



ORIGINAL ARTICLE

Histopathological Study of Upper Gastrointestinal Tract Endoscopic Biopsies

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Abstract

Background: Diseases of gastrointestinal tract are a major cause of morbidity and mortality. **Objective:** This study was carried out to determine the spectrum of histopathological lesions of upper gastrointestinal tract. **Methodology:** This retrospective study was conducted in the Department of Pathology at North East Medical College, Sylhet, Bangladesh during a 36 months period from January 2013 to December 2015. Endoscopies were performed using Olympus 150, forward viewing upper GI endoscope. The biopsy specimens received were fixed in 10.0% formalin and routinely processed in Haematoxyline & Eosin stain. **Results:** The present study included 135 endoscopic biopsies. The mean age with SD of the study population was 53.20±16.09 years. Among 53 cases of esophageal biopsies 8(15.08%) cases showed non-neoplastic lesions and 45(84.92%) cases were neoplastic of which 39(73.6%) cases and 6(11.32%) cases were squamous cell carcinoma and adenocarcinoma respectively. Among 6 cases of gastro esophageal junction biopsies 3(50%) cases showed non-neoplastic lesions and 3(50%) were neoplastic, of which 2(33.33%) were adenocarcinoma and 1(16.67%) were squamous cell carcinoma. Among 61 cases of stomach biopsies 34(55.74%) showed non-neoplastic lesions and 27(44.26%) were neoplastic, of which 1(1.64%) case was adenoma and 25(40.98%) were adenocarcinoma. Among 15 cases of duodenal biopsies 13(86.67%) cases showed non-neoplastic lesions and 2(13.33%) were neoplastic one of which was adenocarcinoma (6.67%). Among 135 cases endoscopist reported 82(60.74%) cases as neoplastic and 53(39.26%) as non-neoplastic, whereas histopathology revealed 77(57.03%) cases neoplastic and 58(42.97%) cases non-neoplastic. **Conclusion:** Common site of upper GIT endoscopic biopsy is stomach which are mostly neoplastic lesion; however, most common malignancy is squamous cell carcinoma of the oesophagus. [*Journal of Current and Advance Medical Research* 2019;6(1):42-46]

Keywords: Upper gastrointestinal lesion; endoscopic biopsy; histopathology

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Introduction

Upper gastrointestinal tract disorders are one of the most commonly encountered problems in clinical practice with a high degree of morbidity and mortality¹. A wide variety of infections, inflammatory disorders, vascular disorders, mechanical conditions, toxic and physical reactions, including radiation injury and neoplasm may occur in the esophagus and stomach². Endoscopy provides a unique opportunity to visualize the mucosal surface of GI tract. Endoscopy is incomplete without biopsy and histopathology is the gold standard for the diagnosis of endoscopically detected biopsy. Upper GI endoscopy in combination with biopsy plays an important role in the diagnosis and treatment of GI lesion³. This study was carried out to determine the spectrum of histopathological lesions of upper gastrointestinal tract in a teaching hospital at Sylhet.

Methodology

This retrospective cross sectional study was conducted in the Department of Pathology of North East Medical College, Sylhet during a 36 months period from January 2013 to December 2015. Patients of different age group and both sex were selected for this study according to inclusion and exclusion criteria. Inclusion criteria was, all endoscopic biopsies of the upper gastrointestinal tract exclusion criteria were all lesions of the mouth and pharynx and all duodenal biopsies below the second part. The present study included one hundred thirty five (135) endoscopic biopsies. They were taken from patients who were clinically diagnosed to have an upper gastrointestinal tract lesion needing biopsy at the Department of Gastroenterology, of North East Medical College. Endoscopies were performed using Olympus 150, forward viewing upper GI endoscope. The biopsy specimens received were fixed in 10% formalin and routinely processed in Haematoxyline & Eosin stain. The site wise distributions of endoscopic biopsies was - esophagus 53 (39.25%), gastro esophageal junction 6 (4.45%), stomach 61 (45.18%) and duodenum 15 (11.12%).

Results

Out of 135 cases 83 (61.14%) patients were males and 52 (38.86%) were females, male to female ratio were 1.6:1. The sex distributions are shown in figure I. The age of the study population ranges from minimum 18 to maximum 85 with the mean age

53.20. The age distributions in different decades are shown in figure II.

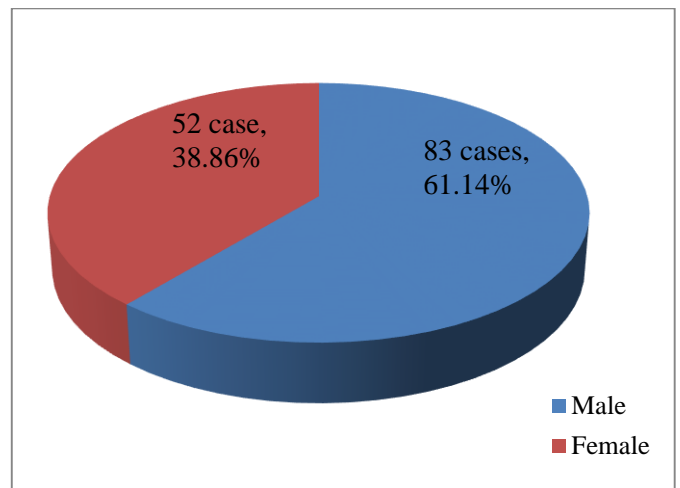


Figure I: Distribution of cases according to sex (n=135)

In this study patients were presented with dysphagia, vomiting, abdominal pain, anaemia, anorexia, melena, blotting etc. of which dysphagia was the common presenting feature 61 (45.18%) cases.

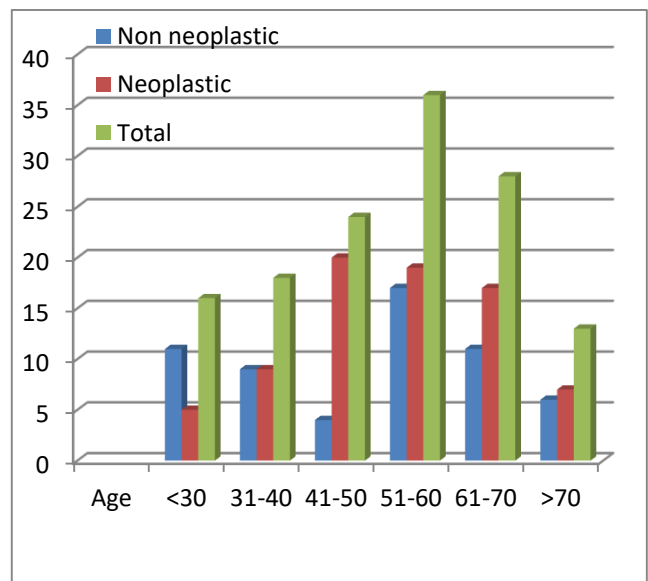


Figure II: Age group distribution (n= 135)

Out of 135 biopsies non-neoplastic cases were 58 (42.97%) and 77(57.03%) cases were neoplastic of which 75 (55.56%) were malignant. The site wise distributions of endoscopic biopsies was- esophagus 53 (39.25%), gastro esophageal junction 6 (4.45%), stomach 61 (45.18%) and duodenum 15 (11.12%) shown in table 1.

Table 1: Distribution according to Site of biopsy (n=135)

Diagnosis	Site of Biopsy				Total	P value
	Stomach	Oesophagous	Duodenum	G-E junc.		
Adenocarcinoma	25(40.98%)	6(11.32%)	1(6.67%)	2(33.33%)	34(25.18%)	0.04
SCC	1(1.64%)	39(73.60%)	0(0.0%)	1(16.67%)	41(30.37%)	
Inflammatory lesion	28(45.91%)	4(7.54%)	10(66.66%)	2(33.33%)	44(32.59%)	
Ulcer	5(8.19%)	0(0.0%)	2(13.33%)	0(0.0%)	7(5.19%)	
Dysplasia	1(1.64%)	4(7.54%)	0(0.0%)	0(0.0%)	5(3.71%)	
Polyp	0(0.0%)	0(0.0%)	1(6.67%)	0(0.0%)	1(0.74%)	
Adenoma	1(1.64%)	0(0.0%)	1(6.67%)	0(0.0%)	2(1.48%)	
Barret oesophagus	0(0.0%)	0(0.0%)	0(0.0%)	1(16.67%)	1(0.74%)	
Total	61(100%)	53(100%)	15 (100%)	6 (1000%)	135(100%)	

SCC=Squamous cell carcinoma; G-E junc=Gastro-oesophageal junction

Among 53 cases of esophageal biopsies eight (15.08%) cases showed non-neoplastic lesions and forty five (84.92%) were neoplastic, of which 39 (73.60%) were squamous cell carcinoma and six (11.32%) were adenocarcinoma. Among 6 cases of gastro esophageal junction biopsies three (50%) cases showed non-neoplastic lesions and three (50%) were neoplastic, of which 2 (33.33%) were adenocarcinoma and 1 (16.67%) were squamous cell carcinoma. Among 61 cases of stomach biopsies 34 (55.74%) showed non-neoplastic

lesions and 27 (44.26%) were neoplastic, of which 1 (1.64%) case was adenoma, 25 (40.98%) were adenocarcinoma and 1 (1.64%) were squamous cell carcinoma. Squamous cell carcinoma is rare in the stomach. We found a case at the cardiac end probably extension from esophageal lesion. Among 15 cases of duodenal biopsies 13 (86.67%) cases showed non-neoplastic lesions and 2 (13.33%) were neoplastic one of which was adenocarcinoma (6.67%).

Table 2: Endoscopic and histopathological findings

Histopathology	Endoscopic Findings					Total
	NL	UL	IL	Polyp	BO	
Adenocarcinoma	30(88.2%)	2(5.9%)	2(5.88%)	0(0.0%)	0(0.0%)	34(100%)
SCC	40(97.6%)	1(2.4%)	0(0.0%)	0(0.0%)	0(0.0%)	41(100%)
Inflammatory lesion	8(18.2%)	19(43.2%)	16(36.4%)	0(0.0%)	1(2.3%)	44(100%)
Ulcer	1(14.3%)	4(57.2%)	1(14.3%)	0(0.0%)	1(14.3%)	7(100%)
Dysplasia	3(60.0%)	1(20.0%)	1(20%)	0(0.0%)	0(0.0%)	5(100%)
Polyp	0(0.0%)	0(0.0%)	0(0.0%)	1(100%)	0(0.0%)	1(100%)
Adenoma	0(0.0%)	2(100.0%)	0(0.0%)	0(0.0%)	0(0.0%)	2(100%)
Barrett oesophagus	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	1(100.0%)	1(100%)
Total	82(60.7%)	29(21.5%)	20(14.8%)	1(0.7%)	3(2.2%)	135(100%)

NL=Neoplastic Lesion; UL=Ulcerative Lesion; IL=Inflammatory Lesion; BO=Barrett Oesophagus; Parenthesis within the bracket indicates percent; p value=0.01

Out of 135 cases, endoscopy revealed 82 (60.74%) neoplastic lesion, of which 77 (57.03%) cases were histologically diagnosed as neoplastic. On endoscopy 20 (14.81%) cases were inflammatory lesion whereas 44 (32.59%) cases were diagnosed as inflammatory on histopathology. On the other hand 29 (21.48%) cases were revealed ulcerative lesion on endoscopy, of which 7 (5.18%) were benign ulcer on histopathology 3 (2.22%) cases of Barrett esophagus on endoscopy 1 (0.75%) case was histologically diagnosed as Barrett oesophagus.

Only 1(0.70%) case was diagnosed as polyp on both endoscopy and histopathology. Moreover 5 (3.70%) cases were diagnosed as dysplasia on histopathology (Table 2).

Discussion

Diseases of Gastrointestinal tract are a major cause of morbidity and mortality⁴. A wide range of tests are available for the investigation of patients with

gastrointestinal symptoms. Endoscope had a revelatory impact on the diagnosis of upper GIT lesions and its histopathological interpretation⁵. This study was conducted from January 2013 to December 2015 dealing with 135 gastrointestinal endoscopic biopsies. The age of the study population ranges from minimum 18 to maximum 85 with the mean age 53.20 years. Islam et al found mean age at 54.46 years, which is similar to this study⁷. In the present study, high incidence of upper GI tract is observe in fifth decade accounting for 26.67% of overall case distribution which show a similar trend to other study^{5,6}.

In aspect of sex distribution, male predominance is noted when compared to female patient with a ratio of 1.6:1. Similar study were done by Hussain et al⁵ and Shanmugasamy et al⁷ showing male predominance.

Among 135 cases 53(39.25%) are oesophageal biopsy, 6 (4.45%) are G-E junction biopsy, 61 (45.18%) are stomach biopsy and 15(11.12%) are duodenal biopsy. Among 53 cases of esophageal biopsies eight (15.08%) cases show non-neoplastic lesions and forty five (84.92%) are neoplastic and all neoplastic lesions are malignant. Sheikh et al. also found 82% of malignant lesions in esophageal biopsies⁶. The Present study show the most common histological type of malignancy is squamous cell carcinoma. The same results were found by Somani and Patil³. This study show frequencies of adenocarcinoma is 11.32% as compared to previous study done by Somani and Patil³ (17.40%).

Out of 6 biopsies from GE junction, 3(50%) cases show non-neoplastic lesions and 3(50%) cases are neoplastic of which 2(33.33%) are adenocarcinoma and 1(16.67%) is squamous cell carcinoma. Among 3 non-neoplastic lesions, 1(16.67%) case is Barrett oesophagus which is similar to study done by Sheikh et al⁶.

In this present study stomach biopsies constitute the majority of the cases (61) which is similar to other studies^{5,6,8}. Frequencies of neoplastic lesions are 44.26% (27 cases) which is similar to Islam et al⁸. Among the neoplastic lesions, malignancy is noted in 26 (42.62%) cases and the remaining 1 (1.64%) is adenoma. Among 26 the malignant lesions 25 (96.15%) are adenocarcinoma and 1 (3.85%) were squamous cell carcinoma. Primary squamous cell carcinoma is rare in the stomach, accounts 0.04-0.07%⁹. This study shows a case at the cardiac end probably extension from esophageal lesion.

Among 15 cases of duodenal biopsies 13 (86.67%) cases show non-neoplastic lesions and 2 (13.33%) are neoplastic one of which is adenocarcinoma (6.67%). In this study incidence of inflammatory lesion is more, which is similar to other studies^{3,1}. Incidence of adenocarcinoma is 6.67% which is close to another study done by Islam et al⁸ in Bangladesh (13.33%).

Among 135 cases endoscopist reported 82(60.74%) cases as neoplastic and 53(39.26%) as non-neoplastic, whereas Histopathology revealed 77(57.03%) as neoplastic and 58 (42.97%) as non-neoplastic. Out of 77 neoplastic lesion 75 (55.56%) are malignant which is higher than the study done by Islam et al⁸ (46.36%). In this study though common site of Upper GIT lesion is stomach but highest incidence of malignant lesion in oesophagus (84.92%). Sheikh et al⁶ also found oesophagus is the commonest site for malignant lesion.

Conclusion

In conclusion variety of non-neoplastic and neoplastic lesions are reported in the present study. Common site of upper GIT endoscopic biopsy is stomach. Incidence of neoplastic lesion is higher than non-neoplastic lesion. The most common malignancy is squamous cell carcinoma of the oesophagus. The second most common malignancy is adenocarcinoma of stomach.

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