

## Gastric Cancer in younger patients of less than age 30

Yoshihide HARADA, Tetsuya SATO, Shimei OH, Toshiyuki OGAWA,  
Masayuki OBATAKE, Toshio MIURA\*, Masao TOMITA\*

*Nagasaki Mitsubishi Hospital*

*\* The First Dept of Surgery, Nagasaki University School of Medicine*

*Received for publication, June 8, 1988*

**ABSTRACT :** Twenty-five gastric cancer of less than 30 years of age were clinically evaluated in comparison with those of manhood.

- 1) Gastric cancers in younger patients were predominant in female, four times as frequent as in male and the most favorable location in the younger was the cardia of the stomach.
- 2) In terms of histologic findings, undifferentiated carcinoma of Borrmann IV type was common in younger patients.
- 3) Peritoneal dissemination and serosal invasion as an extension type of carcinoma were most common in younger patients although hepatic metastasis was very few.
- 4) Surgical outcome of curative operation was very favorable although that of non-curative one was very pessimistic.

### INTRODUCTION

Of gastric cancer in younger patients surgical treatment has been improved with the help of advances in combined chemotherapy and immunotherapy. However, gastric cancer in younger patients is not so rare in frequency and its surgical outcome is not satisfactory yet.

This study was undertaken to clarify clinical feature of gastric cancer in younger patients, less than 29 years of age.

### PATIENTS

Twenty-five younger patients of less than 29 years of age with gastric cancer were subjected to this study. They were surgically treated in The First Dept. of Surgery, Nagasaki University Hospital in 18 years from 1965 to 1983.

It corresponded to 1.9% of a total of gastric cancers surgically treated at the same peri-

od. The ratio of male to female was 1:4, indicating the predominance of female.

Gastric cancer in youth was compared with that in manhood of age 30 to 49. The locations of the tumors in the younger were the cardia (C) and in the middle of the stomach (M) in youth although that in manhood was the antrum (A) and M as shown in Fig 1.

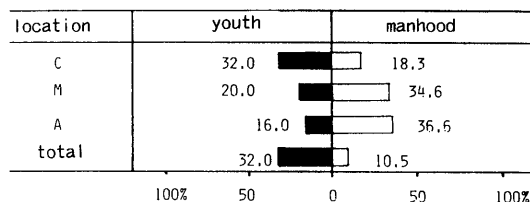


Fig. 1. The location of the tumor in younger patients as compared with that in youth

Early cancers of five cases (20%) in youth were included. It was almost the same as in manhood of the 46 cases (24.1%). In advanced cancers, the types of Borrmann III and IV pre-

dominated in youth although all types were uniformly seen in manhood as indicated in Table 1.

Table 1. Macroscopic findings in younger patients compared with those in youth.

macroscopic finding		youth	manhood
early cancer	I		1
	IIa		4
	IIa+IIc		8
	IIc	3	25
	IIc+III	2	7
	others	5 (20.0%)	1
I type		0	8 (4.2%)
II type		0	38 (19.9%)
III type		8 (32.0%)	63 (33.0%)
IV type		10 (40.0%)	27 (14.1%)
V type		2 (8.0%)	9 (4.7%)
total		25 (100%)	191 (100%)

Surgical resectability was 69.2% in the younger in contrast to 82.5% in manhood as shown in Fig. 2, and it was different in operation methods between surgery for youth and manhood. It was characteristic of the tumors in the younger that either total gastrectomy or exploratory laparotomy was alternative in youth. Curative operation could be only accomplished in 55.6% in youth as compared with that of 75.2% in manhood.

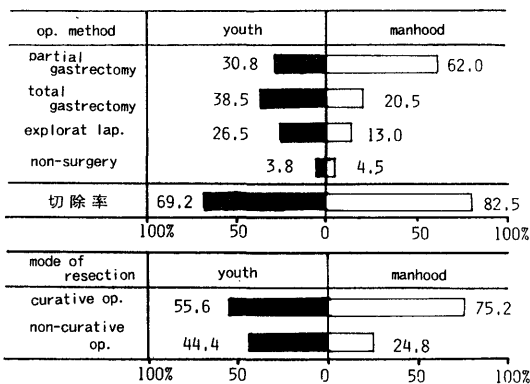


Fig. 2. Operative method and resectability in younger patients.

In view of disease stages in youth most were stage III and IV, demonstrating that advanced

cases were common as shown in Fig. 3.

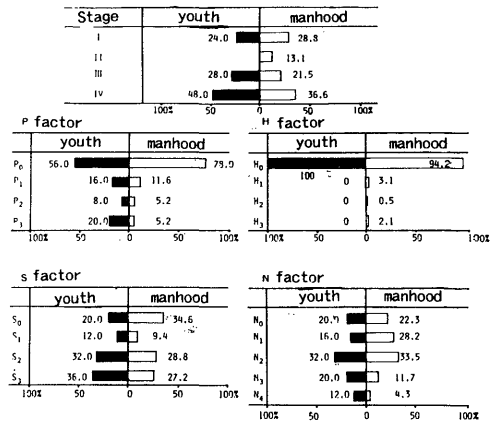


Fig. 3. Histologic disease staging and factors related to stage classification.

According to the staging factors, peritoneal dissemination (p<sup>1-2</sup>) was predominant in youth, showing that nodal involvement (n<sup>3-4</sup>) as well as serosal invasion (s<sup>2-3</sup>) were also significantly more advancing in youth rather than in manhood.

From the standpoint of histologic cell differentiation, the finding of poorly differentiation was popular in youth although that of well one was most in manhood.

The result in two or three year duration after surgery in youth was worse than that in manhood. However, the younger patients without nodal involvement (no) survived favorably as compared with that in manhood whose lymph nodes were not involved.

### DISCUSSION

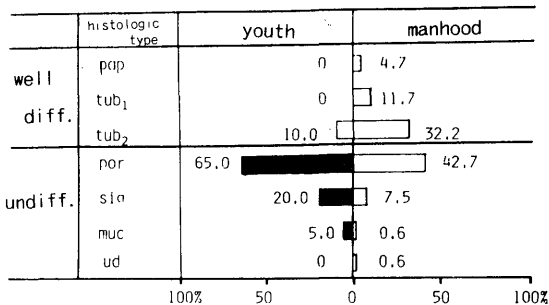
To identify the clinical features of gastric cancer in younger patients, 15 cases of less than 29 years of age were clinically analyzed. In younger patients female was predominantly more affected than male.<sup>1)2)</sup> It is different from that in adult. The cardia of the stomach is the most favorable site of undifferentiated carcinoma in younger patients.

Of interest is the fact that undifferentiated gastric cancers arise from the gland in the fundus of the stomach and well-differentiated carcinoma also is originated in the intestinal hyperplastic epithelium of the stomach as a dif-

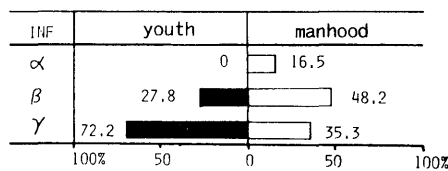
fuse type of gastric cancer.<sup>3)</sup>

According to macroscopic findings, diffuse type (Borrmann IV type) of cell undifferentiation in gastric cancer was common in younger patients in spite of commonly localized type of well cell differentiation in adult<sup>2)</sup> as shown in Fig. 4.

病理組織学的所見



浸潤増殖様式



組織学的壁深達度

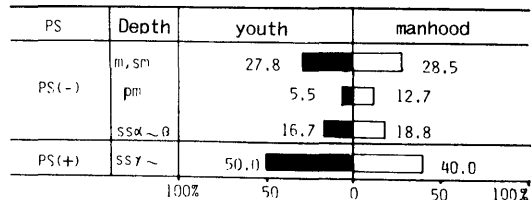


Fig. 4. Pathohistologic findings in gastric cancers in younger patients as compared with those in manhood

In this series gastric cancer in younger patients comprised 40% of Borr IV and 30% of Borr III, indicating that diffuse type of undifferentiated cancer was mostly common in younger gastric cancer patients<sup>2)4)</sup> as shown in Fig. 4.

There are many reports concerning nodal involvement between younger and older patients. It is not necessarily consistent with each other.<sup>2)5)</sup> One is a report about no difference between both,<sup>1)6)</sup> the other is a report about less involved nodes in older patients.<sup>2)5)</sup>

In this study it is indicated that gastric can-

cers in youth tend to invade the nodes. Furthermore, gastric cancers in younger patients are liable to involve the peritoneum and serosa although there were a few with hepatic metastasis with rapid spreading of cancer infiltration.<sup>7)</sup>

Surgical outcome of curative operation in younger patients is more satisfactory than that in older patients<sup>1)5)8)</sup> as shown in Fig. 5.

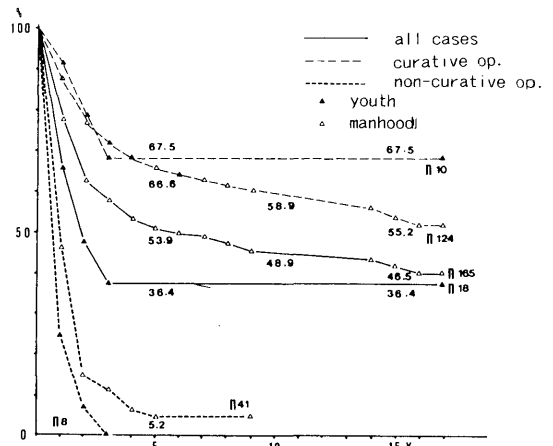


Fig. 5. Surgical outcome in survival rates between younger and youth groups.

However, if curative operation had not been achieved, the results would have been discouraging because of rapid cancer extension in younger patients.

We must bear it in mind that early detection is a most useful means to improve surgical result for younger patients in considering that even younger patients are involved by gastric cancer in conjunction with immunologic response.<sup>9)</sup>

### REFERENCE

- 1) MATSUMOTO, S, *et al.* : Surgical result of gastric cancer in terms of age. *Jap J. Canc. Therap* 15 :1-9, 1980.
- 2) FUNAYAMA H, *et al.* : Characteristics of gastric cancer in older patients - especially pathohistologic evaluation -. *Jap. J. Clin. Surg.* 43: 6-18, 1982. (in Japanese)
- 3) LAUREN, P. : The two histological main types of gastric carcinoma : Diffuse and so-called intestinal type carcinoma. *Acta Path. Microbiol. Scandinav.*, 64 : 31-49, 1965.
- 4) NAKAMURA, T., *et al.* : A study of relationship between morphology and aging. *Cancer*

- Clinic.* 24 : 27-32, 1978. (in Japanese)
- 5) WADA, H., *et al.* : Gastric cancer between younger and older patients. *Cancer Clin.* 12 : 328-334, 1961.
  - 6) UCHIDA Y., *et al.* : Clinicopathological study on gastric cancer in the elderly. *Jap. J. Surg. Assoc.* 79 : 445-452, 1978.
  - 7) NAKATSU T., *et al.* : Clinical and pathological features of gastric cancer in younger patients. *Clinic. Surg.* 20 :1635-1645, 1965.
  - 8) KOGA N. : An operation for gastric cancer of over 70 years old-clinicopathological view-*Jap.J. Surg. Ass.* 71 : 1558-1561, 1970.
  - 9) KIKUCHI K., *et al.* : Cell-mediated immunity involved in autochthonous tumor rejection in rats. *Ann NY Acad. Soci.* 276 : 188-206, 1976.