

—Original Article—

EVALUATION ON THE RECURRENT CASES OF EARLY GASTRIC CARCINOMA

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Summary

In the First Department of Surgery, Faculty of Medicine, Chiba University, 213 cases with early gastric carcinoma have undergone an excision from 1955 to 1975. The observed 5-year, relative 5-year¹⁻⁵⁾, observed 10-year, and relative 10-year survival rates of these cases amount to 89.3%, 99.8% and 98.0% respectively. The present investigation concerns 13 of these patients with diagnosed postoperative recurrent cases.

The post-operative gastric carcinoma recurrence might be classified to metastasis to liver and lymphnodes, peritoneal dissemination, residual gastric recurrence and recurrence in miscellaneous organs⁶⁾. The 13 cases involved 2 cases of liver metastasis, 9 cases of residual gastric recurrence and 2 cases of recurrence in miscellaneous organs. Nine of these cases underwent re-operations which were grouped to 6 cases of residual gastrectomy, 2 cases of excision of miscellaneous organs (cecum and rectum), and 1 case exploratory laparotomy. The development in these cases is characterized by 3 cases of stump persistent carcinoma at the residual stomach due to stump carcinoma positive in excision, 2 cases of residual gastric carcinoma due to lymphatic vessel invasion and 6 cases of multiple carcinoma.

Key Words: *early gastric carcinoma, residual gastric recurrence, stump persistent carcinoma, lymphatic vessel invasion, peritoneal dissemination, metastasis of liver and lymphnode.*

Introduction

At the annual meeting of Japan Gastroenterological Endoscopy Society in 1962 and of Japanese Research Society for Gastric Cancer in 1963, the early gastric carcinoma was defined as carcinoma of the stomach of which invasion was limited to the mucosa and submucosa^{7,8)}. Since then a marked progress has been made in X-ray examination, endoscopy, cytodiagnosis and histopathology so that a great many cases with early gastric carcinoma have been diagnosed and submitted to a gastric resection⁹⁻¹²⁾. This is now the time to evaluate the late results of these cases.

In the First Department of Surgery, Faculty of Medicine, Chiba University, 213 cases with

diagnosed early gastric carcinoma have undergone an excision from 1955 to 1975. The late results of these cases indicate that the observed 5-year, relative 5-year, observed 10-year, and relative 10-year survival rates amounted to 89.3, 99.8, 79.4, and 98.0%, respectively.

The present paper describes the results on 13 of these cases who had subjective symptoms at so long intervals after the gastrectomy that they were diagnosed as recurrences by the clinical examination and re-operation.

Terms concerning the gastric carcinoma used in the present paper are derived from "The General Rules for the Gastric Cancer Study in Surgery and Pathology"⁷⁾.

Result

The clinical findings of 13 cases are listed in **Table 1** and **2**. The findings in the primary operations are as follows:

9 of them were males and 4 were females. Their average age was 50.8 years. We did 9 distal partial gastrectomies, 2 proximal subtotal gastrectomies, 1 proximal partial gastrectomy and 1 total gastrectomy. In macroscopic classification of resected materials, excavated type was very often observed. There were 1 case of type I, 2 of IIa+IIc, 5 of IIc, 2 of IIc+III and 1 of III+IIc. Concerning histopathological findings, 5 cases were poorly differentiated adenocarcinoma, 4 were well differentiated adenocarcinoma and the other 4 cases were signet-ring cell carcinoma. The depth of 6 cases carcinoma invasion was limited to mucosa but 7 cases reached submucosa. Regarding metastasis of lymph-node, 1 was n₁(+) and others were all negative. Ly₁ was observed in 2 cases, but others were negative. Venous invasion was negative in all cases. Three were exhibiting oral stump carcinoma.

The findings at the time of recurrence are as follows:

The average interval between the primary operation and the recurrence was 5.1 years. Four cases out of 13 underwent re-operations. We made 6 residual total gastrectomies, 2 miscellaneous organ (cecum and rectum) resection and 1 was exploratory simple laparotomy. In macroscopic classification of resected materials, there were 1 type I, 2 IIc, 1 Borr. II, 2 Borr. IV and 2 colonic carcinoma Borr. II. Four cases were not submitted to a re-operation. Two cases were clinically doubted to be metastasis of the liver and the other 2 exhibited Borr. IV like development at the residual stomach. As to histopathological findings, 5 were well differentiated adenocarcinoma, 3 were poorly differentiated adeno-

Table 1. Particulars of recurrent early gastric cancer
I. Finding at the primary operation

Patient	Age	Sex	Location	Macroscopic classification	Major diameter	Depth of invasion	histological picture	Metastasis of lymphnode	Lymphatic & venous permeation	Cancer in stump	Method of operation	Mode of recurrence
1. T.U.	48	M	M	III+IIc	3.0 cm	m	S.R.	n(-)	ly ₀	(+)	D.G.	R
2. K.N.	60	M	A	I	3.0	m	P.D.	n(-)	ly ₀	(-)	D.G.	L
3. Y.I.	63	M	A	I	3.0	m	W.D.	n(-)	ly ₀	(-)	D.G.	R
4. T.S.	61	M	A	IIc	2.0	sm	P.D.	n(-)	ly ₀	(-)	D.G.	L
5. S.S.	36	M	M	IIc+III	4.5	m	S.R.	n(-)	ly ₀	(+)	S.G.	R
6. A.Y.	39	F	MA	IIc	9.0	sm	S.R.	n(-)	ly ₁	(-)	D.G.	R
7. T.T.	63	F	M	IIc	4.0	m	S.R.	n(-)	ly ₀	(-)	D.G.	R
8. A.T.	34	F	M	IIc+III	7.0	sm	P.D.	n(-)	ly ₀	(-)	D.G.	R
9. Y.N.	42	F	M	IIa+IIc	3.0	sm	W.D.	n(+)	ly ₁	(-)	D.G.	M
10. H.I.	64	M	A	IIc	0.5	m	P.D.	n(-)	ly ₀	(-)	D.G.	R
11. M.I.	61	M	M	IIa+IIc	1.3	sm	W.D.	n(-)	ly ₁	(-)	D.G.	R
12. J.T.	44	M	C	III+IIc	3.4	sm	P.D.	n(+)	ly ₂	(-)	P.G.	R
13. T.T.	45	M	AM	IIa+IIc	4.0	sm	P.D.	n(-)	ly ₁	(-)	T.G.	M

Table 2. Particulars of recurrent early gastric cancer
II. Finding at the recurrence

Patient	Age	Location	Macroscopic classification	Major diameter	Depth of invasion	Picture	Histolog. picture	(1) Metastasis of lymphnode	Lymphatic & venous permeation	Method of operation	Prognosis
1. T.U.	57	C				S.R.				E.L.	died of ca. 6 monats after 2nd op.
2. K.N.	62	Liver									died of liver metastasis 2 years after the op.
3. Y.I.	70	GM	Borr. 4	15.0 cm	sei	P.D.	n ₃ (+)	ly ₂ v ₂		T.G.	died of ca. 6 monats after 2nd op.
4. T.S.	69	Liver									died of ca. 8 years after the op.
5. S.S.	40	C	IIC	4.0	m	S.R.	n(-)	ly ₀ v ₀		T.G.	alive
6. A.Y.	51	GM	Borr. 4	9.3	se	P.D.	n ₁ (+)	ly ₂ v ₁		T.G.	operationstod
7. T.T.	74	C	Borr. 4?								alive
8. A.T.	37	C	IIC	7.5	m	P.D.	n(-)	ly ₀ v ₀		T.G.	alive
9. Y.N.	45	Rectum	Borr. 2	3.0	se	P.D.	n ₁ (+)	ly ₂ v ₁		Amptatio recti	died of ca. 1.2 years after 2nd op.
10. H.I.	70	C	Borr. 2	7.0	se	W.D.	n ₁ (+)	ly ₀ v ₀		T.G.	operationstod
11. M.I.	64	C	I	3.8	sm	W.D.	n(-)	ly ₁ v ₀		T.G.	died of apoplexy 3.5 years after 2nd op.
12. J.T.	49	MA									died of ca. 5.5 years after the op.
13. T.T.	50	Cecum	Borr. 2	9.0	se	W.D.	n ₁ (+)	ly ₂ v ₁		Hemi-colectory	alive

(1) W.D.: Well differentiated adenocarcinoma, P.D.: Poorly differentiated adenocarcinoma, S.R.: Signet ring cell carcinoma.

(2) T.G.: Total gastrectomy, P.G.: Proximal partial gastrectomy, S.G.: Distal subtotal gastrectomy, D.G.: Distal partial gastrectomy, E.L.: Exploratory laparotomy.

(3) R: Residual stomach recurrence, L: Liver metastasis, M: Miscellaneous organ recurrence.

carcinoma and 1 was mucous adenocarcinoma in histological classification. On the subject of depth of carcinoma invasion, 3 cases were still in the early stage of stomach cancer. Two were mucosa and 1 was submucosa. However the others were in an advanced stage, 4 cases were serosa and 1 was pancreas. Five cases metastasized to the lymphnode, 4 were $n_1(+)$, 1 was $n_3(+)$, 3 were negative. Concerning lymphatic and venous permeation, ly_2 was recognized in 4 cases, ly_1 in 1 case, v_2 in 1 case and v_1 in 3.

According to the patterns of development diagnoses from the primary and re-operation findings, it is considered that 3 recurrences were caused by stump carcinoma positive, 2 cases by residual gastric carcinoma due to lymphatic vessel permeation positive and 6 by multiple carcinoma.

Discussion

It has been quite a long time since the diagnosis for early gastric carcinoma was established. There have been great many cases of gastric carcinoma reported in early stage. The therapy for these cases has been made in a similar way as advanced gastric carcinoma. The late results of these cases are finally ready for evaluation.

In our laboratory, 213 cases diagnosed as early gastric carcinoma have undergone a gastrectomy until late in 1975. The 5-year and 10-year survival rates of these cases amounted to 91.1 and 77.6%, respectively, which would be fairly satisfactory. Among these cases, we experienced several cases with relapse as progressive gastric carcinoma. Thirteen of these cases were identified as recurrences by the re-operation and clinical examination. We will discuss the results of these 13 cases in relation to the patterns of development.

Two of these 13 cases were diagnosed as liver

metastasis. According to the type at the primary operation, one case was grouped by I, and the other by IIc. They died at 1 year 10 months and 8 years 2 months after the operation, respectively.

Macroscopic investigation of the primary excised material indicated that the former case might be liver metastasis due to well differentiated adenocarcinoma with vascular invasion. However, the developing processes have not been clarified. It would be a problem to be reconsidered in future that no surgical treatment has been employed for liver metastasis.

Nine cases of them exhibited the main development of carcinoma at the residual stomach. Three of 9 cases were stump persistent carcinoma. Some authors say that recurrent stump carcinoma is not residual gastric relapse but stump persistent carcinoma¹³⁾. Two of nine cases were submitted to residual gastrectomy at 3 years, and 2 years 9 months after primary operation, respectively. They are still alive. Another case was found to be persistent carcinoma at 9 years 8 months after the primary operation. The case ended in only exploratory laparotomy because of marked peritoneal dissemination at the re-operation.

The above three cases are identified as type IIc and III+IIc, and histologically as poorly differentiated adenocarcinoma of signet-ring cell carcinoma. Therefore, we have to make a thorough examination for the region of carcinoma infiltration and for the presence of multiple carcinoma foci prior to the primary operation. Under the operation, the stump positive cases should be eliminated by the macroscopic findings of resected specimen, histodiagnosis by frozen section and cytodagnosis. If it was detected by the histological tests after the operation, the re-excision should be conducted as soon as possible. It has been shown by our investigations¹⁴⁾ and related

papers¹⁵⁾ that the re-excision should be carried out within the interval of three years.

Four of 6 residual cases underwent a residual gastrectomy and the others (2 cases) were identified as recurrence of residual stomach by X-ray examination and endoscopy. The recurrence patterns of the above 2 cases was accompanied with invasion of lymphatic permeation, therefore relapse might take place in residual stomach with the histological pattern of skirrhous as mentioned by Sano¹⁶⁾. The other cases were considered to be residual gastric carcinoma as multiple carcinoma. Many reports recently published on multiple carcinoma revealed that the frequency of multiple carcinoma in early gastric carcinoma was approximately 5.0%^{17,18)}. In contrast, the frequency in our cases amounted to 10.7%. The results indicate that we have to care not only the presence of precancerous nest in the operation, but also carcinoma recurrence in the residual stomach after the operation. Multiple cysts were found mainly in submucous layer around the carcinoma nest bodies of the primary operative material derived from 2 cases. There is no definite evidence that multiple cystomas present submucosally near the focus of early gastric carcinoma are the carcinogenic field, however, the relationship between early gastric carcinoma and these coexistent lesions will be the theme of future studies^{19,20)}.

In two of these cases, new development of cancer, independent of primary foci, was observed in other organs (cecum and rectum) several years after gastrectomy. Histologically, both tumors were diagnosed as adenocarcinomas, but from the intraoperative findings as well as from the gross findings, should rather be considered asynchronous multiple carcinomas. Thanks to recent progress in diagnostic technic, many cases of multiple carcinoma have been reported, and we, too

have encountered not a few such cases, it is therefore necessary for the surgeon not only to be concerned with the treatment of primary carcinoma but also pay his attention especially to the diagnosis and treatment of secondary and tertiary carcinomas in the future.

Poor prognosis was derived from the residual gastric recurrence. Two of these case died because of insufficient suture. The late results indicate that 3 and 2 cases among 4 cases operated have survived for 3 and 5 years, respectively. In order to improve the cure rates on the recurrent early gastric carcinoma, we have to diagnose the recurrence at the early stage. Since our cases visited hospital, complaining of pain from stenosis and ulcer, it is necessary to grasp the general status of all the patients with postgastrectomy through periodic examination. If anything abnormal was detected by residual X-ray examination and endoscopy, biopsy and cytodiagnosis are to be followed in order to confirm the diagnosis.

In these cases, 5 to 10 years passed since the primary operation. They are at advanced age enough to exhibit the change of cardio-pulmonary function, as is often the case with the old. Therefore, we have to be more careful in selecting the method of operation and in controlling the conditions through and after the operation as compared to the primary operation. We believe that these treatments should be effective in decreasing the frequency of post-operative complication and death, which would improve the survival rates.

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