How to Cite:
Pandey, R., Banseria, N., Bhopalwala, F., & Ali, M. (2022). Frequencies of different oesophageal lesion seen on endoscopy and histopathology in a tertiary care institute. *International Journal of Health Sciences*, *6*(S3), 5833–5839. https://doi.org/10.53730/ijhs.v6nS3.7270

Frequencies of different oesophageal lesion seen on endoscopy and histopathology in a tertiary care institute

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***Abstract*---**Gastrointestinal endoscopy visualizes the whole of the digestive tract and is a well-known technique of investigation, diagnosis and treatment of a broader range of digestive tract lesions. Endoscopy also gives an opportunity for taking biopsy from suspicious neoplastic and inflammatory lesions seen on endoscopy. In India, as per the National Cancer Registry, neoplasm of the oesophagus and stomach are the topmost neoplasm present in males. In the females after breast and cervix cancer, oesophageal cancer is the most common cancer. It was a prospective, observational study of one and half year duration including all the patients visiting the outpatient department of Gastroenterology in whom endoscopy was advised. After proper informed consent biopsy was obtained from the suspicious oesophageal lesion and sent to the pathology department for detailed histopathological examination. Finally frequencies of different lesions were observed on endoscopy and on histopathology. Out of 48 patients enrolled into study, the majority were males

between 40-60 years of age group. Neoplastic lesions were the most common lesions followed by inflammatory lesions in the endoscopy and similar observation was seen in histopathological examinations as well. Oesophageal lesions are very frequent in day to day clinical practise that come across with a wide range of complications, depending upon the lesions. Hence endoscopy followed by endoscopic biopsy is often a part of initial workup procedure for the diagnosis of different benign, malignant and inflammatory lesions of oesophagus.

***Keywords*---**oesophageal lesion, endoscopy, histopathology.

Introduction

Endoscopy is a quite simple, easy and often well tolerated technique that helps in direct visualization of the digestive tract and identifying pathologic site and also provide assistance in taking the biopsy which finally add to confirm the pathologic changes seen in endoscopy and therefore helps to start proper treatment and management. Use of these procedures is being reflected by an increasing number of obtaining biopsies by endoscopy from the oesophageal lesions. [1] In 1968 the first ever flexible fiberoptic endoscope was innovated and it was a very important innovation in the diagnostic evaluation of upper gastrointestinal tract lesions. [2] Credit for the first endoscope development goes to Philipp Bozzini when he presented a "Lichtleiter" (light conductor) for visualising the interior of the bowel in 1806. GIT endoscopy has gone enormous development after fiber optics innovation by Sir A. Hopkins and its merger into flexible endoscopes by B. Hirschowitz. [3, 4] Other than malignancies there are many indications for endoscopic guided oesophageal biopsy e.g. analysis of dyspepsia, odyno/dysphagia, gastroesophageal reflux disease (GERD), Barrett oesophagus, varices and peptico-duodenal ulcer lesions. Flexible endoscopy got recognized for its diagnostic ability initially and was capable of reproducing still photographs only by means of a gastrocamera. [5] Rapidly, however, there was development of biopsy forceps that assisted in obtaining mucosal biopsies for histological confirmation and evaluation.

Materials and Methods

This study was a prospective, observational study of one and a half year duration performed in the section of pathology in association with gastroenterology in a tertiary care institute and included all patients who presented to OPD of gastroenterology department in whom the representative site was oesophagus and biopsy was advised. Following this the patient underwent endoscopic examination by the gastroenterologist and biopsy thus obtained was sent to histopathology department for final evaluation. The characteristics of the endoscopic lesions along with age, gender and chief complaints of the patient were noted. All endoscopic biopsies were preserved in 10% buffered formalin. Tissue was wrapped in a filter paper to prevent dispersion and distortion of the tissue. After overnight fixation in formalin, tissue was processed in an automated tissue processor (histokinet). Following this tissue embedding in paraffin wax was done and blocks were prepared. Thin sections of 3-5 mm thick were obtained from the

tissue using a rotator microtome. Then sections stained with conventional hematoxylin and eosin (H&E) stain. Finally histopathological examination was performed.

Statistical analysis

The data obtained and accorded in mean±SD and percentages. The p-value <0.05 was regarded to have statistical significance. SPSS version 16.0 was employed to analyse the data. (Chicago, Inc., USA). [6]

Results

Total 48 patients were enrolled in the present study and 28 (58.3%) of which were males and the rest 20 (41.7%) were females. maximum patients 25 (52%) were observed in the 40-60 years of age category; females dominated the group being 15 in number followed by 10 males. In the above 60 years of age category all 15 patients were males. The most common chief complaint was dysphagia and weight loss observed in 37 cases followed by pain and dyspepsia observed in 11 cases.

Endoscopic lesions in oesophagus

The 10 cases were diagnosed as inflammatory (20.9%) on endoscopy. 1 (2.1%) case was diagnosed as oesophageal polyp located in the lower third of oesophagus. Maximum number of cases from oesophagus i.e. 36 (75%) were diagnosed as carcinoma oesophagus of which 7 were from the upper third of oesophagus, 10 from middle third and 19 from lower third. A single case (2.1%) of nodularity was seen in lower oesophagus. [Table 1]

Histopathological diagnosis

Amongst the oesophageal biopsies 13 cases were diagnosed as inflammatory (27%) on histopathology, of which 4 (8.33%) were of acute oesophagitis, 7 (14.58%) of chronic oesophagitis and 1 (2%) each of eosinophilic oesophagitis and granulomatous oesophagitis. 4 oesophageal biopsies were diagnosed as Barrett's oesophagus (8.33%) on histopathology and all the biopsies were from the lower third of the oesophagus. Amongst the all biopsies 31 cases diagnosed as neoplastic, of which 16 (33.33%) were diagnosed as Non Keratinizing SCC (NKSCC), 5 (10.4%) were diagnosed as Keratinizing SCC (KSCC), 9 (18.75%) as Adenocarcinoma and 1 (2%) as Adeno-squamous carcinoma. [Table 2]

Table 1
Distribution of endoscopic diagnosis in oesophagus (n=48)

Endoscopic Diagnosis	Total	
	Number	%
Inflammatory	10	20.9
Nodularity	1	2.1
Neoplastic	37	77.0
Benign (Polyp)	1	2.0

Carcinoma oesophagus	36	75

Table 2
Distribution of histopathological diagnosis in oesophagus (n=48)

Histopathological Diagnosis	Total	
	Number	%
Inflammatory	13	27
Acute oesophagitis	4	8.3
Chronic oesophagitis	7	14.6
Eosinophilic oesophagitis	1	2.1
Granulomatous oesophagitis	1	2.1
Barrett's oesophagus	4	8.3
Neoplastic	31	64.6
NKSCC	16	33.3
KSCC	5	10.4
Adenosquamous	1	2.1
Adenocarcinoma	9	18.8

Discussion

Evaluation of patients presenting with upper GIT symptoms follows initial examination by endoscopy and subsequent histopathological examination of the biopsy or tissue obtained from the lesional site. The accuracy and sensitivity of both these techniques in the diagnosis of these lesions can be enhanced by adjoining these two techniques. But, the accurate diagnosis is more obvious on histopathological examination only**.** Of the 48 patients, 28 were men and 20 were women; males dominated the population. Findings were obtained by Rashmi and Shenmark et al were in agreement. [7, 8] This finding of male's preponderance may in reality be because men are exposed to certain harmful factors more than females as reported by Paymaster et al and also due to more number of males attending the outpatient department in our setting [9]. In our study diseases were more frequent in middle aged and elderly populations; 52% patients were between 40- 60 years of age. This was also reported earlier by Rashmi and Abilash et al. [7, 10] The most frequent chief complaint noted in the present study was of dysphagia and weight loss seen in 77% of the cases, as the pain is very obvious in any lesion of oesophagus during swallowing and it too limits food intake leading to weight loss. Same findings were observed by Hussain, Kumar and Gadour et al. [11, 12, 13] Among 48 oesophageal biopsies studied in the present study, 31 (64.6%) were neoplastic lesions. Amongst these neoplastic lesions, 21 (70%) had SCC and 9 (30%) had adenocarcinoma. Similar results were obtained by Islam et al where 81.25% of the oesophageal malignancies were SCC and 18.75% were adenocarcinoma. [14] On the contrary Rashmi et al got predominantly non neoplastic oesophagitis in the oesophageal biopsies in their study and 44% of the lesions were neoplastic, all of them were SCC [7]. In the present study, 70% of the malignant oesophageal biopsies were squamous cell carcinoma. Although the

frequency of adenocarcinoma oesophagus is increasing; SCC remains the most common histologic variety of oesophageal carcinoma globally [15]. In contrast Qureshi et al in their study found 70.2% adenocarcinoma among oesophageal neoplasm while only 23.1% had SCC. [16] Barrett oesophagus was diagnosed in 8.3% of the oesophageal biopsies. The reported incidence of Barrett's oesophagus amongst patients ranges between 8% and 20% (Modiano) [17]. Histologically it is diagnosed by the columnar metaplasia of the squamous lining of the oesophagus. Adenocarcinoma may develop in Barrett oesophagus at the site where columnar metaplasia occurs [18]. Roughly 10% of all the cases with this may turn into adenocarcinoma hence should be followed up on yearly basis [19]. Adenocarcinoma usually occurs at oesophageal cardiac junction as Barrett oesophagus usually occurs in the distal part of oesophagus [20]. A case of adeno-squamous carcinoma of oesophagus was observed in the current study. Adeno-squamous carcinoma has been established to have worse prognosis than "pure" adenocarcinoma and squamous cell carcinoma. Some studies of oesophageal adeno-squamous carcinoma have also suggested that it has a very violent tumour with poor prognosis [21]. In another study by Yachida et al enrolling 18 cases reported that oesophageal adeno-squamous carcinoma has a good prognosis compared to pure squamous cell carcinoma and adenocarcinoma, but their finding probably due to the trivial size and lesser grade of the tumours in their study [22]. In our study there were 31 histologically confirmed malignant tumours of oesophagus, while 36 were diagnosed as neoplastic on the basis of endoscopic findings. That is why histopathology is must after endoscopy although in some studies 100% correlation between endoscopic and histologic diagnosis of oesophageal neoplasm was observed [23]. A single case of granulomatous oesophagitis was observed in the study. The granulomas were present in the sub-epithelial zone formed by histiocytic cells, epitheloid cells and giant cells. Weisner et al had similar findings and recommended that granulomas in the upper GIT could be a frequent sign of sarcoidosis rather than Crohn's disease [24].

Conclusions

Neoplasia remains the most common entity observed in oesophageal lesions both on endoscopy and histopathology followed by inflammatory lesions. Endoscopy and histopathology both together can aid in better diagnosis and thus treatment of the diseases.

Acknowledgments

I am indebted to Prof. Padam kumari Agarwal, Department of Pathology, VPCIMS, Lucknow for extending her unreserved help in the present study.

Author Contributions

Conceptualization, Dr Rimi Pandey.; methodology, Dr Rimi Pandey, Dr Mustafa Ali.; software, Dr Fatima Bhopalwala, Dr Neha Banseria, .; validation, Dr Mustafa Ali.; formal analysis, Dr Rimi Pandey, Dr Mustafa Ali, Dr Fatima Bhopalwala.; investigation, Dr Rimi Pandey, Dr Mustafa Ali.; resources, Dr Fatima Bhopalwala, Dr Neha Banseria.; data curation, Dr Rimi Pandey, Dr Mustafa Ali; writing—Dr Rimi Pandey.; writing—review and editing, Dr Mustafa Ali, Dr Fatima Bhopalwala,

Dr Neha Banseria; visualization, Dr Rimi Pandey.; supervision, Dr Mustafa Ali.; project administration, Dr Rimi Pandey.; funding acquisition, None.

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