



Histopathological Study of Endoscopic Biopsies

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ABSTRACT

Introduction: Diseases of upper gastrointestinal tract are responsible for a great deal of morbidity and mortality. The histopathological study of endoscopic biopsies permits exact diagnosis for further management. The aim of this study is to find out the histopathological pattern of endoscopic biopsy.

Methods: A descriptive study was conducted in consecutive endoscopic gastric biopsies in a Hospital over a period of one year. The patient of all ages and both sexes who underwent gastric biopsy during the study period was included.

Results: Endoscopic biopsies were studied on patients of age ranging from 20 years female to 84 years male. The histopathology revealed non-neoplastic lesions 54 (67.5%) and neoplastic lesions 26 (32.5%). Most common non-neoplastic lesion noted was mild chronic gastritis 22 (27.5%) followed by chronic active gastritis 15 (18.75%) while *H. pylori* was present in 13 (16.25%) and absent in 2 (2.5%).

Conclusions: Mild chronic gastritis was the commonest lesion noted in non-neoplastic lesions and adenocarcinoma was the commonest neoplastic lesion in the endoscopic gastric biopsies.

Keywords: biopsy; endoscopy; gastritis; histopathological.

INTRODUCTION

Diseases of upper gastrointestinal tract are responsible for a great deal of morbidity and mortality. The term gastritis should be reserved for histologically documented inflammation of the gastric mucosa. Gastritis is simply defined as inflammation of the gastric mucosa. Inflammation may be predominantly acute, with neutrophilic inflammation, or chronic, with lymphocytes and/or plasma cells predominating and associated intestinal metaplasia and atrophy.¹ Gastritis has been classified in several ways, which differ from one country to another, sometimes from one department to another and even within a single institution, depending upon the investigator concerned. In order to avoid confusion, Sydney system has been proposed for the microscopic reporting of gastritis.²

The upper gastrointestinal flexible fibroptic endoscope was first used in 1968 and proved to be a major breakthrough in the diagnosis of oesophago-gastro duodenal lesions.³ The histopathological study of endoscopic biopsies permits exact diagnosis for further management. It also provides an opportunity to see *Helicobacter pylori* status and plans for specific medical or surgical therapy. It can detect the early stages of the neoplastic lesions and may prevent the progression of these lesions to invasive cancer.^{4,5} The aim of this study is to find out the histopathological pattern of endoscopic biopsy.

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METHODS

A descriptive study was conducted in consecutive endoscopic gastric biopsies in the Department of Pathology of Medicare National Hospital and Research Centre from 1st April 2011 to 30th April 2012. Patient of all ages and both sexes having undergone gastric biopsy were included in the study. The biopsy specimens were fixed in 10% formalin and routinely processed. Paraffin wax sections were cut at 4 micron thickness and stained with Haematoxylin and Eosin (H&E) stain and with special stain Giemsa when needed. All these biopsies were graded morphologically according to updated Sydney System. Majority of the biopsies were taken from different part of the stomach as per the recommendation (Sydney System). Activity was accounted by the presence of polymorph neutrophils in the lamina propria, within the epithelium and within the foveolar lumen.² The tumors were classified according to the WHO classification of gastric tumors. The data were entered into Microsoft Excel 2010 and descriptive analysis was done.

RESULTS

In the present study, endoscopic biopsies were studied on patients of age ranging from 20 years female to 84 years male. Among the non-neoplastic lesions age ranged from 23 years to 84 years and in neoplastic lesions 45 to 77 years. A slight high frequency of the gastric disease in males with male to female ratio of 1.28:1 was observed. The majority of the patients were biopsied for either gastritis or tumors of stomach. The histopathology revealed non-neoplastic lesions 54 (67.5%) and neoplastic lesions 26 (32.5%). Most common non-neoplastic lesion noted was mild chronic gastritis 22 (27.5%) followed by chronic active gastritis 15 (18.75%) while *H. Pylori* was present in 13 (16.25%) and absent in 2 (2.5%). Atrophy was noted in 6 (7.5%) of cases of chronic active gastritis (Table 1).

Table 1. Distribution of cases on the basis of morphology

Category of non neoplastic lesions	n (%)
Mild Chronic Gastritis	22 (27.5)
Chronic Active Gastritis	15 (18.5)
Chronic Superficial Gastritis	9 (11.25)
Benign Gastric Ulcer	4 (5)
Granulomatous Gastritis	1 (1.25)
Hyperplastic Polyp	3 (3.75)

Dysplasia and metaplasia were however not present in the cases of gastritis. Chronic superficial gastritis was noted in nine (11.25%), benign gastric ulcer was

noted in four (5%), hyperplastic polyp was noted in three (3.75%) and granulomatous gastritis was noted in one (1.25%). Amongst the neoplastic lesions all were malignant lesions, while most malignant lesions were adenocarcinoma 19 (23.75%) followed by seven (8.75%) cases of squamous cell carcinoma (Table 2).

Table 2. Distribution of cases on the basis of morphology

Category of neoplastic lesions	Site	n (%)	Age range (years)
Moderately differentiated adenocarcinoma	Antum	15 (18.75)	45-77
Well differentiated adenocarcinoma	Antum	2 (2.5)	57-67
Poorly differentiated adenocarcinoma		1 (1.25)	75
Early gastric carcinoma	Antum	1 (1.25)	63
Moderately differentiated squamous cell carcinoma	Antum	7 (8.75)	52-76

Almost all neoplastic lesions were from antrum except for seven cases of squamous cell carcinoma taken from gastro esophageal junction.

DISCUSSION

Biopsy sampling of the gastric mucosa at diagnostic endoscopy provides useful information which helps in the diagnosis of various lesions. The most common indications for gastric biopsy are; to detect various types of gastritis along with evidence of *Helicobacter pylori* status, gastric ulcers and different tumors.

The present study has shown preponderance of non-neoplastic gastric lesions with 27.5% of mild chronic gastritis and 18.75% cases of chronic active gastritis. *Helicobacter pylori* was positive in 16.25% cases out of 18.75% cases of chronic active gastritis. *H. pylori* negative chronic gastritis cases could be due to intake of proton pump inhibitors prior to endoscopic biopsy or failure to see *Helicobacter pylori* in the tissue specimens.

Majority of our cases of chronic active gastritis (16.25%) also showed *H. pylori* infection and correlated with presence of neutrophils and lymphocytes in the lamina propria which showed similar results with the study by Afzal et al.⁶ Similar study by Schultz et al, showed 87% cases having chronic active gastritis, and

87.7% gastric biopsies were positive for *H. pylori*.⁷ In other series overall infectivity of *H. pylori* was 83% in adult population undergoing GI endoscopy for various reason.^{8,9} In present study biopsy included majority of representative tissues from antral mucosa. It is suggested that careful examination of four specimens (two antral and two corpus) has a high probability of establishing the correct *H. pylori* status. Corpus biopsies are particularly valuable for yielding positive results after treatment.^{10,11} *H. pylori* associated chronic active gastritis also revealed atrophic changes in six (7.5%) cases, similar with the study by Afzal et al. which showed atrophic and intestinal metaplastic changes in 47 (10%) out of 472 cases.⁶

In present study, gastric biopsy revealed malignant tumors in 26 (32.5%) cases which were clinically also suspected of tumors. A diagnostic yield of over 95% has been claimed for endoscopic gastric biopsy undertaken for a suspected neoplasm especially in the advanced stages. In a study done by Plummer et al showed adenocarcinoma as a common gastric malignancy, common location being the antrum (56%) which is comparable with our study.¹²

Early gastric carcinoma was one (1.25%) and carcinoma at gastro-esophageal junction was seven (8.75%) in

our study which are similar with the study by Plummer et al where early gastric carcinoma (2.8%) and tumors at gastro-esophageal junction four (1.8%) out of total 216 cases.¹²

Gastric carcinoma is uncommon before the age of 40 years, but thereafter, its incidence increases progressively with increasing age, peaking in the seventh decade of life.¹³ The data reflects this global trend for most part, with the disease in our patients being commonest between the ages of 45 to 77 years.

This is a single centered study, to draw clearer picture on this, a multicenter study is needed.

CONCLUSIONS

A variety of non-neoplastic and neoplastic lesions were reported in the present study across a wide age and site distribution. Mild chronic gastritis was the commonest lesion noted in non neoplastic lesions and adenocarcinoma was the commonest neoplastic lesion in the endoscopic gastric biopsies. All above findings correlated well with that of similar studies.

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