

ORIGINAL ARTICLE

A DESCRIPTIVE STUDY ON OESOPHAGEAL CANCER IN HOSPITAL UNIVERSITI SAINS MALAYSIA.

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Abstract

Background: Oesophageal cancer is one of the cancer-related deaths in Malaysia. To date, neither the incidence nor the prevalence of oesophageal cancer has been documented especially in Kelantan, Malaysia.

Objective: This study aimed to determine the basic features of oesophageal cancer patients registered in Hospital Universiti Sains Malaysia (USM).

Methodology: A retrospective cohort study was carried out where the records of 55 oesophageal cancer patients registered in Hospital USM were retrospectively reviewed. The oesophageal cancer patients aged above 18 years old were included in the study whereas the patients with an incomplete medical record were excluded. Descriptive analysis was used.

Results: The mean age (standard deviation) of oesophageal cancer patients was 63.5 (12.3) years. Thirty five of oesophageal cancer patients were males (63.6%) while other 20 patients were females (36.4%). Out of 55 patients, 45 of them were above 60 years of age (81.8%). Smoking was found in 42 oesophageal cancer patients (76.4%). Dysphagia was the main presenting symptom in all patients. Adenocarcinoma was the commonest histology type among oesophageal cancer patients (52.8%).

Conclusion: Oesophageal cancer developed more in older and male patients. Most patients presented with common symptom of dysphagia and adenocarcinoma type of cancer.

Keywords: Adenocarcinoma, Dysphagia, Oesophageal cancer, Kelantan

Introduction

Oesophageal cancer is one of the cancer-related deaths with developing nations making up more than 80% of total cases and fatalities.¹ The incidence of oesophageal cancer is rapidly increasing² since it is considered as a serious malignancy concerning fatal outcome in most of the cases.³ However, in Malaysia, oesophageal cancer is uncommon case among patients admitted to hospital.

Since oesophageal cancer cases were rare in Malaysia, especially in Kelantan region, therefore, the population also very subtle. In our area of study, only 55 patients were diagnosed with oesophageal cancer. Majority of oesophageal cancer patients usually detected at advanced stages. Due to it, remedial treatment cannot be undertaken at the time of diagnosis. Therefore, it showed a grim prognosis attributable to the late presentation in most patients. Early detection of oesophageal cancer and knowing the extent of spread of the disease ensures the option for a cure.

Considering the serious and fatal nature of oesophageal cancer and its prevalence in Malaysian population along with the importance of its early diagnosis in the initial stage, the study aimed to evaluate the basic features of oesophageal cancer among patients in Hospital Universiti Sains Malaysia (USM). Hopefully, the result of this study could help to develop targeted strategies and activities for the early management of oesophageal cancer and references for the future studies.

Materials and Methods

Study design and subjects

A retrospective cohort study was conducted at Hospital USM where fifty five oesophageal cancer patients aged above 18 years old and were registered at Hospital USM were recruited. The medical record of all oesophageal cancer patients were reviewed retrospectively.

Data collection method

Age, gender, race, clinical presentation, risk factor, histology type and tumour location were recorded in structured proforma. The location of the tumour was classified as upper, middle and lower oesophagus according to the distance from the cricopharynx to the oesophagogastric junction. The study included all oesophageal cancer patients aged above 18 years old while those with incomplete medical records were excluded from the study.

Statistical analysis

Data entry and analysis was conducted using the Statistical Package for the Social Science (SPSS) version 24.0 for Window. As a first step, normal distribution of the sample was analysed. Normal distribution was represented by mean and standard deviation (SD) whereas skewed distribution was expressed by median and interquartile range (IQR). Descriptive analysis was used to determine the basic features which provide simple summaries of oesophageal cancer patients in our setting.

Ethical consideration

The study was approved by the Human Research Ethics Committee of USM. Permission to access patient's folder was obtained from Hospital Director of Hospital USM.

Results

Demographic particulars

The basic socio-demographic features of the patients are summarized in Table 1.

Oesophageal cancer had predominance in males (63.6%) rather than females (36.4%). The majority of the patients diagnosed with oesophageal cancer were above 60 years old

(81.8%). The mean age (SD) of patients was 63.5 (12.3) years. The oldest patient was 87 years old and the youngest 31 years old. For ethnicity; 76.4% were Malays, 18.2% were Chinese, and 5.4% were Siamese. This finding may reflect the local population, which is made up primarily of Malays..

Clinical presentation

Dysphagia was found in all the oesophageal cancer patients (100%), followed by weight loss (65.5%), coughing (16.4%), hoarseness of voice (12.7%) and odynophagia (9.1%). With regard to oesophageal cancer subtypes, 52.8% of patients had adenocarcinoma while another 47.2% of patients had squamous cell carcinoma. Almost half of the patients (60.4%) had lower third tumour location followed by middle third (26.4%) and upper third (13.2%). Most of the patients had moderate grade of cancer (64.3%) and stage IV of cancer (43.4%).

Risk factors

Most oesophageal cancer patients (76.4%) gave a history of smoking, and only the six patients (10.9%) gave a history of alcohol consumption. A small percentage (3.6%) of patients was diagnosed as having a previous Barrett's oesophagus (3.6%).

Discussion

The current study was conducted in a tertiary level teaching hospital located in the north-east of Peninsular Malaysia. Over period of the study, the researchers have seen a fairly small number of patients with oesophageal cancer in the tertiary hospital in Kelantan. As oesophageal cancer is a complex disease and almost always referred to a major hospital, the researchers were able to capture most of the cases in this area even though oesophageal cancer patients are in a small population.

The study revealed that the percentage of adenocarcinoma and squamous cell carcinoma

are almost the same which are 52.8% and 47.2% respectively. In the United States, the incidence of squamous cell carcinoma is declining, however, the incidence of adenocarcinoma has increased more than 6-fold in the last three decades.⁴

Reports from Asian countries, such as Singapore and China have shown a decline in the incidence of squamous cell carcinoma.⁵ These observations are not surprising since erosive reflux disease is rare in this part of the world.⁶ The present study showed adenocarcinoma and squamous cell carcinoma occur more frequent in patients above 71 years old just like the report from the United States, where the incidence of squamous cell cancer of the oesophagus increases with age as well and peaks in the seventh decade of life.⁷

Oesophageal cancer occurred more often in men compared to women⁸. It was similar to the present study where the incidence of oesophageal cancer was predominant in men compared to women with overall male to female ratio 1.75:1. The National Cancer Registry 2007 reported the incidence of oesophageal cancer in Malaysia is slightly higher in males compared to females.⁹ For males, oesophageal cancer was the fifth most common cancer¹⁰ and the crude incidence rate was 30.44/100,000 population.⁸

The incidence of oesophageal cancer is very low in those under 40 years of age, but it increases in succeeding years of life. The overall incidence increases with age and for our study, it reached a peak in the sixth decade. In China, aging population is a major cause of the increasing burden of oesophageal cancer¹¹. Jemal et al., (2011) also revealed that the incidence of oesophageal cancer has been found to increase in a continuous manner with age¹². The increasingly aging population makes it inevitable that more elderly patients will manifest oesophageal cancer.

The most common symptoms of oesophageal cancer in the study is dysphagia. Dysphagia is often mild when it starts, and over time, it

becomes worse as the opening inside the oesophagus become narrower. People had to change their diet and eating habits when their swallowing problem becomes severe. They will take smaller bites and chew their food more carefully and slowly. They may start eating softer foods which can pass through their oesophagus more easily. The swallowing problem may even get worse that some people stop eating solid food completely and switch to a liquid diet. Patients with oesophageal cancer tend to be more susceptible to develop malnutrition due to dysphagia and anorexia.¹³. These symptoms also may affect their weight where 65.5% of oesophageal cancer patients in the study had lost their weight. It happened because their swallowing problems prevent them from eating adequate food.

Amongst the well-recognized risk factor, cigarette smoking was found in most oesophageal cancer patients in our study. It was similar to the study in Malawi where Mlombe et al., (2015) concluded that smoking is a well-described risk factor for oesophageal cancer¹⁴. The present study found that 76.4% of patients were smokers and they faced an increased risk of both squamous cell carcinoma and adenocarcinoma of the oesophagus. There is a direct correlation between the number of cigarettes a smoker smokes per day, the length of time the smoker spends smoking, and the risk of oesophageal cancer.¹⁵ Tobacco contains many carcinogens particularly nitrosamines and when a smoker ingested tobacco condensates, it causes nitrosamines to react with the oesophageal mucosa.⁸ Cigarette smoking is more like a promoter than a mutagenic initiator. The most predominant chemicals in cigarette smoke are known promoters as they share

mechanistic characteristics of known tumour promoters. For examples, they have threshold levels of action, they are reversible in action, and their biological effects can be overridden by anti-tumour promoters, anti-oxidants and chemo preventive agents in the diet.^{16, 17}

Alcohol consumption has been consistently associated with increased risk of oesophageal cancer.^{18, 19} However, only small portion of patients in the study were consuming alcohol. Alcohol and its metabolic pathway played an important role in predisposing individuals to oesophageal cancer.²⁰

Lower oesophageal cancer appeared to be the commonest site of oesophageal cancer. These findings are in good conformity with the observation in Indian by Cherian et al., (2007) where lower oesophageal cancers outnumbered the middle and upper and appeared to be the commonest site of oesophageal malignancy.⁵ While the study in China found that squamous cell carcinoma of the oesophagus was located mainly in the middle of the oesophagus and most of the adenocarcinoma of the oesophagus were located in the lower oesophagus.²¹

Conclusion

In conclusion, oesophageal cancer was predominant in men and majority of them was in sixth decades of life. The common histology subtype of oesophageal cancer was adenocarcinoma. Cigarette smoking and drinking hot tea and coffee was found in most oesophageal cancer patients.

Table 1: Socio-demographic of Oesophageal Cancer Patients in Hospital USM (n=55)

Variable	Frequency (%)
Age	
Below 40 years old	1 (1.8)
41-50 years old	3 (5.5)
51-60 years old	6 (10.9)
61-70 years old	16 (29.1)
Above 71 years old	29 (52.7)
Gender	
Female	20 (36.4)
Male	35 (63.6)
Race	
Siamese	3 (5.4)
Malay	42 (76.4)
Chinese	10 (18.2)
Occupation	
Government	4 (7.3)
Self-employed	18 (32.7)
Unemployed	33 (60.0)

Table 2. Clinical Presentation of Oesophageal Cancer Patients in Hospital USM (n=55)

Variable	Frequency (%)
Dysphagia	
No	0 (0)
Yes	55 (100)
Odynophagia	
No	50 (90.9)
Yes	5 (9.1)
Loss of Appetite	
No	25 (45.5)
Yes	30 (54.5)
Weight Loss	
No	19 (34.5)
Yes	36 (65.5)
Coughing	
No	46 (83.6)
Yes	9 (16.4)
Hoarseness of voice	
No	48 (87.3)
Yes	7 (12.7)
Vomiting	
No	33 (60.0)
Yes	22 (40.0)
Histology Subtypes	
Adenocarcinoma	28 (52.8)
Squamous Cell Carcinoma	25 (47.2)
Grade of Cancer	
Well	6 (21.4)
Moderate	18 (64.3)
Poor	4 (14.3)
Stage of Cancer	
II	14 (26.4)
III	16 (30.2)
IV	23 (43.4)
Tumour Location	
Upper third*	7 (13.2)
Middle third	14 (26.4)
Lower third	32 (60.4)

*including both cervical oesophagus and upper third

Table 3. Risk Factors of Oesophageal Cancer Patients in Hospital USM (n=55)

Variable	Frequency (%)
Smoking Status	
No	13 (23.6)
Yes	42 (76.4)
Alcohol Consumption	
No	49 (89.1)
Yes	6 (10.9)
Barrett's Oesophagus	
No	53 (96.4)
Yes	2 (3.6)

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