



Retrospective study of the frequency of oral squamous cell carcinoma in the population of volta Redonda, Rio de Janeiro, Brazil

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Abstract

Malignant neoplasms of the mouth represent approximately 5% of all malignancies on human beings in the world. More than 90% of cancer cases that occur in the mouth are squamous cell carcinomas.

Objective: To know the frequency of oral squamous cell carcinoma in the population of Volta Redonda, Rio de Janeiro, Brazil, in order to confirm their relation according to gender, age and its localization in the mouth.

Methods: A total of 5,880 records histopathological diagnoses, belonging to the collection of the Department of Oral Pathology, at the Dentistry Course of Centro Universitário de Volta Redonda, obtained from 1990 until 2000.

Results: The rate that was found was 85,4% for males, and 14,6 % for females, yielding a ratio of 5,8:1; the ages ranged from 3 to 94 years old, the average age being 53.48 years old, and the tongue was the place it occurred the most.

Conclusion: The data found in this study is similar to that available in the studied literature.

Introduction

Malignant neoplasms of the mouth represent approximately 5% of all malignancies in humans worldwide and up to 9% in Brazil.¹⁻⁴ According to the Instituto Nacional do Câncer (INCA),⁴ oral cancer is the fifth and seventh malignancy responsible for the biggest number of deaths in Brazil between men and women, respectively, estimated 14,170 new cases in the year 2012, and 9,980 for men and 4,180 for women.

More than 90% of cancer cases that occur in the mouth are squamous cell carcinomas,⁵⁻⁸ followed by other carcinomas (verrucous, undifferentiated, minor salivary glands), sarcomas, and rarely by melanomas.^{4,9}

The disease typically occurs in individuals between the fourth and sixth decades of life, predominantly those males exposed to risk factors (notably with smoking, chronic ingestion of alcoholic and solar radiation), associated to genetic factors.^{3,10-16} In relation to smoking and alcohol, it was estimated that smoking and alcohol consumption are associated with 75% of all cases of oral squamous cell carcinomas (OSCC).¹⁶

OSCC is in large part diagnosed late, when it has reached advanced stages.^{4,17,18} Consequently, less than 50% of patients survive after five years of the diagnosis.^{18, 19}

As the function of some etiologic factors is not fully understood, it has been suggested in the literature that even in the absence of agents, squamous cell carcinoma may arise, indicating that genetic changes are closely linked to the onset of the disease.²⁰⁻²² So, the study of carcinogenesis was based on a series of events related to genetic mutations involving specific alterations in oncogenes and tumor suppressor genes, resulting in the interruption of cellular signals by changing the mechanism of repair of DNA damage. This change would result in an absence of elimination of non-functional cells, leading to a disordered growth through an unregulated proliferation of a cell clone.²³⁻²⁵

Its clinical features vary according to the duration time and growth pattern. Lesions may have reddish coloration or whitish, flat or rough, most often ulcerated, and featuring hardened edges. The site with the highest incidence in the mouth is the lip, and in the intra-oral tongue and mouth floor, soft palate and alveolar bone. Is initially asymptomatic, which complicates the search for care, directly affecting the course of the disease.^{16,17,19, 26,27}

Histopathological findings of OSCC showed a solid pattern of growth characterized by cords, nests or islands formed by epithelial cells morphologically altered, with high potential invasive. The atypical keratinocytes may show morphological changes characterized by prominent nucleoli, pleomorphism and hyperchromatic nuclei, loss of the relation nucleus-cytoplasm, dyskeratosis and atypical mitotic figures. In some cases, atypical keratinocytes maintain the production capacity of keratin forming arrangements within the tumor aggregates called

keratin pearls or pearls corneas.^{16,27}

This study aims to understand the frequency of OSCC in the population of Volta Redonda, in order to confirm their relation to gender, age and anatomical location in the mouth, and compare the results with the literature studied.

Methods

Through a retrospective analysis were obtained 5,880 records histopathological diagnoses, belonging to the collection of the Department of Oral Pathology School of Dentistry of UniFOA, from the former Hospital of the Companhia Siderúrgica Nacional in the city of Volta Redonda, Rio de Janeiro, Brazil, recorded the period between the years 1990-2000.

Initially were selected the cases diagnosed as malignant neoplasms with primary site in the oral cavity, and later, among these, separate cases with histopathological diagnosis of squamous cell carcinoma. Metastases were not considered.

Obtained the cases, were selected slides with tissue sections stained by the hematoxylin-eosin to confirm the diagnosis, confirmation that held by two teachers of the discipline.

After diagnostic confirmation, the data were grouped separately by year of diagnosis, take into account gender and age of the patient. The data were organized using Microsoft Excel 2010 version.

Results

Were found 1,880 cases diagnosed as OSCC at this service. Of these, 1,604 cases in males (85.3%) and 276 females (14.6%) (Table 1).

Table 1 – Gender

	<i>n</i>	%
Male	1604	85,4
Female	276	14,6
TOTAL	1880	100

The age ranged from 3 to 94 years, with an average of 53.48 years and prevalence in the age group between 51-60 years (*n* = 629) for males and 41-50 years (*n* = 69) for females (Table 2).

Table 2 - Age

AGE	<i>n M</i>	<i>n F</i>
0 a 10	3	6
11 a 20	16	11
21 a 30	14	12
31 a 40	68	19
41 a 50	485	69
51 a 60	629	67

61 a 70	268	46
71 a 80	124	24
81 a 90	10	6
91 a 100	1	2

Regarding the anatomical location, the most cases were located on the tongue (*n* = 459), followed by the larynx, oropharynx and palate (Table 3).

Table 3 – Anatomical Location

	<i>n</i>	%
Tongue	459	24,3
Larynx	291	15,3
Oropharynx	283	15
Palate	249	13
Floor of the Mouth	230	12
Tonsil	95	5
Alveolar Bone	63	3,4
Pyrim Sinus	58	4
Nasopharynx	37	2
Oral Mucosa	25	1,3
Retromolar Trigone	25	1,3
Lips	20	1
Salivary Glands	15	0,8
Epiglottis	14	0,8
Maxilla	10	0,5
Mandible	6	0,3
TOTAL	1880	100

Discussion

The studied literature affirms that oral cancer is the fifth and seventh malignancy responsible for the largest number of deaths in Brazil between men and women, respectively, projected 14,170 new cases in the year 2012, and 9,980 for men and 4,180 for women. It also states that more than 90% of cancers that occur in the mouth are squamous cell carcinomas.⁵⁻⁸ The overall male-female ratio is 3:1.¹⁶

The results of this study are consistent with the literature, since 85.4% of cases of OSCC were in males, and only 14.6% in females (Table 1). Thus, the ratio found was 5,8:1. It was also found that the overall mean age was 53.48 years, the age group between 51-60 years common to men, and 41 to 50 years more common in women (Table 2). There were 9 cases in individuals between 3 and 10 years old.

The most commonly affected site for intraoral carcinoma is the tongue. Populational studies in the United States showed that the tongue carcinoma accounts for more than 50% of intraoral cancer. The tongue is especially the site of attack in young patients.¹⁶ In this study, the tongue was the most common anatomical location among the cases studied, followed by the larynx, oropharynx and palate (Table 3). According Neville, carcinoma of the palate and oropharynx, which are in a more posterior location, the patient often is not aware of its presence and diagnosis will likely be late.¹⁶

Although 75% of cases of OSCC is associated with

etiological factors such as smoking and alcohol,¹⁶ other unknown factors may develop the disease, as observed in this study, in which there is an incidence in children from 3 years of age.

The OSCC is a malignant neoplasm, multifactorial and considered the highest incidence among all oral cancers. Just as other carcinomas, the risk of oral squamous cell carcinoma increases with age, especially in men. Through a retrospective study of cases of this tumor, it was possible to compare the results with the current literature, confirming that the impact in terms of gender, age and anatomical location, remain the same over the years. Furthermore it was found, due to cases found in children, which no agent or etiologic factor has been defined and accepted but it is known that there are intrinsic and extrinsic factors acting.

Despite advances in the treatment and understanding of the underlying molecular mechanisms involved in the pathogenesis of oral cancer, survival rates have improved significantly. Thus, early diagnosis and prevention are essential to improve the outcome of these patients.¹⁶

Conclusion

Based on results found, we concluded that:

1. The rate found was 5.8 men per 1 woman, or 5,8:1;
2. Regarding gender, 85.4% for males and 14.6% for females;
3. The age ranged from 3 to 94 years, with an average of 53.48 years;
4. The most frequent location is the tongue;
5. The data presented in this study are similar to those available in the literature studied.

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