

HISTOPATHOLOGICAL STUDY OF GASTRIC ADENOCARCINOMA AT A TERTIARY MEDICAL CENTRE

Pathology

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ABSTRACT

Background: Gastric cancer is the fifth most common cancer among males and seventh most common cancer among females in India. The incidence of gastric cancer in India is low compared to developed countries. Histopathological examination is essential for its diagnosis, prognosis and treatment. **Objectives:** To determine the frequency of gastric adenocarcinoma and compare the histopathologic characteristics of intestinal and diffuse-type gastric adenocarcinoma in patients residing in & around Shivamogga district who were treated at a tertiary referral hospital. **Methodology:** A retrospective study evaluated the pathology reports of patients with gastric adenocarcinoma from June 2014 - Aug 2019. Surgically resected specimens of only stomach cancers (Adenocarcinoma) were included in the study. Biopsy specimens, Benign & other neoplastic lesions were excluded. **Results:** Among the 33 patients 11(33.33%) of which were diffuse-type and 21(63.63%) were intestinal-type. The mean age of the patients with diffuse type gastric cancer was 54 years and 10 (99.90%) of those patients were men. The mean age of the patients with intestinal-type gastric cancer was 67 years & 14 (66.6%) were men. **Conclusion:** In our study tubular type of gastric adenocarcinoma and intestinal type was more common which has good prognosis. Mean age of presentation was 67 years and was more common in males.

KEYWORDS

Gastric cancer; Adenocarcinoma; Histopathology.

INTRODUCTION:

Gastric cancer is the 5th most common cancer among males and 7th most common cancer among females in India¹. The incidence of gastric cancer in India is low compared to developed countries. Histopathological examination is essential for its diagnosis, prognosis and treatment. According to the Lauren classification, the disease is divided into 2 types, diffuse and intestinal, and the latter has a better prognosis².

METHODS:

Source of data: The study was done in Department of Pathology, Shimoga Institute of Medical Sciences, Shivamogga Collection of data: Tissues were fixed in 10% formalin and histopathological slides were stained with Hematoxylin and Eosin.

Inclusion criteria: Surgically resected specimens of only stomach cancers (Adenocarcinoma) were included.

Exclusion criteria: Biopsy specimens, Benign & other neoplastic lesions were excluded.

Study period: 5 years

Number of cases: 33

H&E stained sections of all the cases were examined. After fixation in formalin, dehydration was done with graded alcohol, clearing with chloroform followed by paraffin embedding and section cutting in rotatory microtome. Sections of about 3-5 micrometre thickness was made & stained with H&E staining. All the sections were reported by pathologist. Data was collected and analysed. Results were presented through table given below.

Table 1. Showing anatomical location of gastric cancers

Site	No of cases	Percentage (%)
Cardia/Fundus	4	12.12
Body	9	27.27
Antrum	11	33.33
Pyloric	8	24.24
Total	33	100

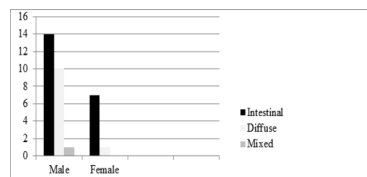
Table 2. Types of Gastric adenocarcinoma (WHO Classification)

Types	No of cases	Percentage (%)
Papillary	0	0

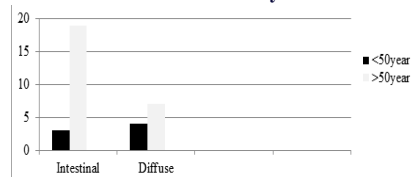
Tubular	16	48.48
Mucinous	2	6.06
Poorly cohesive	5	15.15
Mixed	10	30.30
Total	33	100

Table 3. Type of Gastric adenocarcinoma (LAUREN'S classification)

Type	No of cases	Percentage (%)
Diffuse	11	33.33
Intestinal	21	63.63
Mixed	1	3.04
Total	33	100



Graph 1. Number of cases divided by sex and histologic type.



Graph 2. Number of cases divided by age group and histologic type.



Fig 1. Gastrectomy specimen on cut section shows the grey white tumor area

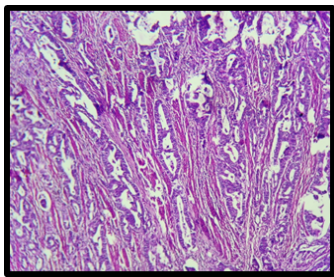


Fig 2. Gastric Adenocarcinoma shows Tubular pattern (H&E Stain ,10X)

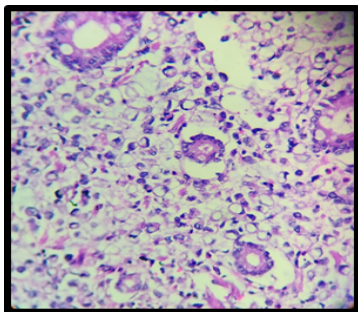


Fig 3. Gastric Adenocarcinoma shows Signet ring cells (H&E Stain , 10X)

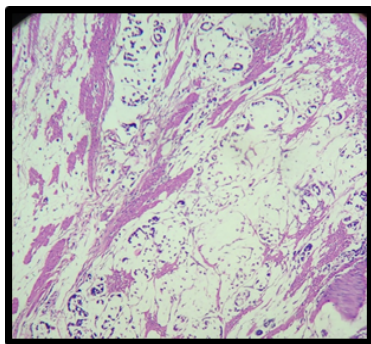


Fig 4. Gastric Adenocarcinoma shows Mucinous type (H&E ,10X)

DISCUSSION:

Gastric cancers have been known since ancient times. Asia accounts for around 73% of gastric cancer cases; of which majority is in China³. The data obtained from the National Cancer Registries indicate that gastric cancer is a leading problem in North-eastern and Southern states of the Indian subcontinent⁴. North-eastern states of India have higher rates of gastric cancer than the rest of the country⁴.

The antrum is the commonest site of gastric adenocarcinoma, but fundal involvement is increasing in recent years. Diffuse involvement of whole stomach is also not uncommon⁵. The most common site of occurrence of gastric tumours in the present study was the antrum (33.33%), followed by the body of the stomach (27.27%) and this is similar to studies by Saha et al., (51.90%)⁶, and Zhou et al., (34%).

The WHO Classification divides gastric adenocarcinoma histologically

1. Tubular
2. Papillary
3. Mucinous
4. Poorly cohesive (Including signet ring cell carcinoma)
5. Mixed

Among which Tubular adenocarcinoma is the commonest subtype, which is comparable to the present study. The Laurens Classification divides gastric cancers mainly into two types- Intestinal & Diffuse. The Intestinal type is more common than the diffuse type. In our study the Intestinal variant of gastric adenocarcinoma was more common seen in 21 cases compared to diffuse type of gastric adenocarcinoma seen in 11 cases. This is similar to study done by M.G. Martinez-Galindo et al.⁷ Also according to TNM classification, T2N1 was

common in intestinal type and T4N3 common in diffuse type. Hence diffuse type has poor prognosis compared to intestinal type of gastric adenocarcinoma.

CONCLUSION:

Gastric cancer remains one of the most frequently occurring and aggressive cancers worldwide. Histopathology of endoscopic biopsy and resected specimen still remains the standard for its diagnosis and confirmation. There is high incidence of local and distant recurrence even in patients with completely resected gastric cancer; which indicates need for multimodality treatment for the gastric cancer.

With current advances in molecular medicine, the role of histopathology including immunohistochemistry, for making therapeutic and prognostic decisions has only increased. Our study highlights about frequency of gastric adenocarcinoma and also compares the histopathologic feature of intestinal type and diffuse type of gastric adenocarcinoma, which could help in the selection of therapeutic modalities.

In our study tubular type of gastric adenocarcinoma (WHO classification) and intestinal type (Lauren's classification) was more common which has good prognosis. Mean age of presentation was 67 years and was more common in males.

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