ORIGINAL ARTICLE

Histopathological Examination of the Esophageal Growth Endoscopic Specimens

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ABSTRACT

Objective: To determine the histopathological examination of the esophageal growth endoscopic specimens.
Study design: Retrospective cross sectional
Study setting and duration: Study was conducted at pathology department of LUMHS, from January 2013 to December 2017.
Material and methods: Patients presented with esophageal dysphagia, underwent endoscopic biopsy, either of gender were selected. All demographic characteristics including endoscopic and Histopathological findings were entered in the proforma for the purpose of analysis by SPSS version 20.
Results: Total 172 patients were enrolled; their mean age was 45.23±8.12 years. Females were in majority 113(65.7%). Most of the patients 86.0% were presented dysphagia, followed by pain, nausea and vomiting. Esophageal growth was commonest finding on endoscopy as 84.3%, followed by stricture 8.7% and inflammation 6.9%. Most of the cases 59.9% histopathologically diagnosed as well differentiated squamous cell carcinoma (SCC), 9.3% moderately differentiated SCC, 2.9% poorly differentiated SCC and adenocarcinoma 5.8%, followed by hyperplasia, dysplasia and barrets esophagus, 8.7%, 5.8% and 1.2% respectively. No significant difference was found in histological findings according to age p-value 0.143. SCC and hyperplasia were significant in male gender p-value 0.001.
Conclusion: It is concluded that SCC commonest histological diagnosis among patients presented with esophageal growth. Endoscopic submucosal dissection has become the gold standard for the resection of superficial specimen for histopathology.
Keywords: esophageal growth, endoscopy. Histopathology

INTRODUCTION

Cancer of the Esophagus is the eighth commonest malignancy and the sixth commonest cause of cancer mortality, with around 456,000 new cases and 400,000 mortality rate in 2012.[1] Squamous cell carcinoma (SCC) is the most continuous subtype of the histology due to its higher occurrence in Asia, with up to 95% of instances of neoplasia of esophagus.[1] around >90% of the esophageal carcinoma are the squamous cell carcinoma and the adenocarcinoma, including other types as lymphoma, stromal tumors, melanoma, stromal tumors and neuroendocrine tumors are rarely noted.[2] It is mostly connected to smoking and uses of the tobacco, all the more generally includes the center throat, and the precursor lesion is the squamous dysplasia. The occurrence of esophageal malignant growth fluctuates relying upon the areas of the world, with rates from 30 cases to as high as 800 cases for every 100 000 people. Most noteworthy occurrence happens in territories like southern Russia, northern Iran and the northern China.[3] While numerous different kinds of malignant growth are relied upon to diminish in frequency over the course of the following 10 years by 2025 the incidence of esophageal carcinoma is predictable to increment by 140%.[4] Most of the cases having tumors of the esophagus present in their fifth and sixth decade of the life. The most well-known giving manifestations of the cases esophageal tumors are weight reduction and dysphagia happening in almost 90% of the cases. The dysphagia is regularly represented as an improver dysphagia from solids at first to fluids because of the tumor obstructive condition. However other presenting features incorporate odynophagia, cough, pain of the chest, hoarseness, melena and sequela of the locally progressed illness and far off regions of spread of illness.[3] In some parts of Pakistan, such as Balochistan, the incidence of esophageal cancer is even higher.[5] However, and unfortunately, there are no scientific data available to describe the status of esophageal cancer research in Pakistan - a possible cause of negligence towards esophageal cancer research in this country.[5] Upper GI Endoscopy is considered a safe procedure and can generally performed on an outpatient basis using a mild sedative.[6] Despite the differences observed in response rate and prognosis according to histologic subtype, there are no consistent data to support that histology is a predictive biomarker of CRT in esophageal carcinoma.[7]Therefore this study has been conducted to assess the histopathological examination of the esophageal growth endoscopic specimens at tertiary care Hospital.

MATERIAL AND METHODS

This descriptive cross sectional was conducted at pathology department of LUMHS. Five years data of esophageal growth endoscopic specimens from January 2013 to December 2017 was analyzed. Patients presented with esophageal dysphagia, and underwent endoscopic biopsy, either of gender were selected. All these specimens

which were sent to histopathological assessment were analyzed. All the tissues of the specimen were fixed in the 10% formaldehyde, regularly process in the automatic tissues processor for the twenty four hours and after that embedded in paraffin wax. Three to five serial sections were cut in to 4 micron thickness on rotatory microtome and after that analyzed with the microscope after the staining with hematoxyline and Eosine (H&E). Selected stains as PAS and Giemsa's stains were utilized in selected cases. All demographic characteristics including endoscopic and Histopathological findings were entered in the proforma for the purpose of analysis by SPSS version 20.

RESULTS

Total 172 patients were enrolled; their mean age was 45.23±8.12 years, minimum 18 years and maximum 90 years. Out of all females were in majority 113(65.7%) and male were 59(34.3%). Table.1

Esophageal growth was commonest finding on endoscopy as 84.3%, followed by stricture 8.7% and inflammation 7.0%. Table: 2

Most of the cases 59.9% histopathologically diagnosed as well differentiated squamous cell carcinoma (SCC), 9.3% moderately differentiated SCC, 2.9% poorly differentiated SCC and adenocarcinoma 5.8%, followed by hyperplasia, dysplasia and barrets esophagus, 8.7%, 5.8% and 1.2% respectively and 4.7% were observed as inflammatory changes and 1.7% specimens found as suspicious of malignancy. Table.2

No significant difference was found in histological findings according to age p-value 0.143. However findings regarding SCC and hyperplasia were found statistically significant according to gender p-value 0.001.

Table. Descriptive statistics of age and gender n=172

Variables	Statistics	
Age	Mean	45.23 years
	Std. Deviation	8.12 years
	Minimum	18.00 years
	Maximum	90.00 years
Gender	Male	59(34.3%)
	Female	113(65.7%)
	Total	172(100.0%)

Table.2. Patients distribution according to endoscopic and histopathological findings n=172

Variables		Statistics
Endoscopic findings	Growth	145(84.3%)
	Stricture	15(08.7%)
	Inflammation	12(07.0%)
Histological findings	Well differentiated SCC	103(59.9%)
	Moderately differentiated SCC	16(09.3%)
	Poorly differentiated SCC Adenocarcinoma	05(02.9%) 10(05.8%)
	Hyperplasia	15(08.7%)
	Dysplasia	10(05.8%)
	Barrets esophagus	02(01.2%)
	Inflammatory findings	08(04.7%)
	Suspicious for malignancy	03(01.7%)

DISCUSSION

Carcinoma of the esophagus is the 6th commonest cause of cancer death worldwide.[8] During the past two decades some changes have occurred in histologic type and primary tumor location in some parts of the world. In this study mean age of the patients was 45.23+8,12 years and females were in majority 113(65.7%) as compared to males 59(34.3%). Similarly Boschee ED et al[9] reported that the 61.4% were females and remaining were males, while mean age of patients was 9.1+4.3 years and this mean age was lower in contrast to this study and this may because of selection criteria or environmental difference. On other hand Ali A et al[10] reported that the females were in majority with female to male ratio as 1:3 and mean age of males was 42 years and females mean age was 51 years. However inconsistently Hafeez, M et al[11] reported that the males were in majority 57% and females were 43% and the mean age of patients was 59±12.3 years.

In this study most of the cases 59.9% histopathologically diagnosed as well differentiated squamous cell carcinoma (SCC), 9.3% moderately differentiated SCC, 2.9% poorly differentiated SCC and adenocarcinoma 5.8%, followed by hyperplasia, dysplasia and barrets esophagus, 8.7%, 5.8% and 1.2% respectively and 4.7% were observed as inflammatory changes and 1.7% specimens found as suspicious of malignancy. On other hand Ali A et al[10] reported that the out of 69 esophageal carcinoma cases, squamous cell carcinoma was found to be most common 92.5%, while adenocarcinoma was found among 7.5% of the cases which are more elaborated with grads and out of 64 squamous cell carcinomas, moderately differentiated carcinomas were the most common 34 (49.2%). Safaee A et al[8] reported that the squamous cell carcinoma was commonest histologic type of tumor. In 15.2% of cases tumor was metastasize to other organs. In 46.6% were in advanced stage at diagnosis. On other hand Hafeez, M et al[11] demonstrated that the out of all study subjects squamous cell carcinoma was the most common among 71.33% of the case, followed by adenocarcinoma was 28% and one patient metastasize. In this study no significant difference was found in histological findings according to age p-value 0.143. However findings regarding SCC, adenocarcinoma and hyperplasia were statistically significant according to gender p-value 0.001. In an epidemiological study it is stated that the squamous cell carcinoma was most common in blacks and white women, while adenocarcinoma was commonly found in white males.[12] In an international study stated that remarkable gender variation does not seem to be explained via traditional risk factors, assumed that the etiological factor's prevalence and associations strength between these factors and esophageal adenocarcinoma risks are parallel between the genders.[13] Hormonal factors of the genders may play the vital role in adenocarcinoma of esophagus development; exposures of the estrogenic may prevent the such improvement, whereas androgens might raise the adenocarcinoma risk.[13] Though further research is still suggested to fully understanding the causes for gender association with different histopathological types of esophageal carcinoma.

CONCLUSION

It is concluded that SCC commonest histological diagnosis among patients presented with esophageal growth. Endoscopic submucosal dissection has become the gold standard for the resection of superficial specimen for histopathology. Further studies are required on such subject particularly with age and gender association.

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