

EARLY GASTRIC CANCER A STUDY OF TEN CASES

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Abstract - This study is a retrospective study of 10 patients with early gastric cancer, (6 from Imam Khomeini hospital between 1985 to 1994 and 4 from private office). from the standpoint of clinical and pathological views, treatment modalities and prognosis. In Imam Khomeini hospital early gastric cancer comprises near 1% (6/560) of all gastric cancers, which may be due to late reference, lack of screening procedures, etc. Mean age of onset was 52 years and male / female ratio was 7:3. All patients had some type of gastrointestinal upset like heartburn, epigastric pain etc. Six tumors were located in antrum and 3 in fundus and one was not identified. Macroscopically 4 cases were type IIc, two cases type IIa, two cases type IIb and two were type III. 5 cases had only mucosal involvement and 5 had both mucosal and submucosal involvement. In 6 patients the tumor was undifferentiated, one moderately differentiated and 3 well differentiated. Intestinal metaplasia was found in 5 and gastritis in 9 of them. Only one patient had lesser curvature lymph node metastasis. Subtotal gastrectomy was performed for 8 and total gastrectomy for two patients. Except for one patient who died 24 hours after surgery due to MI, 8 others lived disease free for more than or near 5 years after treatment. It is concluded that early diagnosis of cancer through screening procedures results in a better outlook for these patients. *Acta Medica Iranica* 36 (1): 14 - 18; 1998.

Key words: Gastric, cancer

INTRODUCTION

Early gastric carcinoma is defined by the Japanese authors as a carcinoma confined to the mucosa or to the mucosa and submucosa (not extending to the muscularis externa), regardless of the status of the regional lymph nodes (1). The name is inaccurate, because the concept is not related to size or duration of the lesion but exclusively to depth of penetration. Other terms include: surface, superficial spreading and microinvasive cancer. They have been further subdivided into minute (<5mm) and small (6 - 10mm) depending on size (2). According to the Japanese endoscopic society (3) early gastric cancer is classified into 6 morphological type, which is depicted in (Fig. 1).

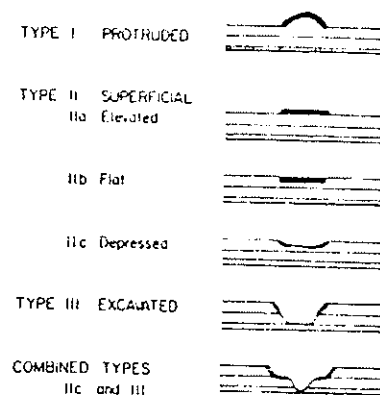


Fig. 1. Classification of early gastric carcinoma. The shaded area represents malignant tissue and the hatched layer the muscularis propria.

Most cases of early carcinoma are said to be of intestinal type (1), but a diffuse form also exists which is composed almost purely of signet ring cells (4).

Mostly they are located in the distal third of the stomach, but they also occur at the gastric cardia (5, 6).

On the average, lymph node metastasis are seen in about 5% of intramucosal tumors and in 10 - 20% of those invading the submucosa (7).

The relative incidence of early gastric carcinoma is clearly related to the magnitude of diagnostic efforts of fiberoptic gastroscopy and double contrast barium - meal examination, which when combined with histologic cytologic evaluation, allows diagnosis of lesions measuring 5 mm or less in diameter (8).

Several other studies on early gastric cancer

about *Helicobacter pylori* infection, DNA ploidy and immunohistochemical studies (K67, PCNA) have been published (1) which are not discussed further.

The 5 year survival rate following resection is between 80 - 95% and remains remarkably high when nodal metastasis are present (7). The incidence of local recurrence is very low (9).

The natural evolution of cases not treated by gastrectomy is to progress to advanced carcinoma (10).

MATERIALS AND METHODS

The records of the laboratory of surgical pathology and surgical ward (Cancer Institute) covering the 10 years period from 1985 - 1994 were reviewed. A total of 560 gastric resections for gastric carcinoma were identified and the pathology reviewed. 6 cases were found to involve only the mucosa or submucosa. 4 other cases were gathered from personal office. Microscopic H and E slides of early gastric cancer were examined. Also the clinical features, endoscopic reports were gathered and follow up was obtained from the medical records of the patients, the patients' family or the patient's responsible physician. Complete 5 years follow up was obtained for 8 patients.

RESULTS

During the 10 year period from 1985 - 1994 a total of 560 gastric cancers were resected at Imam Khomeini hospital. 6 were considered to satisfy the criteria for early gastric cancer, and overall incidence of $\cong 1\%$ was obtained.

The male to female ratio was 7/3. The mean age of occurrence was 52 years (30 - 69 yrs). Most patients were investigated because of upper gastrointestinal symptoms (dyspepsia, epigastric pain, indigestion, emesis). Weight loss and anemia was not a prominent feature in these patients (except one case who had pancytopenia due to

myelofibrosis). Barium studies were performed in nearly 5 patients that suggested malignancy in 4 of them. Endoscopy was done in all 10 cases and biopsies taken during the procedure.

In three cases, the lesion was located in fundus and in 6 patients it was located in antrum. In one case the location was not identified. Two cases had type IIa (elevated); two had IIb (flat); four had IIc (depressed); and two had type III (ulcerated). So type IIIc lesion comprised the most common type (40%). Five cases had only mucosal involvement and the other 5 had mucosal and submucosal involvement. Both patients with type III lesions had mucosal and submucosal involvement; but other types showed inconsistent extension. The lesions ranged from 0.5 to 5.5 cm in greatest diameter in 6 cases (in 4 cases the size was not discernible); with an average of 2.1 cm.

Well differentiated lesions (30%) had recognizable gland formation with enough nuclear atypia to distinguish them from nonmalignant, reactive gastric epithelium. (Fig. 2, 3). One case was moderately differentiated and 6 others (60%) were undifferentiated mostly signet ring type (50%). The association between types and degree of differentiation was inconsistent. Intestinal metaplasia was identified in 5 (50%) and gastritis in 9 (90%) cases. Associated lymph node metastasis was identified in only one case with type IIc, mucosal, signet ring type carcinoma which measured 5.5 cm in diameter.

All patients with early gastric cancer were subjected to either partial (80%) or total gastrectomy, depending on the location of malignancy in the stomach. Associated splenectomy was performed for two patients.

Except for one patient who died 24 hours after surgery due to MI, 8 other patients were followed up for 5 years or more. One patient who had myelofibrosis died 8 years after surgery, all others are alive and free of disease. All the above data are summarized in (Table 1).

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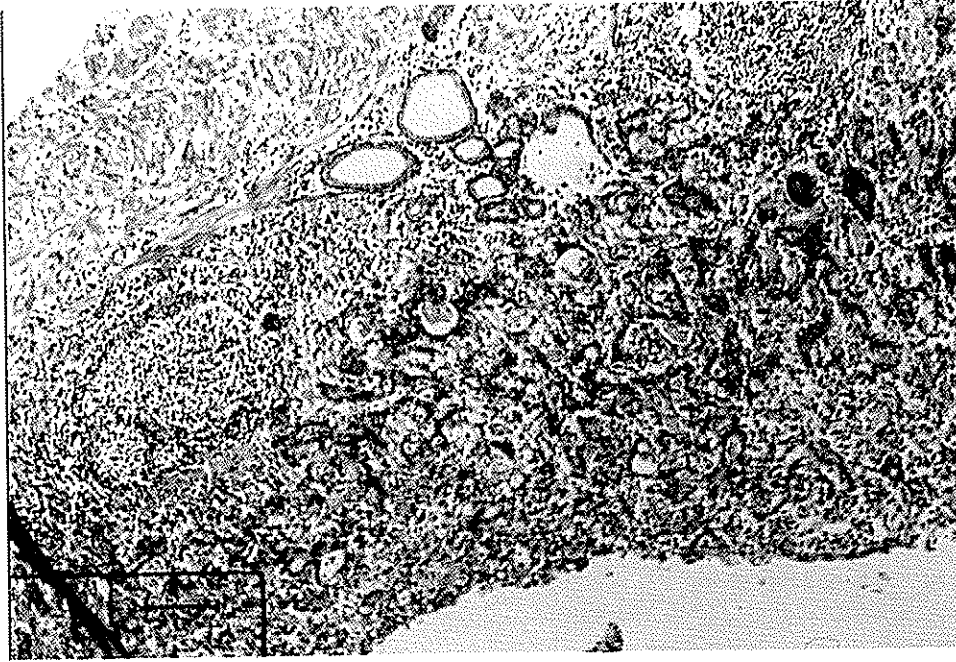


Fig. 2. Early gastric cancer, mucosal involvement

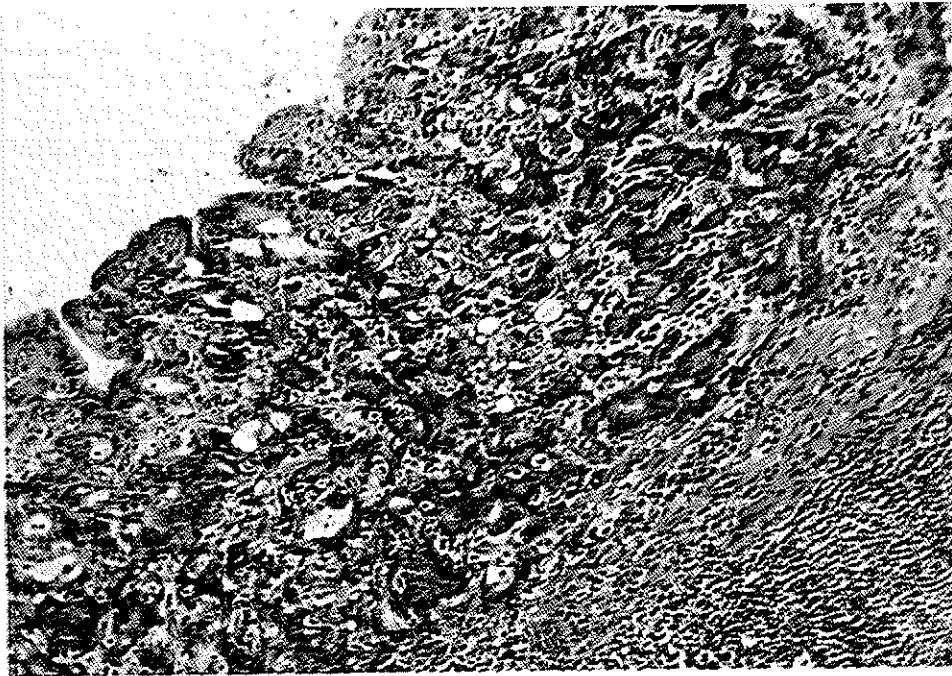


Fig. 3. Early gastric cancer, mucosal involvement

Table 1. Clinical characteristics of ten cases of EGC

No	Age	Sex	Site & Size(cm)	Mac ¹ pattern	Depth of tumor	Mic ² pattern	Intestinal metaplasia	Gastritis	Lymph node metastasis	Treatment	Follow up
I	65	Male	1.5	Fundus Type III	Mucosal & submucosal	WD ³	+	+	-	TG & ⁴ Splenectomy	Died 24 hours after surgery due to MI
II	65	Male	0.5	Antrum Type II _a	Mucosal & submucosal	WD	+	+	-	SG ⁵	Alive and well 9 yrs
III	30	Male	1.5	Fundus Type III	Mucosal & submucosal	Und ⁶	-	+	-	SG	Alive and well 5 yrs
IV	69	Male	Not identified	Type II _b	Mucosal & submucosal	Und signet ring	Not identified	+	-	30 yrs after SG for ulcer Biopsy showed gastric Cancer, 4 yrs later TG was performed	Alive and well 5 yrs
V	55	Male	2	Antrum Type II _c	Mucosal & submucosal	WD	+	+	-	SG & Splenectomy	Died 8 yrs later due to myelofibrosis
VI	35	Male	-	Antrum Type II _c	Mucosal	Und Signet ring	Not identified	-	-	SG	Alive and well 5 yrs
VII	65	Fe-Male	5.5	Antrum Type II _c	Mucosal	Und Signet ring	-	+	+	SG	Could not be traced
VIII	44	Fe-Male	-	Antrum Type II _c	Mucosal	Und Signet ring	+	+	-	SG	Alive and well 5 yrs
IX	45	Male	-	Antrum Type II _b	Mucosal	MD ⁷	+	+	-	SG	Alive and well 6 yrs
X	56	Fe-Male	1.5	Fundus Type II _c	Mucosal	Und MD Signet ring	Not identified	+	-	SG	Alive and well 6 yrs

1 - Macroscopic, 2 - Mic: Microscopic, 3 - WD: Well differentiated, 4 - TG: Total gastrectomy, 5 - SG: Subtotal, 6 - Und: Undifferentiated, 7 - Moderately differentiated

DISCUSSION

Reports from several countries describing experiences in the diagnosis of EGC prompted us to explore the relative incidence of this lesion in a large metropolitan hospital and study of other clinico-pathological features of it. The real incidence of EGC in our hospital during 1984 - 1985 was 1% of all gastrectomies which compared with Japanese reports (39% in 1969) is a negligible number. This fact may be due to late reference of patients, poor screening procedures and faulty diagnosis.

In ten early gastric cancer cases studied, the male percentage was 70% and the mean age of occurrence was 52 yrs. Most patients had some

upper gastrointestinal complaint (dyspepsia, epigastric pain) but weight loss and anemia was not prominent in them. Barium studies were performed on half of the patients and endoscopy associated by biopsy on all of them.

Following gastric resection (either total or partial) pathological findings showed:

- 60% of lesions were located in antrum 30% in fundus and in one site was not identified.
- 40% had type II_c and others distributed equally between types II_a, II_b and III.
- 50% had just mucosal and others had both mucosal and submucosal involvement.
- The mean size of lesions was 2.1 cm (0.5 - 5.5cm).
- 30% case were well differentiated, 10% moderately differentiated and 60%

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undifferentiated mostly signet ring type (50%), in contrast to reference 1.

- Intestinal metaplasia was identified in 50% and gastritis in 90% of patients.
- Lymph node metastasis was identified in only one patient.
- The five year survival of patients was excellent nearly 100%

With an attention to the high survival rate of early gastric cancer patients compared to 27%, 5 year survival in advanced gastric cancer (12), we suggest better patient screening and improving of diagnostic modalities in order to raise percentage of gastric cancer diagnosis in early stages.

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