

Histopathological Spectrum of Upper Gastrointestinal Lesions in a Tertiary Care Centre of Gujarat: A Retrospective Cross-Sectional Analysis

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Abstract: *This comprehensive histopathological study of 91 upper gastrointestinal tract (GIT) biopsy specimens received at a tertiary care centre highlights a wide spectrum of both non-malignant, benign and malignant lesions, spanning various age groups. **Aim:** Histopathological evaluation of upper gastrointestinal lesions among patients treated at a tertiary care centre in Gujarat. **Method:** Retrospective observational study of total 91 upper gastrointestinal biopsies was conducted at Histopathology laboratory, Department of Pathology from January 2022 to December 2023. **Result:** Most esophageal lesions (83.78%) are malignant, predominantly squamous cell carcinoma, while Barrett's esophagus and inflammatory lesions account for a small fraction. In the stomach and duodenum, the majority of lesions are nonneoplastic inflammatory conditions (gastritis and duodenitis), with very few gastric malignant cases (each 2%). Middle-aged males were most commonly affected, with a notable association between lesion type and gender. **Conclusion:** The findings emphasize the importance of early diagnosis and improved clinical management to reduce disease progression and overall GI-related health burden.*

Keywords: Upper GIT, Esophagus, stomach, duodenum, malignancy, squamous cell carcinoma

1. Introduction

Globally, gastrointestinal cancers are a significant cause of morbidity and mortality, accounting for approximately 12.9% of all malignancies.^[1] In India, GI malignancies contribute to 182,000 of the approximately 682,000 annual cancer-related deaths^[2]. According to national cancer registry, oesophagus and gastric cancers are most frequently found in men while oesophageal cancers rank 3 in women.^[3] The upper gastrointestinal flexible Fiber optic endoscope was first used in 1968 and was a breakthrough in the diagnosis of GIT lesions.^[4] The major indications for upper GIT endoscopic biopsy include evaluation of dyspepsia, odynophagia, dysplasia, peptic ulcer disease, infections, inflammatory disorders, vascular disorders, mechanical conditions, toxic and physical reactions, including radiation injury and neoplasms.^[5] Upper GI endoscopy in combination with biopsy plays an important role in the early diagnosis of GI neoplasms and provides an opportunity for a broad range of treatment options as well as potential for possible cure. The endoscopic biopsies are performed not only for diagnosis of the disease but also for monitoring the course, determining the extent of a disease and responses to therapy for the early detection of complications.^[5]

Aim and Objectives

To analyse the frequency distribution and histopathological spectrum of gastrointestinal lesions at a tertiary care centre, and to evaluate their characteristics with respect to inflammatory, infectious, and neoplastic aetiologies, along with age, gender, and anatomical site-wise distribution of non-neoplastic, benign, and malignant lesions.

2. Materials and Method

All tissue samples were fixed in 10% neutral buffered formalin, processed using routine histotechnical methods, and stained with H&E and special stains (PAS, AFB) for microscopic examination. Clinical details were retrieved from records, and histopathological findings were evaluated under light microscopy with re-staining performed, when necessary, followed by clinicopathological correlation.

Inclusion Criteria: Specimens from patients of all age groups and both sexes, with adequate tissue for histopathological evaluation from both endoscopic biopsies and surgical resections with complete clinical and radiological data available in the medical records.

Exclusion Criteria: Inadequate biopsies and poorly fixed biopsies

Ethics: This is a Retrospective, observational study and any intervention were not done. The study was undertaken after the Institutional Ethics Committee gave its approval.

3. Result

The current study demonstrates that out of 91 total cases, showing a significant male predominance in upper Gastrointestinal Tract (GIT) lesions, with males accounting for 66% of cases compared to 34% in females. The majority were non-neoplastic lesions 62.6%, while malignant lesions constituted 37.4%, with no benign neoplasms reported. The stomach contributed the highest number of cases (55%), predominantly non-neoplastic (52.7%), with a small

proportion of malignancies (2.2%). The esophagus accounted for 40.7% of cases and showed a higher burden of malignancy (35.2%) compared to non-neoplastic lesions (5.5%). All duodenal lesions (4.3%) were non-neoplastic, with no neoplastic cases observed.

The esophageal lesions were predominantly malignant, with malignancy accounting for 83.78% of cases, while non-neoplastic lesions such as inflammatory changes and Barrett esophagus were less common. In the stomach, the vast majority of cases were non-neoplastic, with gastritis comprising 96%, and only a small proportion of malignancies (adenocarcinoma and GIST, 2% each). All duodenal lesions were non-neoplastic, with 100% showing inflammatory pathology. Overall, malignant lesions were most frequent in the esophagus, whereas benign inflammatory lesions predominated in the stomach and duodenum.

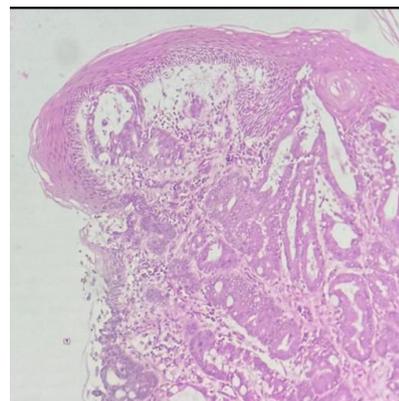
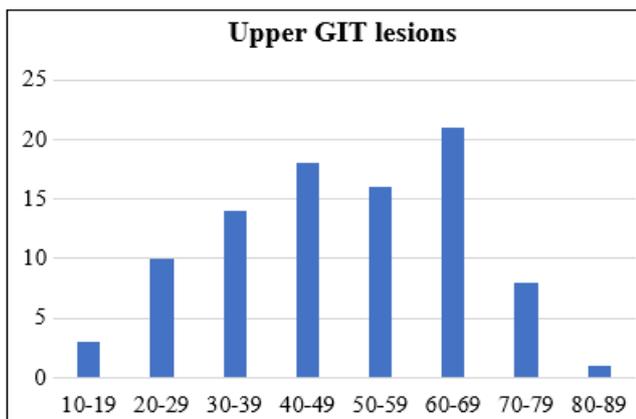
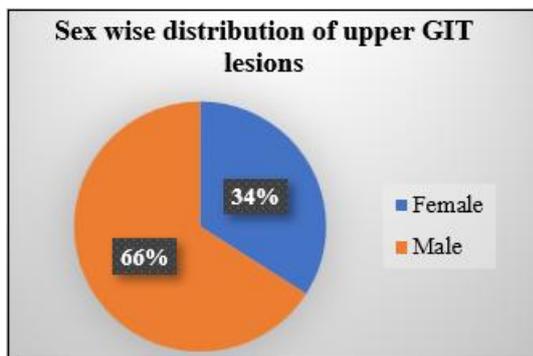


Figure 1: H&E slide showing Barrett's esophagus in a 60-year female



Graph 1: Age wise distribution of the upper GIT lesions shows maximum prevalence in the middle age (30 years to 69 years)



Graph 2: Sex wise distribution shows high male preponderance of the lesions in the upper GIT amounting to 66% of the cases

4. Discussion

The comparative analysis of esophageal lesions between the study by Ganga H et al. (2018) [6] and the present study reveals both concordance and notable variations in lesion distribution patterns. In both studies, malignancy remains the most frequent diagnosis, reflecting the serious nature and clinical relevance of esophageal cancer. Ganga H et al. [6] reported malignancy in 53.33% of cases, whereas the current study shows an even higher incidence of 83.78% (31 out of 37 cases), suggesting a rising trend or possibly a referral bias toward more advanced cases in the current setting. The incidence of high-grade dysplasia dropped from 10% in the earlier study to 2.7% in the current one, while low-grade dysplasia and dysplasia associated with Barrett's esophagus, previously reported in 6.66% and 3.33% of cases respectively, were completely absent in the present study. This could be attributed to better surveillance practices or differences in diagnostic criteria or sample size. Barrett's esophagus was found in 6.66% of cases in the 2018 study and only in 2.7% in the current one. This mild decline may be due to differences in endoscopic biopsy practices or population dietary/lifestyle factors affecting gastroesophageal reflux prevalence. Interestingly, inflammatory lesions were similarly noted in both the studies, more common in the present study (10.8%) compared to the previous one (10%). The present study (2025) shows a higher frequency of gastritis (96%) compared to Ganga H et al. (2018) [6] (90.67%), while Sharma S et al. [7] reported a lower incidence (31.42%) due to broader lesion classification. Malignancy was lower in the present study (2.0%) compared to Ganga H et al. [6] (7.53%) and Sharma S et al. [7] (40%), with one case of GIST noted only in the current study. Overall, benign inflammatory lesions predominated, unlike Sharma S et al. [7], where gastric malignancies were more common, likely due to differences in study populations and referral patterns. Among 34 duodenal lesions, only 4 cases of chronic nonspecific inflammation were observed in the present study. In contrast, Ganga H et al. (2018) [6] reported chronic duodenitis in 70.5% of cases, along with polyps and malignancies, which were absent in the current study- likely due to differences in demographics, diagnostic criteria, and inclusion patterns.

5. Conclusion

Histopathological spectrum included non-neoplastic 57 (62.6%) to neoplastic 34 (37.4%) lesions. Overall, the

findings indicate a shift toward a higher burden of malignant lesions in the current study. The incidence of non-neoplastic lesions is more than neoplastic lesions. This could reflect changes in referral patterns, population risk factors, or healthcare access. Continued surveillance and early detection efforts, particularly for premalignant conditions like dysplasia and Barrett's esophagus, remain essential.

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