Palliative Operative Management in Rectal Carcinoma*

W. R. JOHNSON, F.R.A.C.S., FRANCIS T. MCDERMOTT, M.D., ERIC PIHL, M.D., BARRIE J. MILNE, B.A., ANN B. PRICE, EDWARD S. R. HUGHES, M.D.

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The results of palliative operative management of 338 patients with rectal carcinoma managed by one of the authors are presented. Postoperative mortality was higher for patients undergoing palliative resection (11.7 per cent) than colostomy bypass (5.3 per cent) or diagnostic laparotomy (6.8 per cent). Cancer specific survival following palliative resection was significantly ($P < 0.001$) longer than that following colostomy bypass or diagnostic laparotomy for tumor Stages D_1 (local visceral involvement) and D_2 (distant metastases). However, in patients with liver or peritoneal metastases alone, cancer specific survival did not differ significantly after the operations of resection or colostomy bypass. The failure to demonstrate improved survival after resection of the primary tumor in these latter two groups with distant metastases indicates the dominant role of volume of tumor tissue present in these situations. The results suggest that longer survival following palliative resection reflects a bias of patient selection towards more favorable cases. [Key Words: Rectal carcinoma; palliative operative management]

From the Monash University Departments of Surgery and of Pathology and Immunology, Alfred Hospital Victoria, Australia

RECTAL CARCINOMA is advanced (incurable by resection) in approximately one third of patients at presentation. Palliative treatment is all that can be offered this group. Twenty per cent of resected cases of rectal carcinoma in our own series,[1] as well as that at St. Mark's Hospital, London,[2] were palliative. Palliative resection is defined as one in which macroscopic tumor remains at completion of the operation.

The aim of palliative surgery in rectal carcinoma is to relieve symptoms, to prevent obstruction, and to improve the patient's well-being. In assessing the value of palliative operations, one must consider two additional factors: postoperative mortality and cancer-specific survival.

Comparisons between palliative surgical procedures demand some attempt at patient stratification based on the extent of tumor dissemination, so that similar patient groups can be identified. Using this method, Jaffe *et al.*[3] reported that survival differences that existed following various palliative operative procedures in gastrointestinal cancer became less pronounced.

Most reports favor, where possible, palliative resection in advanced rectal carcinoma.[3–6] This report reviews the experience of one of the authors (E.S.R.H.) with three operative procedures (palliative resection, colostomy bypass, and diagnostic laparotomy) in advanced rectal carcinoma. From this review, an attempt is made to define further the role of palliative resection.

Methods

Between 1950–78, a total of 1228 patients were managed for a single carcinoma of the rectum. The upper extent of the rectum was defined as being at 18 cm from the anal verge as measured at sigmoidoscopy. There were 676 men (mean age 61 ± 11 years) and 552 women (mean age 60 ± 13 years). Patients who had a solitary liver metastasis that was resected with curative intention were excluded from consideration.

Three operative procedures were performed: resection (239 patients), colostomy bypass (61 patients), and diagnostic laparotomy (38 patients). There was no significant difference in patient age distribution among these operative groups. In particular, there was no bias towards a younger age for patients undergoing resection than other procedures.

Postoperative deaths were defined as those occurring within three months from complications of the operation. Deaths occurring within this period but not related to postoperative complications or intercurrent disease were defined as cancer-specific deaths.

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Address reprint requests to Mr. Johnson: Department of Surgery, Monash University, Alfred Hospital, Commercial Road, Prahran, Victoria, Australia 3181.

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All patients were prospectively registered, and clinical and pathologic data were classified. Cancer-specific survival[1] was analyzed according to the method of Kaplan and Meier.[7] Differences between survival curves for each operative procedure and for operative procedures performed within the groups tumor Stage D_1 (local visceral involvement) and tumor Stage D_2 (distant metastases) were evaluated statistically by the generalized Wilcoxon test according to Gehan.[8]

Detailed follow-up data were available on all 338 patients undergoing palliative surgery for advanced rectal carcinoma.

Results

The postoperative mortality in this series was higher for patients undergoing palliative resection than that for diagnostic laparotomy or colostomy bypass (Table 1).

The five-year cancer-specific survival for patients undergoing palliative operations in advanced rectal carcinoma was 4.5 per cent with a median survival of ten months.

Comparisons of the cancer specific survival for the three operative procedures revealed significantly ($P < 0.001$) longer survival for patients undergoing palliative resection than that for either colostomy bypass or diagnostic laparotomy (Fig. 1).

With tumor Stages D_1 (Fig. 2) and D_2 (Fig. 3), survival was significantly better for patients treated by resection than nonresection.

When patients with liver metastases as the sole evidence of tumor dissemination were considered, there was no significant difference in cancer-specific survival after palliative resection or colostomy bypass (median survival 13 and 10 months, respectively). However, cancer-specific survival following diagnostic laparotomy was significantly worse when compared with palliative resection ($P < 0.001$) or colostomy bypass ($P < 0.002$), with a median survival of three months.

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TABLE 1. *Operative Mortality Following Palliative Surgical Procedures in Rectal Cancer*

	Number	Operative Mortality	
		Number	Per Cent
Resection	239	28	11.7
Colostomy bypass	61	3	4.9
Diagnostic laparotomy	38	2	5.3

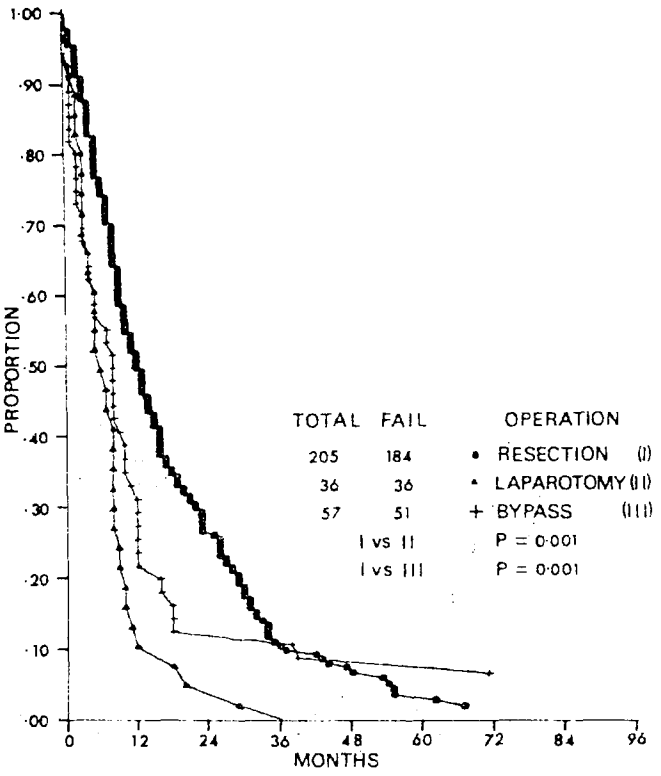

FIG. 1. Cancer specific survival was significantly better after resection then either colostomy bypass or laparotomy.

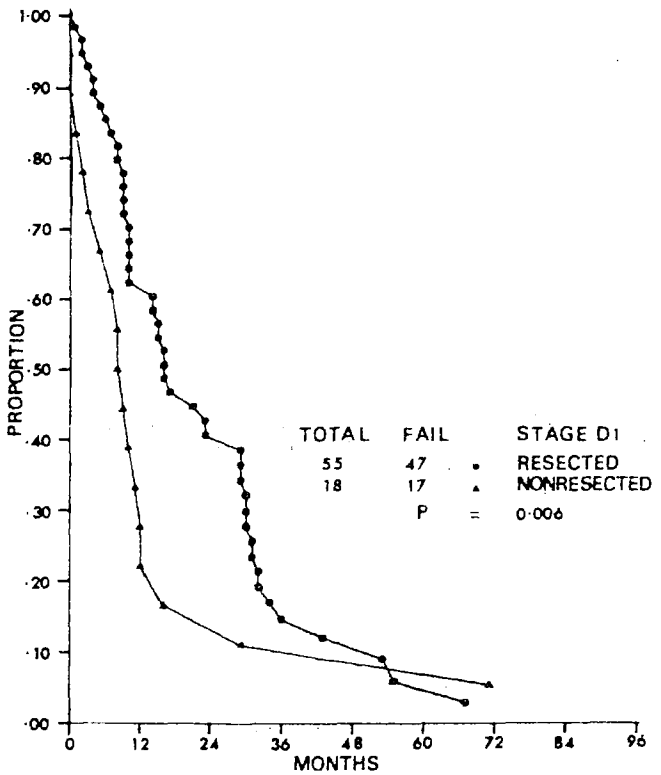

FIG. 2. Cancer specific survival was significantly better in patients treated by resection, compared with nonresection in tumor Stage D_1 (local visceral involvement).

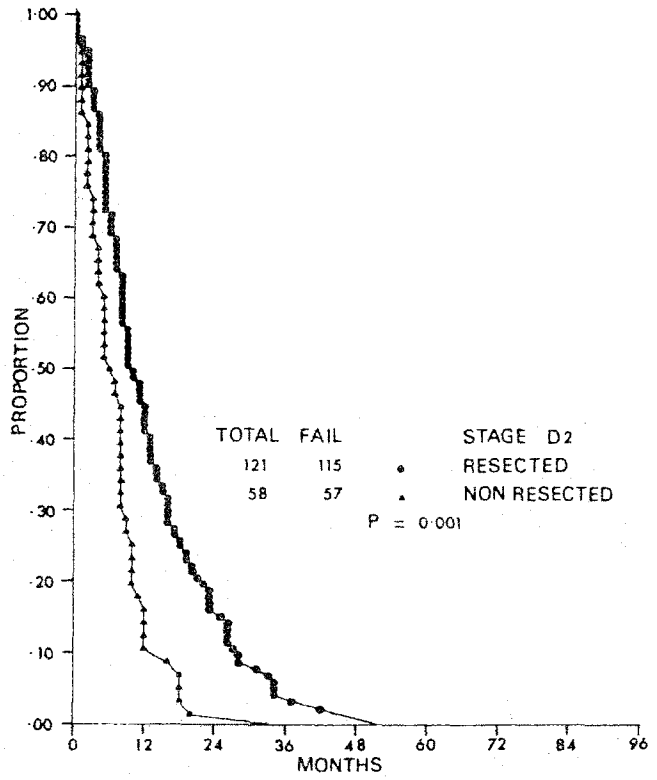

FIG. 3. Cancer specific survival was significantly better in patients treated by resection compared with nonresection in tumor Stage D_2 (distant metastasis).

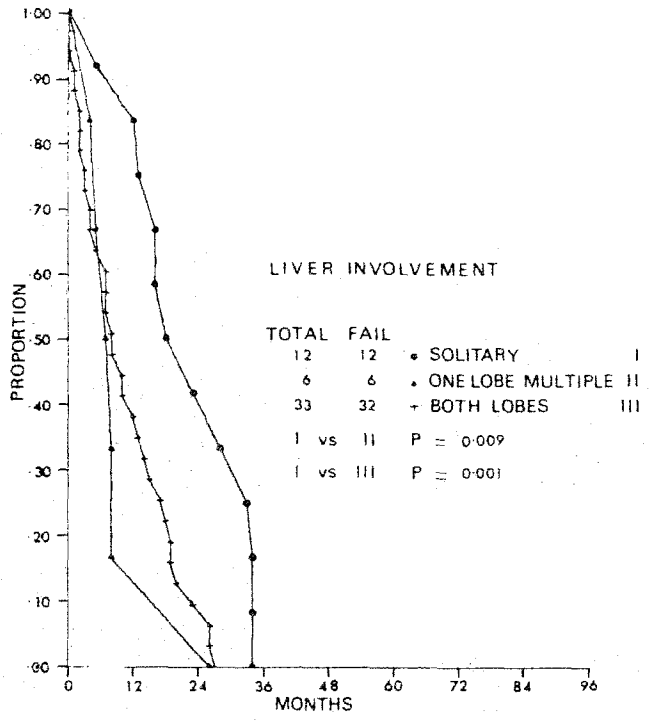

FIG. 4. Cancer specific survival was significantly better in patients with solitary liver metastasis compared with patients with multiple metastases of one or both lobes.

< 0.001) longer survival for patients undergoing palliative resection than that for either colostomy bypass or diagnostic laparotomy (Fig. 1).

With tumor Stages D_1 (Fig. 2) and D_2 (Fig. 3), survival was significantly better for patients treated by resection than nonresection.

When patients with liver metastases as the sole evidence of tumor dissemination were considered, there was no significant difference in cancer-specific survival after palliative resection or colostomy bypass (median survival 13 and 10 months, respectively). However, cancer-specific survival following diagnostic laparotomy was significantly worse when compared with palliative resection ($P < 0.001$) or colostomy bypass ($P < 0.002$), with a median survival of three months.

Patients with solitary liver metastasis had a significantly longer cancer-specific survival than those patients with either multiple metastases of one lobe or both lobes (Table 2; Fig. 4).

There was no significant difference in cancer-specific survival between operative procedures when peritoneal involvement was the only evidence of tumor dissemination (Table 3).

Discussion

The postoperative mortality for palliative resection (11.7 per cent) was higher than that previously reported in this series for curative resection (5.3 per cent),[1] despite no significant difference in the mean age of the patients. A higher postoperative mortality

TABLE 2. *Median Survival Following Resection of Rectal Cancer Based on Extent of Liver Involvement*

	Number of Patients		Median Survival (months)
	Total	Number Resected	
Solitary Metastasis	12	12	18
Multiple, one lobe	6	6	7
Multiple, both lobes	33	27	8

TABLE 3. *Median Survival Following Surgery in the Presence of Peritoneal Metastases alone*

	Number of Patients	Median Survival (months)
Resection	17	9
Colostomy bypass	3	6
Diagnostic laparotomy	5	7

after palliative resection has been previously reported.[9–11] Bordos *et al.*,[6] however, reported no significant differences in postoperative mortality following palliative or curative abdominoperineal resection for rectal carcinoma, and Takaki *et al.*[5] reported a postoperative mortality for palliative resection of 6.4 per cent, close to that of 4 per cent for curative resection.

The postoperative mortality after palliative resection was higher than that for patients undergoing colostomy bypass (5.5 per cent) or diagnostic laparotomy (6.8 per cent). This was not the experience of Welch and Donaldson[9] nor of Bacon and Martin[4] who reported a higher postoperative mortality when the primary tumor was not or could not be resected.

In the present series for tumor Stages D_1 and D_2, cancer-specific survival was better following palliative resection than either colostomy bypass or diagnostic laparotomy.

When liver metastases were present as the only evidence of tumor dissemination, there was no significant difference in cancer-specific survival between resection or colostomy bypass, a finding similar to that of Fischerman *et al.*[12] In this circumstance, the primary tumor was of less significance than the hepatic metastasis in determining survival, a fact supported by the finding that in this group the patients having diagnostic laparotomy did significantly worse.

There was no significant difference in survival following the three types of palliative surgical procedures when peritoneal metastases were present as the only evidence of tumor dissemination.

Patients with solitary liver metastasis had a significantly longer survival period than those with multiple liver metastases irrespective of the operative procedure. There was no difference in cancer-specific survival among patients with multiple metastases of one lobe or both lobes of the liver, a finding at variance with Wood *et al.*[13] who reported longer survival when multiple liver metastases were confined to one lobe.

In considering either peritoneal metastasis or liver metastasis alone, failure to demonstrate an advantage after resection of the primary tumor suggests the dominant role of volume of tumor tissue present in these situations. This factor was previously emphasized by Jaffe *et al.*[3]

The present series shows that palliative resection, where possible, is the procedure of choice in advanced rectal carcinoma. However, the experience also suggests it is the more favorable cases that undergo palliative resection. A point is reached, independent of the primary cancer, but related to the total volume of tumor tissue present, when the survival advantage of palliative resection ceases to exist.

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