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Histopathological Spectrum of Upper Gastric Endoscopic Biopsies: An Institutional Experience of Two Years, Retrospective Study

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Abstract | **Original Research Article**

Introduction: The upper gastrointestinal tract which extends from oesophagus to duodenum spanning a length of 80 cms, is a common site for numerous pathological processes from non-neoplastic, pre-neoplastic to neoplastic. Endoscopic biopsies play an important role not only for the diagnosis of the disease but also for monitoring the course, determining the extent of a disease, in responses to therapy and for early detection of complications. ***Methods:*** The present study was undertaken in 200 histopathological endoscopic biopsy specimens of upper gastrointestinal tract to provide a fairly good estimate of the spectrum of various gastrointestinal lesions. There were 110 male and 90 female patients with male predominance. The age range of 20 - 60 was observed and majority of cases were in 5th decade of life. ***Results:*** Out of total 200 endoscopic biopsies, the most commonly encountered were from stomach, accounting to 90 cases followed by oesophagus 60 cases and duodenum 50 cases. Majority of the lesions in oesophagus showed candidiasis (17 patients), in stomach showed chronic nonspecific gastritis (42 patients) and in duodenum again it was chronic nonspecific duodenitis (16 patients). ***Conclusion:*** Hence in the present study various non neoplastic and neoplastic lesions were found in the upper gastrointestinal tract which definitely emphasises on the benefits of early detection of gastrointestinal lesions by endoscopic biopsies and for its further management by the surgeons.

Keywords: Endoscopic biopsy, gastrointestinal lesions, neoplastic, non-neoplastic.

INTRODUCTION

Upper Gastrointestinal tract disorders are one of the most commonly encountered problems in clinical practice with a high degree of morbidity and mortality and endoscopic biopsy is common procedure performed in the hospital for a variety of benign and malignant lesions[1]. Various pathology involving the upper gastro intestinal tract manifest with a similar group of symptoms which are difficult to assess clinically. There are several diagnostic investigations available in the evaluation of these symptoms where endoscopy is performed as the initial diagnostic test [2]. Introduction of the endoscopes in 1960's has greatly improved the diagnostic facility for fiberoptic endoscopy because they are readily accessible and can easily be sampled for specific histopathological or microbiologic investigation with available biopsy forceps. Tissue specimen can be removed from the lesions under direct vision using biopsy forceps. The procedure causes minimal discomfort and thus can be repeated. Histopathological study of biopsy specimens are used to confirm endoscopic diagnosis in suspected malignancy or to rule out in the endoscopically benign appearing lesion 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. It generates biopsies from the sites that were previously inaccessible, without the major resection. Biopsies are taken to establish a specific diagnosis or to follow the evolution of a particular lesion or disease. It also helps to determine the extent and severity of a disease, to determine the response to therapy and to detect cancers or their premalignant stages. Endoscopic practice is undergoing a revolution with the development of much more accurate video-endoscopy, magnifying endoscopy and techniques such as chromo-endoscopy, auto fluorescence imaging and narrow band imaging [3].

MATERIAL AND METHODS

A total of 200 upper gastrointestinal endoscopic biopsy specimens of patients were sent to

the department of pathology for histopathological examination in a span of last 2 years from December 2017 to December 2019. The procedures undertaken to obtain these specimen were only restricted to endoscopy. All the specimens were fixed in 10% Formalin and were processed to make paraffin embedded tissue blocks and then sectioned. All specimen sections were stained with haematoxylin and eosin and where ever necessary stained with special stains like PAS and GMS stain to shows the presence any parasites. Strict morphologic diagnostic criteria were used for the diagnosis of all the pathologies. Data were obtained retrospectively and subjected to statistical analysis.

Inclusion criteria

1. Age : 20 years to 60 years
2. Gender: both male and female
3. Site of biopsy: Esophagus, stomach, and upper part of the duodenum

Exclusion criteria

1. Age: Below 20 years and above 60 years
2. Site: Mouth, oro-pharynx, liver, gallbladder, and spleen
3. Procedure: other than upper GI endoscopy

RESULTS

Table-1: Age and gender distribution

Age	Male (Percentage)	Female (Percentage)
20-29	10 (09.09 %)	00 (00.00 %)
30-39	10 (09.09 %)	05 (05.55 %)
40-49	35 (31.81 %)	40 (44.44 %)
50-60	55 (50.00 %)	45 (50.00 %)
Total	**110 (100.00 %)**	**90 (100.00 %)**

A total of 200 cases were taken. There were 110 (55%) male patient and 90 (45%) female patients with male predominance. An age range of 20- 60 years was observed. Majority of the cases were in age group of 50-60 years, where 55 were male patients and 45 were female patients. In the age group of 20 -29 years only 10 male patients were found and no female patients were found in the same age group. Similarly, in the age group of 30 – 39 years 10 male were found whereas only 05 female patients were found in the same age group. The second majority of the patients both male and female were found in the age group of 40- 49 years that is 55 and 45 patients respectively.

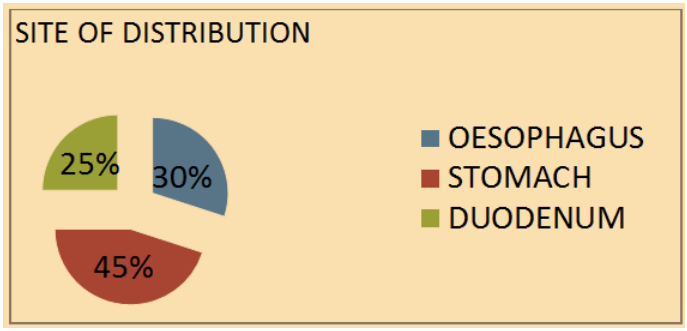

Diagram-1: Site of distribution

Site wise distribution of endoscopic biopsies were Oesophagus 60 cases (30.00%), Stomach 90 cases (45.00%), duodenum 50 cases (25.00%). The diagram representing that in present study majority cases or biopsies were obtained from stomach, second majority cases were obtained from the oesophagus and duodenum is the least site of the biopsy comprising of only 25 % of the total cases.

Table-2: Distribution of the lesions in esophagus

Diagnosis	Number (%)	Male (%)	Female (%)
Squamous cell carcinoma	16 (26.66 %)	11 (29.72 %)	05 (21.73 %)
Dysplasia	13 (21.66 %)	09 (24.32 %)	04 (17.39 %)
Candidiasis	17 (28.33 %)	10 (27.02 %)	07 (30.43 %)
Chronic nonspecific esophagitis	12 (20.00 %)	05 (13.51 %)	07 (30.43 %)
Acute esophagitis	02 (03.33 %)	02 (05.40 %)	00 (00.00 %)
Total	**60 (100.00 %)**	**37 (100.00 %)**	**23 (100.00 %)**

In this study, out of 60 oesophageal samples 37 were from the male patients and 23 were from the female patients. Majority of the diagnosis were candidiasis (28.33%) and least numb were acute oesophagitis (3.33 %). Out of 17 cases of candidiasis male patients were 10 and female patients were 07 in number. Second, majority cases were squamous cell carcinoma of the oesophagus that is 16, out of which 11 patients were male and 05 patients were female patients representing 29.72% and 21.73% respectively.

Table-3 : Distribution of the lesions in stomach

Diagnosis	Number (%)	Male (%)	Female (%)
Squamous cell carcinoma	12 (10.90%)	07 (15.90%)	05 (07.57%)
Adenocarcinoma	22 (20.00%)	16 (36.36%)	06 (09.90%)
Adenoma	05 (04.54%)	02 (04.54%)	03 (04.50%)
Polyps	16 (14.54%)	06 (13.63%)	10 (15.15%)
H. pyloric induced gastritis	13 (11.81%)	03 (06.81%)	10 (15.15%)
Chronic nonspecific gastritis	42 (38.18%)	10 (22.72%)	32 (48.00%)
Total	**110 (100.00%)**	**44 (100.00%)**	**66 (100.00%)**

Majority of the lesions in the stomach are of chronic nonspecific gastritis (38.18%) while least number of lesions is of adenoma (04.54%). Out of 42 patients of the chronic nonspecific gastritis 10 patients were found to be male patient and 32 patients were found to be female patient representing female predominance in this particular case. Similarly, only 03 male patients were found to be affected by H.pyloric induced gastritis and 10 female patients are found to have the similar condition representing female predominance in the same case. Similar results also found in adenoma and polyps that is female predominance comprising of 03 and 10 patients respectively. But, in the cases like squamous cell carcinoma of the stomach and adenocarcinoma of the stomach it showed male predominance.

Table-4: Distribution of lesions in duodenum

Diagnosis	Number (%)	Male (%)	Female (%)
Any malignancies excluding metastasis	02 (06.66%)	01 (06.66%)	01 (06.66%)
Neuroendocrine tumor	08 (26.66%)	05 (33.33%)	03 (20.00%)
Chronic nonspecific duodenitis	16 (53.33%)	07 (46.66%)	09 (60.00%)
Any duodenal parasites	04 (13.33%)	02 (13.33%)	02 (13.33%)
Total	**30 (100.00%)**	**15 (100.00%)**	**15 (100.00%)**

Majority of the lesions from the duodenum were chronic nonspecific duodenitis and least number were malignancies excluding metastasis. Male and female both the group were of same number in the duodenal lesions that is 15 in number. Same like the stomach lesions here also non neoplastic condition like chronic nonspecific duodenitis showed female predominance and male patients were affected more in number in neoplastic conditions like NET and malignant lesion of the duodenum excluding any kind of metastasis.

DISCUSSION

Gastric and esophageal cancers are the most common cancers found in men. While esophageal cancers rank 3rd among women after breast and cervical cancer [4]. Histopathological study of endoscopic biopsies is used to confirm the diagnosis in suspected malignant cases or to make diagnosis of benign condition, thus helping in early therapeutic decision. The incidence of gastro intestinal malignancies increases with age which has led to increased number of endoscopy as well as biopsy in order to detect cases at the earliest stage [5]. The present study was done from December-2017 to December-2019 covered two hundred (200) upper gastrointestinal endoscopic biopsies, of which 60 (30%) cases were esophageal biopsies, 90 (45%) were gastric biopsies and fifty (50) cases (25%) were duodenal biopsies. In the present study most common site for upper gastrointestinal endoscopic biopsy is from the stomach, trailed by esophagus and duodenum respectively. Out of the two hundred (200) patients with upper gastrointestinal tract endoscopic biopsies, 45% were females and 55 % were males showing male predominance. This was also demonstrated by another study done by Krishnappa Rashmi et al. and Ganga H et al. [6]. This gender ratio supporting male predominance could be reflective of the fact that males are exposed to more risk factors than females and gastrointestinal malignancies are more common in males according to JC Paymaster et al. [7]. In the present study there was a predominance of upper gastrointestinal tract disease between the age groups of 50-60 years accounting for 50% both in male and female patients. Present study did not show similar result with the other two studies. In present study the most common site from which the biopsies were taken was stomach followed by duodenum and esophagus similar to the studies conducted by Krishnappa Rashmi et al. and Ganga H et al. Also, the similarities were seen in the study done by Jaynul Islam SM et al. [8] and, Sandhya PG et al. Majority of the lesions of upper

GIT were non-neoplastic in the present study which in consensus with study by Gulia SP et al. [9] and Kothari SL et al. [10]. The majority non neoplastic lesions found to be candidiasis in the oesophageal site. In the site of stomach and duodenum the most common non neoplastic lesions found to be chronic nonspecific gastritis and chronic nonspecific duodenitis. Present study showed concurrent values with the studies by Krishnappa Rashmi et al. and Ganga H et al. Majority number of the biopsies were from the stomach region and least number were from duodenum. CNE: Chronic nonspecific esophagitis; CNG: Chronic nonspecific gastritis; HPG: H. pyloric induced gastritis; CND: Chronic nonspecific duodenitis. In present study the non- neoplastic lesions are more in female patients when we compared to male patients. In the present study it is clearly evident that neoplastic lesions were found more in male patients and non- neoplastic lesions were found more in female patients when compared to male in all the site of the endoscopic biopsy. Present study is compared to Krishnapa et al.

CONCLUSION

Upper gastrointestinal endoscopic biopsy provides very useful information in the diagnostic and preventive measures. A wide variety of non-neoplastic leasions can be identified in a very early stage. Also, this diagnostic procedure helps in early detection as well as prevention of the disease. However, it plays an important role in diagnosis of neoplastic lesions of esophagus, stomach, and first part of the duodenum.

Shortcomings and limitations in present study

1. Inadequate biopsy sample
2. Lack of corporation from the patient
3. Handling and processing artefacts
4. Mistaken endoscopic biopsy that is the site of the biopsy is absolutely different from the lesion – it can mislead the diagnosis
5. Miscommunication between the gastroenterologists and the pathologists

To overcome all the shortcomings and limitations we should overlook the problems and we should work on it to reduce the error rate for benefit of the patients.

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