification no tumour was seen in stage-A. Most

of the lesions were in stage –B i.e. 32(64%) patients. Fourteen (28%) patients were seen in stage C, only four (8%) patients belong to distant metastatic group-D. No synchronous lesion was found. Morphologically 22(44%) patients had tumours which were ulceratopolypoidal, 12(24%) were fungating and 16(32%) had infiltrating stenotic.

All patients were explored and curative resection was possible in 40(80%) patients. Palliation was obtained in 6 (12%) cases, 2(4%) were found inoperable at the time of operation.

During the post-operative period 14(28%) patients developed complications. Respiratory infections comprised the main post-operative complication followed by complications related to wound and colostomy. Clinical anastomotic leak was seen in 2(4%) patients which is near to international studies 3%.

Peri-operative mortality was seen in 1 (2%) patient. Operative mortality is defined as death within 30 days of surgery. Follow up is available for a short period of 1 ½ year on recurrence and late deaths. Local recurrence was observed in 4 patients and 6 patients died as a result of metastatic disease within three months period of potentially curative resection of rectum.

## Discussion

Colorectal carcinoma accounts for 9.6% of the world's cancer cases and is the second most common digestive tract malignancy (after stomach) in the world<sup>5</sup>. The incidence of the rectal carcinoma is increasing in North America, Europe, Norway, Australia and New Zealand as compared to lower rates in South America<sup>6</sup>.

Over 10,000 new cases of rectal cancer are reported in UK each year causing 6000 deaths. Following surgery rectal cancer still reoccur locally with recurrence rate 3-32%. With the wider introduction of oncologically sound procedures such as total mesorectal excision, much lower recurrence rates have been reported<sup>15</sup>.

Carcinoma rectum is not uncommon in Pakistan. Incidence in Pakistan (Karachi 23%) of GIT tumours is higher than the Western countries. Colorectal carcinoma is the 6<sup>th</sup> and 7<sup>th</sup> commonest in male and female population in Pakistan respectively<sup>8</sup>.

In most of the countries carcinoma rectum is a male dominant disease, in Pakistan, local studies from Capital and Frontier Province show equal ratio. In the present study it is 2.2:1 which correlates with the International Literature<sup>8</sup>.

Carcinoma of the ractum is common in 60-70 years of age<sup>9</sup>. Only 10% are in less than 40 years of age group<sup>10</sup> but in Pakistan incidence is more in lower age group<sup>8,11,12</sup>. In Pakistan less than 40 years patients are 18-30%<sup>8,12</sup>. In our study it is 20% which relates with local and international studies<sup>13</sup>. The mean age was 45 years which is 10% below the Western studies<sup>12</sup>.

Bleeding per rectum is fairly common presentation of early rather than late cancer<sup>8</sup>. So the patients with persistent symptoms should have a complete work up. In our study bleeding per rectum was seen in 72% of the cases which is similar with the two local studies<sup>8,14</sup> which are 80% and 76.7% respectively. In 20% of the cases presentation was acute obstruction, which is towards the higher side of the 7-29% incidence reported in the literature<sup>12</sup>.

In Western studies most tumors were in the lower part of the rectum while it occupies upper and middle part of the rectum<sup>8,12,15</sup>. Present study showed predominance in the upper part of the rectum which is contrary to other local studies. In a study conducted in USA including colon and rectum 70% tumours were in the colon and 30% in rectum. In another study which showed 55.3% colonic and 44.7% rectal tumour which is in consistence with the local studies. In our studies no case was found in stage A and most of the cases belonged to stage B and C. But the studies from abroad show remarkable difference e.g. studies from Saudia showed A 19.7%, B 21%, C 26.9%, the studies from New-Zealand shows A = 16.4, B =37.3, C =31, Lahey Clinic study shows A = 22.3, B = 32.9 and C = 20.2. In our study more than 80% of cases from B and C which is similar to Pakistan studies and contrary to Western studies<sup>8,12,13</sup>.

Morphologically, present study showed ulcerative lesion in 44%, polypoidal 24% and infiltrative in 32% of cases, this trend is probably because of changing pattern in the growth of the tumor<sup>12,16</sup>. International data revealed adenocarcinoma in 100% of the cases while melanoma and lymphoma are also not uncommon in Pakistan<sup>12,16</sup>. In the present study the incidence of melanoma and lymphoma is 2% each.

Digital rectal examination was 100% diagnostic in rectal carcinoma while its sensitivity was 70%<sup>6,8,12</sup>. Our findings are similar to the local as well as to the International literature. Diagnostic yield of proctosigmoidoscopy was 75% in colorectal carcinoma<sup>8,11</sup>. Contrast studies shows 96% diagnostic sensitivity in colonic and 100% in rectal cancers<sup>12</sup>. Colonoscopy was diagnostic in 96% of the colonic and 100% of the rectal tumors. Results are similar with the international data<sup>17,18,19</sup>.

Computerized tomography was performed in selected cases. In the detection of metastatic disease it has diagnostic yield of 90%<sup>20</sup>. With the advent of new technologies more and more sphincter saving being done in Pakistan<sup>8,12</sup>. During the past 20 years resectability of rectal carcinoma has increased<sup>12,15</sup>. This is because of new and advanced diagnostic modalities, more competency and skill of the surgeon and more know how of the locoregional anatomy. Total mesorectal excision has an advantage of low local recurrence and improved survival<sup>12,15</sup>.

In the study of J. Mella 53% anterior resections, 37% APRs, 8.3% Hartman procedure and 8% panproctocolectomies were performed<sup>21</sup>, while in the present study 52% anterior resection, 28% APR, 12% Hartman operations were performed, which shows our policy more towards resection and sphincter saving.

In literature anastomotic leak was found in 4.9%<sup>23,24,25</sup>, but it was 8.79% for APR, 8.6% after Hartman and 3.9% after colonic resection. In our study 4% cases were seen with anastomotic leak. Chest complications were seen in 16% of the cases while in literature it is 45%<sup>12</sup>. It is comparatively low and similar with local studies. Abdominal wound sepsis was 20% in emergency and 13% in elective cases<sup>8</sup>. Colostomy complications were 7.6% of the patients. Mortality rate range from 12-33%, but in the present study there were no peri-operative mortality while it was 2% in Ahmad A. and upto 33% in Malik et al. studies<sup>12</sup>.

### Conclusion

Rectal carcinoma is a common malignancy in Pakistan. The incidence in younger age group (< 40 years) with advanced disease is much higher. The most common presentation is bleeding per rectum, changes in bowel habits and digital rectal examination is diagnostic in 75% of patients. Resection of the primary tumor is the only hope for cure of patients despite of their late presentation with advance disease. If not curative then palliation is the best option for advanced tumor of the rectum. Emergency procedures should be done in stages to minimize the anastomotic leak and abdominal sepsis. Lower rectal tumor should be dealt with abdominoperineal resection procedure to reduce morbidity and mortality of recurrence.

On the basis of our experience, all patients over the age of 35 years presenting with bowel symptoms particularly regarding lower GIT should have thorough examination including digital rectal examination and proctosigmoidoscopy. Patients with provisional diagnosis of rectal cancer should be referred to specialist center having the expertise in the said field to get the optimum result of surgery.

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