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A clinicopathological survey of esophageal cancer in patients referred to a gastroenterology clinic in Tehran, 1991-2005

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Abstract

Background: Esophageal cancer is one of the major malignancies, with various epidemiological aspects in recent years in developing countries, including increased prevalence and variations of pathologic patterns. This may be due to increasing rates of Barrett's esophagus, gastroesophageal reflux, smoking and obesity. This study was performed from 1991 to 2005 in order to evaluate various clinicopathological aspects of esophageal cancer in patients referred to a gastroenterology clinic in Tehran.

Methods:This retrospective cross-sectional study was performed according to data from clinical records, including demographic information, pathologic and endoscopic reports. We used SPSS/12 software for statistical analysis. Chi-square and ANOVA tests were used and a P-value less than 0.05 was considered significant.

Results:156 patients (87 males and 69 females) with an average age of 62.4±10.3 years (mean ± SD) were studied. 105 (67.3%), 39 (25%), and 12 (7.7%) patients had squamous cell carcinoma (SCC), adenocarcinoma and metastatic carcinoma, respectively. The location of tumors was 20.6 % (32 patients) in upper third, 35.2% (55 patients) in middle third and 44.2% (69 patients) in the lower third of the esophagus. There was no significant relation between sex and age of patients with the type of cancer and location of tumors. There was a significant relation between the location of tumors and cancer pathology (P<0.001).

Conclusion: In our study, esophageal cancer had no significant epidemiological variations, so SCC was still more common than other esophageal cancers. Upper and lower thirds were the most common locations of SCC and adenocarcinoma of the esophagus, respectively.

Keywords: adenocarcinoma, endoscopy, esophageal cancer, pathology, squamous cell carcinoma.

Introduction

Esophageal cancer is one of the major malignancies with increasing frequency in recent decades [1]. Its pathological patterns had some changes in addition to its increased prevalence. The prevalence of esophageal cancer has increased six times in the recent three decades, which was the most rapid increase between major malignancies [2, 3]. In a survey from Finland, the frequency of esophageal adenocarcinoma has increased 10 times as compared with its frequency before 1970 [4]. Concerning mortality from cancers, esophageal cancers are the sixth cause of death due to cancers, worldwide [5].

This study was performed from 1991 to 2005

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Gender / Pathology of tumors	Female		Male		Sum	
	No.	Percent	No.	Percent	No.	Percent
Squamous cell carcinoma (SCC)	46	43.8	59	56.2	105	100
Adenocarcinoma	18	46.2	21	53.8	39	100
Metastatic cancer	5	41.7	7	58.3	12	100
Sum	69	44.3	87	55.7	156	100

Table 1. Frequency of tumor pathology in different sex groups.

in order to evaluate various clinicopathological aspects of esophageal cancer in patients referred to a gastroenterology clinic in Tehran.

Methods

This retrospective cross-sectional study was performed according to data from clinical records of patients referred to a private gastroenterology clinic from 1991 to 2005. We gathered pathologic and endoscopic reports besides demographic data from these records. All patients were included in our study. After collecting data, we used SPSS software version12 for statistical analysis. We used means ± standard deviations for quantitative and ratios for qualitative data. ANOVA and chi-square tests were used for comparing means and ratios, respectively. A P-value less than 0.05 was considered significant.

Results

156 patients, 87 (55.7%) males and 69 (44.3%) females were referred to our clinic from 1991 to 2005 and underwent diagnostic and therapeutic interventions. The mean age of the patients was 62.4± 10.3 years. According to the available records, 105 (67.3%), 39 (25%) and 12(7.7%) patients had squamous cell carcinoma, adenocarcinoma and metastatic carcinoma, respectively. The location of tumors was 20.6% (32 patients) in the upper third, 35.2% (55 patients) in the middle third and 44.2 % (69 patients) in the lower third of the esophagus.

There was no significant relation between pathology of cancer and sex (Table 1).

There was a significant relation between pathology and location of tumors (P<0.001) (Table 2).

There was no significant difference between tumor locations in both sexes.

From 32 patients with upper third tumors, 10 (31.2%) patients were female and 22 (68.8%) were male.

From 55 patients with middle third tumors, 26 (47.3%) patients were female and 29 (52.7%) were male.

From 69 patients with lower third tumors, 33 patients (47.8%) were female and 36 (52.2%) were male (Fig. 1).

The mean ages of SCC, adenocarcinoma and

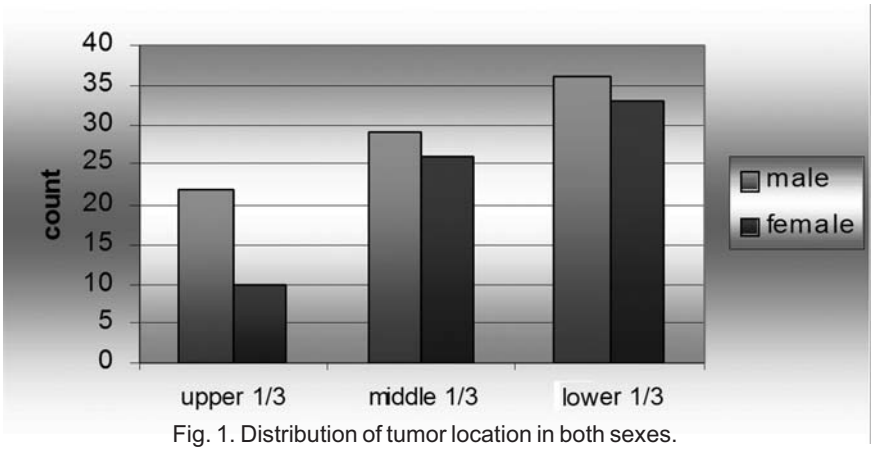

Fig. 1. Distribution of tumor location in both sexes.

Location of tumor	*Upper third*		*Middle third*		*Lower third*		*Sum*	
Pathology of cancer	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Squamous cell carcinoma (SCC)	30	28.8	44	41.9	31	29.5	105	100
Adenocarcinoma	0	0	9	23	30	77	39	100
Metastatic cancers	2	16.7	2	16.7	8	66.6	12	100
Sum	32	20.6	55	35.2	69	44.2	156	100

Table 2. Frequency of tumor pathology in different tumor locations.

metastatic cancers were 63.7±8.9, 61.58±12.26 and 66.2±3.5 years, respectively. There was no significant difference between these means.

Conclusion

Our findings show that SCC was the most frequent esophageal tumor in the past 15 years with a frequency of 67% versus 22% related to adenocarcinoma. This was significantly different from Schlansky et al's study that showed frequencies of 81% and 17% for adenocarcinoma and SCC, respectively [5].

Cherian et al from India studied 994 patients with esophageal cancer. The frequency of SCC and adenocarcinoma was reportedly 92% and 8%, respectively [6]. According to these studies our results was similar to the Indian study [6] but different from the American study [5].

In another study that was performed in Gonbad city (eastern part of Golestan province of Iran), from 245 patients with esophageal cancer, 91% had SCC and 9% had adenocarcinoma [7]. This distribution was similar to esophageal cancer distribution reported from Linxian of China [7] but different from the distribution reported from western countries.

In another study from Ardabil province (western part of Caspian littoral), 345 cancer patients were studied from 1996 to 1999. Apart from skin cancers, the five most common cancers in both sexes were stomach, esophageal, lungs (and breast in women), colorectal and bladder cancers, respectively. The prevalence of esophageal cancer was reported to be 15% in males and 14.4% in females. The prevalence of upper gastrointestinal cancers had a 100% increase in comparison to the data that was published 30 years ago. From these, gastric cancers were increased and esophageal cancers were decreased [8].

Hot tea (> 65°C) was introduced as a risk factor for esophageal cancer in a survey from Golestan province of Iran. Tobacco, nass and alcohol had a less important role in this study [9].

The most frequent site of tumor was in the lower third of the esophagus in our study; since nearly one half of our patients had esophageal cancer in this part of the esophagus. This ratio was similar to reports from authoritative medical textbooks [1].

Our study pointed out that 44.3% of patients were female and 55.7% were male, which was not significantly different. Schlansky et al showed a 4.9 to 1, 1.2 to 1, and 3.4 to 1 male to female ratio in SCC, adenocarcinoma and all types of esophageal tumors, respectively [5].

In our study, SCC had presented frequently in the middle and then in the lower third, but adenocarcinoma and metastatic cancer were most frequently found in the lower third of the esophagus ($P<0.001$). We did not report any patients with adenocarcinoma in the upper third of the esophagus and metastatic cancers were reported with a low prevalence in this region. The most frequent tumors of upper, middle and lower thirds of the esophagus were SCC (92.8%), SCC (71.7%), SCC or adenocarcinoma (37% for both of them), respectively. These findings are similar to reported data from an authoritative textbook of surgery [10].

The mean age of our patients was 62.4±10.3 years. There was no significant difference between means of age in different cancer groups.

This finding was similar to Schlansky's study. It showed a mean age of 66 years for esophageal cancer patients that was close to our finding [5]. Serag et al reported a greater mean of age than our study [11].

In the recent three decades, adenocarcinoma has preceded SCC of the esophagus in developed countries [12, 13]. The present study has shown that this change has not occurred in our region.

According to recent changes in our people's lifestyle including dietary changes and sedentary life that may cause obesity, the pattern of our cancers may have changed over the following decades. According to these variations in the pattern of cancer especially gastrointestinal cancer and since these variations may closely correlate with dietary and lifestyle modifications, we suggest conduction of more extensive studies.

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