Volume : 4 | Issue : 2 | February 2015 • ISSN No 2277 - 8179

Research Paper

THE CONCEDING OF UPPER GASTROINTESTINAL LESION ENDOSCOPIC BIOPSY: A BARE MINIMUM FOR DIAGNOSIS.

Medical Science

KEYWORDS : Upper GI lesions, Endoscopy, Biopsy, Histopathology

DR SHREESHA KHANDIGE	PROFESSOR DEPARTMENT OF PATHOLOGY, YENEPOYA MEDICAL COLLEGE, MANGALORE, KARNATAKA, INDIA. PHONE
DR SUCHITHRA SHETTY	ASSISTANT PROFESSOR,DEPARTMENT OF PATHOLOGY,YENEPOYA MEDICAL COLLEGE.
DR RAGINI THAPA	DEPARTMENT OF PATHOLOGY,YENEPOYA MEDICAL COLLEGE,2 FLOOR ,ACADEMIC BLOCK,MANGALORE,PHONE

ABSTRACT

Introduction: Neoplasms of upper gastrointestinal tract, mainly malignancies are one of the leading causes of death in world population.The emergence of endoscopic biopsy has facilitated the early detection and diagnosis of all gastrointestinal lesions.

Objective:This retrospective study is taken to find out morphological pattern and frequencies of lesion reported in upper gastrointestinal (GI) tract.

Materials & Methods: Ninety-two patients with upper GI biopsy were included in the study period of two years. Multiple Serial sections, 3 – 5 µ were stained with Haematoxylin & Eosin (H&E) stain and studied.

Results: Analysis of 92 upper gastrointestinal biopsies was done and results obtained. Male: female ratio of 3:1 was obtained with an age range of 11-80 years.Among all biopsies oesophageal biopsies were 38(41.30%), gastric biopsies were 49(53.26%) and duodenal biopsies were about 5(5.44%).The commonly encountered lesions are oesophageal carcinoma 32(34.8%), Gastric carcinoma 21(22.8%) and gastritis 21(22.8%).

Conclusion: This study concludes that endoscopic biopsy of Upper Gastro-Intestinal lesions increases the detection rate of Upper GI lesions. Therefore we can say that endoscopy is invariably incompletewithout biopsy and so the combination of methods provides the single most powerful diagnostic tool for better patientmanagement.

INTRODUCTION

Upper gastrointestinal tract is one of the most common site for neoplasms, especially malignant tumours. Worldwide, gastric adenocarcinoma is the second most common cancer and carcinoma oesophagus is the sixth leading cause of death.[1,2] According to theNational Cancer Registry, oesophageal and gastric cancers are the most common cancers found in men, while oesophageal cancer ranks third among women after the carcinoma of breast and cervix.[3]Early detection of malignancy greatly improves the survival rate of the patients. The 5-year survival rate of early oesophageal cancer is 83.5% and early gastric cancer is more than 90%.[4]

Along with malignant neoplasms upper GI tract is a common site of variety of infections,inflamations,chemical& toxic insults,polyps,hyperplasia and dysplasias.With the advent of endoscopy in early 1960s,diagnosis of all of these lesions has improved drastically.The introduction of fiberoptic endoscopy has made dramatical improvement in detecting and diagnosing lesions of upper GI tract.Tissue specimen can be removed from the lesions under direct vision using biopsy forceps. The procedure causes minimal discomfort, which can berepeated also. Histopathological study of biopsyspecimens are used to confirm endoscopicdiagnosis in suspected malignancy or to rule outin the endoscopically benign appearing lesion.The endoscopic biopsies are performed not only for the diagnosis of the disease but also for monitoring the course, determining the extent of a disease, as responses to therapy and for the early detection of complications.

Present study was undertaken to determine the spectrum of oesophageal, gastric and duodenal lesions byendoscopic biopsy.

AIMS AND OBJECTIVES:

1.To analyse various lesions of oesophagus and stomach by endoscopic biopsy.
2.to know incidence of lesions with reference to age and sex.
3.To make definitive histopathological diagnosis of various neoplastic and non-neoplastic upper gastro intestinal

MATERIALS AND METHOD:

The present study included ninety two (92) endoscopic biopsy taken from the patients presented with G.I. symptoms during period of two years in a tertiary care institute. Clinical details were recorded from the case records maintained in Gastroenterology department. Biopsy was taken by the Gastroenterologist with pentax EPM 300 video upper Gastrointestinal endoscope.

Biopsies were immediately put in 10% neutral formalin to prevent shrinkage, followed by manual tissue processing[5] and embedded in paraffin with mucosal surface facing the cut end of the block. Five micron thick sections were cut perpendicular to this surface and four to five sections were prepared on each slide. Each section was stained with Haematoxylin and Eosin stain and studied.Additional sections were stained with Giemsa to observe for the presence of H.Pyloriand Per-iodic Acid Schiff (PAS) stain were performed wherever necessary. Lesions were diagnosed as per WHO classification of Gastrointestinal tumor and tumor like conditions[6].

Results:

Among all the upper GI tract endoscopic biopsies,esophageal biopsies were 38(41.30%),gastric biopsies were 49(53.26%) and duodenal biopsies were about 5(5.44%).There were 69 cases of males and 23 cases of female patients making male to female ratio 3:1.The following table shows distribution of endoscopic biopsy cases according to age and sex.

Table 1.1

Age in years	Sex		Total cases	Percentage
	Male	Female		
11-20	2	0	2	2.16%
21-30	2	1	3	3.29%
31-40	8	8	16	17.39%
41-50	19	6	25	27.17%
51-60	20	3	23	25.0%
61-70	15	4	19	20.65%
71-80	3	1	4	4.34%
Total	69	23	92	100%

Volume : 4 | Issue : 2 | February 2015 • ISSN No 2277 - 8179

The highest incidence was seen between 41 to 50 years (27.17%) and the lowest incidence was seen in age group of 11-20 years(2.16%).

Table 1.2

Lesions	No of cases	Percentage
Oesophagus		
Chronic nonspecific esophagitis	3	3.3%
Dysplasia	3	3.3%
Squamous cell carcinoma	31	33.7%
Adenocarcinoma	1	1.1%
Stomach		
Chronic nonspecific gastritis	21	22.8%
Metaplasia	2	2.2%
Dysplasia	3	3.3%
Adenocarcinoma	20	21.7%
Polyp	1	1.1%
Gastric Ulcer	1	1.1%
Anaplastic carcinoma	1	1.1%
Duodenum		
Chronic nonspecific duodenitis	5	5.4%
Total	92	100%

In the present study the commonly encountered lesions are oesophageal carcinoma 32(34.8%), Gastric carcinoma 21(22.8%) and gastritis 21(22.8%) with male to female ratio was 2.1:1.

Most oesophageal carcinoma patients were found to be in the age group of 41-60 years, and gastric carcinoma patients were found more commonly in age group of 41-50 years.

In clinical presentation of gastro-oesophageal diseases dysphagia was the commonest symptom in 75% of oesophageal carcinomas. Pain in abdomen and loss of weight were the most common symptoms seen in gastric carcinoma.

History of consumption of alcohol and tobacco were obtained in 28 patients of Oesophageal carcinoma and 8 patients of gastric carcinoma.

Table 1.3

Endoscopic Finding	Histopathological Finding	
	Squamous Cell Carcinoma	Adenocarcinoma
Ulcerative growth	25	1
Polypoid growth	3	0
Elevated plaque	2	0
Punched out ulcer	1	0
	31	1

The above table shows endoscopic and histopathologic findings of oesophageal carcinoma.Oesophageal carcinoma was most common in lower 1/3rd of oesophagus in the present study.

Among gastric carcinoma most common endoscopic finding was ulcerative erosion in 11 out of 21 cases of gastric carcinoma with most common site being distal stomach.

Esophagitis constituted 3.3% of all oesophageal lesions and 21 cases of gastritis(22.8%)were encountered. In all gastritis patients most common finding was chronic diffuse gastritis (15 out of 21)

All duodenal biopsies showed chronic nonspecific duodenitis.

DISCUSSION: Biopsy sampling of gastric mucosa at endoscopy provides useful information that helps in the diagnosis of various lesions[7,8]. Good clinical and endoscopic information is a main part of adequacy and this strongly affects how a biopsy should beinterpreted.Endoscopy along with biopsy was done on patients presenting with symptoms as reflux, heart burn, epigastric pain,dysphagia, vomiting, hematemesis, weight loss, melena, constipation, bleeding per rectum.Biopsy was also done as follow up for post resection cases.

In the present study there was predominance of upper gastro intestinal diseases between the age group of 41-50 years(27.17%). The youngest patient was 20 years old and the oldest patient was 80 years old.(Table 1.1) The age related differencecould be due to variation in the risk factorsamong the different age groups.Of 92 patients only 23(25%) were females, which is comparable to study done by J. C Paymasters et al.[9] and also due to large number of male patients attending outpatient department as compared to female patients.

The percentage of oesophageal carcinoma in the present study was 40.9% which is lower than that of the study conducted at Mumbai and Nagpur.The percentage of gastric carcinoma in the present study was 23.9% which is higher than the study conducted at Mumbai.In this study lower third of oesophagus was most commonest site 68.75%, where other studies reveal that middle oesophagus was most common site in their studies.

Of the total 38 patients with oesophageal disorderneoplastic lesions were morecompared to the non-neoplastic lesions. Among oesophageal carcinoma 96.8% (31) were squamous cell carcinoma,32.2%(10) were well differentiated,25.8%(8)were poorly differentiated and 1.2%(14)were diagnosed as moderately differentiated carcinoma.(Fig 1.1)One case of adenocarcinoma was seen in the present study.(Fig 1.2,1.3)Though squamous cell carcinoma topped among the histopathological types similar to other studies,frequency of adenocarcinoma is much more lower compared to the study by Helen wang[10] et al.

Author	SCC	Adenocarcinoma	Others
Helen wang et al	66%	34%	NIL
Leenadevi et al	67%	18.9%	14.1%
Gauri et al	82.9%	4.9%	12.2%
Present study	96.8%	3.2%	NIL

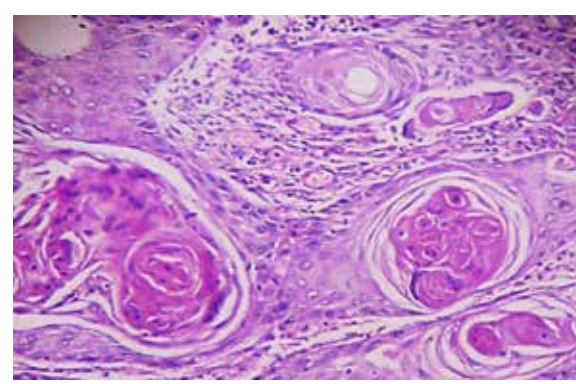

Fig 1.1 Well Differentiated Squamous Cell carcinoma Oesophagus showing Malignant Squamous cells with Keratin Pearls.

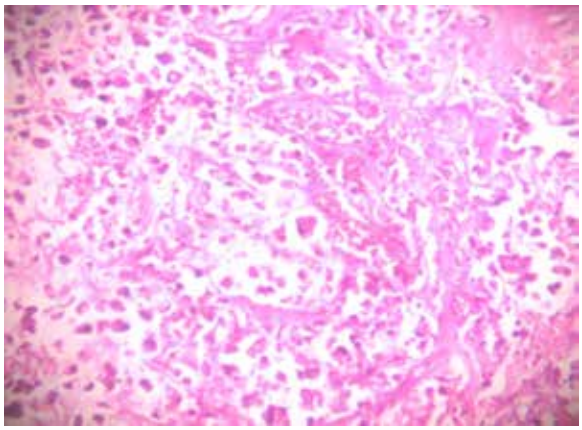

Fig 1.2 Adenocarcinoma Oesophagus showing many signet ring cells. (Low Power view)

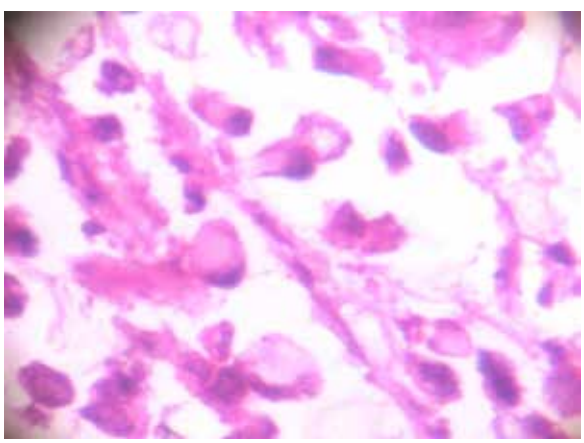

Fig 1.3 Adenocarcinoma Oesophagus showing Signet ring cells. (High power view)

Gastric malignancy commonly encountered in the present study was 20 cases of adenocarcinoma followed by 1 case of anaplastic carcinoma. Out of 20 adenocarcinoma cases 12 were well differentiated, 4 were moderately differentiated and 4 cases were poorly differentiated.

Among the non-neoplastic lesions encountered in the present study gastritis was the commonest 22.8% followed by esophagitis 3.3% and benign gastric ulcer 1%.Maximum number of gastritis patients were in the age group of 61-70 years.90.5% patients were males.

In our study dysphagia was the commonest clinical manifestation of oesophageal malignancy, while pain in abdomen and loss of weight were common features of gastric neoplasm.

Endoscopic correlation between gross and histopathological picture were consistent in 96.87% of oesophageal study. Out of 21 endoscopically diagnosed gastric carcinoma cases histopathological examination revealed gastric carcinoma in 20 cases.

The variability of the macroscopic appearance of gastro intestinal lesions can mislead the endoscopist, especially in diffuse type of gastric carcinoma which mimics benign ulcer.

So, careful evaluation of clinical data, expertization on the part of endoscopist in choosing the correct site are needed apart from the proper processing of biopsy tissue and meticulous reporting by the histopathologist for interpretation of endoscopic biopsies.

This proves the histopathological study of endoscopic biopsy is an important tool in the diagnosis of upper gastrointestinal diseases.

REFERENCE

1. Zhang XF, Huang CM, Lu HS, Wu XY, Wang C, GuangGX,et al. Surgical treatment and prognosis of gastric cancer in 2613 patients. World J Gastroenterol 2004;10:3405-8. | 2. Enzinger PC, Mayer RJ. Esophageal cancer. N Engl J Med 2003;349:2241-52 | 3. National Cancer Registry Programme. First All India Report 2001-2002. Vol 1.Indian Council of Medical Research. Bangalore, India. Apr 2004 | 4. Kato H, Tachimori Y, Watanube H, Yamaguchi H, Ishikawa J, Itabashi M. Superficial esophageal carcinoma: Surgical treatment and results. Cancer 1990;66:2319-23. | 5.John D Bancroft,Marilyn Gamble. Theory and Practice of Histological Techniques;6thedn Churchill Livingstone .p.90-1 | 6.Hamilton S.R., Aaltonen L.A. (Eds.): World Health Organization Classification ofTumours. Pathology and Genetics of Tumours of the Digestive System. IARC Press:Lyon 2000 | 7.Blackstone MO. Normal and pathologicappearances of the gastrointestinal tract.Endoscopic interpretation, 1stedn. NewYork: Raven Press ; 1984.p.13 – 5 | 8.SipponenP. Update on the pathologic approach to the diagnosis of gastritis, gastric atrophy and Helicobacter pylori and its sequel. J ClinGastroenterol 2001;32:196-02 | 9.Paymaster JC, Sanghvi LD, GanghadaranP.Cancer of gastrointestinal tract in westernIndia. Cancer 1968; 21: 279-87. | 10.Wang HH,Antonioli DA. Comparative features of oesophageal and gastric adenocarcinomas. Human Pathol 198;17:482 – 7 |