

## OESOPHAGEAL CARCINOMA: A REVIEW OF ENDOSCOPIC BIOPSIES

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### ABSTRACT

**Objective:** To evaluate the frequency and pattern of esophageal carcinoma with respect to age and sex groups.

**Methodology:** All esophageal biopsies received in the Department of Pathology Muhammad Medical College Hospital Mirpurkhas over a five years period from January 2004 to December 2008 were reviewed and the cases of esophageal cancers studied in detail.

**Results:** A total of 215 cases were reviewed. There were 57 benign lesions and 158 were malignant. Out of 158 malignant lesions, the common carcinoma was squamous cell carcinoma 150 (95%) followed by five (3%) cases of adenocarcinoma and three (2%) cases of undifferentiated carcinoma. Females were predominant 57% as compared to males 43% with female to male ratio 1.3:1. Maximum number of the patients was seen in 5<sup>th</sup> decade of life followed by 4<sup>th</sup> and 6<sup>th</sup> decades.

**Conclusion:** Squamous cell carcinoma is the commonest esophageal carcinoma followed by Adenocarcinoma.

**KEY WORDS:** Squamous cell carcinoma, Adenocarcinoma, Dysphagia, Endoscopy.

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### INTRODUCTION

Carcinoma esophagus, ICD-10 (International classification of Disease 10<sup>th</sup> Revision) category C15 is a disease with a wide range of global

variation in its incidence.<sup>1</sup> Carcinoma esophagus is common in developing countries, there are two geographical esophageal belts on the globe. The 'Asian cancer esophageal belt' comprises Mongolia, China, and Kashmir. Iran, Turkmenistan and Quetta in Pakistan.<sup>2</sup>

Data from Karachi showed that it is the 7<sup>th</sup> most common malignancy in men and 6<sup>th</sup> most common malignancy in females.<sup>3</sup> At AKUH, this was the 10<sup>th</sup> most common in men (5%),<sup>4</sup> while at Cinar, Quetta, this was the 3<sup>rd</sup> most common malignancy in men, accounting for 11% of all cancers seen.<sup>5</sup>

The incidence is as high as 100/100,000 cases in some parts of the world, including parts of Iran, China and USSR. South East Asia has intermediate probability of about 10-50/100,000, and the West, including the USA has low incidence of about <10/100,000.<sup>6,7</sup> In the West, adenocarcinoma is the most prevalent

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histology, world over; including Pakistan squamous cell carcinoma is the predominant histology.<sup>7</sup>

Tobacco smoking is a strong risk factor for esophageal cancer.<sup>8</sup> Molecular changes, including p53 mutation with smoking heralds the development of malignancy.<sup>9</sup> Studies have shown that diet low in vegetables and fruits is another risk factor.<sup>5</sup> Associations between consumption of pickled vegetables, which contain a high concentration of N-nitroso compounds, with esophageal cancer have been documented.<sup>10-12</sup>

Dysphagia and weight loss are most common symptoms. Others are odynophagia, hoarseness, cough, Pleural effusion, hematemesis & hemoptysis etc.<sup>13</sup> The prognosis for patients with esophageal carcinoma is poor, despite attempts at aggressive multimodality treatment.<sup>14,15</sup> However, owing to the remarkable development of esophago-endoscopy, esophageal carcinoma can now frequently be diagnosed at an early stage, and as a result, the number of patients with early esophageal carcinoma has increased significantly.<sup>16</sup>

Information on the geographical distribution of cancer has been of great value for generation of epidemiologic hypothesis and formulation of concepts for the etiology of cancer. Such information would also be valuable for making global comparison.

In an effort to address this need, an attempt has been made to determine the frequency and pattern of esophageal cancer in our setup and compare it with the pattern reported within the country and abroad.

Table-I: Distribution of 215 Esophageal Lesions

Type Of Lesions	No. of Cases (%)
i) Benign Lesions	57 (27%)
- Chronic nonspecific esophagitis	18
- Hyperplastic epithelium	14
- Candidiasis	14
- See description	10
- Fibroepithelial polyp	01
ii) Malignant Lesions	158 (73%)

## METHODOLOGY

Muhammad Medical College Hospital Mirpurkhas is a 500 bedded teaching hospital. This retrospective & prospective study was carried out in the Pathology Department of this institute. The study included all the endoscopic esophageal biopsies which were received in the Department, over a five years period from January 2004 to December 2008. Total number of cases was 215. The hematoxylin and eosin (H&E) stained sections were examined to see esophageal cancers in detail.

## RESULTS

A total of 215 oesophageal biopsies were studied. Out of these 57 (27%) cases were benign lesions and 158 (73%) cases were diagnosed as cancers. In 57 benign lesions 18 cases were diagnosed as chronic nonspecific esophagitis followed by 14 cases of hyperplastic epithelium, 14 cases of candidiasis and one case of fibroepithelial polyp. The remaining 10 cases were reported as see description. (Table-I).

Out of 158 malignant lesions, the common malignancy was squamous cell carcinoma with a frequency of 150 (95%) followed by five (3%) cases of adenocarcinoma & three (2%) cases of undifferentiated carcinoma (Table-II).

A high frequency of cancer was seen in females with a total of 90 (57%) cases as compared to 68 (43%) males with female to male ratio of 1.3:1. Maximum number of the patients of esophageal carcinoma was seen in 5<sup>th</sup> decade of life followed by 4<sup>th</sup> and 6<sup>th</sup> decades (Table-III).

## DISCUSSION

Pakistan has a high incidence of cancer, from its independence in 1947 to the present.<sup>17</sup> The escalating burden of non-communicable diseases worldwide warrants an urgent public health response, especially for Pakistan.<sup>18</sup>

Table-II: Distribution of 158 malignant lesions

Type Of Lesion	No. of Cases (%)
Squamous cell carcinoma	150(95)
Adenocarcinoma	05 (03)
Undifferentiated carcinoma	03(02)

Table-III: Age Distribution of 158 Malignant Lesions

Type of Lesion	Age Groups						
	10-20 years	21-30 years	31-40 years	41-50 years	51-60 years	61-70 years	71-80years
Squamouscell carcinoma	02	31	36	39	33	06	03
Adenocarcinoma	--	--	--	03	01	01	--
Undifferentiated carcinoma	--	--	01	--	02	--	--

Minimum age Male, 13 years, Female; 23 years

Maximum age Male, 80 years, Female; 80 years

In current study all endoscopic esophageal biopsies were reviewed to see the frequency and pattern of esophageal cancers. We studied 215 esophageal biopsies. Out of these 57 (27%) cases were found benign and 158 (73%) cases were diagnosed as malignant lesions.

In present study out of 158 malignant lesions, squamous cell carcinoma was found to be commonest cancer one hundred fifty (95%) followed by 5 (3%) cases of adenocarcinoma & three (2%) cases of undifferentiated carcinoma. Our results are in agreement with other national studies of Quetta,<sup>5</sup> Karachi<sup>2-19</sup> and multiple international studies of India,<sup>20</sup> Japan,<sup>21</sup> and Bangladesh,<sup>22</sup> where squamous cell carcinoma was also reported as common esophageal cancer followed by adenocarcinoma.

Carcinoma esophagus is a dreadful disease due to dysphagia, which disables the patients to swallow along with the consequent biochemical changes it induces.<sup>23</sup> In our study dysphagia was the main presenting complain in 90% cancer patients. This finding is in conformity with the findings of Roohullah et al,<sup>5</sup> Kuwano et al<sup>21</sup> and Saleh M et al.<sup>19</sup>

In most countries esophageal cancer is 2 to 4 times more frequent in men than in women. In China, Iran, Afghanistan "the esophageal cancer belt region" this cancer is almost as frequent in women as in men.<sup>8</sup>

The current study showed predominancy of females 57% in esophageal cancers as compared to males 43%. These results are in favour of findings by Bhurgri Y et al<sup>24</sup> who reported a rising incidence for esophagus cancer in females.

While Roohullah et al<sup>5</sup> reported a similar frequency of this cancer in both sexes. However Puhakka & Aitsalo,<sup>25</sup> Malik et al,<sup>4</sup> Afidi SP et al<sup>23</sup> and Salih M et al<sup>19</sup> reported a high ratio of males for this cancer as compared to females.

Carcinoma esophagus is a disease of old age group but younger people are also being affected.<sup>23</sup> In our study most of the patients of esophageal cancer were seen in 5<sup>th</sup> decade (41-50 yrs) of life followed by 4<sup>th</sup> & 6<sup>th</sup> decades. These results are in favour of studies from Karachi,<sup>2-23</sup> Quetta,<sup>5</sup> & India<sup>12</sup> who also reported maximum number of patients between age 41 – 60 years. Carcinoma esophagus is a fatal tumour as overall prognosis is poor. Good prognosis depends largely on early detection of the tumour.<sup>5</sup> Dysphagia was the main symptom in 90% of the patients suggesting that all the patients with this symptom should be thoroughly investigated to rule out carcinoma esophagus, particularly in this region, as prognosis highly correlates with staging.

This study was a preliminary investigation and represents an addition to the data on incidence in Pakistan. The aim of the present analysis was to collect baseline data so that further work may be done in the etiopathogenesis of this common malignancy. Socioeconomic background is important, in determining risk and greater emphasise on education is necessary. The selected region in this study is of low socioeconomic status and the results showed an increasing rate of cancer. Increased awareness by education is very important and may play a preventive role.

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