

## Surgery for postoperative recurrence of gastric cancer

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**SUMMARY :** The six patients who underwent reoperation for recurrence of gastric cancer following surgery were clinically analysed, of whom one had lung metastasis and the other five local recurrences.

The conditions of resectability are that carcinoma infiltration should be limited, the disease-free interval after the first operation should be long and there are no blood-borne metastases into the lung and the liver.

The surgical outcome for lung metastasis was pessimistic. It is emphasized that multidisciplinary therapy and early detection are indispensable for improving the surgical outcome in the treatment of recurrence of gastric cancer.

### INTRODUCTION

Surgical outcome for gastric cancer has become much improved by early detection. Meanwhile, as we have not infrequently experienced with the treatment for the advanced cases, so are we embarrassed to treat untoward postoperative recurrence.

In this study, an experience with surgery for postoperative recurrence was analyzed to clarify the significance of surgical treatment of gastric cancer.

### PATIENTS

Six recurrences and one metastasis to the lung were treated in The First Department of Surgery, Nagasaki University School of Medicine, during a six year period from January 1978 to December 1983 as shown in Table 1.

**Table 1.** The modes and the number of recurrences after gastrectomy for gastric cancers experienced in the First Dept. of Surgery, Nagasaki Univ. School of Medicine

The mode of recurrence	No of recurrence	No of resection	No of non-resection
peritoneal dissemination	10		simple laparotomy 1
local recurrence	7	3	intestinal fistula 4
limited to remained stomach	2	2	anastomosis 4
hematogenous metastasis	1	1	non-surgery 4
total	20	6	14

It corresponds to 4.8% of total 418 cases of gastric cancer operated upon at the same period of time. In 20 cases with postoperative re-

currence of gastric cancer, only six (30%) underwent resection although the other 10 had exploratory laparotomy including simple laparotomy in two, intestinal fistula in four, anastomosis between the remained stomach and the gut in four. The remaining four received non-surgical treatment. The main symptoms were referable to a disease of the digestive tract except for lung metastasis based on respiratory one as shown in Table 2.

The detection of recurrence was made by fluoroscopy and endoscopy except for chest x-film and bronchoscopy for lung metastasis.

However, as the endoscopic tube could not pass through the recurrent lesion in the remained stomach, so was the endoscopic examination unable to accomplish in two. The disease free interval ranged from six months to six years and seven months (averaging two years and four months). Therefore, it seemed that surgical indication for recurrence should be limited to those who have a long interval of time before recurrence.

The age receiving the first operation for gastric cancer ranged from 23 to 73 years old, and the included three cases in their forties, implying that operability for recurrence of gastric cancer would be indicative for manhood as shown in Table 3. According to location of the tumor mass, it is indicated that when recurrence occurs, the lesions in the cardia and middle portions of the stomach tend to be resectable, although those originated in the antrum are not necessarily true in this series. All of the resected cases had advanced cancer of Borrmann III analogous to advanced IIc according to macroscopic findings.

As for serosal invasion, S<sub>0</sub> was in 3, and S<sub>1</sub>, S<sub>2</sub>, S<sub>3</sub>, were seen in each one respectively. In view of histological examination, there was a tendency, recurring in much more undifferentiated rather than well differentiated type, as recurrence in this study was seen tub<sub>2</sub> in two and poorly differentiated carcinoma in four.

With respect to depth of cancer invasion, there was no close relationship between recurrence and depth of cancer invasion as shown in the fact that cancer extended to pm in three, se in two and ss  $\gamma$  in one.

Table 2. Case profile who underwent reoperation for

Case	Age	Sex	symptoms	detection moment	disease free interval	histologic finding of surgical specimen										op. method	curability	survival period	cause of death				
						location	macroscopic type	S	P	H	N	depth	Ly	V	INF					n	curative op.	op. method	combined
1	48	M	cough	chest xp	3y2m	MC	Borr 3	2	0	2	se	2	1	$\beta$	1	absol.	total gastrectomy	spleen	lung	lung	lung	9m	lung
2	73	F	dysphagia	fluoroscoph endoscopy	3y	M	Borr 3	0	0	0	pm	0	0	$\beta$	0	absol.	subtotal		local	lower Es -total gast.	non-curat	1y7m	malign. pleural eff.
3	46	M	dysphagia	fluoroscoph endoscopy	6m	C	Borr 3	3	0	2	se	3	1	$\gamma$	2	relat.	total	spleen	local	total gast. -diaphrag.	non-curat	3m	malign. pleural eff.
4	46	M	abd. wain	fluoroscoph endoscopy	2y1m	M	Ic.-like	0	0	0	pm	2	1	$\beta$	0	absol.	subtotal		stomach liver	total - liver l-lobe	non-curat	5m	liver meta
5	23	M	abd. fullness	fluoroscoph endoscopy	1y7m	CM	IIc.-like	1	0	2	ss $\gamma$	3	2	$\gamma$	2	absol.	subtotal		local lung	lower Es -total gast.	non-curat	3m	lung meta
6	55	M	dysphagia	fluoroscoph endoscopy	6y7m	M	Borr 3	0	0	0	pm	1	0	$\beta$	0	absol.	gastrect		stomach	lower Es -total gast. -liver, l-lobe -spleen	curat	3y7m alive	

As for histologic vascular invasion, five revealed  $ly_1 - 3$  and four  $v_1 - 2$ . Only one showed  $ly_0$  and  $v_0$ .

In terms of the modes of cancer infiltration, four were INF  $\beta$  and two INF  $\gamma$ . The finding of undefined border between cancer infiltration and healthy surrounding tissues is the key to determine as to whether the risk of recurrence is high or not.

In relation to stroma, four had intermediate type and scirrhous. There was no medullary type in this series. With respect to histologic margins, there was nothing to have left cancer residue at the resected margin at the first operation. In terms of n-factor,  $n_0$  was in three  $n_1$  in one  $n_2$  in two respectively. N-factor was not associated with cancer recurrence.

All but one with a relative curative operation underwent absolute curative one which comprised gastrectomy in one, subtotal gastrectomy in three, total gastrectomy in two, including combined splenectomy.

As for postoperative adjuvant therapy, one was given MMC alone, one MMC + Krestin one MMC + 5Fu + Levamisol although two received nothing. The modes of recurrence were presented as the types of distant metastasis in one, local recurrence of serosal invasion in three and late developing carcinoma in the remained stomach in two as shown in Table 1.

Two of the six patients had distant metastasis into the lung and the liver. Surgery comprised of combined resection of the remained stomach with the adjacent organs for abdominal recurrence except for lung metastasis. Thoracoabdominal approach was applied to three patients. Surgical outcome was not necessarily satisfactory. Although only one survived for three years and seven months, death within six months was in three, within one year in one and within two years in one. Most patients died within one year after surgery.

The longest survivor underwent a combined resection with the left lobe of the liver and the spleen because of cancer infiltration. However, the prognosis for those who have distant metastases to the lung and the liver was poor.

## DISCUSSION

The incidence of recurrence after surgery for

gastric cancer is 8.6%, and it becomes 1.0% after elapsing 10 years according to a report by KUSAMA,<sup>1)</sup> who collected the data from 48 institutes in Japan. The major items of concern involve as to how to identify recurrence of a primary tumor from the second tumor.

As reported by KOZAKI,<sup>2)</sup> recurrence of more than five years after surgery is characteristics of 1) non-advancing disease stage 2) less penetrating invasion to the wall 3) less severe invasion to vascular structure 4) not so extensive nodal involvement 5) commonly demonstrating Borr I or II types and 6) being well differentiated carcinoma. We have not experienced the patients in whom 10 years or more elapsed after surgery.

The criteria for identifying recurrence of gastric cancer in the resected stomach from multiple cancers are that the primary tumor is to be the localized type with cancer-free margin distant from the resected stump without histologic vascular invasion and the second tumor should be infiltrative type with different histologic pattern from that of primary one and its location is far away from the line previously anastomosed between the remained stomach and the small bowel. It has been accepted that synchronous double cancers predominate in the middle and lower portions of the stomach with well-differentiated carcinoma, so is it required that carcinoma in the resected stomach should be taken into consideration as recurrence.

There is a report concerning the recurrence that 12 and 16 year periods of time have elapsed following surgery.<sup>6)7)</sup> Therefore recurrence could not be denied by increasing longevity of over ten years after surgery. Surgeons must keep the possibility in mind that recurrence after a long period of time following surgery could be either recurrence at anastomosis or secondary cancer.<sup>7)8)</sup> According to our experience, when the recurrence of carcinomas were detected, these usually show wide extension in the remained stomach with the spreading mode of angitis carcinomatosa. Distant metastases into the lung and the liver are prone to appearing earlier after surgery. In attempt to improve the surgical outcome of gastric cancer, multidisciplinary therapy is required.

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