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RESEARCH ARTICLE

CLINICOPATHOLOGICAL CORRELATION OF ENDOSCOPIC ESOPHAGEAL BIOPSIES IN A TERTIARY CARE HOSPITAL IN RURAL AREA OF NORTH INDIA

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Abstract

Background: Endoscopy when combined with biopsy, the diagnostic accuracy get increased manifold. The objective of the present study was to diagnose the lesions of esophagus by studying endoscopic biopsies in relation to neoplastic and non neoplastic lesions, sub site wise distribution and correlating them with endoscopic diagnoses.

Method: The study included 52 endoscopic esophageal biopsies.

Result: Out of 52 esophageal biopsies, the neoplastic lesions commonly presented as carcinoma whereas the non-neoplastic lesions presented as inflammatory lesions on endoscopy. Neoplastic lesions predominated and squamous cell carcinoma was the most common lesion. Associated conditions were found to be candidiasis with esophagitis. The most common lesion was squamous cell carcinoma followed by esophagitis. In esophageal biopsies, non-neoplastic lesions showed 83.3% while neoplastic lesions showed 95.0% concordance between the two diagnostic modalities respectively.

Conclusion: 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.

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Introduction:-

An endoscopy helps you to see the place that your hands cannot reach and see the world your eyes cannot see¹. Upper GI endoscopy utilizes a lighted, flexible fiberoptic or video endoscope for visual examination of the upper gastrointestinal tract². GERD has emerged as the mainstay of dynamic research in the Asia-Pacific zone during the last few decades. Most patients, clinically diagnosed as GERD or having epigastric pain do not show any defect on endoscopic analysis. In such patients, histopathology may provide the opinion as esophageal biopsy is undoubtedly sensitive in detecting reflux disease even in the lack of endoscopic findings³. Barrett's esophagus is a well-known pre-malignant condition & is found in 10- 15% of symptomatic subjects who underwent endoscopy for indications of gastro-esophageal reflux⁴. A study done by Soest et al reveal the increasing incidence of BE despite endoscopic biopsy surveillance & more so in males⁵. Thus, early detection by endoscopic biopsies, especially of malignancies greatly improves the survival rate⁶. The objectives of this study was to study the spectrum of histopathological lesions both non-neoplastic and neoplastic in patients undergoing esophageal biopsy, to study sub site distribution of lesions and to correlate histopathological findings with endoscopic findings.

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Material and Methods:-

The study was a prospective study and 52 patients were included in the study over a period of 3 years.

Inclusion Criteria:

1. Patients presenting with ulcers, abnormal growths, precancerous conditions.
2. Lesions present in esophagus.

Exclusion Criteria:

1. Patients presenting with lesions in the oral cavity & oropharynx.
2. Inadequate biopsy in terms of no glands, only fibro collagenous tissue.

Brief clinical data was noted from the case records, endoscopic findings were noted and presumptive clinical diagnosis was made. 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 neoplastic lesions were diagnosed as per WHO classification of tumours⁷.

Results:-

Observations of total 52 biopsies taken were taken, The majority of the esophageal biopsies were from lower third (84.6%) among which the most common diagnosis was well-differentiated squamous cell carcinoma. (TABLE 1) Endoscopic and histological correlation of 52 esophageal biopsies showed that out of 12 cases of esophagitis, 2 were diagnosed as carcinoma upon endoscopy whereas remaining 10 were diagnosed as esophagitis in both yielding 83.3% concordance. Similarly, out of 40 cases of carcinoma, 38 were found to be malignant on both endoscopy as well as histology whereas 2 cases were documented as esophagitis upon endoscopy accounting to 95.0% concordance. (TABLE 2)

Table 1:- Sub-site presentation & histopathological diagnosis of esophageal biopsies.

Site	Histopathological diagnosis					Total
	Ch esophagitis	Candidal esophagitis	Squamous cell carcinoma			
			Wd	Md	Pd	
Upper third	0	0	0	0	0	0
Middle third	4	2	0	2	0	8
Lower third	6	0	18	14	6	44
Total	10	2	18	16	6	52

Table 2:- Correlation of endoscopic and histological diagnoses in esophageal biopsies.

Endoscopy	Histology			Percentage of concordance (%)
	Esophagitis	Squamous cell carcinoma	Total	
Esophagitis	10	2	12	83.3
Carcinoma	2	38	40	95.0
Total (26)	12	40	52	-



Figure 1:- Endoscopic view of carcinoma of esophagus presenting as a proliferative growth.

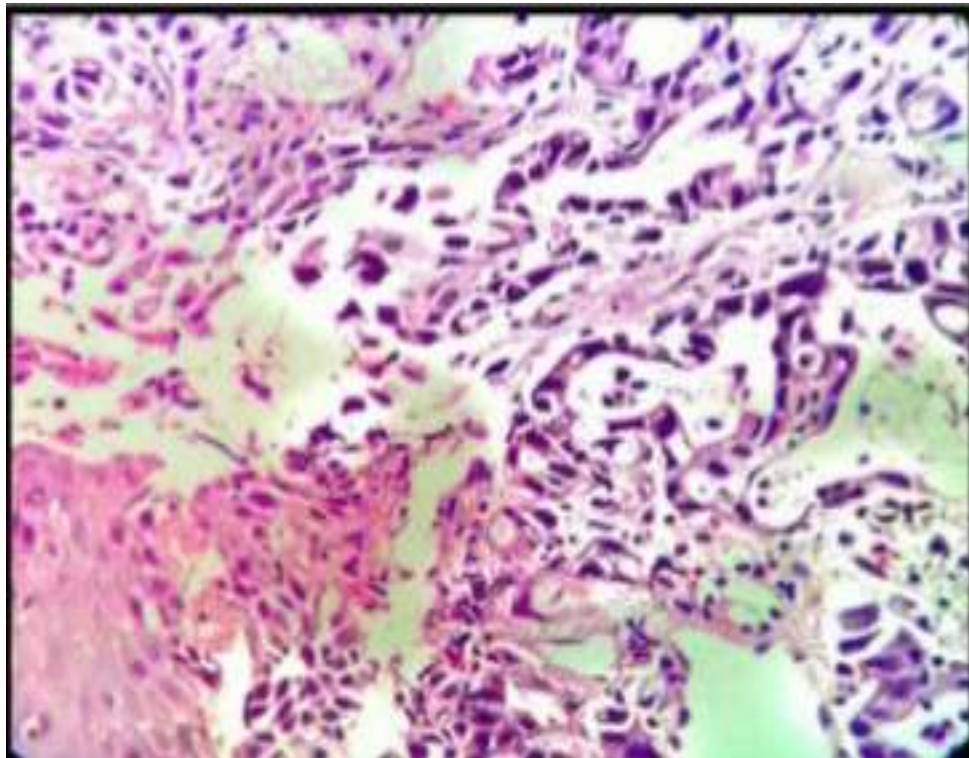


Figure 2:- High power view of invasive squamous cell carcinoma of esophagus, showing highly pleomorphic cells invading into the subepithelium (H & E; X400).

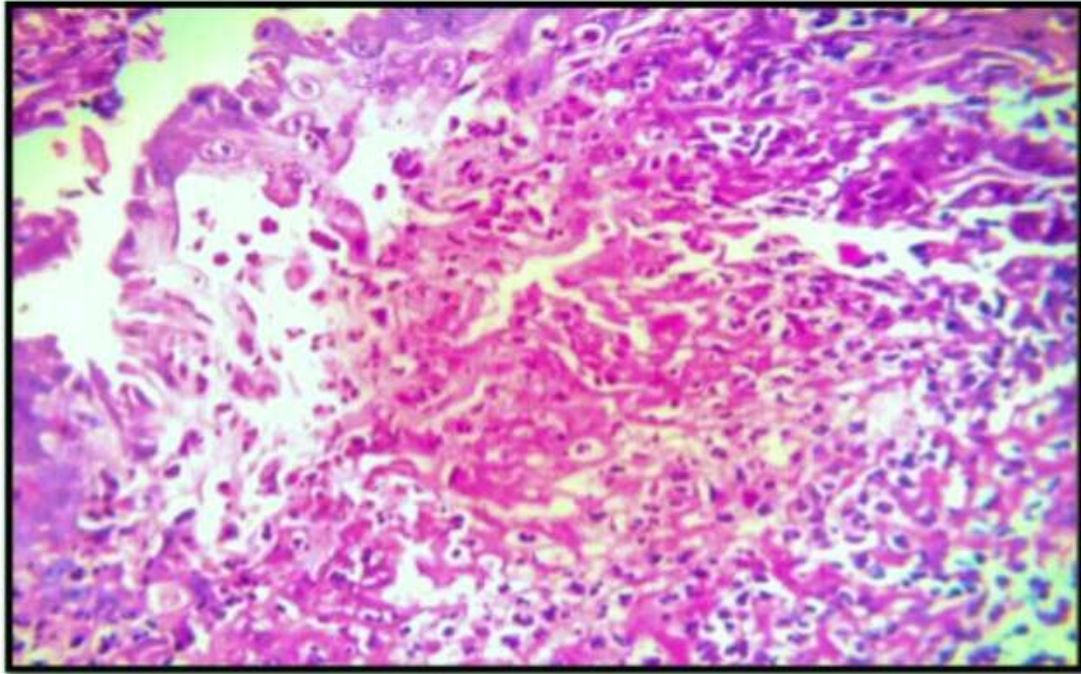


Figure 3:- High power view of esophageal candidiasis, showing spores of candida on PAS stained section (PAS; X400).

Discussion:-

Symptoms like dyspepsia, dysphagia, vomiting, abdominal pain etc. are a very common cause of discomfort among patients & form the common reasons for referral to the endoscopy department. The modern endoscope has evolved from a rigid hollow metal tube to a light, flexible fiberoptic system using self-illumination. It not only allows the inspection of esophagus, but also permits ease of access to suspected tissue areas with the aid of a biopsy forceps. 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 endoscopic findings. These lesions were then classified as non-neoplastic lesions which comprised 12 (23.0%) cases & neoplastic lesions which comprised 40 (77.0%) cases.

Of the total 52 cases of esophageal biopsies, neoplastic lesions (77.0%) were more common than non-neoplastic lesions (23.0%). The majority of the lesions were squamous cell carcinoma (76.9%) followed by chronic esophagitis. Though adenocarcinomas are on the rise, our study did not prove that might be due to limited patients undergoing esophageal endoscopic biopsies in contrast to stomach⁸. The most common site for squamous cell carcinoma was found to be lower one-third in the present study. The most common histological type was found to be well-differentiated squamous cell carcinoma. These findings were in contrast to those published by Pedram et al & Vidyavathi et al wherein the most common site was middle one third and the commonest type was moderately differentiated squamous cell carcinoma^{9,6}.

The esophageal lesions showed good correlation between the two diagnostic modalities with positive endoscopy findings. Out of 40 esophageal carcinomas, 38 diagnosed as carcinomas on endoscopy were confirmed by histology whereas 2 cases came out benign. Esophagitis seen as inflammatory change could only be found in 10 out of 12 histologically confirmed cases while 2 were diagnosed as carcinoma endoscopically. According to Pope¹⁰ endoscopic finding did not rule out possibility of esophagitis, confirming our study that few lesions are likely to be missed on endoscopic examination alone.

Conclusion:-

Few lesions in the present study emerged to be benign, which were otherwise visualized as atypical/ suspicious on endoscopy. So, the conclusion of the study was that endoscopic examination alone might miss out in diagnosing

majority of the lesions. Histological examination in adjunct with endoscopy should be considered as much more valuable diagnostic tool rather than endoscopy alone.

Abbreviations:-

WHO - World Health Organisation

GERD – Gastrointestinal Reflux Disease

BE – Barrett’s Esophagus

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