

A Prospective Study of Colorectal Carcinoma

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Aim: The aim of the study was

- 1) To find out the prevalence
- 2) Study the clinical pattern and presentation
- 3) To obtain demographic information
- 4) To determine the site of distribution
- 5) The role of various investigations and the ideal therapeutic and surgical procedures in the management of patients with established CRC, was also studied.

Materials and Methods of Study:

Patients attending the surgical units of our hospital between August 2001 and September 2003 were included for the study. History of blood or mucus in stool and presence of identifiable growth in the rectum colon, detected radiological, or endoscopically without histological confirmation were included for the study. New cases attending the oncology unit either with a fresh lesion or a recurrence were also included. Patients with long standing idiopathic procto colitis and familial polyposis coli and nonglandular carcinoma were excluded from the study.

All patients had a detailed symptomatology and clinical evaluation. A per rectal examination and proctoscopy was done, if a lesion was identified, sigmoidoscopy was performed. All patients had haemogram, and biochemical investigations such as blood urea, sugar, serum creatinine and liver function tests. Chest and abdomen X-ray was taken routinely. Barium enema and colonoscopy was done in patients with high index of clinical suspicion histological grading and staging of these tumors was attempted in all patients. Ultrasonogram was done pre-operatively to stage the cancer. Dukes staging was done wherever feasible. For analysis the right colon included the caecum, ascending and transverse colon upto the splenic flexure. The left colon included the descending colon, sigmoid and rectum. Intravenous urogram was done if involve excretory system has been demonstrated and to study the relation of ureters to the lesion.

All patients who were diagnosed to have CRC, were subjects to surgery if their general condition was good enough to permit the same preference for a particular surgery depended on the site, stage and operability of the tumor. Surgeries were either curative or palliative. If the tumor was confined to the caecum and extended right hemicolectomy was planned. If the tumor was in the hepatic flexure, (Right extended hemicolectomy) was planned. If a growth was identified in the splenic flexure an left hemicolectomy was done. Rectal cancers above 6cm from dentate line were treated by low anterior resection and for lesions below 6cms an abdomino perineal resection was performed. Patients with rectal cancer were ultimately subjected to either pre-operative or post operative radiotherapy. An average of 3500 to 5000 rads of telecobalt therapy was given for a had of 2 to 3 weeks. Those with colonic malignancies had 5 Fu postoperatively. In operable cases with extensive metastasis were offered only chemotherapy.

Results of the Study:

56 patients with CRC were identified between August 2001 and September 2003. The average hospital admissions during this period was 8000 cases, there were 37 men and 19 women. There were no cases with Idiopathic procto colitis. Male : female ratio was 2:1, the mean age for men was 49 years and for women was 46 years. The mean duration of illness was 1 to 2 years.

Majority of the cases were in the sixth decade of life. The percentage of Hindus (92%) affected were more than muslims (4%) and Christians (4%). The number of patients taking a non-vegetarian diet far exceeded a vegetarian 84% alcoholic men had consumed alcohol for more than 8-10 years. The average consumption of alcohol per day was 250ml. Arrack and toddy were the indigenous preparation commonly used and 75-80% consumed this form of alcohol. Whiskey and brandy were also used. A non vegetarian smoker was at significantly greater risk of developing cancer than a vegetarian non-smoker. Similarly, a non-vegetarian alcoholic was at a greater risk of developing cancer vegetarian alcoholic.

Patients with left sided colonic tumor presented with blood and mucus in stools (63%), constipation with spurious diarrhea (30%), abdominal pain (78%), and anemia (15%). In contrast, the predominant presentation with right sided colonic lesion were pain in 88%, anaemia in 68% and pseudo malena in 4%.

Systemic manifestations such as anorexia, weightless, lethargy and asthenia was noticeable in 54%. A mass was palpable in 79% with right sided lesion and in 23% in left sided lesion complications included left uretral involvement with left sided hydronephrosis in one cases, vaginal and bladder involvement with urinary fistula in one case.

43% of patients had hemoglobin value of less than 9gms/dL. Liver function test were normal. The mean total protein was 5.4gms/dl and albumin:globulin ratio was 2:1. Chest and abdomen X-rays were non contributory. Polypoidal and proliferative growths in rectum were detectable in 30%, 40% had perirectal fixation.

Barium enema and colonoscopy together diagnosed patients with lesions in descending and transverse colon while 29% of cases with radiological lesions in caecum ascending colon could not be confirmed. Pre-operative histological confirmation of the tumor was possible in 78% of the cases. In rest the diagnosis was confirmed at laparotomy. Histologically 55% had well differentiated adenocarcinoma. 45% were poorly differentiated. On the whole of the cases had adenocarcinoma.

Duke's staging was possible in 74% (39 cases) of cases. 58% were in stage C, 32% in stage B and 10% in stage D, none of the patients were in stage A. 5 patients had liver secondaries 10% of patients had ascites.

29 patients had rectal carcinoma. 5 cases were identified with upper one-third growth for whom a low anterior resection was done. 12 cases with a rectal growth were subjected to abdomino perineal resection with permanent colostomy. Four of cases which were initially found to be inoperable but were subjected to radiotherapy following which resection was possible. All cases who underwent abdomino perineal resection were further treated with radiotherapy. 8 cases with inoperable lesions had only palliative radiotherapy.

2 patients with inoperable caecal colon carcinoma, one had liver secondary and peritoneal deposit and one case had ureteric involvement. These patients received 5Fu only. 7 patients with caecal tumor were subjected to right hemicolectomy with ileo transverse anastomosis. 2 cases with hepatic flexure lesion had greater resection of the transverse colon by means of right extended hemicolectomy.

2 cases with tumor arising in transverse colon, had entire transverse colon with both the splenic and hepatic flexure removed. Distal part of transverse colon and three cases of splenic flexure growth underwent left hemicolectomy the descending colon were resected in 2 cases with lesions in descending colon. Only five cases were available for follow up. All these patients are doing well. Recurrence was found in 3 patients who had come subsequent for surgery which was not possible. They were further lost to follow up.

Discussion:

A 9 year survey carried out by the Adyar Cancer Institute under the auspices of the Indian council of Medical research report rectal malignancy as 1.7% and 1% for colonic malignancy. The crude incidence rate has been on the rise during this period, the prevalence of CRC in this study was similar to that reported from Kerala. But lower than figures from Aurangabad, India and from abroad. Study from Srinagar by Shah et al showed that CRC constituted 3.3% of all malignancies. The overall male:female ratio was 1.7 : 1, being higher in the rightsided Indian studies varied from 0.8:1 to 2.9:1 for colonic and 1:1 to 1.8:1 for rectal cancer. This was similar to that reported by Madras Metropolitan Tumor registry, Imbembo however reports equal involvement in both males and females. Shah et al codes the figures as 2.37:1 for right sided tumors and 1.4:1 for left sided tumors.

Majority of the cases were in Dukes stage B&C at the time of diagnosis. The advance stage may be due to vague symptoms, decreased awareness, and increased frequency of the mucinous variety.

The overall mean age in the study series was 47.5 years, for men it was 49 years and for women it was 46 years. Shah et al reports mean age of 47.4 years, with right side it was 49 years and to left side it was 46.6 years. In this study mean age incidence for right sided tumor was 50.68 similar to that reported by Shah et al. The true incidence in the study group was 55.8% in age range 41-60 years and 30.2% for age less than 40 years similar to that reported by Shah et al. In his large series he had 46.7% rectal cancer, left colonic tumors were 18.7% and right side tumors 34.1% in this study rectal tumors accounted for 63% while right sided tumors were 28% and left sided tumors 9%.

Well differentiated tumours were found in 55% and 45% were poor differentiated tumors. Shah et al quotes well differentiated tumours in 72% and the mucinous variety.

In 20.6% Dukes B in 23%, Dukes C in 58%; Shah et al quotes Dukes B 51.4% and Dukes C 44%. In the Western Europe and United states, the dietary factors namely animal fat and dietary proteins were incremented in the etiology of CRC, (Anthony L. Imbembo et al). In this study the incidence of CRC in non vegetarian smokers was 62% and was much less amongst vegetarian non smokers.

Hindus (92%) were more affected and the Christians (4%) least. 4% of patients were Muslims. The MMTR figures, quotes as Christians being more commonly affected with incidence at 3.7%, followed by Hindus (2%) and Muslims (1.8%). Blood group did not influence the occurrence of CRC.

Pain and mass lesion were the common presentation in patients with right side lesion. Pain was presented in 83% while 75% of patients presented with mass abdomen. Anaemia was an important presentation in patients with right sided tumor. At times anaemia was diagnosed subsequently. Similar observation was made in a study from UK wherein 78% of people with right sided

tumors presented with pain and 67.7% of patients with a mass. Anita et al noted bleeding as the common complaint in patients with right side tumors. Weight loss accounted by 68% in the present study. This has been related to late presentation, presence of a mass or metastasis (stage C or stage D). Pseudo malena was presented in 5% of individuals. About 8% of the patient with right sided lesions underwent emergency surgery. The presentation was that of acute intestinal obstruction.

In left sided tumor, (which included the rectal lesions) 78.9% of people came to the hospital with alternate constipation and or diarrhoea and 87% with bleeding per rectum. In Great Britain and 81% of patients with left sided tumors presented with altered bowel habits and 66% with haematochezia. Spurious diarrhea was recorded in 17%. About 5% of the individual presented with acute intestinal obstruction for whom an emergency laparotomy had to be performed. Anthony I. Imbembo states that although complete large bowel obstruction on the whole is less frequent, colonic cancer itself accounts for more than one half of the above patients.

With the available rigid sigmoidoscope 25% of patients with rectal carcinoma were made out. Proctosigmoidoscopy can be performed with relative ease and lesions identified upto 25cm, thus increasing the pick up rate to as high as 40% (Anthony I imbembo).

8% of cases suspected to have CRC were subjected to it. In fourteen cases colonoscopy was performed as a complementary investigations to barium enema to obtain a biopsy for confirmation of the diagnosis. Only single Winawer et al (1976) reports that conventional barium enema performed without air contrast technique can miss upto 20% of carcinoma, Lancer et al (1965) a studied 707 cases and found that the lesion has been missed or incorrectly diagnosed in 49 cases (7%). In 29 cases in which the enema was reported to be negative, the missed lesions were nearly all in the caecum or pelvic colon small tumors are often missed on a conventional barium enema study and thus an ir contrasted should be recommended.

The investigation of choice in his study for a definitive diagnosis was colonoscopy, it could be performed in 60% of the patients. The success rate with left sided lesions was 90%. Polyps with malignancy was identified in 7.3% of the individuals with CRC. All polyps were identified in left sided tumors. Winawer et al (1976) quotes that colonoscopy is complementary to barium enema examination. Even when the barium enema reveals frank cancer, colonoscopy is important to confirm the diagnosis and to disclose additional lesions which need to be removed at the time of surgery.

10 cases who found to be inoperable were subjected to palliative RT. Rao et; in 1978 has quoted that in the present days radiotherapy is used mainly for palliation. In 90 patients so treated, the majority obtained relief from pain, tenesmus, discharge of mucus or bleeding. Wang and Schulz (1962) reports of long time survival after radical RT for recurrence or inoperable CRC.

Conclusion:

Colorectal Cancer is not an uncommon cancer of the Gastrointestinal Tract in Madras, South India. The incidence of among the hospital attendance was 0.1%. The peak age of occurrence was between 40-50 years rectal cancer affected the patients under the peak age of 46 years and colonic cancer in 49.4 years. A non vegetarian alcoholic was more common for CRC than a vegetarian Non alcoholic. Clear distinction between right and left sided lesions could be identified. Preoperative irradiation helped in 2 patients to make them operable. 68% of patients presented in the stage C and D. in conclusion CRC is an uncommon disease in India. There is need for introduction in simple and non invasive procedures for quick and early detection of the disease. an awareness amongst clinicians that CRC constitute an important differential diagnosis cannot be over emphasized. Larger epidemiology studies are necessary to study the role of dietary factors, smoking and alcohol as predisposing factors for the occurrence of CRC. With modern diagnostic methods and therapeutic procedure colorectal carcinoma can be cured without morbidity and mortality.

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