

## Clinicopathological Correlation of Endoscopic Duodenal Biopsies in a Tertiary Care Hospital in Haryana

Abhimanyu Sharma, Monika Garg, Kusum Joshi, Kartar Singh\*

### Abstract

The study included endoscopic duodenal biopsies received in the department of pathology, MMIMSR, Mullana, Haryana. 44 biopsies were included in the study. The most common presenting complaint was pain abdomen followed by diarrhea. The neoplastic lesions commonly presented as carcinoma whereas the non-neoplastic lesions presented as inflammatory lesions on endoscopy. Non-neoplastic lesions were found to be common with villous atrophy predominating the list. Majority of the lesions were non-neoplastic, presenting with pain abdomen & inflammatory findings on endoscopy. The neoplastic lesions comprised of adenocarcinoma. A single case of ampullary carcinoma was also noted. Percentage of concordance between endoscopic & histologic diagnoses was calculated wherein duodenitis, scalloping, polypoidal & carcinomatous lesions showed 100%, 60.7%, 0% & 100% concordance between the two diagnostic modalities respectively. The conclusion of the study was that endoscopic examination alone might miss out in diagnosing majority of the lesions. So, histological examination in adjunct with endoscopy should be considered as much more valuable diagnostic tool rather than endoscopy alone.

### Keywords

Adenocarcinoma; Endoscopic Biopsies; Villous Atrophy; Ampullary Carcinoma

### Introduction

Malabsorption syndrome and duodenitis are frequent presentations in patients undergoing endoscopy, along with neoplastic lesions. Thus, examination of specimens obtained at endoscopy by a qualified pathologist is a regular & dire part of handling patients with ailments of the alimentary tract (1). The routinely reported endoscopic anomalies are: duodenal ulcer (2.3-12.7%), gastric ulcer (1.6-8.2%) & gastric malignancy (0-3.4%) (2).

Recent studies reveal that dyspepsia is common in Asian population especially in young age & there is an overlap of symptoms of functional dyspepsia, IBS & GERD (3).

Thus, early detection by endoscopic biopsies, especially of malignancies greatly improves the survival rate (4).

### Aim and Objective

The current study was done to

" To study the spectrum of histopathological lesions both non-neoplastic and neoplastic in patients undergoing endoscopic duodenal biopsy.

" To study sub site distribution of lesions.

" To correlate histopathological findings with endoscopic findings.

**From The: Dept of Pathology & Gastroenterology, Maharishi Markandeshwar Institute of Medical Sciences, Mullana**

**Correspondence to :** Dr. Abhimanyu Sharma, Assistant Professor, Dept of Pathology, Maharishi Markandeshwar Institute Of Medical Sciences, Mullana, Haryana.

**Material and Method**

The present study included endoscopic duodenal biopsies received in the Department Of Pathology, at MMIMSR. The study was a prospective study and 44 patients were included in the study over a period of 2 years.

*Inclusion Criteria:*

" Presenting with ulcers, abnormal growths, precancerous conditions and MAS.

" Lesions present up to second part of duodenum.

*Exclusion Criteria:*

" Inadequate biopsy in terms of no glands, only fibro collagenous tissue.

" All duodenal biopsies below the second part of duodenum.

The endoscopic biopsy specimens so obtained were put in saline, placed on the filter paper with mucosal surface upwards and fixed in 10% formalin. All the bits were embedded together for ideal visualization. Then, sections 4-6 microns were stained routinely with Haematoxylin and Eosin.

The well oriented and adequate endoscopic biopsies were then evaluated and attempt was made to correlate it with endoscopic findings. The neoplastic lesions were diagnosed as per WHO classification of tumours (5). The

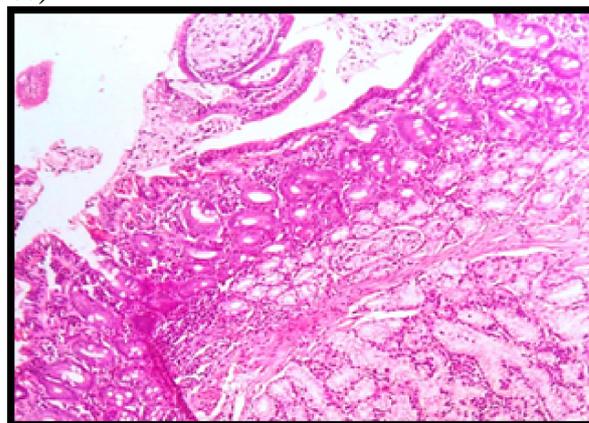
**Fig1. Endoscopic view of Celiac Disease Showing Scalloping and loss of Folds**



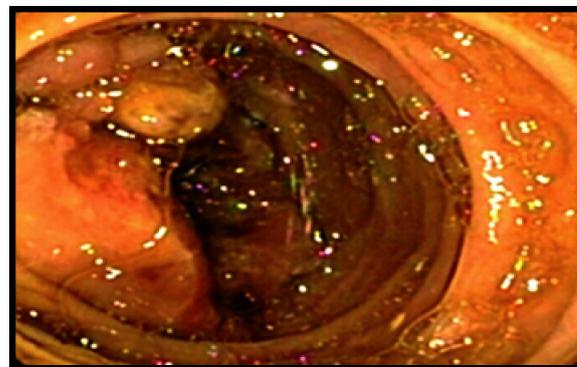
cases of MAS were graded as per modified MARSH criteria (6).

*Statistical Analysis*

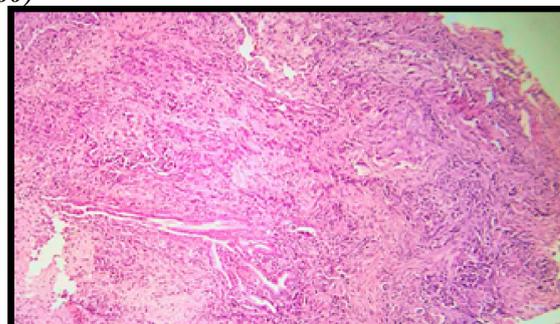
This was a descriptive study to correlate endoscopic appearances/ diagnosis with the final histologic diagnosis-  
**Fig 2. Low power view of duodenal biopsy showing flattening of villi along with mild degree of lymphomononuclear infiltrate in lamina propria. MARSH grade 3 (H & E; X100)**



**Fig 3. Endoscopic view of ampullary carcinoma of duodenum presenting as a proliferative growth**



**Fig 4. Low power view of ampullary carcinoma showing poorly differentiated tumour cells in sheets & nests (H & E; X100)**



**Table.1 Sub-Site Presentation & Histopathological Diagnosis Ofduodenal Biopsies**

Site	Histopathology				Total			
	Duodenitis	Lymphangectasia	Intra Epithelial Lymphocytosis	Villous Atrophy	W	M	P	
1 <sup>ST</sup> PART	4	0	0	0	0	0	0	4
2 <sup>ND</sup> PART	11	2	8	17	0	1	0	39
PERIAMPULLA RY REGION	0	0	0	0	0	0	1	1
<b>TOTAL</b>	15	2	8	17	0	1	1	44

**Table 2: Correlation Of Endoscopic And Histological Diagnoses Induodenal Biopsies**

Endoscopy	Dudonitis	Intra Epitheial Lymphocytosis	Villous Atrophy	Lymphangectasia	Adenocarcinoma	Total	% of Concoradance
DUODENITIS	13	0	0	0	0	13	100
SCALLOPING WITH LOSS OF FOLDS	2	8	17	1	0	28	60.7
POLYPOIDAL LESION	0	0	0	1	0	1	0
CARCINOMA	0	0	0	0	2	2	100
<b>TOTAL (44)</b>	15	8	17	2	2	44	-

sis. Hence the data collected was analyzed as percentage of concordance of the two. The discordant cases were analyzed to obtain reasons for discordance. SPSS (Statistical package for social sciences v21.0) was used to perform statistical analyses.

### Results

The present study was carried out for a period of 2 years, at MMIMSR, MULLANA. A total of 44 biopsies were studied during this period.

Among the duodenal biopsies, majority was from 2nd part of duodenum (88.6%) with the most common lesion being villous atrophy. (Table 1)

Endoscopic and histological correlation of 44 duodenal biopsies shows that the most common discordant lesion on endoscopy was polypoidal lesion wherein a case of lymphangectasia was diagnosed to be a polypoidal lesion upon endoscopy, followed by scalloping lesions which accounted for 60.7% concordance between the two di-

agnostic methods. Duodenitis and carcinomas yielded 100% concordance in our study. (Table 2)

### Discussion

Upper gastro-intestinal symptoms like diarrhea, abdominal pain, malabsorption etc. are a very common cause of discomfort among patients & form the common reasons for referral to the endoscopy department.

Endoscopy, when combined with biopsy is an easy, minimally invasive & cost effective procedure when it comes to arriving at a specific diagnosis of a patient with non-specific symptoms.

The present study included such endoscopic biopsies that were studied with respect to sub-site wise distribution & correlation with presenting complaints & endoscopic findings. A total of 44 endoscopic biopsies from duodenum were received in the department of pathology within this study period.

## SUB SITE WISE DISTRIBUTION OF LESIONS

Of the total 44 cases of duodenal biopsies, non-neoplastic lesions (95.5%) were more common than neoplastic lesions (4.5%). The majority of the lesions comprised of villous atrophy (38.6%) followed by chronic duodenitis (34.1%). Most of the lesions were found to be common in the 2nd part of duodenum, similar to Ryder *et al* according to whom the most common site was 2nd part of duodenum (7, 8). A single case of ampullary carcinoma and two cases of lymphangectasias also correlated with the study done by Ryder *et al* (7).

## CORRELATION OF ENDOSCOPIC AND HISTOLOGICAL FINDINGS

In the duodenal lesions, the correlation studies showed polypoidal lesions yielding total discordance, as single case diagnosed as polyp on endoscopy came out as lymphangectasia upon histology. This was followed by scalloping lesions with loss of folds seen in 28 cases on endoscopy with only 17 confirmed cases on histology accounting for 60.7% concordance between the two methods. Our findings were in agreement to the study by Paoluzi *et al* (8). Similar to the gastric findings, the carcinomas yielded 100% concordance in our study.(9,10)

## Conclusion

Hence, to conclude few lesions in the present study emerged to be benign, which were otherwise visualized as atypical/ suspicious on endoscopy. Similar studies done by Roberts et al & Faigel et al reveal that even an experienced endoscopist is unpredictable in categorizing a resectable lesion on inspection alone & such missed cases with equivocal findings on endoscopy should lead to urgent re-investigation and its confirmation with histological examination. Also, Endoscopic Ultrasound can be performed in selected cases whose biopsies are negative for malignancy but with suspicious findings on endoscopy and atypical presentation like profound weight loss, advanced age, short duration of symptoms etc.

## References

- 1) Jacobson BC, Crawford JM, Farraye FA. GI Tract Endoscopic and Tissue Processing Techniques and Normal Histology. In: Odze RD, Goldblum JR, editors. Surgical Pathology of the GI Tract, Liver, Biliary Tract, and Pancreas. 2nd ed. Philadelphia: W.B. Saunders; 2009. pp. 3-30.
- 2) Tytgat GNJ. Role of endoscopy and biopsy in the work up of dyspepsia. *Gut* 2002;50(Suppl 4):iv13-iv16.
- 3) Ghoshal UC, Singh R, Chang F-Y, *et al*. Epidemiology of uninvestigated and functional dyspepsia in Asia: facts and fiction. *J Neurogastroenterol Motil* 2011;17(3):235-44.
- 4) Vidyavathi K, Harendrakumar ML, Lakshmana Kumar YC. Correlation of endoscopic brush cytology with biopsy in diagnosis of upper gastrointestinal neoplasms. *Indian J Pathol Microbiol* 2008;51(4):489-92.
- 5) Aaltonen LA, Hamilton SR, editors. World Health Organization classification of tumours. Pathology and genetics of tumours of the digestive system. Lyon: IARC Press; 2000.pp. 314 .
- 6) Shariff S. Gastrointestinal System. In: Fundamentals of Surgical Pathology. New Delhi: Jaypee Brothers Publishers; 2010. pp. 135-88.
- 7) Ryder NM, Ko CY, Hines OJ, Gloor B, Reber HA. Primary duodenal adenocarcinoma: a 40-year experience. *Arch Surg* 2000;135(9):1070-75.
- 8) Paoluzi P, Pallone F, Palazzesi P, Marcheggiano A, Iannoni C. Frequency and extent of bulbar duodenitis in duodenal ulcer, endoscopic and histological study. *Endoscopy* 1982;14(6):193-95.
- 9) Roberts RH, Madden MV, Dent DM. Sensitivity of endoscopic detection of malignancy in resectable gastric carcinoma. *South Afr Med J* 1987;72(1):37-8.
- 10) Faigel DO, Deveney C, Phillips D, Fennerty MB. Biopsy-negative malignant esophageal stricture: diagnosis by endoscopic ultrasound. *Am J Gastroentero.* 1998;93(11):2257-60.