

LOCAL RECURRENCE OF RECTAL CANCER

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ABSTRACT : One hundred twenty-six rectal cancers were operated upon in the First Department of Surgery, Nagasaki University School of Medicine. Local recurrence occurred in thirty-three (26.2%).

In this study, contributing factors in causing local recurrence were local excision of the surgical approach, advanced stage, depth of cancer invasion, location of carcinoma of the rectum below the peritoneal reflection (Rb) or above (Rba) and nodal involvement of n2 or more.

As far as advanced rectal cancer and cancer location of Rb are concerned, it is suggested on the basis of this study that the incidence of local recurrence should be high.

INTRODUCTION

Recurrence following surgery for carcinoma of the rectum is more frequently seen in the intrapelvic space. The incidence is varying from 15 to 30%^{1) 2) 3)} and over half the cases with recurrence following surgery is local recurrence in the pelvic space⁴⁾.

The great concern has been raised regarding the surgical technique as well as the adjuvant procedures to inhibit local recurrence. Accurate analysis of local recurrence is necessary for early detection of local recurrence and improvement of surgical outcome.

MATERIAL AND METHOD

One hundred sixty-one carcinoma of the rectum were operated upon in the First Department of surgery, Nagasaki University School of Medicine, from January 1965 to December 1987. Local recurrences occurred in 3 in whom 8 received the operation by pull-through method,

23 by abdominoperrineal resection, 8 were trans-sphincteric, 4 were transsacral approach as shown in Table 1. Local recurrence was more liable to occur after local excision than after pull-through and abdominoperineal resections. In addition, in advanced stages of stage III and IV, recurrence occurs more often than in stage I and II, However, recurrence can not be excluded even in the early stage as shown in Table 1.

As to the depth of cancer invasion, when the locations of carcinoma limited to the superior portion to the peritoneal reflection or ampulla regions, local recurrence occurred in ss or s invasions, accounted for 25.9% or 28.6% respectively as shown in Table 2. However, when carcinoma has been situated in Rb or Rba, recurrence would occurred even in pm, ss, s and si invasions including a shallow cancer invasion in the depth. On the contrary, while carcinoma limited to pm and ss, the incidences of local recurrence were lower than those of s or si. Carcinomas occurring in the lower portion below the peritoneal reflection (Rba, Rb) were

Table 1. Relationship in local recurrence among operation approach, stage and depth of cancer invasion

	cases	Stage			recurrence
		I • II	III • IV		
pull-through	8	3	5		4
Mile op	3	2	1		0
local excision		m	sm	pm	recurrence
trans-sphincteric	8	3	5	0	
trans-sacral	4		2	2	1 (sm)

Table 2. Relationship between depth of cancer invasion and recurrence rate

depth of ca invasion	[Rs • Ra]				() recurrence case
	ms • m	pm	ss (a1)	s (a2)	si (ai)
anterior resection	4	4	20 (4)	7 (2)	4
Miles op	0	1	7 (3)	7 (2)	0 (1)
recurrence rate	0 %	0 %	25.9 %	28.6	0 %
	[Rba • Rb]				
anterior resection	2	3 (1)	8 (1)	3 (1)	0
Miles op	0	15 (3)	22 (6)	16 (9)	1 (1)
recurrence rate	0 %	22.2 %	23.3 %	52.6 %	100 %

prone to local recurrence.

According to Dukes classification, Dukes C was more prone to local recurrence rather than

Dukes B and A. However, local recurrence was sometimes seen even in Dukes A as shown in Table 3. Differences in the incidence of local

Table 3. Relationship between operation method and Dukes classification

Dukes class	[Rs • Ra]				recurrence rate
	cases	A	B	C	
anterior resection	39	10	12	17 (6)	15.4 %
Miles op	15	4 (2)	3 (1)	8 (2)	33.3 %
	[Rba • Rb]				
anterior resection	16	8 (1)	2	6 (2)	18.8 %
Miles op	56	21 (4)	8 (4)	27 (11)	33.9 %

() recurrence cases

Table 4. Relationship between nodal involvement and recurrence rate

nodal involvement	[Rs • Ra]			
	n0	n1	n2	() recurrence cases
anterior resection	22	9 (3)	8 (3)	0
Miles op	7 (3)	2	6 (2)	0
recurrence rate	10.3%	27.3%	35.7%	0%
[Ria • Rb]				
anterior resection	10 (1)	2	4 (2)	0
Miles op	28 (8)	16 (5)	9 (4)	4 (2)
recurrence rate	23.7	27.8%	46.2%	50%

recurrence between Rs Ra and Rba Rb were such as more remarkable than those between surgical methods of anterior and abdominoperineal resections.

As to lymph node metastasis, local recurrence occurred in proportion to the spread of nodal involvement at the time of the first operation as shown in Table 4. In patients with node metastasis, local recurrence was more frequent. Furthermore, it also was influenced by the location of carcinoma. In the cancer occurring sites of Rs and Ra in patients with nodal involvement, the incidence of local recurrence following surgery accounted for 35.7%. In contrast, it became higher and increased to 46.2% in Rba and Rb.

DISCUSSION

The term local recurrence following surgery for carcinoma of the rectum is divided into the two categories as cited by STERNS⁵⁾, perineal and pelvic recurrences. It is easy to be diagnosed for perineal recurrence, which is caused by inadequate resection or implantation during surgery. On the other hand, pelvic recurrence is defined as recurrence of nodal metastasis or unrecognized microscopic extension.

In general, local recurrence following surgery can be attributed to an inadequate resected

margin and node dissection, intra-or extracanalicular cancer cell implantation and unrecognized microscopic extension^{5) 6) 7)}.

The contributing factors in causing local recurrence are the size of tumor, location of carcinoma in the peritoneal reflection, poorly differentiated carcinoma, histologic vascular invasion and INF γ , the distance from the resected edges⁸⁾, a presence of perforation, and intestinal obstruction, and the surgical procedure.

In this series, factors implicated in local recurrence were the location of carcinoma below the peritoneal reflection, the depth of cancer invasion across pm, nodal involvement extending n₂ and the operative approach of local excisions for Rb or Rba cancers. In general, it is recommended that CT, US and cytologic examinations are helpful to establish a precise diagnosis of local recurrence.

However, it also is of benefit to evaluate the changes in CEA-levels in the course of follow-up study to detect local recurrence in the early stage. SCHIESSEL⁹⁾ emphasized that second look operation is useful in early detection of local recurrence. According to Stearns' and WELCH¹⁰⁾ reports, combined therapy of radiation with chemotherapy definitely contributed to a prolonged survival with reduction of the tumor size.

As a rule, most of postoperative recurrence of rectal cancer comprise local recurrence. Therefore, surgical outcome of rectal cancer is attributed to how to overcome local recurrence. Aggressive surgery with radiation and chemotherapy may well get better result. It is because recurrent cancer cells used to scatter widely in scar tissues of previous operation¹¹⁾.

Wide resection of pelvic exenteration combined with sacral resection is recommended for enhancing oncological radicality of local recurrence of rectal cancer. In those patients who develop advancing local metastases, blood-borne metastases are concomitantly seen following surgery for rectal cancers, so chemotherapy postoperative is indispensable in prevention of distant metastasis and essential to improvement of surgical outcome for postoperative recurrence of rectal cancer.

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