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Original Article

Epidemiological Profile of Patients with Oral and Oropharyngeal Cancer Treated at a Referral Hospital, Salvador, Brazil

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Abstract

Objective: To describe the epidemiological profile of patients with oral and oropharyngeal cancer treated at a referral hospital in Salvador, Brazil. **Material and Methods:** A cross-sectional study was carried out at Aristides Maltez Hospital (HAM), analyzing the medical records of patients treated between 2008 and 2015. Of the 722 medical records analyzed, 154 were included, considering the following variables: gender, age, occupation and educational level; type of lesion of the mouth/oropharynx cancer, its location and stage. The data were presented using descriptive statistics. **Results:** There was a greater occurrence of squamous cell carcinoma (88.3%), with a higher prevalence for males (72.73) and age between 60-69 years (42%), with a predominance of farmers (38.31%). As for the educational level, 59% had only completed elementary school. The most common location for cancer was the tongue, 25.15% of the cases, and the professional responsible for the diagnosis was predominantly a doctor (94%). Prevalence of T3 and T4 size tumors (53.25%). **Conclusion:** Patients with oral and oropharyngeal cancer are mostly male, older than 60 years, with low educational level, and working as farmers. The most common location was the tongue, and T3 and T4 tumors were predominant.

Keywords: Mouth Neoplasms; Carcinoma, Squamous Cel; Epidemiology.

Introduction

The mouth is in a privileged anatomical position, which enables a good view of its structures by professionals and even allows self-examination. Mouth cancer is up to one hundred percent curable if diagnosed in its early stage. Thus, it is hard to admit that there are approximately five thousand deaths per year caused by this disease [1,2].

Undeniably, late diagnosis leads to an increased risk of death and a decrease in the quality of life of the affected individuals. Added to this is the indication of long, invasive and mutilating treatments, need of a highly specialized multidisciplinary team, equipment and advanced therapy and, consequently, higher hospital costs [1,3].

It should be noted that, regarding the oral cavity, the estimates are 11,140 new cases of cancer in men and 4,350 in women, totaling 15,490, for the period 2016-2017 in Brazil, assuming the possibility of underestimating the cases, as well as the fragility of the system of reference and counter-reference for oral cancer. Considering this subject's importance as a public health issue, since, currently, cancer is the second cause of death by disease in Brazil, except for external causes, occupying the fifth place in mortality statistics for men, and eleventh place for women [2].

The high prevalence as well as the high mortality rate of oral and oropharyngeal cancer in the Brazilian population need to be investigated through epidemiological studies, not only for monitoring this disease, but also in order to characterize at-risk populations and optimize the public health policies aimed at prevention, protection and health care [1,3].

In Bahia, Brazil, the center of excellence for the treatment of malignant neoplasms is Aristides Maltez Hospital (HAM), a philanthropic institution, a reference for cancer care, which is located in a prominent position in the national scenario, becoming a center of excellence, of attention to the needy [4].

In this sense, the purpose of this study was to analyze the epidemiological profile of the individuals with oral and oropharyngeal cancer treated at HAM in the period of 2008 to 2015, taking into account sociodemographic and disease-related aspects.

Material and Methods

Study Design

A retrospective cross-sectional study was developed by analyzing the medical records of patients treated at the Aristides Maltez Hospital from January 2008 to December 2015, with diagnosis of confirmed head and neck cancer.

Population and Sample

The sample consisted of records of patients assisted at Aristides Maltez Hospital (HAM). The sample was selected through a list of the medical records of all the patients who were treated by the Head and Neck Service in the aforementioned period, and 722 medical records were randomly selected for this study.

The following inclusion criteria were established: individuals with confirmed diagnosis of oral and oropharyngeal cancer, enrolled in and treated at the HAM in the previously informed period.

The following exclusion criteria were established: patients diagnosed with other cancer types, including head and neck and thyroid and skin, for example; people who evaded after the initial consultation, and were never tested to confirm the diagnosis of the disease; and medical records of patients with incomplete data.

The variables included: age, gender, marital status, educational level, occupation, duration of the disease, place of diagnosis, doctor responsible for the diagnosis, type of treatment, histopathological diagnosis, location, signs and secondary symptoms.

Data Analysis

The data were organized and tabulated with Microsoft Excel (Microsoft Inc., Redmond, WA) and presented using descriptive statistics (absolute and percentage distribution).

Ethical Aspects

This study was approved by the Research Ethics Committee of the HAM (Protocol no. 1.466.211), and the Research Ethics Committee of the Institute of Health Sciences of Federal University of Bahia (Protocol no. 1.393.120).

Results

Following the established criteria, 722 medical records were analyzed. They corresponded to the enrollment of patients during the period between 2008 and 2015. The study included a total of 154 medical records, after an analysis following the inclusion and exclusion criteria.

The patients' sociodemographic data are shown on Table 1. The study found a predominance of males (72.7%), as well as of single people (50%) and with low educational level (59.1%), mostly from inner cities of the State of Bahia (70.8%). The lowest age among the patients was 20 years old, and the highest was 94 years old, with average age of 57 years old. The more prevalent age group was 60 to 69 years old, corresponding to 27.3% of the sample. The occupational profile of the sample showed that 38.3% were farmers.

Table 1. Distribution of patients according to sociodemographic data.

Variables	n	%
Gender		
Female	42	27.3
Male	112	72.7
Age group (years)		
20-29	6	3.9
30-39	10	6.5
40-49	29	18.8
50-59	39	25.3

60-69	42	27.3
70-79	20	13.0
80-89	5	3.3
90-99	3	1.9
Marital status		
Single	77	50.0
Married	53	34.4
Separated	3	2.0
Widower	13	8.4
No information	8	5.2
Place of residence		
Metropolitan area of Salvador	45	29.2
Inner cities of the state	109	70.8
Educational level		
Illiterate	35	22.7
Elementary complete/not complete	91	59.1
High school complete/not complete	25	16.2
Higher education or more	3	1.9
Occupation		
Farmer	59	38.3
Housewife	11	7.1
Driver	7	4.6
Construction worker	5	3.2
Mechanic	5	3.2
Self-employed	4	2.6
Teacher	4	2.6
No information	7	4.6
Others	52	33.8

The study found that the average age of diagnosis of the disease for men was 57.31 years old, and for women it was 57.95 years old.

Table 2 shows the type and location of cancer lesions, with squamous cell carcinoma as the most common neoplasm, and the tongue as the most common location.

Table 2. Distribution of patients according to the histological type and location of the lesions.

Variables	n	%
Type of lesion		
Squamous cell carcinoma	136	88.3
Adenocarcinoma	9	5.8
Other (melanoma, undifferentiated neoplasms)	4	2.6
Sarcoma	3	1.9
Mucoepidermoid Carcinoma	1	0.7
Epidermoid Carcinoma	1	0.7
Location of the lesion		
Other (larynx, nasal mucosa, cervical, salivary glands)	43	27.9
Tongue	41	26.6
Lip	20	13.0
Palate	17	11.0
Floor of the mouth	10	6.5
Cheek mucosa	9	5.8
Tonsils	9	5.8
Gingival ridge	5	3.3

Table 3 shows the data concerning the TNM classification applied to oral and oropharyngeal cancer, evidencing the predominance of large tumors, T3 and T4, which represented 53.3% of the total.

Table 3. Distribution of patients according to the classification of tumors of the TNM system.

Classification	T		N		M	
	n	%	n	%	n	%
0	-	-	108	70.1	134	87.0
1	38	24.7	21	13.6	8	5.2
2	33	21.4	16	10.4	-	-
3	43	27.9	8	5.2	-	-
4	39	25.3	-	-	-	-
No information	1	0.7	1	0.7	12	7.8

From the moment individuals decide to seek care from a health professional, it is important that they register their preferences. In this study, the physician was the most sought-after health professional (94%), and the dentist was only chosen by 3% of the individuals, although this professional is mentioned along with the doctor in 2% of the cases. The percentage of other professionals mentioned as responsible for the diagnosis was 1%. Similarly, among the patients treated and diagnosed at HAM, most (59.7%) were diagnosed by a physician, with the dentist participating in the process of identifying specific oral lesions, which occurred in only 1.9% of the cases. After enrollment at the HAM, the average time until the performance of a biopsy was 1.7 months.

As to the symptoms related to the disease, the study found that the most common complaint was pain in an unspecified location, related by 85 patients (55.2%), or described as being present in the auditory cavity (29.4%), the throat (21.2%) and the tongue (16.5%). In addition, 29.4% of patients related feeling pain when swallowing, and 11 patients (12.9%) said they felt pain when chewing (Table 4). Symptoms that did not involve pain were also related, with special notice to: hoarseness (29.9%/n=46), tongue ulcers (18.8%/n=29), cough (18.2%/n=28), stinging (16.9%/n=26), burning and increases in size (14.9%/n=23 each) (Table 4).

Table 4. Distribution of the symptoms reported by the patients during first care.

Variables	n	%
Painful symptoms [154]		
General pain	85	55.2
Pain when swallowing [85]	25	29.4
Pain in the auditory cavity [85]	25	29.4
Throat pain [85]	18	21.2
Pain in the tongue [85]	14	16.5
Pain when chewing [85]	11	12.9
Cervical pain [85]	3	3.5
Mouth pain [85]	1	1.2
Absence of pain [154]		
Hoarseness	46	29.9

Tongue ulcers	29	18.8
Cough	28	18.2
Stinging	26	16.9
Burning	23	14.9
Increase in size	23	14.9
Weight loss	19	12.3
Bleeding	16	10.4
Dyspnea	16	10.4
Neck tumor	16	10.4
Difficulty swallowing	15	9.7
Dysphonia	9	5.8
Asthenia	7	4.5
Other ulcers	7	4.5
Itching	6	3.9
Mouth tumor	6	3.9
Hypersalivation	5	3.3
Face tumor	3	2.0
Others	22	14.3

When trying to analyze the educational level of patients along with the information regarding the decision of seeking professional help, the study observed a tendency to postpone this among the patients in the sample who had the lowest educational level. However, individuals who were illiterate or had low educational level — average of 19.3, putting the illiterate subjects along with those who had only completed elementary school — sought professional help in a shorter amount of time, when compared to individuals who had completed higher education (average=7.7); and when compared to those who completed high school (average=22).

Discussion

The results obtained for the socioeconomic profile of the studied population found a male, single, with low educational level and aged between 60 and 69 years. Therefore, these results are in accordance with the scientific literature, especially regarding the age of the individuals, since the records reveal that 95% of cases of oral cavity cancer occurred in people aged 40 years or more, and that the average age at the time of diagnosis was during the sixth decade of life [3,5-9].

The fact that oral cancer has a higher prevalence at more advanced ages can be explained by the increase in life expectancy and, mainly, by a greater exposure of the individuals to the risk factors, including the presence of chronic-degenerative diseases. The American Cancer Society estimates that about 77% of all cancers are diagnosed in individuals aged 55 years or older, as aging itself is a risk factor for neoplasms, since it makes individuals more susceptible to malignant transformations [3,6,7,10].

As to the patients' gender, it was observed that the most prevalent was male, in relation to female (Table 1), with the ratio between men and women at 2.6:1.

The analysis of the data concerning the educational level (Table 1) shows that 59.1% of the patients declared to have complete/incomplete elementary school, 16.2% had complete/incomplete

high school, and 22.7% were illiterate. This data is in accordance with the findings of the literature [11,12]. It should be added that a research conducted at the Hospital do Câncer de São Paulo showed that 61% of the individuals with advanced diagnosed disease had completed elementary school at most [13].

The literature also evidences a clear consistency around the world regarding the association between social status and oral cancer incidence/mortality [14-16].

It should be emphasized that the analysis of the medical records carried out for this study found elements suggesting that several individuals, whose education was declared as complete/incomplete elementary school, could not possibly fit this classification, since their identification documents and consent terms authorizing the treatment contained their fingerprint instead of their signature. However, the information that was recorded in the files was used.

When registering the occupational profile of the patients, the analysis showed that most occupied positions referred to those who have low educational levels, including farmers, men and women, followed by housewives, drivers, construction workers and mechanics, among others. Considering, specifically, the women, it has been observed that the majority of women involved in domestic activities present a higher incidence of oral cancer [5,17], possibly due to the same justification of income and lower educational level.

A case control study carried out in the metropolitan region of São Paulo (Brazil) concluded that activities in machine shops and auto mechanics presented a greater risk for oral cancer, regardless of the use of tobacco and alcohol [18]. Another study, also conducted in São Paulo, pointed to “general helper” as a high-risk occupation [8]. In epidemiological studies regarding this disease, the geographical size of Brazil must be taken into account, since it is a variable that makes each of the various regional communities very particular. Rural activity is predominant inside the State of Bahia, when compared to the State of São Paulo, for example. This aspect reinforces the regional differences in relation to the data referred to in the two studies mentioned above, in which the activities of mechanical worker, auto mechanic and general assistant appear as the most frequent for oral cancer.

The fact that the Aristides Maltez Hospital treats people from all the cities of the State of Bahia and, even, people coming from other states, must not be disregarded. In this study, 70.80% of the patients resided in inner cities of the State of Bahia, mostly rural areas, an evidence that is in agreement with the findings of another researcher [11], also carried out with data collected at HAM, which identified an equal proportion of individuals living in the urban area and in the rural/inner area of the State of Bahia. But it should be noted that the author only focused on patients who had access to the dentist service, while this study used the list of all patients with head and neck neoplasms enrolled during the study period. A previous study conducted in Rio Grande do Sul (Brazil) with 2,255 records revealed the prevalence of oral cancer in 3% of the sample, with squamous cell carcinoma as the most frequent histological type, with percentage of 83.5% [19].

It is known that most oral and oropharyngeal cancers involve the tongue and floor of the mouth. In this study, the most common location of the cancer lesion was the tongue, with 26.2% of the cases, followed by the larynx (21.4%) and the lip (13%). Although several authors [8,17,20] emphasize the tongue as the preferred anatomic site, some add that the lips, gingiva, dorsum of the tongue and palate are less frequent locations [20]. The findings in this research differ from those found in literature references [8,17,20], which can be explained in part by the random selection of the medical records in the sample, although the number of cases found in the studied period can be considered as significant.

When assessing the size of the lesions according to the TNM classification at the time of diagnosis (Table 3), the high proportion of larger tumors (T3 = 27.9% and T4 = 25.3%) stands out, totaling 53.3%. In addition, 29.2% of the patients presented reactive nodules (presence of grade 1 nodule = 13.6%) and presence of metastases in 5.2% of the cases. Most of the tumors were in advanced stages, with only two deaths recorded in the records analyzed, among the 11 patients who had a second tumor, a recurrence in 12, and 17 who did not return for follow-up. Similar results were mentioned by other authors [8,17,21], as was observed in other studies [3,6], that in the State of Bahia, oral cancer has been diagnosed late.

Despite the privileged anatomical position of the oral cavity, which facilitates the diagnosis, most of the carcinomas in this region are diagnosed when the tumor is in an advanced stage, and several factors may contribute to this fact. The delay in diagnosis can be attributed to the initial evolution, which is not very symptomatic, to the patients' lack of knowledge about the disease, to difficulties in accessing health services and to unpreparedness on the part of professionals [1].

The search for care by doctors in more than 90% of the sample in this study is a relevant data to be considered. When looking for a doctor, patients do not know the nature of their disease, so they do not seek a specialist directly. Cancer diagnoses are performed, mostly (70%), by non-cancer doctors, which highlights the importance of these professionals in the control of the disease [2,6]. Findings from a previous study reflect the dentists' poor performance in diagnosing and referring patients with oral and oropharyngeal cancer for treatment [21], a fact that is very worrisome, since the mouth is the main organ with which this professional works. Similar results are also presented by other researchers [11,13], as well as the records of the A. C. Camargo Hospital, in São Paulo [2]. In addition, there is the possibility that dental surgeons have limited knowledge about oral cancer, which may impair the early diagnosis of the lesions, as evidenced by a previous study conducted with dentist professionals in Campina Grande, Brazil [22].

Add to this the fact that the patient seeks care from a doctor when the lesion is already in an advanced size, which may express the difficulty of access to health services in general, a reality that should be taken into account by the public health care services. In addition, dental surgeons are not always included in the same number of government health projects and do not receive fair and equal remuneration or compensation as other health care professionals do, a condition winds up not encouraging these professionals to work in rural areas, for example.

The study found a significant number of individuals seeking private care, with 28.6% of individuals paying for their treatments with their own resources, not only consultations but also diagnostic procedures - biopsies, laryngoscopies and imaging tests -, a fact that suggests that the population is seeking health services provided by private plans. This is in agreement with a previous study [23] that pointed out the deficiency of care, access and quality of health services or even the lack of governmental programs with the goal of prevention as reasons for the search for private health insurance. It should be noted that few patients, when referred to the HAM, had already been submitted to a biopsy of the lesions and were enrolled with the diagnosis already established, and the average time between the biopsy and the admission to the Hospital was two months.

Several symptoms associated with the disease and/or treatment of the individuals have been described by the patients. It is important to emphasize that the symptoms interfere, especially, in the quality of life of the individuals, especially because they cannot eat properly, which negatively impacts their general state and delays or contraindicates the therapeutic approach. In this study, complaints of pain, hoarseness and cough predominated, which may also be associated with the fact that the lesions were large at the time of diagnosis.

Clinically larger lesions, such as those that prevailed in this study (T3 and T4), mean greater involvement of structures due to invasion or adhesion, possibility of regional or distant metastases, and involvement of nerve structures, which cause severe pain, with this being the main factor responsible for patients seeking medical care. Similar data were observed in another study in which pain was found to be the main clinical complaint, a symptom that can reach an incidence equivalent to 84.1% [8].

Previous findings [3,23,24] show that educational level, professional activity, economic factors such as monthly income, and lack of self-examination of the mouth are factors that influence the delay in seeking health professionals. Also, delayed diagnosis may be associated with initial oligosymptomatic lesions that are not valued by patients as well as by health professionals, a condition that suggests a lack of knowledge regarding this pathology [23].

It was found that, in developing countries, there is a high percentage of patients with oral cancer belonging to less favored socioeconomic classes [25]. According to the authors, this finding is clearly associated with the difficulties in accessing health systems, possibly incurring advanced clinical stages. In addition, other authors pointed out that in most of the diagnosed cases, individuals performed activities in rural areas, whose populations are predominantly of low socioeconomic status, and have difficulty accessing health services [24,26]. All this information seems to be in line with the data found by this research.

The wide expansion of health promotion programs through the inclusion of preventive measures for oral cancer through periodic campaigns with the general population certainly can contribute to avoiding the serious consequences that can result from simple misinformation or neglect of this pathology.

Conclusion

Patients with oral and oropharyngeal cancer are mostly male, single, with average age of 57, low educational level, and rural workers. Squamous cell carcinoma was the most frequent histological form and the main location was the tongue. This study found a restricted participation of dental surgeons in the diagnosis of the disease and in the referral of the patients to the Aristides Maltez Hospital.

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