

## Endoscopic biopsies of lower 1/3 rd oesophagus and gastric lesions and its clinico- pathological correlation with Helicobacter pylori

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### ABSTRACT

**Background:** Helicobacter pylori infection is now recognized as worldwide problem and associated with various gastric lesions.

**Aim:** To study the histopathological features of endoscopic biopsies from Lower 1/3 rd oesophagus and gastric lesions and with clinico- pathological correlation with Helicobacter pylori.

**Methods:** Samples of 111 endoscopic biopsies from lower 1/3 rd oesophagus, gastro oesophageal junction and stomach (60 from oesophagus, 4 from gastro oesophageal junction and 47 were from stomach) were collected from gastroenterology unit of surgery department during Jan' 2009 to Dec' 2012. It was studied by routine histopathology methods using, Hematoxylin and eosin, giemsa stain in the department of pathology of a tertiary care and teaching hospital.

**Results:** Mean age of the patients was 45.5 years and male to female ratio was 2.26:1. Most common lesion 32(31.6%) encountered is squamous cell carcinoma of oesophagus, followed by chronic gastritis 31(30.69%). Prevalence of Helicobacter pylori associated gastritis was seen in 23 cases (22.77%). Abdominal pain was leading clinical presentation followed by vomiting and nausea in Helicobacter pylori infected patients.

**Conclusion:** The more prevalent lesions in this study were squamous cell carcinoma of esophagus and followed by chronic gastritis etc. Thus endoscope biopsy is an essential tool for diagnosis and confirmation of clinically suspected cases.

**Key words:** chronic gastritis, endoscopic biopsies, Helicobacter pylori, prevalence

### INTRODUCTION

Helicobacter pylori infection is one of the most common and important infection worldwide. It is a gram negative, micro aerophilic, spiral, motile bacterium that resides in the gastric pits and over lying mucus blanket and was identified by warren and Marshall in 1983.<sup>1</sup> Its infection has been established firmly with the development of peptic ulcer, chronic active gastritis, gastric adeno carcinoma and gastric mucosa associated lymphoid tissue lymphomas.<sup>2,3</sup> The Prevalence rate of Helicobacter pylori and associated diseases has been highly inconsistent worldwide. It is high in less developed Asian countries like India, Bangladesh, Pakistan and Thailand and is acquired at an early age than in the more developed Asian countries like Japan and China. The frequency of gastric cancer, however is very low in India, Bangladesh, Pakistan and Thailand compared to that in Japan and China, Similar enigma has been reported from Africa as compared to the west.<sup>4</sup>

The upper gastro intestinal fiberoptic endoscope

was a major breakthrough in the diagnosis of esophagus- gastro -duodenal lesions.<sup>5,6</sup> The endoscopic biopsy not only permits exact diagnosis but also provides an opportunity to see Helicobacter pylori status and plans for specific medical and surgical therapy.<sup>7</sup> In routine clinical practice histology is often considered as the gold standard. Biopsy provides an excellent opportunity for the clinician and histopathologist to correlate the clinical data, endoscopic findings and pathological lesions. Hence this study is under taken to know the histopathological features of endoscopic biopsies of lower 1/3rd esophagus and stomach lesions with clinic pathological correlation of the lesions with Helicobacter pylori.

### MATERIALS AND METHODS

All patients (111) undergoing endoscopic biopsies of the lower 1/3rd oesophagus and stomach lesions (60 from esophagus, 4 from gastro esophageal junction and 47 were from stomach) during July' 2009 to Dec' 2012 at department of pathology of a

tertiary care and teaching hospital were included in the study. The sample material were immediately fixed in 10% neutral formalin and sent to Department of pathology. Biopsies were labelled and studied at grossing table and findings were noted. The biopsy bits were gently spread on a piece of filter paper measuring 2X2 cms, the embedding surface was marked with eosin dye.. After wrapping of the tissue in paper, they were put in capsules and immersed in 10% neutral formalin for 6 hours. After fixation the biopsy capsules were washed in tap water and they were submitted for processing, paraffin blocks were made and multiple sections were cut serially for 4 – 5 micron thickness. One set of slides were studied with haematoxylin and another set of slide were stained with modified giemsa stain in order to detect H. Pylori and all the microscopic findings were noted.

## RESULT

The mean age of patients was 45.5 years. Male to female ratio was 2.26:1. Most common lesion encountered in present study is squamous cell carcinoma of esophagus 32(31.6%) cases , followed by chronic antral gastritis and chronic fundal gastritis in 9(8.9%) each , chronic esophagitis in 7(6.93%) and chronic active gastritis 7(6.93%) , adeno carcinoma esophagus in 6(5.8%) cases, chronic atrophic gastritis in 5(4.9%) , Mild dysplasia in 4 (3.9%) cases , moderate squamous dysplasia esophagus and mucin secreting adeno carcinoma stomach in 3(2.9%) cases, barret's esophagus and stomach dysplasia in 2(1.9%) cases, one case each of moderate dysplasia , adeno carcinoma and squamous cell carcinoma of gastro-esophageal junction and chronic superficial gastritis and chronic peptic ulcer. Most Common non-neoplastic lesion association with H. Pylori is chronic gastritis. Out of 31, chronic gastritis cases, chronic antral gastritis7 (30.4%). Chronic active gastric 6 (26.08%), chronic fundal and chronic atrophic gastritis in 5(21.73%) each.

Prevalence of Helicobacter pylori in all biopsies were 22.7%, in all stomach biopsies 53.48% and in non-neoplastic stomach biopsies 71.8%. The commonest presentation was vomiting and pain abdomen in 17 cases (73.9%) followed by Nausea 8 (34.7%) in Helicobacter pylori infected patients (table.1).

**Table.1.** Clinical features distributions of H. Pylori lesion Biopsies

Clinical features	No of Cases	Percentage
Vomiting	17	73.9%
Pain Abdomen	17	73.9%
Nausea	8	34.7%
Malena	6	26.08%
Loss of Weight	1	4.34%

## DISCUSSION

Biopsy sampling of the gastric mucosa at diagnostic endoscopic provides useful information which helps in the diagnosis of various lesions. Endoscopic biopsies are safe and simple. It has emerged as popular diagnostic and therapeutic tool in various lesions of upper gastro intestinal tract. However, the precise diagnosis becomes more certain on histopathological examinations. The common indications for gastric biopsy are; various types of gastritis along with evidence of Helicobacter pylori status, gastric ulcers and different tumors.<sup>9</sup> In the present study out of total 55 adequate esophageal biopsies, 9(16.36%) were non neoplastic and 46(83.69%) were neoplastic ,all were comparable to a study however, shows more of neoplastic esophageal lesions.<sup>10</sup> Type of lesion distribution of neoplastic esophageal biopsies show predominance of squamous cell carcinoma in 32 (69.56%); adeno-carcinoma in 7(15.21%), mild dysplasia in 4(8.6%) and moderate dysplasia in 3(6.52%) All were comparable with a study conducted by yoshinaka et al.<sup>11</sup>

Biopsies at gastro esophageal junction revealed almost equal percentage of pathology viz., squamous cell carcinoma, adeno carcinoma , squamous dysplasia which is comparable to a study except that no case of barret's oesophagus was found in our study.Non neoplastic stomach lesion type in the present study show predominance of chronic antral gastritis 9(28.12%) and chronic fundal gastritis 9(28.12%), which is similar to a study but it shows less percentage of chronic superficial gastritis.<sup>12</sup> Neoplastic stomach biopsies in present study shows predominance of lesser curvature which is contrast with another study which shows grater curvature predominance.<sup>13</sup>

Neoplastic stomach lesion type in the present study shows predominance of adeno carcinoma in 6(54.45%) cases, Mucinous adeno carcinoma in 3(27.27%) dysplasia in 2(18.18%) cases, it was less in a study conducted by Prabhakar D.<sup>10</sup> In this study helico bacter pylori associated chronic gastritis was seen 23 cases(22.77%),this finding correlates with yet another study.<sup>14</sup>

## CONCLUSION

The histopathological diagnosis of certain premalignant lesions like Barrett's esophagus , dysplastic glands and lining epithelium , chronic atrophic gastritis etc aided with follow up biopsies helps in preventing malignancy and reducing morbidity. Endoscopy has shown to be simple, safe

and cost effective diagnostic and therapeutic procedure, giving good information about site and appearance of the lesion. The biopsy material can be studied for the lesions and Helicobacter Pylori by routine Haematoxylin and eosin stain and special stain like modified giemsa for detecting subtle histopathological changes caused by helicobacter pylori.

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