

ORIGINAL RESEARCH

Histomorphological Spectrum of Endoscopic Biopsies in Upper Gastrointestinal Lesions

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ABSTRACT

Background: Disorders of the upper gastrointestinal tract are frequent symptoms in clinical practice and are associated with high rates of death and morbidity. The present study evaluated histomorphological spectrum of upper gastrointestinal lesions. **Materials & Methods:** 76 upper GIT endoscopic biopsies of both genders underwent standard tissue processing, including fixing in 10% buffered formalin, cutting tissue into sections that were 3–4 microns thick, and staining with hematoxylin and eosin. Acid-Fast and periodic Acid Schiff (PAS) staining were carried out. **Results:** Out of 76 cases, males were 40 and females were 36. Out of 24 neoplastic lesions, 8 belonged to esophagus, 4 stomach and 2 duodenum. Out of 52 non-neoplastic lesions, 6 were of esophagus, 14 were of stomach and 18 were of duodenum. The difference was significant ($P < 0.05$). There was correlation of endoscopic and histopathological findings of oesophageal lesions ($P < 0.05$). **Conclusion:** An efficient investigative technique for evaluating patients with upper gastrointestinal symptoms and obtaining representative biopsies is upper gastro-intestinal endoscopy. Upper GI endoscopy helps in early detection of mucosal lesions, diagnosis of the carcinoma at early stage and confirmation of clinically suspected cases leading to early clinical management.

Key words: endoscopy, gastro-intestinal tract, Biopsy

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INTRODUCTION

Disorders of the upper gastrointestinal tract are frequent symptoms in clinical practice and are associated with high rates of death and morbidity.¹ The mouth cavity, esophagus, stomach, and duodenum make up the upper gastrointestinal system. Numerous abnormalities, which are roughly categorized as congenital malformations, infections, inflammation, benign and malignant neoplasms, can impact the UGT.²

Endoscopic biopsies of the upper gastrointestinal tract (GIT) are medical procedures that involve the use of an endoscope to obtain tissue samples from various parts of the upper digestive system for diagnostic purposes. The upper GIT includes structures such as the esophagus, stomach, and duodenum (the initial part of the small intestine). These biopsies are performed to evaluate a variety of conditions, including inflammation, infection, cancer, and other gastrointestinal disorders.³

The biopsy specimen's information can be used by histopathology to make a conclusive diagnosis. The

early detection of mucosal lesions by histological analysis, particularly different metaplasia and dysplasia, can assist to stop the spread of cancer or to treat it, increasing the likelihood of a successful cure.⁴ India is home to 0.31% of all cancer cases globally, with stomach cancer coming in at number eight and colorectal cancer at number four, respectively, impacting 0.03% and 0.01% of the global population. Endoscopic biopsies are invasive procedures, yet they are regarded as the best way to identify UGT tumours. Correlating with the clinical data benefits the pathologist and clinician as well.⁵ The present study evaluated histomorphological spectrum of upper gastrointestinal lesions.

MATERIALS & METHODS

The present study consisted of 76 upper GIT endoscopic biopsies of both genders. Ethical clearance was obtained before starting the study.

Data such as age, duration of symptoms was recorded. All biopsy samples underwent standard tissue processing, including fixing in 10% buffered

formalin, cutting tissue into sections that were 3–4 microns thick, and staining with hematoxylin and eosin. Acid-Fast and periodic Acid Schiff (PAS)

staining were carried out. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 76		
Gender	Males	Females
Number	40	36

Table I shows that out of 76 cases, males were 40 and females were 36.

Table II Distribution of biopsies

Lesions	Esophagus	Stomach	Duodenum	P value
Neoplastic	8	14	2	0.05
Non- neoplastic	6	28	18	0.04

Table II shows that out of 24 neoplastic lesions, 8 belonged to esophagus, 4 stomach and 2 duodenum. Out of 52 non- neoplastic lesions, 6 were of esophagus, 14 were of stomach and 18 were of duodenum. The difference was significant (P< 0.05).

Graph I Distribution of biopsies

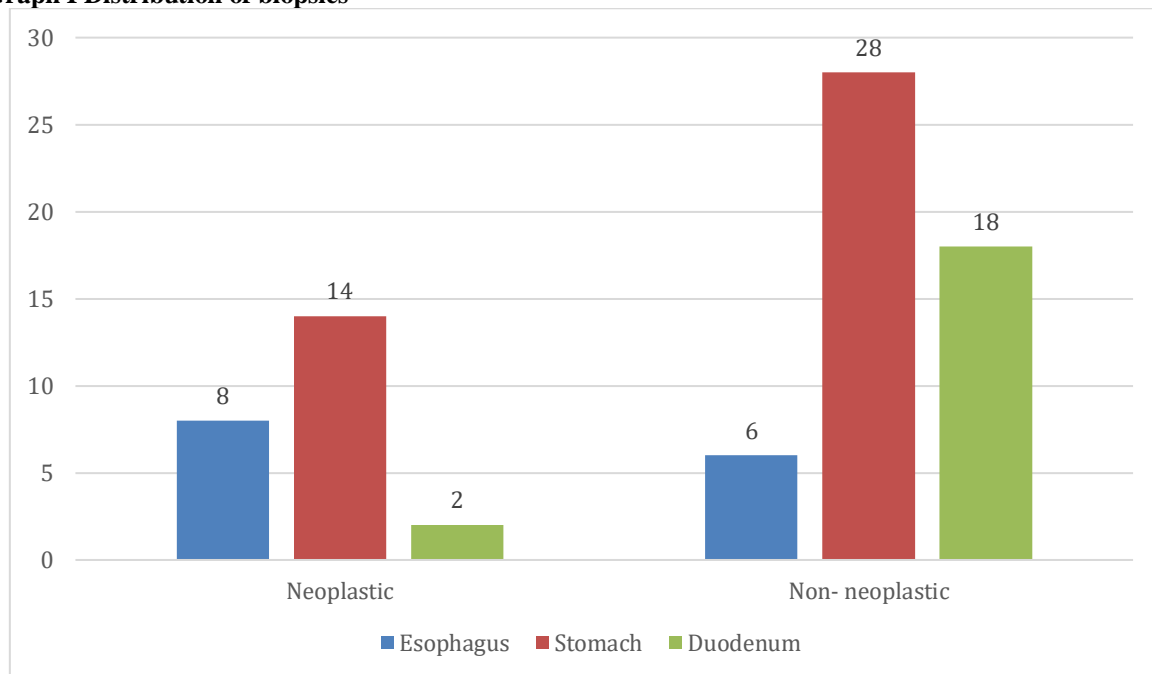


Table III Correlation of endoscopic and histopathological findings

Endoscopic findings	Histopathological Findings			Total
	Esophagitis	Dysplasia	Carcinoma	
Ulceroproliferative lesion	0	0	1	1
Oedema	1	1	0	2
Erythema	2	0	0	2
ulcer	1	0	0	1

Table III shows that there was correlation of endoscopic and histopathological findings of oesophageal lesions (P< 0.05).

DISCUSSION

The upper gastrointestinal (UGI) tract spans from the oesophagus to the duodenum (second part), and the development of upper digestive tract endoscopy has boosted the diagnostic yield over time.⁶ The illnesses of the upper gastrointestinal tract are very common, and patients can exhibit a wide range of symptoms,

including difficulty swallowing, pain when eating, nausea, vomiting, dyspepsia, and weight loss. It is well recognized that disease load has an impact on health care costs by lowering quality of life. Flexible, fiberoptic endoscopy is utilized to see within the digestive tract and collect the specimen. Early diagnosis of esophago-gastroduodenal lesions

depends heavily on endoscopic biopsy in conjunction with histological analysis.⁷ Endoscopic biopsies of the upper GIT are commonly used to diagnose conditions such as gastroesophageal reflux disease (GERD), gastritis, ulcers, celiac disease, and various types of gastrointestinal cancers.⁸ The procedure is generally safe, but there are potential risks, including bleeding, infection, and perforation (a rare complication where the endoscope creates a hole in the digestive tract).⁹ The present study evaluated histomorphological spectrum of upper gastrointestinal lesions.

We found that out of 76 cases, males were 40 and females were 36. In 2941 patients with GI lesions, Sunita et al¹⁰ investigated the distribution of non-neoplastic and neoplastic gastrointestinal lesions as well as the relationship between age, sex, and the sites of different lesions. throughout 17% of the 21831 histology samples that were obtained throughout the course of the four years were GIT lesions. Appendix samples made up the majority of the 3738 GI specimens, followed by gastric samples (23.2%), small intestine samples (18.9%), and appendix samples (26.9%). The majority of GI lesions (94.5%) were non-neoplastic, while 5.5% were cancerous. Male to female patients was 1.2:1, with more men than women. The age range of 21 to 40 years saw the highest prevalence of non-neoplastic lesions, while the range of 50 to 70 years saw the highest incidence of neoplastic lesions.

We observed that out of 24 neoplastic lesions, 8 belonged to esophagus, 4 stomach and 2 duodenum. Out of 52 non- neoplastic lesions, 6 were of esophagus, 14 were of stomach and 18 were of duodenum. Theresa et al.'s¹¹ study included 152 cases of upper gastrointestinal tract biopsies, of which 113 cases involved the stomach, 22 cases the esophagus, and the remaining 17 cases the duodenum. According to the data from 152 UGT biopsies, 137 of the tumors were not cancerous and only 15 were. The age group that was most frequently afflicted was 31 to 40 years, then 41 to 50 years. According to the current study, men were more frequently impacted than women. Six of the 22 instances from esophageal biopsies had neoplastic lesions, while 16 had non-neoplastic lesions.

There was correlation of endoscopic and histopathological findings of oesophageal lesions ($P < 0.05$). 55 patients in all were analyzed by Shubhangi Agale et al¹²; of those, 37 (69.8%) were men and 16 (30.1%) were women. In the fourth and fifth decades, the majority of malignant cases were diagnosed. 32 biopsies from the duodenum, 16 from the stomach, and 5 from the esophagus—a total of 60.3%—were included in the study. Nine cases (17%) had neoplastic diagnoses; eight of these instances were adenocarcinomas and one had squamous cell carcinoma (SCC). There were 44 cases in the non-neoplastic category (or 83%)

Thapa et al¹³ found out the histopathological pattern of endoscopic biopsy. 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%).

Jonnalagadda et al¹⁴ in their study the Upper GI Endoscopy includes 18 Esophageal of which 7 (38.9%) are neoplastic and 11 (61.1%) are non-neoplastic and particularly SCC is noticed in 5 (71.4%), mostly from the middle third of esophagus. Similarly Gastric biopsies showed 25 (71.4%) non neoplastic and 10 (28.6%) neoplastic and the commonest presentation being Adenocarcinoma. *H Pylori* is present in 10 (40%) and absent in 15 (60%) of all gastric lesions and coming to 15 duodenal biopsies, 10 are non-neoplastic (66.7%) and 5(33.3%) are neoplastic and 4 are adenocarcinomas.

CONCLUSION

Authors found that an efficient investigative technique for evaluating patients with upper gastrointestinal symptoms and obtaining representative biopsies is upper gastro- intestinal endoscopy. Upper GI endoscopy helps in early detection of mucosal lesions, diagnosis of the carcinoma at early stage and confirmation of clinically suspected cases leading to early clinical management.

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