Indian Journal of Basic and Applied Medical Research; September 2018: Vol.-7, Issue- 4, P . 372 - 380

Original article:

Clinicopathological evaluation of upper gastrointestinal endoscopic biopsies

Dr. Chetna Srivastava , *Dr Deepak Kumar Garg

Department of Pathology, National Institute of Medical Sciences and Research, Jaipur
Corresponding author*

Abstract:

Rationale:- For accurate diagnosis of patient resulting in proper management the present study was planned out.

Objective:- 1.To evaluate the histopathological findings in patients presenting with signs and symptoms pertaining to upper gastrointestinal tract lesions.

2.To study the histological spectrum and diagnose the lesions of upper gastrointestinal tract.

Study area:- study will be conducted in National institute of medical sciences and research, Jaipur.

Study population: Patients attending outdoor patient department and admitted patients in National institute of medical sciences and research, Jaipur., of both sex and of all ages presenting with upper gastrointestinal symptoms .

Inclusion criteria:-1.Patients will be selected regardless of the age group and sex.

2. Patients with upper gastrointestinal symptoms for whom endoscopic biopsies will be done at National institute of medical sciences and research, Jaipur,for confirmation of diagnosis.

Exclusion criteria:-1.Patients who are already diagnosed earlier at National institute of medical sciences and research, Jaipur, or elsewhere will not be included.

Methods: Patients with signs and symptoms pertaining to upper gastrointestinal tract and undergoing endoscopic biopsies in National institute of medical sciences and research, Jaipur,will be included. Detailed history, clinical examination & endoscopic findings will be noted. Endoscopic biopsies received in the Department of Pathology, National institute of medical sciences and research, Jaipur, will be processed and histopathological evaluation will be done.

Results and Conclusion: To conclude, even with the limitations of small sample size, most of the findings in this study were in concordance with previous studies and important interpretations could be made. Moreover the diagnosis of 4 premalignant lesions and most of the malignancies in early stages (All oesophageal and 66.6% of gastric malignancies were well or moderately differentiated) underlines the importance of upper gastrointestinal endoscopic biopsies in early diagnosis and management of upper gastrointestinal lesions.

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 upper gastrointestinal lesions. Endoscopic examination and biopsy is a convenient procedure for accurate objective assessment of patients with symptoms of gastrointestinal tract. Endoscopy is incomplete without biopsy and histopathology is the gold standard for the diagnosis of endoscopically detected lesions [1]The esophagus and stomach can be sited for a wide variety of infections, inflammatory disorders, vascular disorders, mechanical

www.ijbamr.com P ISSN: 2250-284X , E ISSN : 2250-2858

conditions, toxic and physical reactions, including radiation injury and neoplasm[2]. The prevalence of Helicobacter pylori (H. pylori) infection varies markedly in different Asian countries. The prevalence rates in developing Asian countries such as Bangladesh, India, Thailand and Vietnam have been reported to be especially high at 92%, 81%, 74% and 75% respectively[3-6]. Helicobacter pylori (H. pylori), infection has been linked to acute and chronic gastritis, non-ulcer-dyspepsia, peptic ulcer, gastric adenocarcinoma and gastric non-Hodgkin's lymphoma of mucosa-associated lymphoid tissue (MALT) [7]

Histopathology is used in the diagnosis of various lesions in the gastrointestinal tract, such as chronic gastritis, intestinal metaplasia, malignancies of oesophagus and stomach etc. Duodenal biopsies are now commonly performed as a part of upper gastrointestinal endoscopic procedure. Common indication for duodenal biopsies includes peptic ulcer disease, symptoms of malabsorption, neoplasia and infectious enteritis. The differentiation of benign and malignant lesions of the upper gastrointestinal tract continues to be frequently encountered and often a difficult diagnostic problem. As there is poor prognosis of gastrointestinal malignancies, it is essential to diagnose them accurately and as early as possible. It is essential that the endoscopist and pathologist function as a team when a biopsy is obtained in order to provide the maximum benefit to the patient. The study reviews upper gastrointestinal endoscopic biopsies in relation to histopathological examination of biopsy. Also the study evaluates the histological findings with respect to age, sex, habits and clinical presentation.

Observations and results:

This was a study of 40 cases for which upper gastrointestinal endoscopic biopsies were sent for histopathological evaluation. These included biopsies from oesophagus, stomach and 2nd part of duodenum. The findings and results were as follows:

No of Cases and Adequacy of Biopsy:

Out of the 40 biopsies 10 (25%) were of oesophagus, 17(42%) were of stomach and 13(33%) were of duodenum(Fig1). Out of these 3 cases comprising 7.5% of cases were considered inadequate or non representative (Fig 2). These included, one oesophageal biopsy which was considered inadequate for evaluation, one periampullary growth biopsy which was suspected to be non representative and a suspected carcinoma stomach which was considered inadequate for assessment of invasion. However histological diagnosis was given on the submitted material in gastric biopsy (as Dysplasia) and in duodenal biopsy (as Within normal limits) which are included in further calculations. So a total of 39 cases were considered for evaluation and calculations. Organ-wise distribution of inadequate biopsies are given in Table 1 below

Table 1: No of Cases and Adequacy of biopsy

	No of Biopsy	Adequate/ Representative	Inadequate/Non representative
Oesophagus	10	09	01 (10%)
Stomach	17	16	01 (5.9%)
Duodenum	13	12	01 (7.7%)
Total	40	37	03 (7.5%)

www.ijbamr.com P ISSN: 2250-284X , E ISSN : 2250-2858

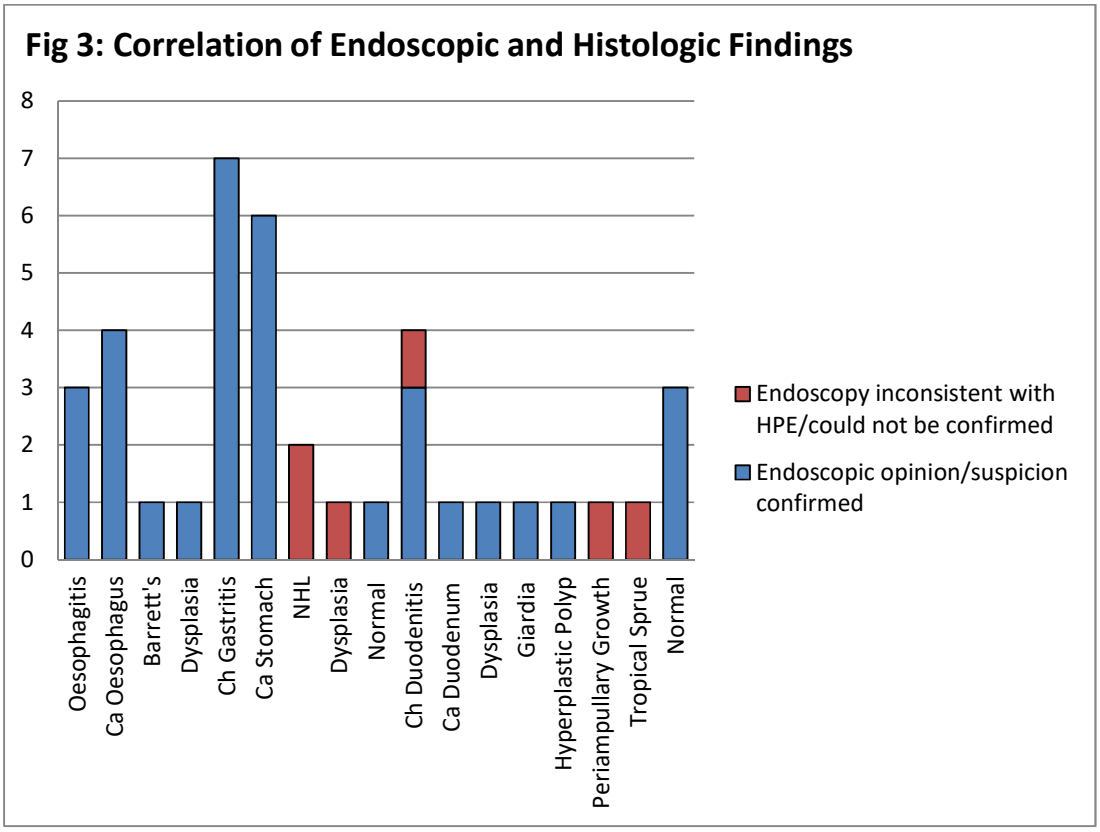
Spectrum of lesions biopsied with correlation of endoscopic and histopathological findings

In 33 out of 39 cases the endoscopic findings and suspicions were consistent with histological findings. There were 06 (15.4%) cases in which endoscopic opinion was inconsistent with histological examination. One case was reported as inadequate and no histological opinion was given. Half of the cases (3 cases) were of duodenal lesions. Both cases of non-Hodgkins lymphoma (confirmed on IHC)were diagnosed as carcinoma on endoscopy. Three cases clinically suspected to have duodenal lesions were found to be normal on endoscopy and histology. Correlation of endoscopic and histopathologic findings are given in Table 2 below and plotted in Fig 3 below.

Table 2: Spectrum of Lesions biopsied with correlation of Endoscopic and Histopathological findings

	Endoscopic consistent with HPE	Endoscopy inconsistent with HPE	Endoscopy Impression	Histo-pathological Impression
OESOPHAGUS				
Oesophagitis	03			
Ca Oesophagus	04			
Barrett's Oesophagus	01			
Dysplasia	01			
STOMACH				
Ch Gastritis	07			
Ca Stomach	06			
NHL		02	CaStomach	NHL
Dysplasia		01	Ca Stomach	Dysplasia
Normal	01			
DUODENUM				
Ch Duodenitis	03	01	Normal	Ch Duodenitis
Ca Duodenum	01			
Dysplasia	01			
Giardia	01			
Hyperplastic Polyp	01			
Periampullary Growth		01	Periampullary Carcinoma	WNL
Tropical Sprue		01	Normal	Tropical Sprue
Normal	03			
TOTAL	33	06 (15.4%)		

www.ijbamr.com P ISSN: 2250-284X , E ISSN : 2250-2858



Malignant, Nonmalignant(inc Normal cases) and Dysplastic cases

A total of 13 (34.2%) cases were malignant. A little less than half the cases of oesophagus (44.45%) and stomach (47.05%) were malignant whereas only 01 (8.3%) of 13 duodenal lesions was malignant. Number of malignant, non malignant and dysplastic cases are given in Table 3 and the organ-wise percentage distribution is plotted in Fig 4.

Table 3: No of Malignant, Nonmalignant(inc Normal) and Dysplastic cases

	Malignant	Non malignant	Dysplasia	Total
Oesophagus	04	04	01	09
Stomach	08	08	01	17
Duodenum	01	11	01	13
Total	13	23	03	39

Age distribution

Cases of carcinoma oesophagus ranged from 50 to 67years with an average of 58.75 years (Table 4, Fig 5). Most of the cases of chronic gastritis (71.4%) were found in 3rd and 4th decade. Cases of gastric carcinoma ranged from 36 to 72 years of age. 4 out of 6 cases(66.6%) of gastric carcinoma were found in 7th and 8th decade(Table 5, Fig 5). Average age of gastric carcinoma was 59.3 years. The two cases of NHL were in 5th and 7th decade. Duodenal

www.ijbamr.com P ISSN: 2250-284X , E ISSN : 2250-2858

lesions were uniformly distributed throughout the age groups ranging from 19 years(Tropical sprue) to 62years(Table 6, Fig 5).

Table 4: Age distribution in Oesophageal lesions

Age (years)	**Esophagitis**	**CarcinomaOesophagus**	**Dysplasia**	**Barrett's Oesophagus**
21-30	_	_	_	_
31-40	01	_	_	_
41-50	01	01	01	_
51-60	_	02	_	_
61-70	01	01	_	01

Table 5: Age distribution in Gastric lesions

Age (years)	Gastritis	Adenocarcinoma	NHL	Dysplasia	Normal
21-30	_	_	_	_	_
31-40	02	01	_	_	_
41-50	03	_	01	_	_
51-60	_	01	_	_	_
61-70	02	02	01	_	01
71-80	_	02	_	01	_

Table 6: Age distribution in Duodenal lesions

Age (yrs)	Duodenitis	Adenocarcino-ma	Dyspla-sia	Polyp	Tropical sprue/Giardia	Normal
11-20	_	_	_	_	01	_
21-30	01	_	_	_	01	01
31-40	01	01	_	_	_	01
41-50	01	_	01	_	_	01
51-60	_	_	_	01	_	_
61-70	01	_	_	_	_	_

www.ijbamr.com P ISSN: 2250-284X , E ISSN : 2250-2858

Sex Predilection

Sex predilection is given in Table 7 and plotted in Fig 6.

Table 7: Sex predilection in various lesions

	Male	Female	M:F
CaOesophagus	3	1	3:1
Ca Stomach	4	2	2:1
Ch Gastritis	5	2	2.5:1
Ch Duodenitis	3	1	3:1

Habits- History of alcohol and tobacco

83.3% cases of carcinoma stomach were alcoholics 50% of which also used tobacco. 85.3% cases of chronic gastritis and all the cases (100%) of carcinoma oesophagus used either alcohol or tobacco or both. 75% case of carcinoma oesophagus and 71.4% cases of chronic gastritis were alcoholics with tobacco use being 50% and 57.1% respectively(Table 8, Fig 7).

Table 8: Habits- History of alcohol and tobacco

	Total	Alcohol	Tobacco	Both	None
CaOesophagus	04	03 (75%)	02 (50%)	01 (25%)	-
Ca Stomach	06	05 (83.3%)	03 (50%)	03 (50%)	01 (16.7%)
Ch Gastritis	07	05 (71.4%)	04 (57.1%)	03 (42.9%)	01 (14.3%)

Clinical Presentation

Dysphagia was the most common presenting complaint and was present in all the cases (100%) cases of carcinoma oesophagus. This was followed by vomiting and pain which were present in 75% of cases. Anorexia and weight loss were present in 50% of cases(Table 9, Fig 8).

Table 9: Clinical Presentation in Carcinoma Oesophagus

Carcinoma Oesophagus		
Clinical features	**No of cases**	**% of cases**
Dysphagia	04	100
Vomiting/Regurgitation	03	75
Pain	03	75
Anorexia	02	50
Weight loss	02	50

Most common presenting complaint in gastric carcinoma were pain and dyspepsia and were present in all the cases (100%). Vomiting and weight loss were present in 50% of cases. Abdominal lump could be palpated in 16.7% of cases. 50% cases also complained of anorexia(Table 10, Fig 9).

Table 10: Clinical presentation in Carcinoma Stomach

Gastric Carcinoma		
Clinical features	**No of cases**	**% of cases**
Pain	06	100
Dyspepsia	06	100
Vomiting	03	50
Lump abdomen	01	16.7
Weight loss	03	50
Anorexia	03	50

In chronic gastritis dyspepsia with epigastric pain was the most common presenting complaint and was present in all the cases (100%) cases. This was followed by vomiting (70.4%) and anorexia (57.1%). Epigastric tenderness was present in 14.3% of cases. All 4 cases of chronic duodenitis presented with dyspepsia (100%). 1 case (25%) had epigastric tenderness (Table 11, Fig 10).

Table 11: Clinical presentation in Chronic Gastritis

Chronic Gastritis		
Clinical features	**No of cases**	**% of cases**
Dyspepsia/Epigastric pain	07	100
Vomiting	05	70.4
Anorexia	04	57.1
Epigastric tenderness	01	14.3
Anaemia	04	57.1

Site of Gastric lesions

Most common site of carcinoma stomach was antrum and pylorus harbouring 66.6% of cases. Body and fundus accounted for 16.7% of cases each (Table 12, Fig 11). All cases of carcinoma oesophagus were in middle 1/3rd of oesophagus. Most common site for chronic gastritis was antrum and pylorus accounting for 57.1% of cases. 28.6% cases involved body and 14.3% cases involved fundus(Table 12, Fig 12).

Table 12: Site of Gastric lesions

	Antrum/Pylorus	Body	Fundus
CaStomach	04 (66.6%)	01(16.7%)	01(16.7%)
Ch Gastritis	04 (57.1%)	02(28.6%)	01(14.3%)
NHL	01	01	

www.ijbamr.com P ISSN: 2250-284X , E ISSN : 2250-2858

Endoscopic morphology of lesions in Oesophageal and Gastric carcinomas

In carcinoma stomach ulcerative lesions were most common comprising 66.6% of cases whereas in carcinoma oesophagus ulcerative and exophytic lesions occurred in equal proportions (Table 13, Fig 13).

Table 13: Endoscopic morphology in carcinoma of stomach and oesophagus.

	Ulcerative	Exophytic
Carcinoma Oesophagus	02 (50%)	02 (50%)
Carcinoma Stomach	04 (66.6%)	02 (33.3%)

Type and Grade of Oesophageal and Gastric carcinomas

75% of carcinoma oesophagus were found to be moderately differentiated. Most of the gastric carcinomas were moderately differentiated (50%) followed by poorly differentiated carcinoma comprising 33% of cases(Table 14, Fig 14).

Table 14:Type and Grade of Oesophageal and Gastric carcinomas

	Well differentiated	Moderately differentiated	Poorly differentiated
	Grade I	Grade II	Grade III
Squamous CaOesophagus	01 (25%)	03 (75%)	
Adenocarcinoma Stomach	01 (16.7)	03 (50)	02 (33.3)

Conclusion:

To conclude, even with the limitations of small sample size, most of the findings in this study were in concordance with previous studies and important interpretations could be made. Moreover the diagnosis of 4 premalignant lesions and most of the malignancies in early stages (All oesophageal and 66.6% of gastric malignancies were well or moderately differentiated) underlines the importance of upper gastrointestinal endoscopic biopsies in early diagnosis and management of upper gastrointestinal lesions.

References:

1. Pailoor K, Sarpangala M K, Naik RCN. Histopathological diagnosis of gastric biopsies in correlation with endoscopy – a study in a tertiary care center.Adv Lab Med Int. 2013; 3(2): 22-31.
2. Rosai J In: Rosai and Ackerman's surgical pathology. 9th ed. St. Louis: Mosby; 2004. pp 648-651.
3. Ahmad MM, Rahman M, Rumi AK, Islam S, Huq F, Chowdhury MF, Jinnah F, Morshed MG, Hassan MS, Khan AK, Hasan M. Prevalence of Helicobacter pylori in asymptomatic population - a pilot serological study in Bangladesh. J Epidemiol 1997; 7:251-4.
4. Ramakrishna BS. Helicobacter pylori infection in India: the case against eradication. Indian J Gastroenterol.2006; 25: 25-28.

5. Perez-perez GI, Taylor DN, Bodhidatta L, Wongsrichanalai J, Baze WB,. Dunn BE, Echeverria PD, Blaser MJ. Seroprevalence of Helicobacter pylori infections in Thailand. J Infect Dis. 1990; 161: 1237-1241.
6. Hoang TT, Bengtsson C, Phung DC, Sorberg M, Granstrom M. Seroprevalence of Helicobacter pylori infection in urban and rural Vietnam. ClinDiagn Lab Immunol.2005; 12: 81-85.
7. Kumar A, Bansal R, Pathak VP, Kishore S, Karya PK. Histopathological changes in gastric mucosa colonized by H. pylori. Indian Journal of Pathology and Microbiology.2006; 49: 352-356.
8. Rashmi K, Horakerappa MS, Karar A, Mangala G. A Study on Histopathological Spectrum of Upper Gastrointestinal Tract Endoscopic Biopsies.Int J Med Res Health Sci. 2013;2 (3):418-424. DOI: 10.5958/j.2319-5886.2.3.073.