Histopathological Study of Upper Gastrointestinal Tract Lesion by Endoscopic Biopsies.

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ABSTRACT

BACKGROUND- Gastrointestinal tract is common site for neoplasm (benign & malignant tumours) inflammation and malabsorption syndrome. Upper Gastrointestinal tract is common site for neoplasm especially malignant tumours. worldwide gastric adenocarcinoma is second most common carcinoma next to lung carcinoma and carcinoma esophagus is the sixth leading cause of death.

OBJECTIVES- To find out occurrence of upper gastrointestinal tract lesion in present institute.
To know the spectrum of upper gastrointestinal tract lesions.

Methods: STUDY DESIGN: Cross Sectional.
 STUDY SETTING: Tertiary care hospital.
 STUDY POPULATION: Patients attending to department of Surgery department of tertiary care hospital.

Results: The most common diagnosis encountered among the G.I.T. lesions was carcinoma stomach (22.5) followed by carcinoma oesophagus (17.5%), perforation peritonitis(17.5%) and prepyloric perforation(17.5%) .

Conclusion: In the present study, the most common histopathological diagnosis was gastritis, followed by carcinoma of stomach and carcinoma of esophagus. Gastric dysplasia was also seen in some subjects.

KEYWORDS: Upper GIT, Endoscopic biopsies , Histopathology

I. INTRODUCTION

The development of flexible endoscope has led to great increase in the examination and mucosal biopsy evaluation of esophagus stomach and all portion of small intestine.

Gastrointestinal tract is common site for neoplasm (benign & malignant tumours) inflammation and malabsorption syndrome.

Upper Gastrointestinal tract is common site for neoplasm especially malignant tumours. worldwide gastric adenocarcinoma is second most common carcinoma next to lung carcinoma and carcinoma esophagus is the sixth leading cause of death. Barett's esophagus is a well known pre malignant condition. Acid peptic disease are the commonest cause for medical and surgical consultant worldwide. A constellation of definitive and putative etiological entities have been sough of H. pylori infection is forefront. These lesions are detected late as are either asymptomatic/ present with mild non specific symptoms in early stage of the disease thus early detection of malignancy by endoscopic biopsy greatly improves survival rate.

II. AIMS AND OBJECTIVES

1) To find out occurrence of upper gastrointestinal tract lesion in present institute.
2) To know the spectrum of upper gastrointestinal tract lesions.
3) To find out age and sex distribution of histopatholgical lesions.

III. METHODOLOGY

STUDY DESIGN: Cross Sectional.
 STUDY SETTING: Tertiary care hospital.
STUDY POPULATION: Patients attending to department of Surgery department of tertiary care hospital.
SAMPLE SIZE:
INCLUSION CRITERIA: All clinically diagnosed and indicated cases for endoscopic biopsies of GIT referred by surgery Dept, or treating clinician.

EXCLUSION CRITERIA:
1 Already diagnosed cases.
2 Lesions of mouth and pharynx.
3 Inadequate biopsy specimen.
3-6 biopsy specimens from any lesion seen in oesophagus, stomach and duodenum were taken with cupped biopsy forceps by passing through side channel of endoscope. In case of ulcers, biopsies were taken from edge of the ulcers. The biopsy forcep should be sharply and retracted back towards the endoscope after .mucosa has been firmly grasped. fixation and Processing of Biopsies :
The biopsies obtained were very small and were fixed in 10 % formal saline and then subjected to routine processing. Afterwards biopsy tissue was routinely embedded in paraffin wax and blocks were prepared. These paraffin blocks were subjected to microtome and cut into thin sections of 5-6 micron thickness.

IV. OBSERVATIONS
Table 1 : Age-wise distribution of G.I.T. lesions

AGE IN YEARS	Frequency	Percent
30-40	4	10.00 %
41-50	8	20.00 %
51-60	10	25.00 %
61-70	12	30.00 %
71-80	6	15.00 %
TOTAL	**40**	**100.00 %**

Table1 shows Age-wise distribution of G.I.T. lesions out of the 40 G.I.T. lesions 30% belonged to the age group 61-70 years , followed by 25% in the age group of 51-60 years. The least number of G.I.T. lesions were in the age group of 30 – 40 years i.e. 10%.

Table.2: Age-sex wise distribution of G.I.T. lesions

AGE GROUP IN YEARS	FEMALES	MALE	TOTAL
30-40	1 25.00%	3 75.00%	**4** **100%**
41-50	4 50.00%	4 50.00%	**8** **100%**
51-60	4 40.00%	6 60.00%	**10** **100%**
61-70	4 33.33%	8 66.67%	**12** **100%**
71-80	3 50.00%	3 50.00%	**6** **100%**
TOTAL	**16** **40.00%**	**24** **60.00%**	**40** **100%**

Table 2 shows Age-sex wise distribution of G.I.T. lesions. 40% of the study subjects were females in our study . and the rest 60% were males .there was almost equal preponderance of male and females in all age groups except for 51-60 years and 61-70 years.

Table 3: Distribution of G.I.T. lesions based on Clinical Diagnosis.

CLINICAL DIAGNOSIS	Frequency	Percent
CARCINOMA EOSOPHAGUS	7	17.50 %
CARCINOMA STOMACH	9	22.50 %
GASTRIC OUTLET OBSTRUCTION	1	2.50 %
GASTRIC PERFORATION	2	5.00 %

GASTRIC ULCER	1	2.50 %
GASTRITIS	2	5.00 %
MALIGNANT GROWTH	1	2.50 %
OESOPHAGEAL STRICTURE	1	2.50 %
PERFORATION PERITONITIS	7	17.50 %
POLYPS	1	2.50 %
PRE PYLORIC PERFORATION	7	17.50 %
PYLORIC STENOSIS UNDER EVALUTION	1	2.50 %
TOTAL	**40**	**100.00 %**

Table 3 Distribution of G.I.T. lesions based on Clinical Diagnosis. The most common diagnosis encountered among the G.I.T. lesions was carcinoma stomach (22.5) followed by carcinoma oesophagus (17.5%), perforation peritonitis(17.5%) and prepyloric perforation(17.5%) **.**

Table 4: Distribution of G.I.T. lesions based on Histopathological Diagnosis

| HPE	Frequency	Percent
ACUTE GASTRITIS	2	5.00 %
ACUTE ON CHRONIC NON SPECIFIC GASTRITIS	1	2.50 %
CHRONIC GASTRITIS	4	10.00 %
CHRONIC GASTRITIS WITH MILD DYSPLASIC CHANGES	1	2.50 %
CHRONIC GASTRITIS WITH MILD TO MODERATE DYSPLASIC CHANGES	1	2.50 %
CHRONIC INFLAMMATORY LESION WITH MODERATE DYSPLASIA	1	2.50 %
CHRONIC NON SPECIFIC GASTRITIS	2	5.00 %
GASTRIC PERFORATION	6	15.00 %
GASTRIC ULCER	1	2.50 %
INFLAMMATORY POLYP	1	2.50 %
MOD DIFF ADENOCARCINOMA- STOMACH	1	2.50 %
MOD DIFF MUCINOUS ADENOCARCINOMA- STOMACH	1	2.50 %
NON SPECIFIC INFLAMMATORY LESION	2	5.00 %
PERITONITIS	2	5.00 %
POORLY DIFF ADENOCARCINOMA -STOMACH	1	2.50 %
PREPYLORIC PERFORATION	2	5.00 %
SQUAMOUS CELL CARCINOMA GRADE 1- EOSOPHAGUS	1	2.50 %
SQUAMOUS CELL CARCINOMA GRADE 1-2- EOSOPHAGUS	2	5.00 %
SQUAMOUS CELL CARCINOMA GRADE 2 –EOSOPHAGUS	3	7.50 %
SQUAMOUS CELL CARCINOMA GRADE 2-3 –EOSOPHAGUS	1	2.50 %
WELL DIFF ADENOCARCINOMA- STOMACH	4	10.00 %
TOTAL	**40**	**100.00 %**

Table 4 Shows Distribution of G.I.T. lesions based on Histopathological Diagnosis .the most common histopathological diagnosis was gastric perforation (15%), followed by well differentiated adenocarcinoma (10%) and chronic gastritis (10%) . squamous cell carcinoma was seen in (7.5%) of the subjects.

TABLE 4A :HISTOPATHOLOGICAL DIAGNOSIS – FREQUENCY

Histopathological diagnosis	Frequency	Percent
ACUTE GASTRITIS	3	7.50 %
ADENOCARCINOMA	7	17.50 %
CHRONIC GASTRITIS	8	20.00 %
CHRONIC INFLAMMATORY LESION WITH MODERATE DYSPLASIA	1	2.50 %

GASTRIC PERFORATION	6	15.00 %
GASTRIC ULCER	1	2.50 %
INFLAMMATORY POLYP	1	2.50 %
NON SPECIFIC INFLAMMATORY LESION	2	5.00 %
PERITONITIS	2	5.00 %
PREPYLORIC PERFORATION	2	5.00 %
SQUAMOUS CELL CARCINOMA	7	17.50 %
TOTAL	**40**	**100.00 %**

Table 4A Shows Distribution of G.I.T. lesions based on Histopathological Diagnosis. The most common histopathological finding encountered was chronic gastritis (20%) followed by squamous cell carcinoma (17.5%) , adeno carcinoma (17.5%) and Gastric perforation (15%) . the less common findings were gastric ulcer , inflammatory polyp and chronic inflammatory lesion found in (2.5%.)

TABLE 4B :HISTOPATHOLOGICAL DIAGNOSIS – FREQUENCY

Histopathological Diagnosis	Frequency	Percentage
Adenocarcinoma-Stomach	7	17.50
Squamous Cell Carcinoma- Eosophagus	7	17.50

Table 4B: Shows Distribution of G.I.T. lesions based on Histopathological Diagnosis. The frequency of Histopathological finding of both adeno carcinoma and squamous cell carcinoma is almost similar (17.5%).

Graph 1: Distribution of G.I.T. lesions based on Histopathological Diagnosis
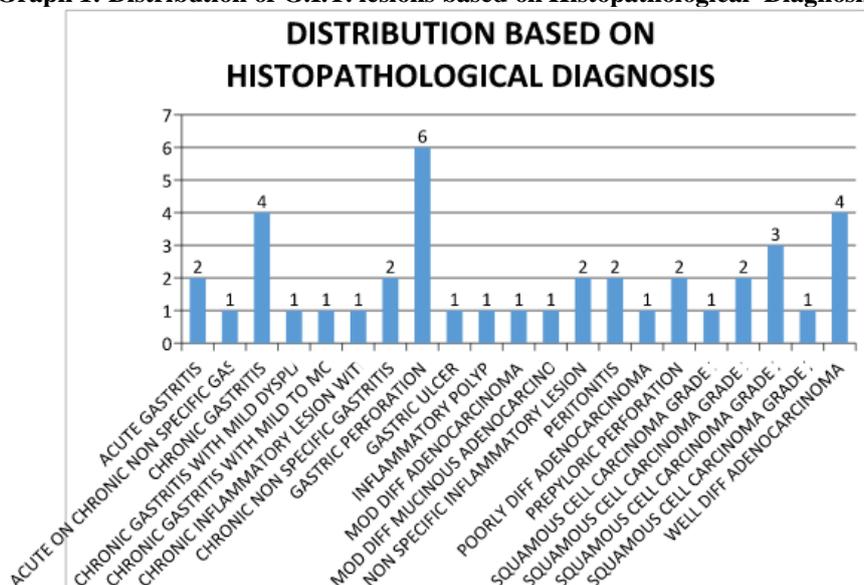
V. DISCUSSION

The study of upper gastrointestinal tract lesions was carried out in the Department of Pathology, in a tertiary care Centre . All these cases were subjected to endoscopic examination & biopsy, and, Histopathological examination was carried out.

Table No.5 : age and sexwise distribution

	Present study	Piyaporn et al 2010	Qureshi et al 2007	Fran et al 2007	Hameed et al 2006
Age	61-70	40-60	50-60	50-65	31-40
Sex: Male to Female ratio	2:1	0.47:1	1.04:1	1.2:1	1:0.8

Demographic data related to age and sex in present study shows treads almost similar to other reported studies with male predominance .The present study shows highest number of upper GI endoscopic biopsies between 61-70 years of age similar to study by Fran et al.

Table No.6: Comparative incidence of upper gastrointestinal tract malignancy by endoscopy.

	Esophagus malignancy	Stomach malignancy
Vidyavathi et al 2012	30.67%	64.0%
Melville et al 2000	23.2%	38%
Prem et al 1997	27.36%	16.92%
Present study	17.50%	17.50%

In present study, incidence of upper gastrointestinal tract malignancy is almost similar in esophagus as well as stomach. Other reported study, shows highest percentage of stomach malignancy.

Table No.7: The relative frequency of Histopatholgical lesion established by upper gastrointestinal endoscopic biopsies in a present study is compared with other studies

	Present study	Hameed et al 2006	Nowshad 2007	Fran et al 2007	Sumathi et al 2008	Sandhya et al 2012	Dr.Ganga H 2018
Carcinoma of esophagus	17.50%	3.0%	-	-	3.9%	1.03%	-
Carcinoma of stomach	17.50%	4%	2%	2%	3.9%	5.21%	-
Gastric ulcer	2.50%	1.5%	10%	11.5%	5.3%	3.59%	2.9%
Gastritis	27.50%	27.2%	8%	86.5%	12.2%	40.89%	44.0%
Polyps	2.50%	-	-	-	-	-	11.7%
Gastric dysplasia	7.5%	-	-	2%	-	-	4.4%

In the present study ,the most common histopathological diagnosis was gastritis(27.50%), Treads almost similar to other reported study, fran et al and sandhya et al with highest percentage with gastritis.

Table No.8: Comparison of pattern of malignant lesions on Endoscopic biopsies of upper GIT.

	Present study	Sandhya et al 2012	Shaheen et al 2009	Hirachand et al 2018
Squamous cell carcinoma esophagus	7.50%	-	2.4%	20%
Poorly differentiated squamous cell carcinoma esophagus	10%	-	1.1%	-
Well differentiated adenocarcinoma Stomach	15%	2%	0.8%	12.33%
Poorly differentiated adenocarcinoma Stomach	2.50%	-	0.9%	-

In a present study ,the most comman histopathological diagnosis was well differentiated adenocarcinoma of stomach(15%).Treads almost similar to other reported study, hirachand et al with well differentiated adenocarcinoma of stomach(12.33%).
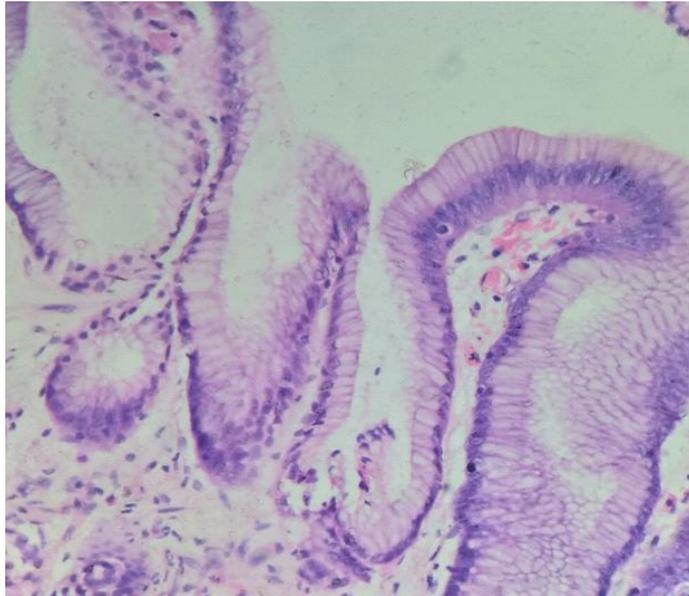
CLINICAL IMAGES

Image no.1: Gastric ulcer- shows sloughed off mucosa, gastric glands and diffuse inflammatory infiltrate. (H&E) high power (40 x)
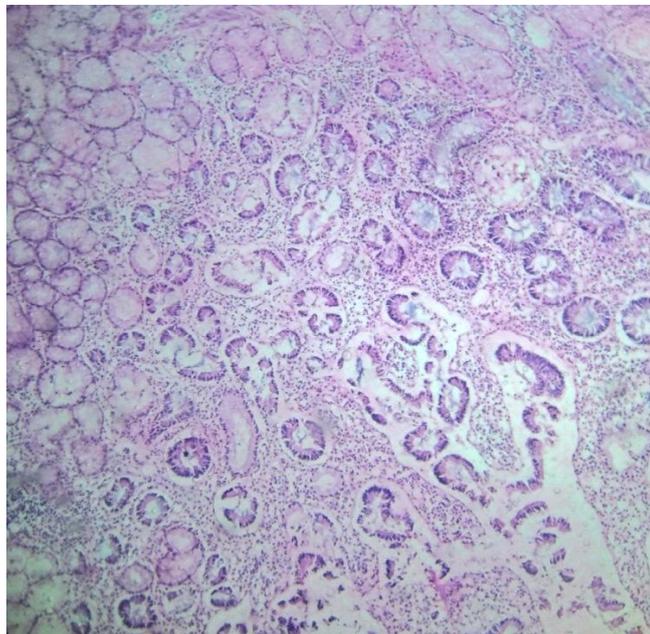

Image no.2 Acute gastritis-shows gastric glands with variable acute inflammatory infiltrate.H&E stain low power (10x)
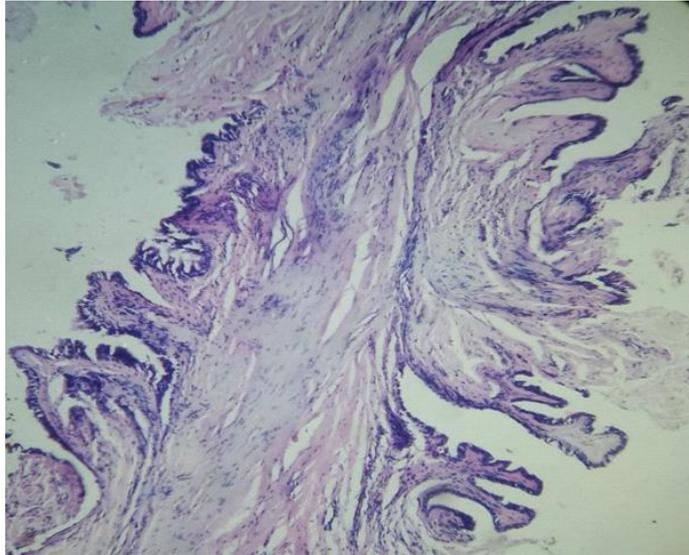
Image no.3: Chronic gastritis- shows glandular columner mucosa with infiltration by mononuclear cell infiltrate.   H&E low power (10x)
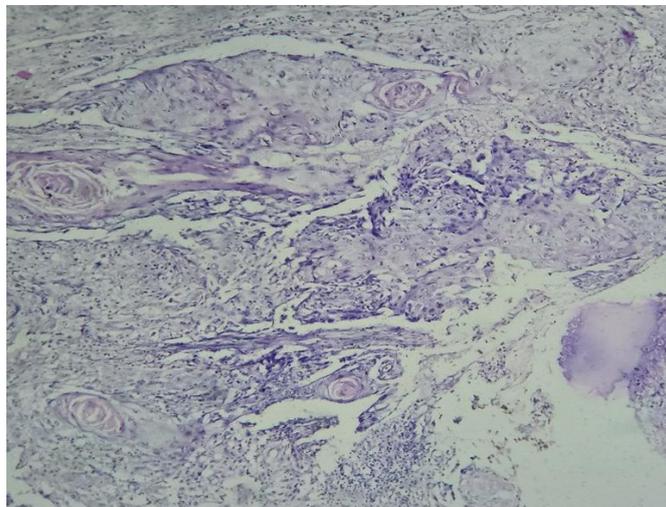

Image no.4: Well differentiated squamous cell carcinoma –shows stratified squamous epithelium, keratin pearls and underneath tumour tissue.H&E low power (10 x)
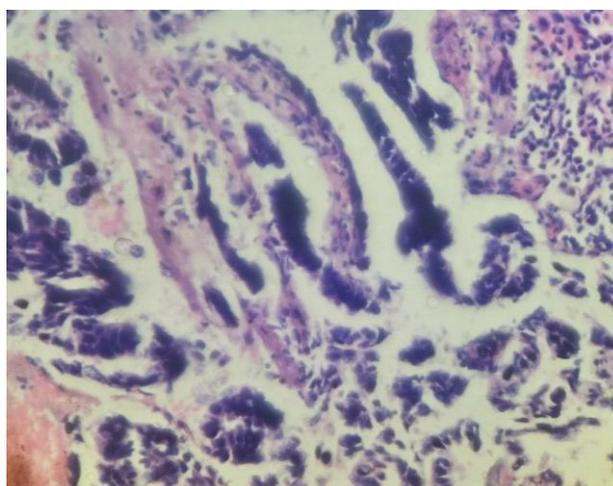

Image no.5: Well differentiated adenocarcinoma, stomach – shows tumour cells showing glandular arrangement H&E (40x)

VI. SUMMARY AND CONCLUSION:

In present study, the upper gastrointestinal tract lesion were studied and subjected to fibro optic endoscopy and histopathological correlation was carried out at department of pathology in a tertiary care center

• The present study shows Age-wise distribution of G.I.T. lesions. Out of the 40 G.I.T. lesions 30% belonged to the age group 61-70 years, followed by 25% in the age group of 51-60 years. The least number of G.I.T. lesions were in the age group of 30 – 40 years i.e. 10%.

• The diseases was predominant among male compared to female, Mean age of males was 58.15+/-12.07 years and for females 58.15+/-11.98 also Male: Female ratio: 1.5: 1, for G.I.T. lesions.

• In the present study, the most common histopathological diagnosis was gastritis, followed by carcinoma of stomach and carcinoma of esophagus. Gastric dysplasia was also seen in some subjects

• The most common histopathological diagnosis was well differentiated adenocarcinoma of stomach, followed by poorly differentiated squamous cell carcinoma esophagus.

• The endoscopy with biopsy is effective tool in diagnosing the upper gastrointestinal lesions and in distinguishing benign lesions from malignant neoplasm. Endoscopy is minimally invasive procedure and can often be done on outpatient basis with little risk to the patient.

6) The application of upper gastrointestinal tract endoscopy to the early diagnosis and management of many patients can be extremely helpful.

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