

Surgery for Early Esophageal Carcinoma

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Early esophageal carcinomas are clinicopathologically evaluated in 11 patients whose carcinomas are limited to the epithelium (ep) and the mucosa (mm). Most of ep and mm carcinomas were detected by mass-screening without any symptom. Even when mass examination for gastric lesion is attempted, precise examination of the esophagus should be made at the same time. It is assured that a ep and mm esophageal carcinoma ensured satisfactory outcome. It is emphasized that early detection is only a way to improve the surgical outcome of the treatment for esophageal carcinomas.

Introduction

It is generally accepted that curable esophageal cancer is limited to superficial esophageal carcinoma. Early detection of the superficial esophageal carcinoma is of primary concern. Criteria of early esophageal carcinomas correspond clinically to criteria localized cancers to the epithelium (ep) and the mucosa (m).

Recently the incidence of early carcinoma for a total of detected esophageal carcinomas has been increased in number. Endoscopic staining method contributed significantly to facilitate early detection of esophageal carcinomas.

The purpose of this study is to clarify the value and the significance of the surgical treatment for early esophageal carcinoma and search for the ideal target of curably esophageal carcinoma.

It is well known that thirty percent of sm carcinomas already accompany nodal involvement and their prognoses were poor as compared with other organ sm carcinomas arising from the stomach and the colon.

The prognosis of esophageal sm carcinoma is pessimistic and differs from that of various organ sm carcinomas.

Patients

During the 10 years from January 1983 to December 1992, ep and m carcinomas of the esophagus were found in 11 patients (ep carcinoma in 3, mm carcinoma in 8) at the First Department of Surgery, Nagasaki University School of Medicine.

The onset of detection was shown in Table 1. Most cases were asymptomatic and detected by mass screening. Some were picked up by close examination for gastric lesions. Complaints were in 4 (36.4%).

Table 1. Onset of m-carcinoma

Onset	ep	mm	total
dysphasia	0	1	1
burning sensation	0	1	1
uncomfortably feeling of larynx	0	1	1
nausea	0	1	1
close examination for other disease	1	2	3
periodic mass screening			
stomach	2	1	3
esophagus	0	1	1

Tumor locations of m-carcinomas were shown in Table 2. Im and Ei were favorite sites of m-carcinoma as seen in thoracic esophageal carcinomas.

Table 2. Tumor locations

	ep	mm	total
Ce	0	0	0
Iu	0	1	1
Im	2	3	5
Ei	1	3	4
Ea	0	1	1
	3	8	11

Endoscopic findings were classified in accordance with the rule set forth by Japanese Society of Esophageal Disease as follows:

0-I: superficial and protruded type, 0-II: superficial and flat type (slightly elevated IIa, flat IIb and slightly depressed IIc), 0-III: superficial and excavated type and 0-V: superficial and unclassified.

Endoscopic gross findings were shown in Table 3. 0-II findings were represented in all m carcinomas and all were almost equally distributed among 0-IIab and c.

Table 3. Endoscopic findings

	ep	mm	total
0-I	0	0	0
0-IIa	0	4	4
0-IIb	2	2	4
0-IIc	1	2	3
0-III	0	0	0

The length of the tumors were shown in Table 4. Six were 1.1-2.0cm long, 2 were 0-1.0 and 2.0-5.0cm long, respectively. Half of m carcinomas were within 2cm long in size.

Table 4. Tumor size in length

cm	ep	mm	total
0 - 1.0	1	1	2
1.1 - 2.0	1	5	6
2.1 - 5.0	1	1	2
5.1	0	1	1

The biologic behaviors were investigated in recently experienced 4 m-carcinomas by the analysis of DNA ploidy using flow cytometry method. The results were shown in Table 5. Diploidy of DNA ploidy pattern was predominant in m-carcinomas. It is worthy of note that diploidy is predominant in early stage of carcinomas. In contrast, aneuploidy was seen in one which implies an aggressive biologic behavior from initiation of carcinoma.

Table 5. Analysis of DNA ploidy

	ep	mm	total
diploidy	2	1	3
aneuploidy	0	1	1
	2	2	4

Nodal involvement was shown in Table 6. It is indicated that lymphnodes were not involved in m-carcinomas. And

Table 6. Nodal involvement and vascular invasion

		positive node meta	ly	V
ep	3	0	0	0
mm	8	0	1 (12.5%)	0
	11	0 (%)	1 (9.1%)	0

also histologic vascular invasion was also investigated. Only one of mm carcinoma showed histologic lymphatic invasion. No finding of vascular invasion was observed in this series. No death related to carcinoma was encountered. Four of 11 died which 3 years after surgery, three died of heart failure and one due to cerebral infarction. The 5 year survival rate was 63.6% despite of a limited number of patients.

The survival curve was shown in Fig. 1. The survival time of patients with ep and mm carcinoma was apparently longer than that with sm and mp carcinoma.

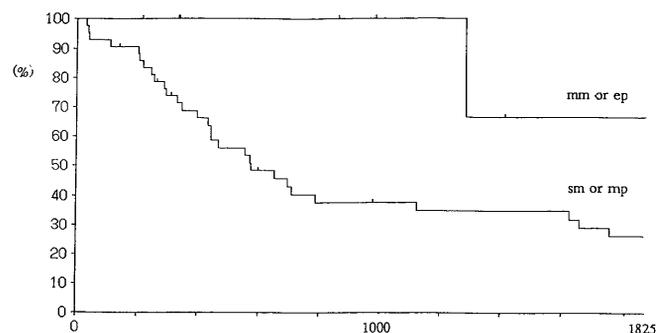


Fig. 1. Survival curve according to the depth of cancer infiltration

For the reason of a satisfactory result of ep and mm carcinomas, an extensive surgery should be reduced for early esophageal carcinoma.

Discussion

Detective modalities of superficial esophageal carcinomas were rapidly progressed by the development of some-graphy and panendoscopy in combination with endoscopic staining method.³⁾ Early detection of ep and mm carcinomas is essential to improve the outcome of esophageal carcinomas.

Early ep and mm carcinomas were distributed in the 5 and 6 decades of life. Mass examination is required for 50 to 60 years of age. Needless to say, most of ep and mm carcinomas were asymptomatic. Attention should be paid for difficulty of early detection of cancer with no complaints. Recently early detection by mass screening had increased in number from 9.0 percent⁴⁾ in 1983 to 27.8³⁾ in 1990. Endoscopy and x-ray examination are reliable for early detection. Yoshida⁵⁾ reported that radiologic examination is sufficient for detection of Ia and Ic type lesion. In contrast, detection of Ib type lesion is mandatory for endoscopy in combination with staining method. Yoshida⁵⁾ also emphasizes that it is not so easy to detect ep and mm carcinoma by means of radiologic examination. Physicians should be aware of carcinomas of multicentric organs. It is important to keep in mind that extremely minute ep carci-

nomas is multiple in frequency.

According to endoscopic gross findings, it is accepted that a 0-I type means sm, 0-IIa and 0-IIc include m, partly sm and 0-IIb m, 0-III sm, respectively. In this series, 0-I and 0-III types were excluded from mm-carcinomas. Even 0-II types include sm-carcinoma. Careful attention should be paid for identifying sm-carcinoma from the a 0-II type lesion.

Some investigators⁶⁻⁸⁾ emphasized that most of the 0-II type lesions are of ep and mm carcinomas. However, some of 0-II type lesions belong to sm-carcinoma.

In this series, the sizes of ep and mm carcinomas ranged from 0.8cm to 6.1cm long. It is assured that the sizes of the tumors are not proportionale to the depth of cancer infiltration as reported by Itabashi⁹⁾ et al.

As reported by Endo,³⁾ the 5 year survival rates of ep and mm carcinomas are satisfactory outcome of 96.9% and 91.9%, respectively.

Improvement of surgical results requires prevalence of early detective measures in esophageal carcinoma and refinement of diagnostic procedures. Endoscopic staining procedure is imperative for detection of early esophageal carcinoma.

Great strides in the treatment of esophageal carcinoma have been achieved in the field of palliative and extensive surgery. In conclusion, mass screening should be expanded

to subjects over 50 years of age and the application of endoscopic iodine staining method is indispensable for improvement of the outcome and facilitation of early detection.

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