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Malignant Gastric Tumors – A Clinico Pathological Study

A S CHUGHTAI I U D QURESHI A KHALIL SAMIULLAH

Department of Pathology, King Edward Medical College, Lahore

Correspondence to Akhter Sohail Chughtai, Associate Professor Pathology

A total number 32 cases of gastric malignant tumors were diagnosed from January 1994 to June 1996. They were referred from different hospitals of Lahore. A detailed history, clinical examination, endoscopic and operative findings of each case were obtained. The malignancy was more common in males as compared to females with pain in epigastrium as the commonest presenting feature. Gastric antrum and pylorus were the major sites involved whereas poorly differentiated adenocarcinoma was the commonest histological pattern observed.

Key words: Malignant, Gastric Tumors, Pathology

The malignant tumors of stomach are one of the important causes of morbidity and mortality all over the world because they carry a poor prognosis. In these patients the overall five years survival is seen in 5-15% of cases^{1,2}.

The prevalence rate varies from region to region. It is higher in Japan and Chile as compared to USA and United Kingdom^{3,4}. Various studies conducted in different region show variation in gastric cancer pattern. Environmental and genetic factors play an important role in predisposition to this malignant tumour^{5,7}.

Material and Methods

During the period from January 1994 to June 1996, a total of 32 cases of gastric malignant tumors were diagnosed. They were referred from different hospitals of Lahore. A detailed history, clinical examination, endoscopic and operative findings of each case was obtained. The biopsy specimens were fixed in 10% formaline. After fixation, tissue processing was carried out in order to dehydrate the tissue. Ascending grades of ethanol were used ranging from 50% to 100% and later clearing was done in xylene. The tissues were left overnight in molten wax for impregnation. These were then embedded in paraffin wax blocks. The blocks were cut into sections on a rotary microtome. The thickness of the section was 4-5 microns. The sections were placed on albuminised glass slides and brought to water after passing them through various descending grades of alcohol. Later on, the sections were stained with Haematoxylin and Eosin. Light microscopy was carried out to examine these sections.

Results

A total number of 32 cases of primary gastric malignancies were diagnosed during the period of January 1994 to June 1996. Out of these 32 patients 17 were male whereas 15 were female with male to female ratio 1:13:1. Age ranged from 26 to 75 years in both males and females, with a median age of 50 years.

Most of these patients presented with more than one symptom. The major clinical complaint was pain in epigastrium. Out of 32 patients 20 (62%) presented with this symptom followed by vomiting in 18 patients, weight loss in 10 patients and mass abdomen in 8 patients. Haematemesis and melena was seen in 5 patients (Table 1).

Table 1. Clinical features of patients with gastric cancer (n=32)

Clinical features	n=	%age
Pain in epigastrium	20	62
Vomiting	18	56
Weight loss	10	31
Mass abdomen	8	25
Haematemesis and melena	5	12

The gross features were recorded during endoscopic examination, per-operatively and examination of the submitted specimen. Solid nodular growth was seen in 16 cases (50%) whereas ulcerative lesion was present in 13 patients (40%). It was only in 3 patients (9.4%) where a fungating mass was present.

The gastric site involved for these malignancies in order of frequency was gastric antrum and pylorus 18 patients, body of stomach 8 patients, cardia 4 patients and fundus 2 patients (Table 2). Different histological types of these malignant tumors diagnosed during this study are depicted in Table 3. The most common histological pattern was a poorly differentiated adenocarcinoma in 43.8% of patients followed by signet ring carcinoma, moderately differentiated adenocarcinoma and well differentiated adenocarcinoma. Mucinous adenocarcinoma was only seen in 6.2% of patients (Fig1&2).

Table 2. Distribution of site of lesion in the malignant tumours of stomach (n=32)

Site of lesion	n=	%age
Gastric antrum and pylorus	18	56.2
Gastric body	8	25
Gastric cardia	4	12.5
Fundus	2	6.3

Table 3. Histopathological types of malignant tumours of stomach

Histopathological type	n=	%age
Poorly differentiated adenocarcinoma	14	43.8
Signet ring carcinoma	9	28.1
Moderately differentiated adenocarcinoma	4	12.5
Well differentiated adenocarcinoma	3	9.4
Mucinous adenocarcinoma	2	6.2

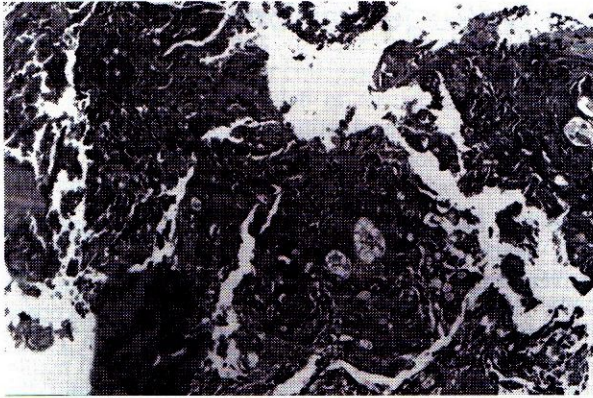


Fig. 1. Photomicrograph of poorly differentiated adenocarcinoma of stomach



Fig. 2. Photomicrograph of signet ring carcinoma of stomach

Table 4. A comparative study of distribution of site in malignant gastric lesions

Site of lesion	Hawley et al	Morson and Dawson	Present study
Gastric antrum and pylorus	51%	47%	56.2%
Body of stomach	23%	23%	25%
Cardia	19.4%	21%	12.5%
Fundus	1.4%	2%	6.3%
Linitis plastica	5.2%	7%	-

Discussion

In this small study, the median age of patients with gastric cancer is around 50 years with a male to female ratio of 1.13:1. The similar ratio was observed by Hawley et al⁸ and Cassell et al¹. They reported male to female ratio 1.85:1 and 2.8:1 respectively in their studies. However, the involvement of male in both these studies was more common when compared with our present study. The site of stomach involved in gastric carcinoma observed in our study was gastric antrum and pylorus, body of stomach,

cardia and fundus in order of frequency. Similar observations were made by Hawley et al⁸ and Morson and Dawson⁹.

According to our study the most common histological pattern was poorly differentiated adenocarcinoma followed by signet ring adenocarcinoma. Both these entities carry a poor prognosis as observed by Brender et al¹⁰. The other histological patterns observed in the order of frequency were moderately differentiated adenocarcinoma and well differentiated adenocarcinoma. These two varieties were placed under tubular carcinoma by Oota¹¹. Initially this pattern was described by Lauren¹² as intestinal type. A well differentiated mucinous adenocarcinoma shows better prognosis when compared with signet ring adenocarcinoma as shown by Brender et al¹⁰ in their studies.

Conclusion

The variation in data showed in various studies regarding carcinoma of stomach could be attributed to environmental, dietary habits, genetic and racial factors. Further work is suggested in different regions and among different ethnic groups in order to understand the etiology and pathogenesis of gastric cancer.

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