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Original Article

Epidemiological features of the lip cancers and it's relation with smoking

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Abstract. To evaluate the epidemiological features of the patients with lip cancer and the relationship between these features and smoking. The relationship between epidemiological features, localization of the lesions, histopathological type and smoking was evaluated in 92 patients in this study. The number of the patients with lip cancers was average 5.41 per year and the 80% of the cases were male. The average age was 62.1. When the average age was compared with gender, the females were meaningfully older than males ($p<0.05$). It was seen that the patients who smokes were younger than the patients who do not ($p<0.05$). It was seen that a large number of the patients (57.6%) were the farmers who work in the open air and they were meaningfully younger than other professional groups ($p<0.05$). A large number of the lesions were squamous cell carcinoma (SCC) (88%). While 86% of the lesions in the patients with SCC were localized on the lower lip, 70% of the lesions in the patients with basal cell cancer were localized on the upper lip. There was no statistical difference in terms of smoking and histopathological types ($p>0.05$). Lip cancers do not reflect the characteristics of the oral cavity tumors because of the differences in behavioral patterns and while the exposure to ultraviolet sun lights has an important role in the ethiology, it was evaluated that smoking had a little contribution to the tumor development.

Key words: Lip cancer, epidemiology, ultraviolet, smoking

1. Introduction

Since the lip cancers are on visible localizations, they have higher cure rates, depending on the early diagnosis and treatment. These cancers are evaluated among oral cavity cancers in terms of their anatomic integrity. Oral cavity cancers are mostly seen on lip areas. While the cancers that develop on other areas of the oral cavity is seen rarely, oral cavity and head-neck region becomes a region where the cancers are mostly seen together with the lip cancer (1). Moreover, the fact that the lip cancers exhibit different behavioral patterns than other oral cavity cancers, so the separate classification of the lip cancers is still controversial (2). Since the lip cancer is treated in the departments of Ear Nose and Throat, Dermatology and Plastic Surgery, the epidemiological features of the disease are not clear in our country.

In this study, the epidemiological features of 92 patients with of lip cancers between 1994 and 2010 were discussed.

2. Methods and materials

In this study, the retrospective analysis of 92 patients with lip cancer between 1994 and 2010 were evaluated. The patients were analyzed according to the age, gender, profession, localization of the lesions and histopathological type. The relationship between these features and smoking was also evaluated. SPSS statistical program was used for analysis. One-way Variance Analysis was used for the constant variables emphasized especially. Paerson correlation coefficient was calculated to determine the relationship between these variables. Chi-square test was conducted to determine the relationship between groups and categorical variables. Statistical significance in the calculations was accepted as 5% and 1%.

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3. Results

Distribution of the patients according to years is shown in table 1. The annual number of the cases was 5.41. 80% of the patients were male and 20% of the cases were female. Male/Female ratio was approximately 4/1.

Table 1. Distribution of the patients according to age

Year	Number	Persentage (%)
1994	2	2.2
1996	1	1.1
1998	5	5.4
1999	5	5.4
200	2	2.2
2001	8	8.7
2002	5	5.4
2003	5	5.4
2004	9	9.8
2005	10	10.9
2006	6	6.5
2007	7	7.6
2008	12	13.0
2009	5	5.4
2010	10	10.9
Total	92	100

The average age regardless of the gender was 62. While the average age of the males was 60 and average age of the females was 68. When the average age was compared with genders during diagnosis, it comes out that females are statistical meaningfully older ($p<0.05$).

Approximately, 67% of the cases was and 33% of the cases smoking was not smoking. Regarding the relation between smoking and age, it was seen that people smoking with the lip cancer was at the age of 59, whereas people not smoking with lip cancer was at the age of 66 on average. It was showed that the patients smoking were meaningfully younger than ones not smoking ($p<0.05$) (Table 2). A large number of the patients (57.6%) were farmers. It was seen that farmers were meaningfully younger than other professional groups when compared to the profession groups ($p<0.05$) (Table 3).

Regarding the distribution of the lesions on lips, 77.2%, 19.6%, 3.3% of the patients had lesions on lower lip, upper lip and lip commissure, respectively. A large number of the lesions (81 patients) were histopathologically squamous cell carcinoma (SCC) (88%). Ten patients (10.9%) were basal-cell carcinoma (BCC) and 1 (1.1%) patient was basosquamous cell carcinoma (BSCC). Regarding the distribution of lip localizations 86.5% of the lesions in the SCC patients were localized on lower lips whereas 70% of the lesions in the BCC patients were localized on upper lips. When the histopathological types were compared, there was no statistical difference between squamous cell carcinoma and BCC in terms of gender and smoking ($p>0.05$) (Table 4).

4. Discussion

Lip cancers are generally seen among the people with light-skinned and frequently after 6th decade (3,4). They are sensitive to solar damage since they do not contain protective pigment layer. The exposure to sun lights for a long time is accused in etiology (4,5). DNA mutation caused by ultraviolet lights was shown as underlying factor (6). Tumors develop as a result of the failure in repairing of these mutations (7). Lip cancer is more frequently seen among the profession groups who are more exposed to sun lights (5,8).

Table 2. The relation between smoking and age. (1: smoker, 2: nonsmokes)

		Number	Percentage (%)	Average	Standard Deviation	Standard Error	p
Age	1	62	67.4	59.85	14.568	1.850	0.02
	2	30	32.6	66.77	11.449	2.090	
	Total	92	100	62.11	13.952	1.455	

$p<0.05$

Table 3. The Relation between Profession and Age (1: farmer, 2: other)

		Number	Percentage (%)	Average	Standard Deviation	Standard Error	p
Age	1	53	57.6	59.58	13.925	1.913	0.04
	2	39	42.4	65.54	13.410	2.147	
	Total	92	100	62.11	13.952	1.455	

$p<0.05$

Table 4. Histopathological Type (1:SCC, 2:BCC) and its relation with smoking (1:yes, 2:no) (Crosstab)

			Smoking		Total
			Yes	No	
Histopathological Type (1:squamous, 2:BCC)	1	Number	57	24	81
		% among histopathological type (1:SCC, 2:BCC)	70.4%	29.6%	100.0%
		% among people smoking (1:yes, 2:no)	93.4%	80.0%	89.0%
		% Total	62.6%	26.4%	89.0%
	2	Number	4	6	10
		% among histopathological type (1:SCC, 2:BCC)	40.0%	60.0%	100.0%
		% among people smoking (1:yes, 2:no)	6.6%	20.0%	11.0%
		% Total	4.4%	6.6%	11.0%
Total		Number	61	30	91
		% among histopathological type (1:SCC, 2:BCC)	67.0%	33.0%	100.0%
		% among people smoking (1:yes, 2:no)	100.0%	100.0%	100.0%
		% Total	67.0%	33.0%	100.0%

$p>0.05$

SCC: Squamous cell carcinoma

BCC: Basal-cell carcinoma

In the study conducted by Erdibil et al (8), it was reported that 55% of the patients work in open air when compared according to profession groups. Similarly, approximately 58% of the patients were farmers working in open air in our study. It can be resulted from the fact that farmers do not take the necessary precautions for protecting from the sun lights.

The localizations of the lip cancer are divided into three groups which are upper lip, lower lip and commissure region. 88-98%, 2-7% and 2% of all lip cancers are seen on lower lip, upper lip and commissure region, respectively (4,5). It was found that 81% of the cases were on lower lips in an analysis conducted on 2152 lip cancer cases in Western Australia (2). The localization of the lip cancer on 77%, 20% and 3% of the patients was lower lip, upper lip and lip commissure, respectively. It was explained that the reason why the cancers are more frequently seen on lower lips was that they stick out and are more exposed to sun lights (9).

A large number of the lip cancers are squamous cell and frequently localized on lower lips; on the other hand, BCC are frequently seen on upper lip (3-5). In our study, 88% of the cases were SCC, 10.9% of the cases were BCC and 1.1% of the cases were BSCC. While 86.5% of the lesions in the SCC patients were localized on lower lips, 70% of the lesions in the BCC patients were localized on upper lips. Here, lower lip behaves like oral cavity and upper lip behaves like skin in cancer histopathology. It makes difficult to evaluate the lip cancers within only oral cavity cancers or skin cancers (10). In our study, a meaningful relationship between the localization of lip cancers and gender and smoking could not be found ($p>0.05$).

Lip cancers are more frequently seen among males over 60. It was found that M/F rate was 2.5-3/1 and 88% of females and 80% of males were over 40 in a polycentric, retrospective study of 2152 cases in Western Australia (2). Using lipstick and covering the face in conservative societies were accepted as a protective factor (9). Male/Female (M/F) rate was 4/1 in our study. While the average age of males was 60.5, the average age of females was 68.72 and the average age regardless of the gender wase 62.1. It was seen that females were older when they were diagnosed of lip cancer ($p<0.05$). The reason might be that the mutagen change in cells takes a long time, depending on cancerous factors and less exposure.

Smoking and consuming alcohol are important factors in the development of the oral cavity cancer. Especially using them together creates synergic effect (11). The cancer will affect the location on which cigarette and tobacco pipe are put (12). When the relationship between the

location of the cancers on the lip and smoking was analyzed in our study, any statistical difference in terms of localization was not found between people smoking and not smoking ($p>0.05$). In parallel to the literature, SCC on lower lip is seen five times more frequently than SCC on upper lip in our cases (13). It is impossible to explain this situation only with smoking (14). However, the high rate (82%) of males who have cancer on lower right location was not statistically significant but it was remarkable.

The epidemiological studies showed that the cancer localization was resulted from joint place of external and internal lip and even the lip cancers spreading in recent years generally have external localizations (13). It makes think that smoking and using alcohol have a lower effect on the development of the lip cancer; instead, ultraviolet sun lights are the actual factors. In our study, 67.4% of the patients were smoking and we saw that people smoking came down with the lip cancer at the earlier age than people not smoking in the analysis of the relationship between age and smoking ($p<0.05$).

In conclusion, lip cancers do not reflect the characteristics of the oral cavity tumors because of the differences in behavioral patterns and while the exposure to ultraviolet sun lights has an important role in the ethiology, it was evaluated that smoking had a little contribution to tumor development.

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