

Surgery for Colorectal Cancer

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SUMMARY

The present study is a retrospective review of 45 cases of colorectal cancer managed in the Department of Surgery Shaikh Zayed Hospital, Lahore from January 1987, to May 1990. Mean age was 45 years (range 17-72 years) which was 10-15 years younger than that reported from the west. Male to female ratio was 4:1, showing much higher male preponderance than reported earlier. 29% of the cases belong to the younger age group, (39 years or less). 30 % of the cases presented with bowel obstruction. Overall operability was 96% with 78% undergoing curative resection, which is encouraging. Remarkable feature is zero mortality and low complications. (particularly of anastomotic failure of 3.3%). Over 90% of the patients are alive after a follow-up (2-30 months).

INTRODUCTION

Colorectal cancer is the most common malignancy of the gastrointestinal tract. It is also the most frequent abdominal visceral malignancy. It accounts for the 2nd most common visceral cancer in U.S.A. exceeded only by lung cancer [1]. It is also the 2nd most common cause of cancer death in the United Kingdom accounting for over 15000 deaths per year [2]. The disease affects mostly the older age group with peak incidence in the 6th or 7th decade [3] Only about 4-10% of the colorectal cancers are diagnosed before the age 40 years [1,4]. Most of the data presented in the English Literature is from the West, studies from some regions of the East (Japan & Far East) are also available, whereas scanty informations about the spectrum of the disease and its prevalence are available from this region (Pakistan).

A retrospective study of colorectal cancer was carried out at Shaikh Zayed Hospital, Lahore to evaluate the clinico-pathological evidence and outcome of the disease in the local population. This preliminary report comprises of first 45 cases collected between January 1987, to May, 1990.

MATERIAL AND METHODS

Over the 3 1/2 years period under review 50 cases of colorectal carcinoma were managed at the Department of Surgery, Shaikh Zayed Hospital,

Lahore. Complete medical records of 45 cases were available. The parameters examined were age, sex, history of pre-malignant disease, presenting symptoms and signs, location of the primary tumor, extent of spread (local & distant), histopathology (type, grade

and stage), type of resection (curative, palliative) and operative mortality, morbidity and survival. The follow-up of 45 cases is available from 2-3 months. The patients were divided into two distinct groups, (a) younger age group comprising of those aged 39 years or less (b) older age group with patients over 39 years.

Diagnostic techniques included rectal examination, procto-sigmoidoscopy, contrast studies and colonoscopy in selected cases. Preoperative biopsy was carried in 30 patients endoscopically, which was positive for malignancy in 28 cases (62%). Standard operative procedures included curative or palliative resection. Where possible Abdominoperineal resection was undertaken for tumors involving the lower 3rd of the rectum. Mechanical bowel preparation was used in all elective cases without obstruction. Chemoprophylaxis comprising Cephalosporins (first generation), gentamycin and metronidazole was employed routinely. All surgical specimens were reported by the consultant Histopathologist at the Department of Histopathology, Shaikh Zayed Hospital, Lahore. Most emergency cases underwent staged procedures with decompression (proximal colostomy) as first stage, with resection 2-3 weeks later. All operations were performed by the senior author. Average hospital stay was two weeks (range 10 days to 3 weeks). No chemotherapy or radiotherapy was administered to the patients considered operable.

RESULTS

There were 45 cases with histological diagnosis of colorectal cancer, 36 were male (80%) and 9 female (20%) thus showing a male to female ratio of 4:1. Age distribution of these patients is depicted in Fig. 1. The

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age of these patients ranged from 17 to 72 years with a mean of 45 years. Twenty nine percent of cases were younger than 39 years while 71% were aged 40 years or above.

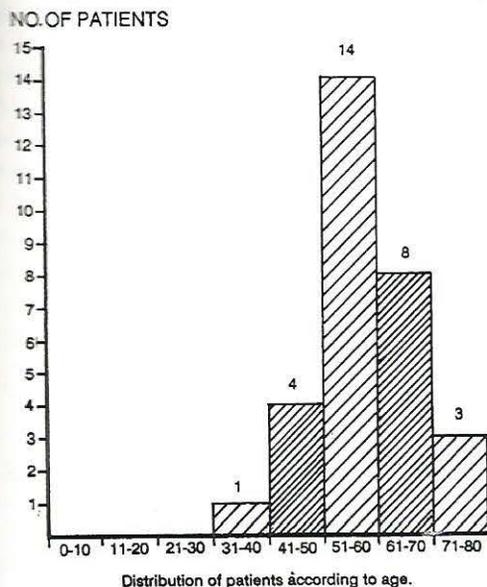


Fig 1: Age distribution of the patients.

No history of any pre-malignant condition like ulcerative colitis or adenomas was available.

Methods of diagnosis

Fourteen patients (30%) were diagnosed on digital rectal examination, 27 cases (60%) were diagnosed on proctosigmoidoscopy, whereas contrast studies were conclusive in 38 (83%) cases. Preoperative diagnosis was available in 28 cases (62%).

Mode of presentation (Symptomatology): The common modes of presentation are given in Table 1. The common presentations were altered bowel habits 59%, weight loss and debility 56% and rectal bleeding 40%. 13 cases (25%) presented with acute or subacute bowel obstruction.

Table 1: Common modes of presentation

Presentation	No.	Percent
Altered bowel habits	29	64
Weight loss, debility	28	62
Bleeding per rectum	20	44
Acute or subacute bowel obstruction	13	29
Palpable lump	6	13
Generalized or localized	5	10
Malena	5	10
Haemorrhoids	8	18

Location of the primary tumor

The distribution of the tumor is given in Table 2 and is illustrated in Fig-2.

Table 2: Site of lesion in 45 cases of colorectal carcinoma.

Site	No.	Percent
Right sided tumors	13	29
Cecum	2	4.5
Ascending colon	2	4.5
Hepatic flexure	6	13
Transverse colon	3	7
Left sided tumors	32	71
Splenic flexure	2	4
Descending colon	3	7
Sigmoid colon	6	13
Rectum	21	47

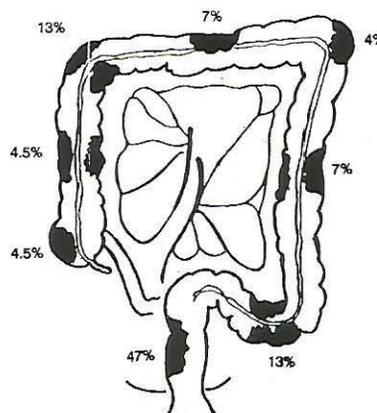


Fig. 2: Site of lesions.

Right sided tumors, defined as tumors proximal to the splenic flexure were 13 (29%) and left sided lesions (splenic flexure and distal colon) accounted for 32 cases (71%). The distribution of tumors in cases presented with acute or subacute bowel obstruction is given in Table 3.

Table 3: Distribution of tumor in cases with acute or subacute intestinal obstruction.

Site	No.	Percent
Cecum	1	2
Hepatic flexure	3	7
Transverse colon	1	2
Descending colon	2	4
Sigmoid colon	2	4
Rectum	4	9
Total	13	29

Percentages calculated against total number of cases(45).

Histopathology

Of the 45 cases of colorectal carcinoma 42 were adenocarcinoma (93%), out of them 5% were well differentiated, 65% moderately differentiated and 30% were poorly differentiated. The remaining 3 cases were one each of anorectal carcinoid, adenosquamous carcinoma, and malignant melanoma.

Modified Dukes classification was employed for staging of the tumors and is given in table 4. Accordingly no tumor was seen in stage A. Most of the lesions (86%) were in stage B & C, whereas 7 cases (17%) belonged to stage D with distant metastases. Synchronous and metachronous tumors were found in one patient each (2%).

Table 4: Staging of carcinoma in 42 patients using modified dukes classification

Stage	No.	Percent
Duke A	0	0
Duke B	24	57
Duke C	12	29
Duke D	06	14
Total:	42	

Surgical treatment

All patients underwent exploration. Curative resection was possible in 35 cases (78%). Palliation was achieved in further 8 cases (18%). Two patients (4%) were considered in-operable and only biopsy could be taken for histological diagnosis. Table -5 shows the various surgical procedures performed. Of the 13 cases presenting with acute or subacute bowel obstruction and explored in emergency, 9 patients (70%) underwent initial bowel decompression followed 2-3 weeks later by definitive resection. In the remaining 4 cases (30%), resection was possible at the time of initial exploration.

Table 5: Surgical procedures undertaken in 45 cases of colorectal malignant neoplasms.

Surgery	Procedures	
	No.	Percent
Curative	35	78
Right hemicolectomy	13	29
Transverse colectomy	1	2
Left hemicolectomy	4	9
Sigmoid colectomy	1	2
Anterior resection	2	4
Abdominoperineal excision	14	31
Palliative	8	18
In-operable	2	4

Mortality morbidity

The operative mortality defined as death within 30 days of surgery [2] was nil. Table-6 gives a comparison of 30 days operative mortality rate of different series reported in literature [2], alongwith the present series.

Table 6: Early complications observed in 45 patients with colorectal surgery

Complication	No.	Percent
Severe Chest infection	12	26
Colostomy complications	4	9
Wound infection	4	9
Anastomotic Leak	1	2
Burst Abdomen	1	2

However, 22 patients (48%) developed some complications (major or minor) listed in Table-7. Respiratory infections comprised the major postoperative complications (26%) followed by complications related to colostomy (13%) and a wound infection rate of 9%. Clinical anastomotic leak was seen in one patient (2.2%), which represents an anastomotic failure rate of 3.3%.

Table 7: Comparison of perioperative mortality rate with international studies

Author of Study	Site of carcinoma	Period of Study	Mortality rate (%)	Ref. No.
Clarke	Colon and Rectum	1968-69	17.0	5
Turunen	Colon and Rectum	1966-75	6.5	6
Habib	Colon and Rectum	1972-77	8.7	7
Bear	Colon and Rectum	1976-79	13.0	8
Lockhart-Mummery.	Rectum only	1948-52	7.0	9
Present series	Colon and Rectum	1987-90	0.0	Present Study

Recurrence and late deaths

Followup is available for a period of 2-30 months on recurrence and late deaths. Local recurrence was observed in four patients (9%). Two patients (4%) developed urinary fistula in the perineum following abdominoperineal resection for rectal carcinoma. Two patients (4%) have died so far as a result of metastatic disease within two years of a potentially curative resection for carcinoma of rectosigmoid.

Comments

The cure for carcinoma of the colon and rectum at

present remains exclusively surgical. Refinements in surgical techniques have dramatically reduced the operative mortality and morbidity.[5,6]

Colorectal carcinoma remains the commonest malignancy of gastrointestinal tract seen at the Department of General Surgery, Shaikh Zayed Hospital, Lahore. Next in frequency was carcinoma of gall bladder (total of 40 cases were seen during the period under review - unpublished results). Our experience with 45 cases managed during the 3 1/2 years period between January 1987 to May 1990 is limited but shows some distinct features compared to the data presented from the Western countries. Mean age at presentation was 45 years, about 10-15 years younger than that reported from the West [3,4]. Colorectal cancer in the younger age group (under 40 years) comprised 29% of the total number of cases which is in contrast to the figures of 4 - 10% reported in the literature. The highest incidence reported earlier from Japan in this age group is 14.5% [7,4]. Male to Female ratio in the present study is 4 : 1 which means considerable male preponderance, much higher than the International data. [4,3,5]. 13 cases (29%) presented with acute or subacute bowel obstruction. Majority of the cases presented in an advanced stage (86% - stage B & C), no case presented with Duke A lesion. The left sided tumors predominated 32 vs 13, as compared to the right sided tumors. Digital rectal examination was able to diagnose 30% of the cases whereas proctosigmoidoscopy raised the figure upto 60%. This highlights the importance of rectal examination and sigmoidoscopy in suspected cases. The incidence of synchronous and metachronous tumors is 2% each. These figures are in accordance with the published reviews.

Curative resection was possible in 78% of the cases and palliation was achieved in further 18% cases. Overall operability rate of 96% was achieved. This speaks of our policy of resectional surgery as far as possible for colorectal cancer and is in accordance with current practices. [4,5,6] The perioperative mortality (Nil) is remarkable low. The reported operative mortality (30 days hospital stay) ranges from 0.5% - 17%. [2] Of the 13 cases presenting with acute or subacute bowel obstruction, all underwent exploration, primary resection was possible in 30% of all cases and initial decompression by colostomy followed by

definitive resection was achieved in remaining 70% of the cases. Sites of obstruction in the present series differ from earlier reports. Rectum 30%, hepatic flexure 25% and 15% each for descending and sigmoid colon, compared to 38% sigmoid and 16% descending colon. [8] Operative mortality for resection of colorectal carcinoma presenting with acute bowel obstruction is much higher (23 -45%0. [9] In the present study zero mortality may be related to sample size, younger age group at presentation and level of available surgical expertise, related to our special interest in gastrointestinal surgery. Similarly the incidence of anastomotic failure (Clinical leakage) is quite low (2%) compared to the figures (3-18%) quoted in the literature[10]. The period followup of being short (2-30 months), hence survival figures can not be compared. Of the postoperative complications, chest infections accounted for 26% of total number of cases followed by complications related to colostomy 12% and wound infection (9%). These figures are comparable to those reported in the literature [2,5]. We therefore conclude that colorectal carcinoma, though prevalent in the West, is not uncommon in this region. Though the present study is of a relatively small size, our preliminary results are gratifying.

REFERENCES

1. Steinberg J.B, Tuggle D. W., Postier, R. G. Adenocarcinoma of the colon and Adolescents. *Am. J. Surgery* 1988, 156 : 460-2.
2. Brown S.C.W., Walsh S. and Sykes P.A. Operative Mortality-rate and Surgery for colorectal cancer. *Br J. Surgery* 1988, 156: 163-8.
3. Goligher J. Incidence, Pathology, Clinical features and diagnosis of carcinoma of the Colon and Rectum. In Goligher J. *Surgery of the Anus Rectum and Colon*; London, Willim Clowes Ltd, 1984, 426-84.
4. Okuno M, Ikehara, T, Nagayama M. et al. Colorectal Carcinoma in Young Adults *Am. J. Surgery* 1987, 154:264-7.
5. Rogemurgy A. S, Block G. E. and Shihab F. Surgical Treatment of Carcinoma of the Abdominal Colon. *Surgery, Gyane & Obstetrics* 1988, 167:399-406.
6. Reasbeck P. G. Colorectal cancer: The case for endoscopic screening *Br. J. Surgery* 1987, 74 :12-7.
7. Rao B.M, Pratt O.B, Flamming F.D, et al Colon Carcinoma in children and Adolescents. *Cancer* 1985, 55 :1322-6.
8. Butchter K. J, Boustani C, Cohn I, Surgical Management of Acutely Obstructed Colon *Am. J. Surgery* 1988, 156 : 163-8.
9. Serpell J.W, McDermott F.T, et al Obstructing Carcinomas of the Colon *Br. J. Surgery* 1989, 76 : 965-9.
10. Feelding L.P, Stewart Brown et al Anastomotic Integrity after operations for large bowel cancer: A multicentres study. *Br. Med. J.* 1980, 281 : 411-4.