

Histopathological Spectrum of Lesions in Gastrointestinal Endoscopic Biopsies: A Retrospective Study in a Tertiary Care Center in Western India

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Abstract

Background: Lesions of gastrointestinal tract (GIT) are commonly seen in the surgical histopathology section. These patients are subjected to endoscopic examination and biopsy is taken for further evaluation. Both upper and lower parts of gastrointestinal tract can be accessed through endoscopy. A wide spectrum of lesions are encountered in the GIT. This study is done to statistically analyse the various histopathological lesions and to evaluate the usefulness of endoscopic biopsy to the clinicians for effective treatment.

Material and methods: A total of 272 cases received in surgical histopathology section were studied. All endoscopic biopsies from upper and lower GIT were received and processed. Paraffin blocks were made , sections cut at 4 micron thickness and stained with routine hematoxylin and eosin stain.

Results: Out of the total 272 endoscopic biopsies, the most commonly encountered were colorectum biopsies, accounting to 151 cases, followed by small intestine (53) gastric (34), and esophagus (34). Malignancy was the most common lesion in the esophagus. Adenocarcinoma was the most common lesion in stomach. Chronic non specific inflammation was the

most common lesion in the duodenum, ileum and colorectum. Among the malignant cases, esophagus was found to be the most common site followed next by colorectum.

Conclusion: Hence in this study, various non-neoplastic and neoplastic lesions were found in the whole of GIT. This study is done to emphasize the usefulness of endoscopic biopsy in diagnosing the conditions, thus helping the surgeons to decide further management prior to resection, especially in malignant cases.

Keywords: Gastrointestinal lesions, histopathology, neoplastic, non neoplastic lesions.

Introduction

Disorders of gastrointestinal tract (GIT) are one of the most commonly encountered problems in clinical practice. They cause a high degree of morbidity and mortality [1]. The invention of flexible fibre optic endoscopy was a major breakthrough among surgeons. Since then an endoscopy or colonoscopy has become incomplete without biopsy for histopathological examination [2]. Upper gastrointestinal endoscopic biopsies include biopsies from oesophagus, stomach and duodenum upto the second part. Lower

gastrointestinal biopsies are taken from lower GIT beyond second part of duodenum.

Various lesions can occur in GIT and include non-neoplastic conditions, more commonly encountered are infection, inflammation, toxic, physical injury, vascular disorders etc. Polyps are also seen in GIT which include hyperplastic, inflammatory, adenomatous and carcinomatous polyps[3]. Endoscopic biopsies enable the surgeon to reach the inaccessible sites of lesions and arrive at a diagnosis without major surgical resection.

Endoscopic biopsies, apart from diagnostic utility, they are also used to monitor the course of the disease, extent of the disease, to detect complications and to assess the response to therapy. Hence, they are considered gold standard investigation for GI lesions [4].

Material And Methods

This is a retrospective study, carried out in Jaipur National University Medical College & Hospital, India during a period of 3.5 years from January 2016 to July 2019. A total of 272 gastrointestinal biopsies were received in the surgical histopathology section.

Complete clinical history was collected for histopathological correlation.

Inclusion Criteria

- 1- All lesions of upper and lower GIT.
- 2- All age groups and both sexes.

Exclusion Criteria

- 1- Resection specimens
- 2- Lesions of oropharynx
- 3- Lesions of liver and gall bladder

The biopsies were received as tiny fragments of soft tissue. They were placed in a filter paper and inked with eosin. Fixation was done in 10% formalin, followed by tissue processing and embedding. Four

microns thick sections were taken and stained with Hematoxylin and Eosin. Analysis of spectrum of lesions in GIT was done. All tumors were classified according to the WHO classification [5].

Results

In the present study of 272 cases, 150 were males and 122 were females with male to female ratio of 1.2:1. The mean age of presentation was 45 years. The youngest patient was 2 years male with juvenile rectal polyp and the oldest patient was 80 years male with adenocarcinoma of colon.

Among all endoscopic biopsies, colorectal biopsies constituted higher number of 151 (55%), followed by small intestine (19%), esophagus (13%) and stomach (13%).

Out of 34 cases of esophageal biopsies, 7 cases were non-neoplastic and 27 cases were neoplastic in nature. (Figure-1) Table 1 shows distribution of lesions in esophagus.

Table 1: Distribution of lesions in esophagus (n=34)

Diagnosis	Number(N=34)	Percentage
Squamous cell carcinoma	27	79
Dysplastic squamous epithelium	1	3
Candidiasis	1	3
Chronic non specific esophagitis	3	9
Adenocarcinoma at Gastro-esophageal junction	2	6

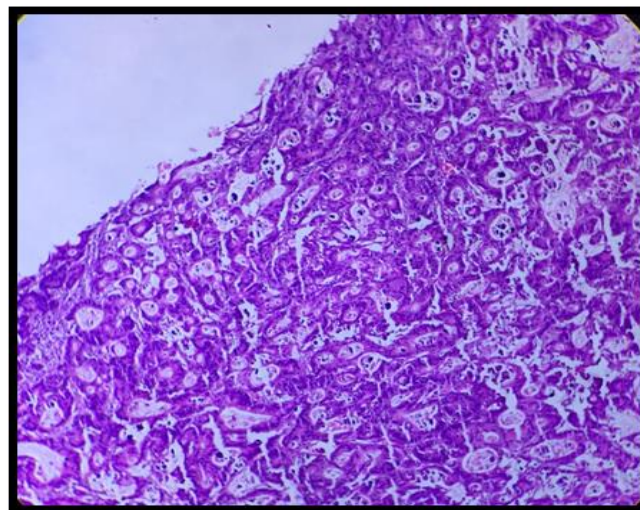
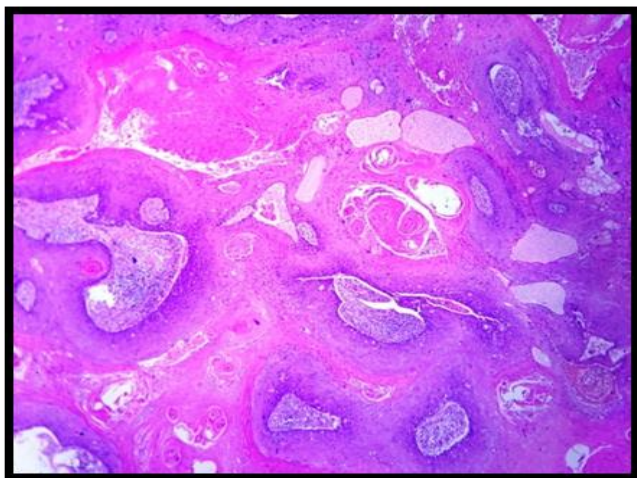


Figure 1: Squamous Cell Carcinoma Oesophagus (H & E X 400)

Figure 2: Moderately differentiated Adenocarcinoma of Stomach (H & E X 400)

Out of 34 cases of gastric biopsies, the most common lesion was found to be well differentiated adenocarcinoma, followed by chronic non specific gastritis, followed by gastrointestinal stromal tumor, dysplasia & hyperplastic polyp. (Figure-2) Table 2 shows distribution of lesions in gastric biopsies.

Among 53 cases of duodenum and ileal biopsies received, 29 cases were of chronic non specific inflammation, 8 cases of tuberculosis, 8 cases of gangrene, 7 cases of moderately differentiated adenocarcinoma and one was reported as tropical sprue. Total biopsies from colorectum including anal canal were 151. The most common lesion was chronic non specific colitis (32%). Table 3 shows distribution of lesions in colorectal region. (Figure-3,4,5,6) In this study, out of total 272 cases of gastrointestinal biopsy, 106 cases were malignant and their distribution is shown in Table 4.

Table 2: Distribution of lesions in stomach (n=34)

Diagnosis	Number(N=34)	Percentage
Chronic non specific gastritis	8	24
Acute gastritis	7	20
Dysplasia	1	3
Hyperplastic polyp	1	3
Adenocarcinoma	15	44
Gastrointestinal stromal tumor	2	6

Table 3: Distribution of lesions in colorectal region (n=151)

Lesions In Colorectal Region	Number(N=151)	Percentage
Adenocarcinoma – well differentiated	22	14
Adenocarcinoma – moderately differentiated	8	5

Adenocarcinoma-poorly differentiated	6	4
Lymphoma	4	3
Mucinous adenocarcinoma	10	7
Adenoma with low grade dysplasia	1	0.5
Adenoma with high grade dysplasia	8	5
Hyperplastic polyp	2	1
Juvenile rectal polyp	4	3
Inflammatory polyp	2	1
Ulcerative colitis	8	5
Crohn's disease	4	3
Acute colitis	4	3
Chronic non specific colitis	48	32
Amoebic colitis	1	0.5
Tuberculosis	12	8
Gangrene	4	3
Anal canal-squamous cell carcinoma	3	2

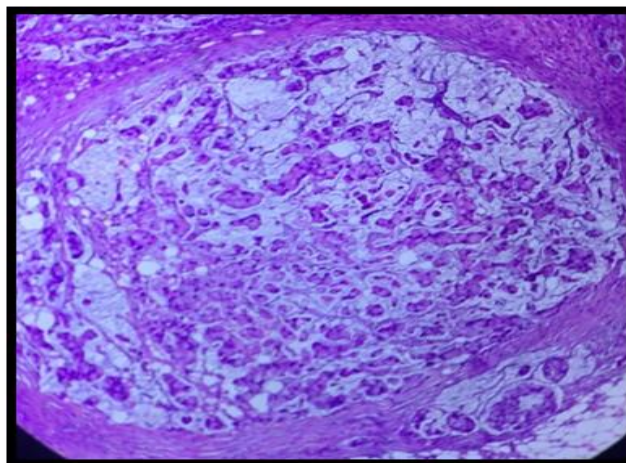


Figure 3; Mucinous Adenocarcinoma Of Colon(H & E X 400)

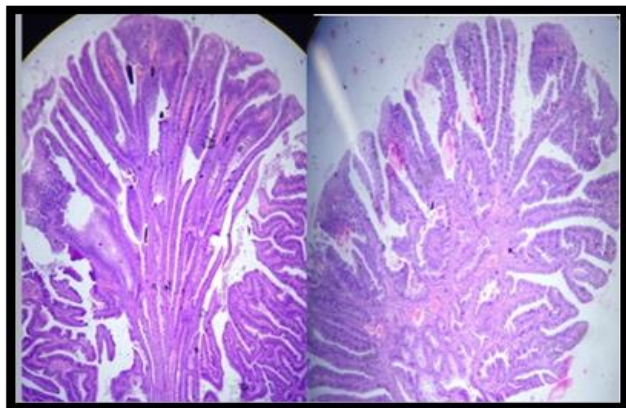


Figure 4; Tubulovillous Adenoma Of Colon (H & E X400)

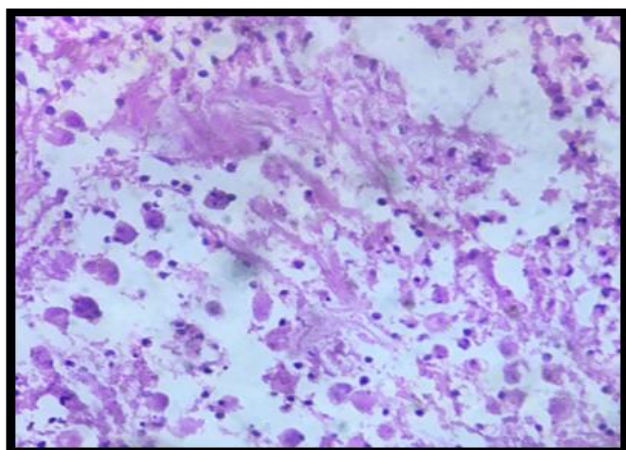


Figure 5; Amoebic Colitis Showing Trophozoites (H & E X 400)

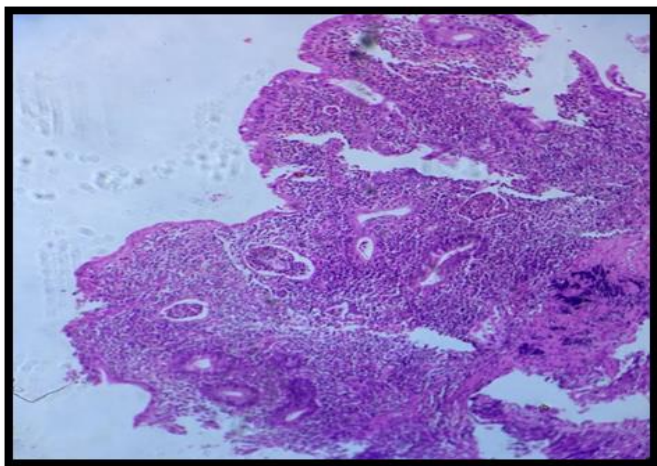


Figure 6; Ulcerative Colitis Section Showing Crypt Abscess, Cryptitis Crypt Distortion

Table 4: Distribution Of Malignant Lesions In Gastrointestinal Biopsies

Site of Malignancy(N=106)	Number	Percentage
Esophagus	29	27
Stomach	17	16
Small intestine	7	6
Colorectum and anal canal	53	51

Discussion

Gastrointestinal lesions are one of the most commonly encountered problems seen in clinical practice. They are broadly classified into upper and lower gastrointestinal disorders.

In the present study, the most common biopsies received are colorectal biopsies, which constituted 56% of total 272 gastrointestinal biopsies. This was contrary to the study by Krishnappa Rashmi [6] and Prasaad PR [7], who observed that the most common biopsies received were gastric biopsy, accounting for 68% and 56%.of the total gastrointestinal biopsy. Bilal A sheikh et al in their study also showed majority of cases constituted by gastric biopsy (64.8%) [9].

Gastric Lesions

Of the total 34 biopsies from stomach, 17 were non neoplastic and 17 were neoplastic. The most common lesion in gastric biopsy in this study was adenocarcinoma, which is contrary to the study done by Hirachand et al and SK Md Jaynut Islam et al. where chronic non specific gastritis was the most common lesion.

Seventeen cases were malignant of which moderately differentiated adenocarcinoma was the most common which is similar to other studies by Hirachand [1] and Sharma P [8]. In contrast, Bilal A sheikh et al in his study, observed that poorly differentiated adenocarcinoma was more common than moderately differentiated adenocarcinoma [9]. H. pylori is the most common cause of chronic gastritis. It manifests as multifocal atrophic gastritis in which there is patchy involvement of pylorus, body and cardiac mucosa. In a study by Ponnam Sharma et al, it was observed that H.pylori was positive in 47% of cases and need in 53% of cases [8]. In study by Prasad PR, 61 % of cases showed H.pylori and 39% were H.pylori negative [7].In the present study, among 34 cases of gastric biopsies, H.pylori was positive in 1 case only which is found to be lower than other studies.

Esophageal Lesions

Among the esophageal biopsies received in the present study (34 cases) 7 were non-neoplastic and 27 were neoplastic. This data is similar to other studies by SK Md Jaynut Islam [10] and Bilal A Sheikh .Among the neoplasms, squamous cell carcinoma was the most common constituting 79% of esophageal biopsies.

In the present study, 53 duodenal and ileal biopsies were received, out of which 29 cases showed chronic non specific inflammation. Adenocarcinoma was reported in 7 cases in the present study which is similar to a study by Kazi J I [11].

Colonic Lesions

Among the lower gastrointestinal biopsies, colonic biopsies were the most common. 151 colon biopsies were received. Various lesions can occur in colon including chronic non specific colitis and focal acute colitis. Special forms include amoebic colitis and eosinophilic colitis .Polyps are more commonly seen in colon. Tubular adenomas, villous adenomas and hyperplastic polyps are the frequently encountered polyps. The most common lesion in the colonic biopsies in present study was chronic non specific colitis (32%).

Adenomatous polyps were reported with either lower grade dysplasia or high grade dysplasia. Three cases of tubulovillous adenoma and three cases of villous adenoma with high grade dysplasia and single cell tumour infiltration into the lamina propria were reported. Among the malignancies of colon, well differentiated adenocarcinoma was the most common constituting 14% of colonic malignancies, which is similar to the study by Durrani A [12].

Of all these lesions of GIT, the most important to be diagnosed are malignancies. In the present study, 106 cases were reported as malignant and the most common site was found to be esophagus which is in contrast to study by Pailoor K [13].

Endoscopy and biopsy have certain advantages and limitations. Advantages:It is a minimally invasive procedure. It is sensitive for diagnosing mucosal diseases. Limitations: It cannot assess functional diseases. It cannot detect wall thickness and luminal diameter. It is difficult to diagnose if biopsy samples are very small. Complications of endoscopic biopsy are very rare with a well experienced endoscopic surgeon. They include perforation, laceration of major blood vessels and mucosal bleeding.

Conclusion

A wide variety of neoplastic and non-neoplastic lesions were diagnosed in the present study. The most common non –neoplastic lesion was chronic non-specific colitis and the most common neoplastic lesion was moderately differentiated squamous cell carcinoma of esophagus. Early endoscopy and biopsy with adequate sample size can help the surgeon to detect unsuspected cases like lymphocytic colitis and also to diagnose malignancies at early stage. Hence a proper management can be given to

the patients at the earliest. However, certain diseases of deeper sites could not be diagnosed by endoscopic biopsy which further needed evaluation.Hence appropriate use of biopsy during endoscopic procedure is necessary to categorize the gastro-intestinal lesions.

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