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RESEARCH ARTICLE

HISTOPATHOLOGICAL SPECTRUM OF UPPER GASTROINTESTINAL TRACT ENDOSCOPIC BIOPSIES IN A TERTIARY CARE HOSPITAL IN RURAL POPULATION IN NORTH INDIA

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Abstract

Background: Upper GI endoscopy when combined with biopsy, the diagnostic accuracy get increased manifold. The objective of the present study is to diagnose the lesions of upper GIT by studying endoscopic biopsies in relation to age and sex distribution, correlating them with presenting complaints.

Method: The study included 200 endoscopic biopsies of upper GIT received in the hospital.

Result: There were 26 esophageal, 130 gastric, 44 duodenal biopsies. Most patients presented in the age group of 31-40 years with a male-female ratio of 1.94:1 and the most common presenting complaint was pain in abdomen. 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 (83.0%) out of which gastritis was the most common lesion.Majority of the lesions of upper GIT were non-neoplastic, presenting with pain in abdomen & inflammatory findings on endoscopy. Lesions were more common in males and in the 31-40 years age group. The most common neoplasm was squamous cell carcinoma followed by adenocarcinoma. 4 cases of signet ring cell carcinoma were noted along with a single case of ampullary carcinoma.

Conclusion: The conclusion of the study was that histological examination in adjunct with endoscopy should be considered as much more valuable diagnostic tool rather than endoscopy alone.

Introduction:-

Upper GI endoscopy utilizes a lighted, flexible fibreoptic or video endoscope for visual examination of the upper intestinal tract. When EGD is performed to evaluate a specific symptom & an etiological structural lesion is observed, the decision to biopsy is straightforward[1]. Examination of specimens obtained at endoscopy by a qualified pathologist is a regular & dire part of handling patients with ailments of the alimentary tract[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. Also, the present decade has seen a rise in the prevalence & association of H. Pylori with a number of gastrointestinal diseases & it has recently been described as a gastritis-associated bacterium[3]. In Indian subcontinent, conferring to National Cancer Registry, esophageal & gastric cancers are the most frequent cancers in men, while esophageal neoplasm positions third among women. Thus, early detection by

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endoscopic biopsies, especially of malignancies greatly improves the survival rate[4]. The objective of this study include studying the spectrum of histopathological lesions both non-neoplastic and neoplastic in patients undergoing upper gastrointestinal biopsy and the overall frequency, age and sex distribution of upper gastrointestinal tract lesions.

Materials And Methods:-

The present study was a prospective study conducted on 200 patients over a period of 2 years.

Inclusion Criteria:

1. Patients presenting with ulcers, abnormal growths, precancerous conditions and malabsorption syndrome (MAS).
2. Lesions present in esophagus, stomach and up to second part of duodenum.

Exclusion Criteria:

1. Patients presenting with lesions in the oral cavity & oropharynx.
2. Inadequate biopsy in terms of no glands, only fibro collagenous tissue.
3. All duodenal biopsies below the second part of duodenum.

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. Additional sections were stained with special stain, Giemsa stain, to look for the presence of H. Pylori. The neoplastic lesions were diagnosed as per WHO classification of tumours[5]. The cases of MAS were graded as per modified MARSH criteria[6]. (Statistical package for social sciences v21.0) was used to perform statistical analyses.

Result:-

Out of 200 biopsies ,26 (13.0%) were esophageal, 130 (65.0%) were from stomach, 44 (22.0%) were from duodenum & 0 (0%) were from GE junction. In 200 cases of upper gastrointestinal biopsies studied (n=200), 132 (66.0%) were males (n=66) and 68 (34.0%) were females (n=34) with a male to female ratio of 1.94:1 and the age ranged from 03 to 80 years.Among the neoplastic lesions 34 (17.0%), the most common was Squamous cell carcinoma constituting 20 cases (10.0%) followed by 14 cases of adenocarcinoma (7.0%). The most common age group was 51-70 years for both squamous cell & adenocarcinoma. The non-neoplastic lesions including gastritis, duodenitis, villous atrophy, polyp, lymphangectasia& GAVE were commonly seen in males accounting for 166 cases (83.0%).

Table 1:- Presenting complaints of non neoplastic lesions of upper git.

Presenting complaint	Lesion								Total
	Esophagitis	Gastritis	Polyp	Gave	Duodenitis	Villous atrophy	Intra epithelial lymphocytosis	Lymphangectasia	
Diarrhoea	0	1	0	0	13	13	7	0	34
Pain abdomen	0	104	5	1	2	4	1	2	119
Vomiting	1	4	0	0	0	0	0	0	5
Dysphagia	0	1	0	0	0	0	0	0	1
Gerd	5	1	0	0	0	0	0	0	6
Hematemesis	0	0	0	0	0	0	0	0	0
Weight loss	0	1	0	0	0	0	0	0	1
Total	6	112	5	1	15	17	8	2	166

The most common presenting complaint in the non-neoplastic category was pain abdomen (71.7%) followed by diarrhea (20.5%). (TABLE 1)

Table 2:- Presenting complaints of neoplastic lesions of upper git.

presenting complaints	Lesions			Total
	Squamous cell carcinoma	Adeno carcinoma	Signet ring cell carcinoma	
Diarrhoea	0	0	0	0
Pain abdomen	3	10	3	16
Vomiting	0	0	1	1
Dysphagia	8	0	0	8
Gerd	2	0	0	2
Hematemesis	7	0	0	7
Weight loss	0	0	0	0
Total	20	10	4	34

The most common presenting complaint of neoplastic lesions was pain abdomen (47.1%) seen most commonly in adenocarcinomas followed by dysphagia (23.5%)& hematemesis (20.6%). (TABLE 2)

Figure 1:- Endoscopic view of GAVE showing hyperemic streaks at mucosal folds resembling watermelon stomach.

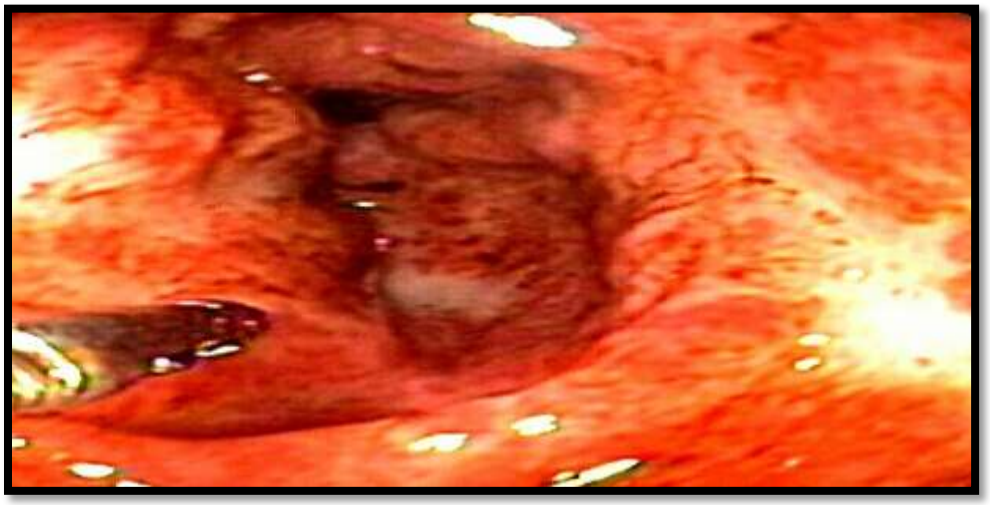


Figure 2:- High power view of gastric biopsy showing signet ring cell carcinoma with sheets of signet ring cells having vacuolated cytoplasm with peripherally pushed nuclei (H & E; X400).

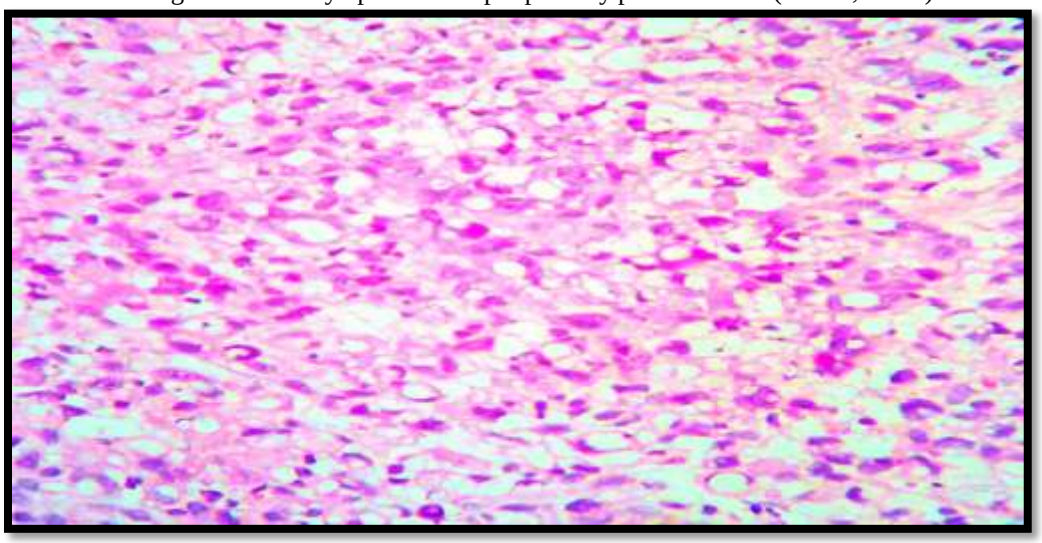
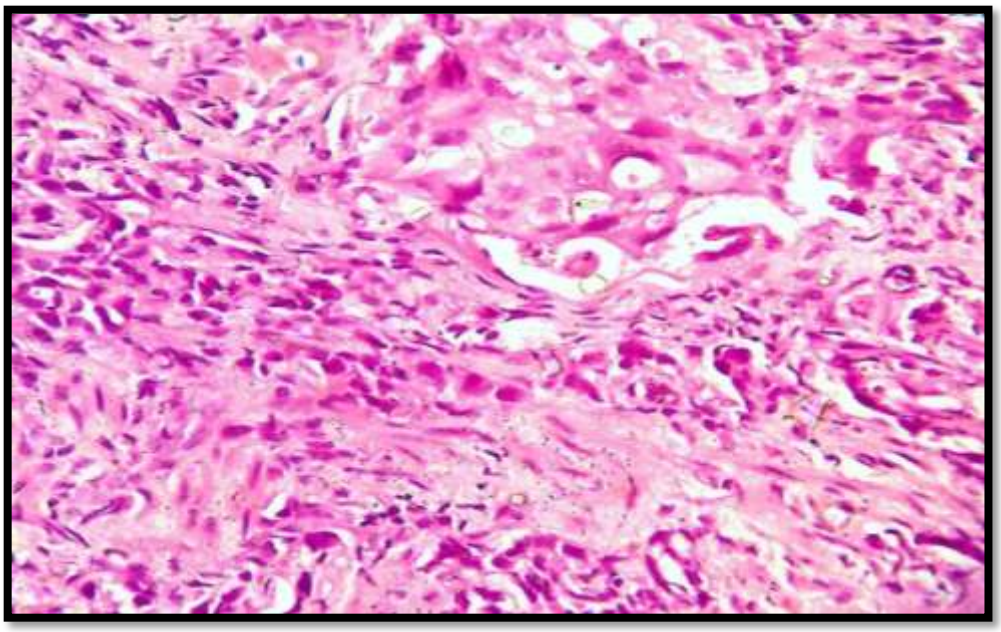


Figure 3:- High power view of ampullary carcinoma showing nests and cords of malignant cells (H & E; X400).



Discussion:-

Upper GI symptoms like dyspepsia, dysphagia, abdominal pain, etc. are a very common cause of discomfort among patients & form the common reasons for referral to hospitals. Endoscopy, when combined with biopsy is a cost effective procedure when it comes to arriving at a specific diagnosis of a patient with non-specific symptoms.In the present study, majority of patients presented between 31-40 years of age in contrast to study done by Froehlich et al[7], where the age group was found to be over 60 years. The youngest patient being 03 years of age & oldest being 80 years. This relative variation could be due to different risk factors prevalent among different age groups.The non-neoplastic lesions included cases of esophagitis, gastritis, GAVE, polyps, duodenitis, villous atrophy& lymphangectasia. The peak age group of non-neoplastic lesions was found to be 31-40 years. These findings were in contrast to the study done by Wei et al where mean age group was 56 years[8]. Gastritis was found to be common in 31-40 years age group in the present study similarly, it was found to be common in 31-40 years in other studies & the incidence was also found to increase with age[9,10]. In the present study, gastric polyps were found more in females over 31-40 years, & 61-70 years age groups. A study done by Ljubicic et al revealed higher incidence of benign gastric polyps in 52-53 years, whereas Cao et al study revealed an equal distribution pattern in young & elderly adults[11,1]The neoplastic lesions were most commonly seen in 51-60 years age group, similar to a study done by Vidyavathi et al & Bazaz et al where the peak age group of upper GI neoplasms was found to be 51-60 years & 31-60 years respectively[4,13]. A study done by Hammadi et al showed a peak age incidence of 45-54 years[14]. Esophageal squamous cell carcinomas predominated neoplastic lesion with peak age distribution in 51-70 year age group, similar to Pedram et al where the peak age was found to be 61.8 years[15].Gastric adenocarcinomas including signet ring types were more common in 51-60 years age group, while Ozoran et al found a higher incidence in 3rd & 4th decades[16]. Duodenal adenocarcinomas were seen in 51-70 years age group. Ryder et al revealed a mean age incidence of 61.3 years for duodenal adenocarcinomas[17].In the present study the number of males undergoing upper GI endoscopy were more than the number of females. Similar findings were found in the previous study by David[18], Froehlich et al[7] and Shennak et al[19].In all the three studies the men out numbered women due to more prevalence of smoking, alcoholism and stressful life.

The non-neoplastic lesions were also commonly seen in males (69.3%), which was similar to Lee et al[20]. Gastritis was also more common in males in the present study similar to Afzal et al but in contrast to Adisa et al where it was more common in females[21,22.] This could be due to more number of males attending the hospital and also due to higher consumption of alcohol in males.In the present study, gastric polyps were found to occur more in frequency in females than males while Ljubicic et al showed a slight male preponderance[11].Overall, the neoplastic lesions were similar in males (50.0%) and females (50.0%) in contrast to Vidyavathi et al, where it showed male predominance (64%) and to Hammadi et al where females showed higher frequency (52%)[4,14]. The esophageal carcinomas showed

equal preponderance (50.0%) each with a male-female ratio of 1:1, while Pedram et al showed a female preponderance with a male-female ratio of 0.84:1[15].Gastric carcinomas were again equal in both sexes with a male-female ratio of 1:1 in the present study, similar to Ozoran et al, who too did not find any sex predilection[16].The frequency of duodenal carcinomas were also similar in both sexes, in contrast to that of Ryder et al, who figured male predominance[17].In the present study, the commonest symptom was pain abdomen 135 (67.5%) which correlates with the study done by Heading et al[23] and Sajid et al[24]. In both of these studies pain abdomen was the commonest presentation in patients presenting with upper gastrointestinal symptoms i.e. 54% and 46% respectively. (TABLE 3)

Table 3:- Comparative study based on commonest symptom in the study.

Symptom	Heading et al [23]	Sajid et al [24]	Present study
Pain abdomen (%)	54%	46%	67.5%

Study done by Aduful et al revealed epigastric pain, dyspepsia, & upper GI bleeding as the common presenting symptoms, similar to our study.[25]In the present study, the most common presenting complaint was pain abdomen (71.7%) followed by diarrhoea (20.5%). Gastritis presented as pain in abdomen, in contrast to dyspepsia in a study by Al-Ammaret al[9]. In the present study, the most common presenting symptom of neoplastic lesions was pain abdomen (47.1%) followed by dysphagia (23.5%) similar to that found by Hammadi et al[14]. Dysphagia was highest among SCC of the esophagus (40.0%), similar to that found by Pedram et al[15].

Conclusion:-

Few of the lesions in the present study emerged to be benign, which were otherwise visualized as atypical/ suspicious on endoscopy. Thus, endoscopy should be adjuncted with biopsy for better detection of lesions.

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