CORRELATIVE STUDY OF HISTOPATHOLOGICAL DIAGNOSIS WITH CLINICAL & ENDOSCOPIC DIAGNOSIS IN UPPER GASTROINTESTINAL ENDOSCOPIC BIOPSY AT TERTIARY CARE CENTER

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Abstract

Lesions of Upper gastrointestinal tract (GIT) is commonly seen in surgical department patients. These patients are subjected to endoscopic examination and biopsy is taken for further histopathological diagnosis. A clinical, endoscopic and histopathological diagnosis is made. This study was done to compare and correlate the results of histopathological diagnosis with endoscopic and clinical findings.

Study Designed: A total 50 Upper Gastrointestinal tract biopsy cases received in histopathology lab were analyzed.

Material and Method: All endoscopic biopsies from upper GIT were received and processed. Paraffin blocks were made and sections were cut at 4 microns thickness and stained with routine hematoxylin and eosin stain. Their clinical and endoscopic reports were collected and compared with histopathological diagnosis.

Result: After analyzing statistically the data, we found that endoscopy results were better than clinical diagnosis and more closer to histopathological diagnosis.

Conclusion: Relation of histopathological diagnosis with endoscopic findings & clinical diagnosis was done in our study. We conclude that endoscopy is incomplete without histopathological examination of biopsy & so, the combinations of both plays an important role in diagnosis & management of upper gastrointestinal tract disorders. Histopathological examination remains the gold standard.

Keywords: Histopathology, endoscopy, gastrointestinal lesions.

Introduction

Upper gastrointestinal tract disorders are one of the most commonly encountered problems in the clinical practice with a high degree of morbidity and mortality and endoscopic biopsy is common procedure performed in the hospital for a variety of benign and malignant lesions^[1]. A variety of disorders such as infectious diseases, inflammatory disorder, mechanical, toxic and physical reactions including radiation injury and neoplasm can affect the upper gastrointestinal tract.

Gastrointestinal (GI) tract tumors are one of the commonest cancers accounting for 11% of all cancers^[2]. Among these tumors, upper gastrointestinal tract malignancies are quite aggressive with a dismal prognosis. Upper gastrointestinal tumors include those arising from the esophagus, stomach, and first and second part of duodenum. These neoplasms can be benign or malignant, more often malignant^[3].

Malignancies of the esophagus and stomach are detected late, as the patients are either asymptomatic or present with mild non-specific symptoms in the early stages of the disease. Thus, early detection of these lesions becomes rather important. Gastric lymphomas, mostly of the MALT (Mucosa Associated Lymphoid Tissue) type are associated with *Helicobacter pylori* infection and around 75% of these tumors undergo complete regression with eradication of the infection, which may take anywhere from a few weeks to

18 months during which time careful follow-up with repeated endoscopies and gastric biopsies is necessary. In the duodenum, villous adenomas are common tumors^[4]. Most of the adenocarcinomas of the duodenum are said to arise from a pre-existing villous adenoma. Hence early detection and resection of these tumors is very important. The prognosis of these adenocarcinomas depends mainly on the stage of the neoplasm at time of surgery for which early detection is necessary^[5].

Endoscopic biopsies, apart from diagnostic utility, they are also used to monitor the course of the disease, extend of the disease, to detect complications and to assess the response to the therapy. Hence, they are considered gold standard investigation of gastrointestinal lesions.

Material & Method

The Study was conducted in Department of Pathology, Medicine & Surgery of Index Medical College, Hospital and Research Centre.

The Study Protocol was implemented after obtaining an approval and due clearance from the Ethical Committee of the institute.

This was a cross sectional and prospective study which includes Upper GI endoscopic biopsy specimen received from Department of Medicine and Department of Surgery of Index Medical College & Hospital.

Materials (Cases)-

50 cases of Upper Endoscopic biopsy specimen were included.

Inclusion Criteria

1. All symptomatic patients undergoing endoscopic biopsy were included in the study.
2. Patients of all age groups and both sexes were included in the study.

Exclusion Criteria:-

1. Patients who refused to give consent.

History and Investigations of all subjects were recorded as per the following points:

1. Name
2. Age
3. OPD No./IPD No.
4. Clinical Findings
5. Endoscopic Findings
6. Histopathological Findings
7. Diagnosis.

Method:

The Upper GI endoscopic biopsy Of 50 consecutive samples from patients of upper GI were symptoms subjected to histopathological examination. The selection of study material was prospective (June 2018 – May 2020).

Upper gastrointestinal endoscopic biopsy samples in 10% formalin that were received in the laboratory were processed and paraffin blocks were prepared. Sections were cut at 4 micron thickness and stained with routine Hematoxylin and Eosin Stain. Histomorphological diagnosis was made and compared with clinical and endoscopic finding. In selected cases additional sections were stained with Giemsa to observe for the presence of *Helicobacter pylori*. Periodic Acid Schiff (PAS) stain was performed wherever necessary.

Eosinophilic Gastritis:

- Marked destruction of mucosal glands.
- Lamina propria shows mixed inflammatory infiltrate predominantly eosinophils.
- Blood vessels with plump endothelial lining along with granulation tissue.
- PAS and Mucicarmin :- **strongly positive**

Mucicarmin **PAS****CHRONIC ATROPHIC GASTRITIS:**

Glandular Atrophy, Dense lymphocytic inflammatory infiltrate in mucosa, at places fibrosis also noted.

H&E, 10X **H&E, 40X** **Alcian Blue, 10X****Moderately Differentiated Squamous Cell Carcinoma (MDSCC) ESOPHAGUS:**

Markedly dysplastic stratified squamous epithelium infiltrated by tumor cells.

Sub epithelium is edematous having scattered tumor cells showing pleomorphism, prominent nucleoli, high N:C ratio & keratin pearls.

H&E, 4X

H&E, 4X

H&E, 40X

H&E, 40X

MUCINOUS ADENOCARCINOMA STOMACH:

- Marked glandular hyperplasia
- Disruption of architecture & loss of basement membrane

Cells are showing cellular & nuclear pleomorphism with high N:C ratio, hyperchromatism & prominent nucleoli.

H&E, 4X

H&E, 40X

H&E, 40X

H&E, 40X

ADENOCARCINOMA STOMACH:

Alcian Blue and PAS Positive

H&E, 40X

Alcian Blue

PAS

Results**Table 1: esophagus cases relation of clinical & histopathology diagnosis of esophagus cases**

	Clinical	Histopathology	p value
Benign	10	02	0.0128
Malignant	09	17	

Table 2: esophagus cases relation of endoscopic & histopathology diagnosis of esophagus cases

	Endoscopy	Histopathology	p value
Benign	05	2	0.4048
Malignant	14	17	

Above tables (1 and 2) show correlation between clinical, endoscopic and histopathological findings for esophageal lesions. Comparison done using Fischer Exact test Calculator, which showed statistically significant difference (p value 0.0128) between clinical and histopathological findings. No significant difference (p value 0.4048) was found between endoscopy and histopathology thus it is more correlating to histopathological findings. This showed that for esophageal lesions endoscopy was better than clinical findings in correct diagnosis as compared to clinical findings.

Table 3: stomach cases relation of clinical & histopathology diagnosis of stomach cases

	Clinical	Histopathology	P value
Benign	12	10	0.7579
Malignant	9	11	

Table 4: relation of endoscopic and histopathology diagnosis of stomach cases.

	Endoscopy	Histopathology	P value
Benign	10	10	1
Malignant	11	11	

Above tables (3 and 4) show correlation between clinical, endoscopic and histopathological findings of stomach diseases. Fischer Exact test Calculator showed statistically insignificant difference (p value 0.7579) between clinical and histopathological findings. No significant difference (p value 1) was also found between endoscopy and histopathology. This showed that for gastric lesions clinical findings and endoscopy showed no significant difference in correlating to histopathological diagnosis.

Table 5: duodenum cases relation of clinical & histopathology diagnosis of duodenum cases

	Clinical	Histopathology	p value
Benign	9	10	1
Malignant	1	0	

Table 6: duodenum cases relation of endoscopic & histopathology diagnosis of duodenum cases

	Endoscopy	Histopathology	p value
Benign	10	10	1
Malignant	0	0	

Above tables (5 and 6) show correlation between clinical, endoscopic and histopathological findings of duodenal lesions. Fischer Exact test Calculator showed no statistically significant difference between clinical, endoscopy and histopathology findings. This showed that for duodenal lesions clinical findings and endoscopy correlated equally to histopathological diagnosis.

Discussion

According to National Cancer Registry, Gastric & Esophageal cancers are the most common cancers found in men, while Esophageal cancer ranks third among women after breast & cervical cancer^[6]. Hence, there is a need to detect these malignant lesions at an early stage & differentiate them from various benign & inflammatory conditions that afflict the upper GI tract & may give rise to an overlapping symptomatology.

Histopathological study of Endoscopic biopsy specimens is used to confirm the endoscopic diagnosis in case of suspected malignancy or to make the diagnosis of benign condition, thus allowing an early therapeutic decision without unnecessary delay. Endoscopy with endoscopic biopsy is currently the major method of diagnosis of Gastrointestinal (GI) neoplasms^[7].

This study showed that for esophageal lesions endoscopy was better than clinical findings in correct diagnosis as compared to clinical findings^[8]. For gastric lesions clinical findings and endoscopy showed no significant difference in correlating with histopathological diagnosis, whereas clinical findings and endoscopy correlated equally with histopathological diagnosis for duodenal lesions^[9].

Conclusion

Relation of histopathological diagnosis with endoscopic findings & clinical diagnosis was done in our study. We

conclude that endoscopy is incomplete without histopathological examination of biopsy & so, the combination of methods play an important role in diagnosis & management of upper gastrointestinal tract disorders.

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