Minute Gastric Cancer

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Oshiba, S., Ueno, K., Mochizuki, F. and Yamagata, S. Minute Gastric Cancer. Tohoku J. exp. Med., 1976, 118 (Suppl.), 19-22 — Nineteen cases of minute early gastric cancer were diagnosed under endoscopical examinations. Diagnosis was established by endoscopic biopsy in 18 cases, and exceptional one case of type IIb was incidentally found. Some of the endoscopic characteristic features of superficial depressed minute cancer were mentioned. By these findings, the diagnosis of superficial depressed minute cancer is possibly made in certain extent only by endoscopic observation. Prognosis of minute gastric cancer is excellent. Especially in the minute early cancer, the actual 7-year-survival rate was 100%. Prognosis of minute advanced cancer is also quite good. Minute gastric cancers can be found clinically and are almost completely curable.

With the definition of minute cancer as a cancer less than 10 mm in the longest diameter, there are currently two kinds of gastrointestinal minute cancers; namely, minute gastric cancer, and poly-cancer in the large intestine. In order to study on minute gastric cancer in this report, early gastric cancer was analyzed.

Materials and Results

Up to 1971, 303 lesions of early gastric cancer were found in cases on which adequate histopathological studies were performed.

As shown in Table 1, the macroscopic classification was as follows: Type I 41 cases, type IIa 19 cases, type IIa+IIc 25 cases, type IIc+IIa 9 cases, type IIc 127 cases, type IIc+III 68 cases, type III 11 cases, and type IIb 1 case. Among these early gastric cancers, the following 19 minute cancers less than 10 mm in longest diameter were found; Type I 3 cases, type IIc 11, IIc+III 1 case, type III 3 cases and type IIb 1 case.

Only two cases of type IIc and one case of type IIb were minute cancer less than 5 mm in diameter. As for the depth of invasion of these minute cancers, all of the three cases of minute cancer less than 5 mm in diameter were mucosal cancer (m). Minute cancers between 5 to 10 mm in diameter were found to be as follows: 3 cases of type I consisted of 2 cases of mucosal cancer and 1 case of submucosal cancer (sm). 9 cases of type IIc were 5 cases of mucosal cancer and 4 cases of submucosal cancer; 3 cases of type III being 2 cases of mucosal cancer
and 1 case of submucosal cancer. One case of IIc + III type was submucosal cancer.

Analyzing the site of the lesions of minute cancer, minute cancers less than 5 mm in diameter were all found in the antrum, and those between 5 to 10 mm in diameter were found in the middle portion of the corpus (2 cases), in the lower portion of the corpus (5 cases), in the gastric angle (2 cases) and in the antrum (7 cases). None was found in the upper portion of the corpus or the cardia and prepyloric region. It can be said that the diagnosis of minute cancer in these areas is difficult.

Histological study of these minute cancers revealed that 3 minute cancers less than 5 mm in diameter were well differentiated cancers, and among 16 minute cancers between 5 to 10 mm in diameter, 12 were well differentiated and 4 were undifferentiated carcinoma.

Diagnosis of minute early gastric cancers was established in 19 cases observed endoscopically, and biopsies were performed except in one case of type IIb. This case was found during a follow-up for gastric ulcer, and cytological study by irrigation method revealed positive cancer cells. Gastrectomy was performed and IIb type of minute cancer was incidentally found. Retrospectively, some characteristic endoscopic findings can be pointed out in the superficial depressed type of minute early gastric cancers.

Of course, it is difficult to make diagnosis of type I and type IIa only by the endoscopic observation without biopsy. It is also known that it is often difficult to differentiate type III minute gastric cancer from a benign ulcer. Among 12 cases of superficial depressed minute gastric cancer, type IIc and type IIc + III, only 3 cases were accompanied by convergence of mucosal fold. Histologically, nine cases were found to be well differentiated carcinoma and three cases were undifferentiated carcinoma.

Since 1957, we have carried out mass survey of stomach cancer. 1077 cases of stomach cancer were found; however, adequate long term follow-up data were

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**Table 1. Relationship between type and size of early gastric cancer**

<table>
<thead>
<tr>
<th>Type</th>
<th>~5</th>
<th>6~10</th>
<th>11~20</th>
<th>21~30</th>
<th>31~40</th>
<th>41~50</th>
<th>51~60</th>
<th>61~</th>
<th>Total</th>
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<tbody>
<tr>
<td></td>
<td>m</td>
<td>sm</td>
<td>m</td>
<td>sm</td>
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<td>sm</td>
<td>m</td>
<td>sm</td>
<td>m</td>
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<tr>
<td>I</td>
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<td>1</td>
<td>7</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>5</td>
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<td>3</td>
<td>2</td>
<td>1</td>
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<td>IIa+IIc</td>
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<td>7</td>
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<td>5</td>
<td>2</td>
<td>3</td>
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<tr>
<td>IIIc+IIa</td>
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<td>2</td>
<td>1</td>
<td>2</td>
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<td>1</td>
<td>2</td>
<td>7</td>
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<tr>
<td>IIc</td>
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<td>4</td>
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<td>19</td>
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<td>11</td>
<td>5</td>
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<td>4</td>
<td>7</td>
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<tr>
<td>III</td>
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<td>3</td>
<td>2</td>
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<tr>
<td>Total</td>
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<td>32</td>
<td>46</td>
<td>24</td>
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available in only 592 cases. By analysis of the follow-up data, actual survival
rates in 1 year, 5 years and 7 years after surgery are as follows: In mucosal
cancer, 0.963, 0.925 and 0.892, respectively and in submucosal cancer 0.961, 0.838
and 0.770, respectively and in pm cancer (in which cancer invades the proper
muscle layer) 0.962, 0.648 and 0.532, respectively and in ss or s cancer (in which
cancer invades subserosal or serosal surface), 0.817, 0.347 and 0.297, respectively.
It is obvious that prognosis becomes poor with the advancement of the cancer
invasion to m, sm, pm and ss.

The relationship between the size of the lesion and prognosis was also studied.
Actual survival rates in 1 year, 5 years and 7 years after surgery in 5 cases of minute
cancer less than 10 mm in diameter, with a cancer invasion seen beyond pm, were
1.000, 0.750 and 0.750, respectively (Table 2). In contrast, 7 cases of minute early
gastric cancer less than 10 mm in diameter all survive for 7 years after operation.
In other words, actual survival rate was 1.000 in minute early cancer. In above-
mentioned 5 cases of minute advanced cancer, 4 were pm and 1 was s, which
deceased by unknown cause. In 7 cases of minute early cancer, 3 cases were
mucosal and 4 cases were submucosal.

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>Cancer invasion</th>
<th>Number of cases</th>
<th>Survival rate</th>
<th>1 year</th>
<th>5 years</th>
<th>7 years</th>
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<tr>
<td>~10</td>
<td>Mucosa</td>
<td>3</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
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<tr>
<td></td>
<td>Submucosa</td>
<td>4</td>
<td>1.000</td>
<td>0.940</td>
<td>0.880</td>
<td>0.785</td>
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<td>11~20</td>
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<td>33</td>
<td>0.963</td>
<td>0.963</td>
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<td>0.885</td>
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<tr>
<td>21~30</td>
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<td>27</td>
<td>0.985</td>
<td>0.866</td>
<td>0.807</td>
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<tr>
<td>31~</td>
<td></td>
<td>63</td>
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</table>

DISCUSSION

In general, stomach cancer limited in 1 cm or less in diameter is defined as
minute cancer and most of the minute cancer are included in the category of the
early cancer. The diagnosis of the minute cancer has become not difficult with the
advances of diagnostic methods, if the localization is previously checked. According
to the classification of M.C.A. determined by Japanese Research Society for
Gastric Cancer, A region is the major site of the stomach cancer, M region being less
frequent. Stomach cancer detected in C region is more or less 10 per cent, whereas
owing to the diagnostic difficulty minute cancer detected in this site is rare. The
type of the minute cancer is mostly IIc type, according to the statistics from 91
institutions in Japan. The lesion is so minute that it is frequently overlooked by
the macroscopical examinations with the resected specimen of the stomach.
Rather it is easy to diagnose the minute cancer preoperatively from the findings of
distinct erosion on small circumferential mound revealed by endoscopy and x-ray
examinations.

Minute cancer is usually classified from the clinical findings mentioned
above. According to Kasumi et al. (1972), twenty-two cases of minute cancer consisted of one case of IIb type, three of I type, one of IIa+IIc type, ten of IIc type and seven of IIa type. Eleven out of nineteen cases of minute cancer detected by us were IIc type. Minute cancer of IIb type was diagnosed incidentally by histopathological examination. Our results agree well to Kasumi’s data.

In excavated minute cancer, small circumferential mound is found due to either inflammation or infiltration. If the air inserted into the stomach is excess, stomach is so extended that eroded area is not disclosed by the endoscopical examination owing to the disappearance of circumferential mound. Therefore, it should be emphasized to minimize the air inserted into the stomach.

Whole minute cancer less than 5 mm in diameter is within mucosa in depth of the cancer invasion, whereas some of the minute cancers from 6 mm to 10 mm extend into the submucosa.

The percentage of seven-year-survival after gastric resection is one hundred percent, so that we might say that minute early cancer of stomach is the completely curable gastric cancer.

References