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Original Article

Histomorphological spectrum of gastric lesion in endoscopic biopsies: An institutional experience

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Abstract
Introduction: *Gastric disorders are one of the most commonly encountered problems in clinical practices. The definitive diagnosis of gastric disorders rest on histopathological confirmation and is one of the gold standard investigation for gastric lesions.*
Materials and Methods: *This prospective observational study of two years duration was carried out to determine the histopathological spectrum of gastric lesion in endoscopic biopsies at tertiary care center. Total 272 consecutive gastric biopsies were included in study.*
Results: *Neoplastic lesions accounted for 64.8% of cases outnumbering non-neoplastic lesions which constituted about 36.15% of cases. Chronic gastritis (68.09%) was the commonest non-neoplastic lesion. Helicobacter pylori positivity was seen in 61% cases of chronic gastritis. In the neoplastic category Adenocarcinoma of intestinal type was the commonest malignancy (98.7%) followed by signet ring carcinoma accounting for 20.13% of cases.*
Conclusion: *Upper GI endoscopy with biopsy helps in the evaluation of chronic gastritis ,detection of Helicobacter pylori, early diagnosis of cancer risk factors especially atrophy, intestinal Metaplasia and dysplasia ,distinguishes benign from malignant gastric ulcers and different types of gastric tumors thus providing wide range of treatment options and possible cure.*
Keywords: *Upper GI endoscopy, Gastric biopsy, Histomorphological spectrum.*

Introduction

Diagnostic endoscopy is an invasive technique but has proved to be a simple, safe and well tolerated procedure[1]. The endoscopic biopsies not only permits exact diagnosis of specific entity but also provides an opportunity to see helicobacter pylori status and plan for specific medical and surgical therapy[2][3]. Gastric carcinoma is the second most common tumour in world. It is the second leading cause of cancer related death [4]. Helicobacter pylori infection is frequently associated with chronic gastritis and gastric malignancy. Early diagnosis of chronic gastritis and gastric malignancy is difficult due to nonspecific symptomatology. Endoscopic screening detect gastric lesions at an early stage

especially atrophy, intestinal Metaplasia and dysplasia so as to prevent progress of these lesions to invasive carcinoma. Upper GI endoscopy with biopsy helps in evaluation of chronic gastritis, detection of H Pylori ,early diagnosis of cancer risk factors, distinguishes benign from malignant gastric ulcers and different types of gastric tumors .It thus provides opportunity for wide range of treatment options and possible cure. The present study aims to provide preliminary data on histomorphological pattern of gastric lesions and their frequency in endoscopic biopsies at tertiary care centre.

Materials & Methods

This prospective observational study of two years duration (Jan 2017 to Dec 2019) was carried out in pathology department of tertiary care centre. Total 272 consecutive gastric endoscopic biopsies were included in the study with complete clinical and endoscopic findings. All the biopsies were subjected to routine H&E staining .Giemsa and PAS staining was done wherever necessary. Biopsies were categorised into neoplastic and nonneoplastic lesions. Updated Sydney system was used for the microscopic reporting of gastritis [5]. All the tumors were classified according to WHO classification [6].

Results

Total 272 cases of endoscopic gastric biopsies were studied at tertiary care centre. Out of 272 biopsies, 12 cases showed unremarkable gastric mucosa.

Patients age varied from 14-89 years. Males were 200 (74%) and female were 72 (26%) with Male: Female ratio of 3.1:1. The majority of the patients were biopsied for either chronic gastritis or suspected gastric tumors.

Antrum (69.4%) and pylorus (16.5%) were the commonest site of involvement followed by cardia (7.33%) and fundus (3.6%). Neoplastic Lesions comprised about 63.84% and non-neoplastic lesions about 36.15% of cases. Neoplastic Lesions were common in our study accounting for 166 cases Fig [1].

In the non neoplastic category (n=94), most common diagnosis was chronic gastritis accounting for 68.09% Fig[2],[3] followed by chronic gastric ulcer (19.15%) & Hyperplastic polyp 12.76% Fig[4]. Helicobacter pylori positivity was seen in 61% of cases of chronic gastritis.

Neoplastic lesions accounted for 166 cases out of which 156 cases (93.98%) were malignant and benign gastric adenoma accounted for 10 cases (6.02%) Fig [5].

In the malignant category, Adenocarcinoma accounted for 98 % of cases. Lauren classification was used to classify Adenocarcinoma into intestinal and diffuse type[5]. In our study intestinal type of Adenocarcinoma Fig[6] was commonest accounting for 78.57% of cases whereas diffuse signet ring carcinoma accounted for 20.13% of cases Fig[7], Mucinous carcinoma and gastric Lymphoma accounted for 1.3% of cases Fig[8].Demographic study revealed intestinal Adenocarcinoma more common in elderly males Fig[9] with male: female ratio of 3.1:1 whereas diffuse signet ring carcinoma was common in females with younger age group Fig[10] with Male :Female ratio of 1:1.6.

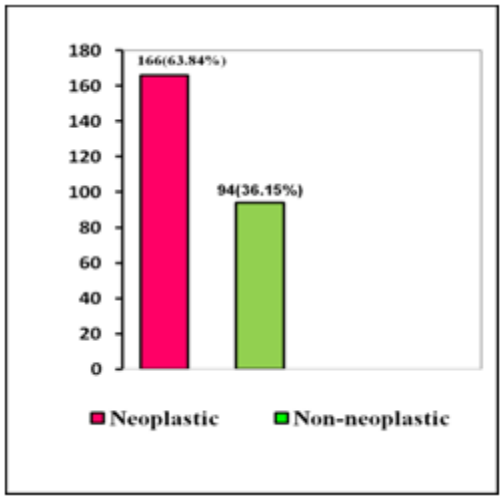

Fig.1 Pattern of Gastric lesions (n=260)

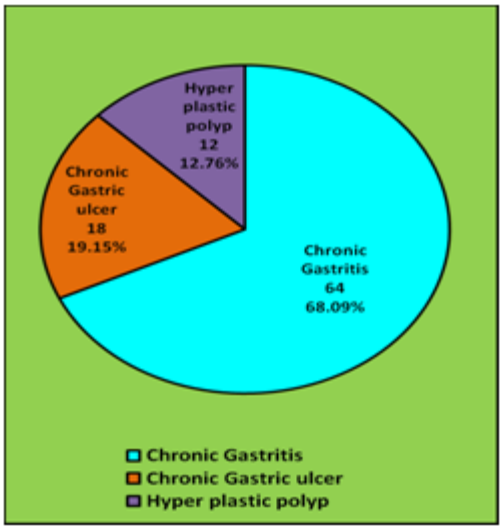

Fig.2 Pattern of non-neoplastic lesions (n=94)

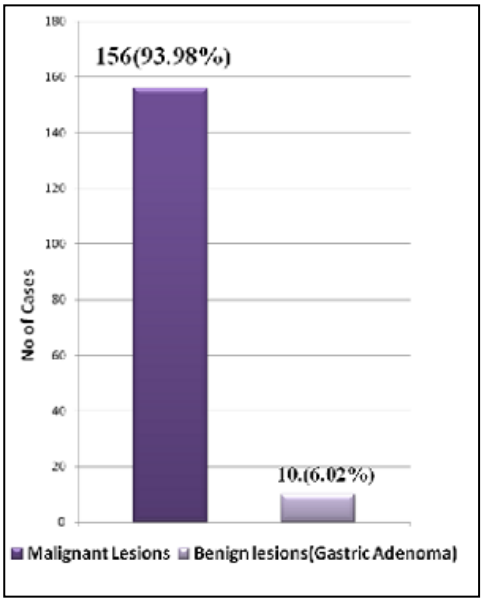

Fig.5 Pattern of neoplastic lesions (n=166)

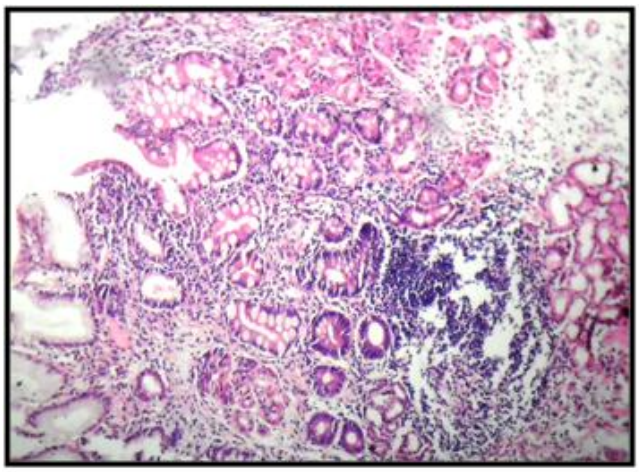

Fig.3 chronic gastritis showing lymphoid aggregates and intestinal Metaplasia

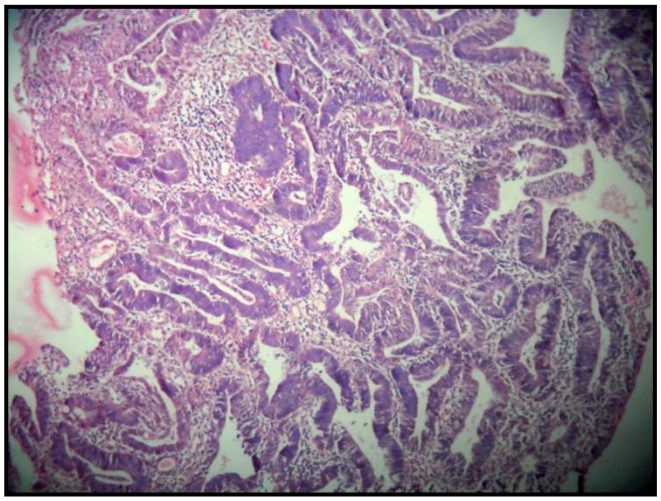

Fig.6 Gastric Adenocarcinoma showing tumor cells arranged in glandular pattern.

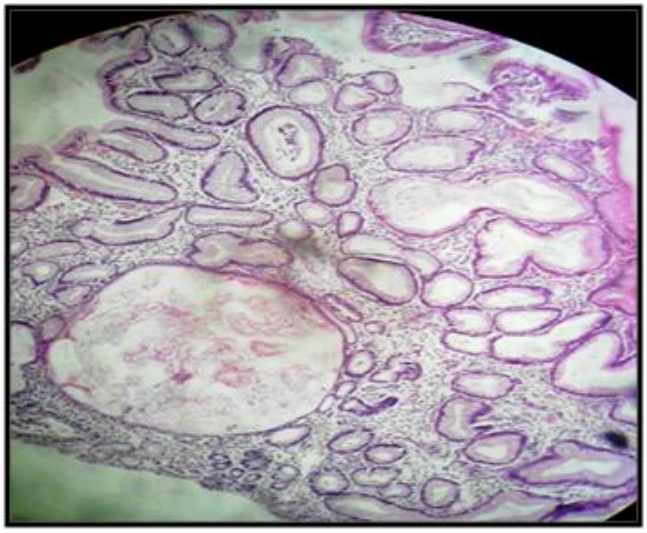

Fig.4 Hyperplastic Polyp showing dilated mucosal glands

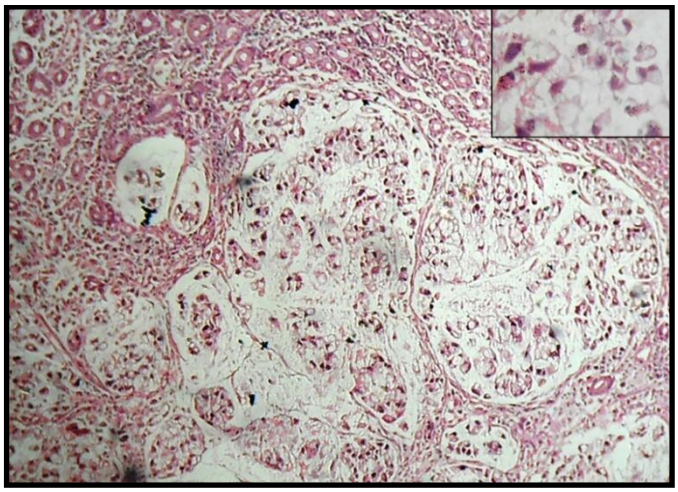

Fig.7 Signet Ring Carcinoma showing dissociated cells with eccentric nuclei forming signet ring cells

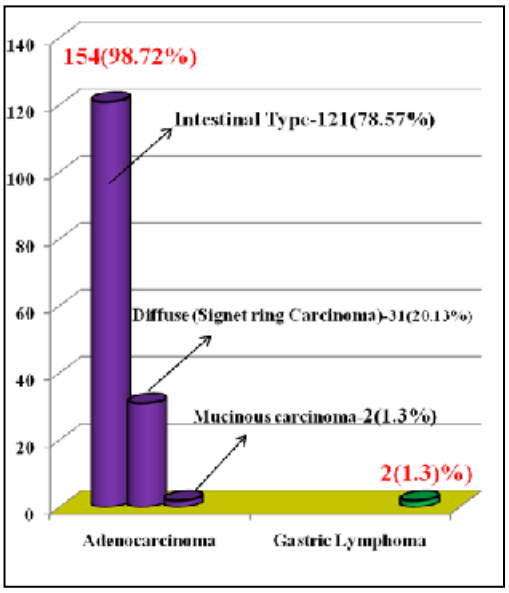

Fig.8 Pattern of Gastric Malignancy (n=156)

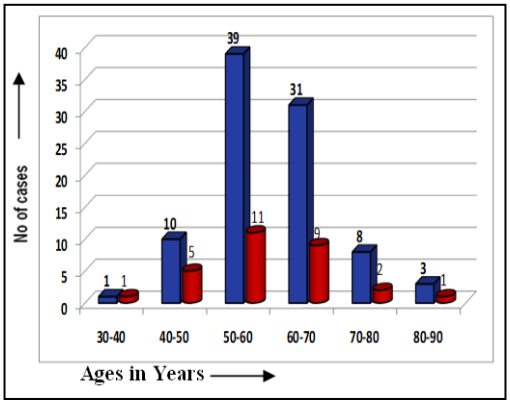

Fig.9 Age & Sex Distribution of Intestinal type

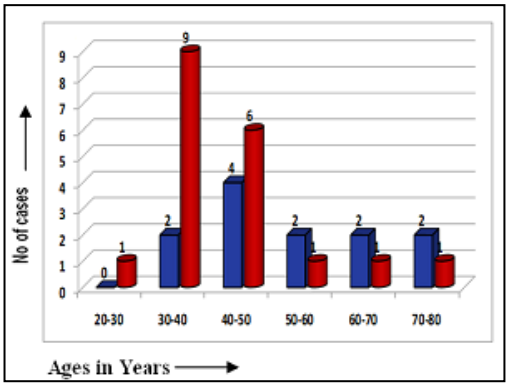

Fig.10 Age & Sex Distribution of Signet ring carcinoma

Discussion

Endoscopic biopsy sampling of gastric mucosa provides valuable information which helps in the diagnosis of various neoplastic as well as non neoplastic lesions [1] [2].

The most common indications for gastric biopsy are to detect gastritis, to know helicobacter pylori status, gastric ulcers and different types of tumors [7] - [10].

Most of the lesions in our study are located at antrum and pylorus and it is comparable to other studies [11] [12]. Nonneoplastic lesion comprised about 36.15%of cases with chronic gastritis being commonest nonneoplastic lesion accounting for about 68.09%of cases followed by gastric ulcers and Hyperplastic polyps. Our findings are near to the findings by Gulia SP et al[13]. In there study chronic gastritis constituted about 75.2% of cases. H Pylori positivity was seen in 61 % of cases in our study. Similar findings were also reported by Prasaad et al [14].In our study neoplastic lesions were common accounting for about 63.84% of case out of which Adenocarcinoma was seen in 93.98% of cases. Lauren classification was used to classify gastric Adenocarcinoma into intestinal and diffuse type[5]. Intestinal Adenocarcinoma accounted for 78.57% of cases while signet ring Adenocarcinoma comprised about 20.13% of cases. Similar findings were seen in studies by Islam et al[15]. In their study gastric Adenocarcinoma constituted about 98.27% of cases. In the study by Islam et al[15] and Gulia SP et al [13] the most common gastric carcinoma was Adenocarcinoma accounting for about 98.2% and 97.3% of cases .Our findings correlate well with the other studies. In our study intestinal Adenocarcinoma was common in elderly males with Male: Female ratio of 3.1:1 whereas signet ring carcinoma was common in young females with male female ratio of 1:1.6.Similiar type of trends was also reflected in study by Gulia SP [13].Mucinous carcinoma and gastric lymphoma each constituted about 1.3% of cases. Similar findings were reflected in the study by Gulia SP [13].

Conclusion

Biopsy sampling of the gastric mucosa at diagnostic endoscopy provides useful information which helps in the diagnosis of various neoplastic and nonneoplastic gastric lesions. Endoscopy is incomplete without biopsy and histopathology is the gold standard for the diagnosis of endoscopically

detected lesions. The definitive diagnosis of gastric disorders rests on histopathological confirmation and is one of the basic for planning proper treatment. To conclude endoscopy is incomplete without biopsy and the combination of both provides powerful diagnostic tool for better patient management.

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