The role of dental surgeon in early oral cancer diagnosis

Jardel dos Santos Silva
Gesom Avohai Dias Sombra
Luciana Botinelly Mendonça Fujimoto
Fernando Andre Martins Ferreira
Lia Mizobe Ono
Naíza Menezes Medeiros Abrahim

ABSTRACT

Oral cancer appears as a public health problem, late diagnosis often leads to mutilating surgeries and bleak prognosis. Most of the cases are diagnosed late, and the prognosis and survival improves considerably when the patient has an early diagnosis. In Brazil, the neoplasia still presents high levels of incidence and mortality, mainly affecting males sex. The oral cavity is an anatomical site that is easy to access for the examination and allows direct vision of the structures, which facilitates the identification of initial lesions, making possible the early diagnosis of oral pathological conditions. This paper describes a case of Epidermoid Carcinoma affecting the ventral of the tongue, classified as T2N0M0, in a male patient, feoderma , 57 years old, smoker and alcoholic. Etiological factors, clinical features and prognosis are discussed, as well as the role of the dental surgeon in the early diagnosis of oral cancer, suggesting the need for population education programs and professionals to identify early symptoms of the disease.

Keywords: mouth neoplasms; epidermoid carcinoma; tongue neoplasms; oral diagnosis.

O papel do cirurgião-dentista no diagnóstico precoce de câncer bucal

RESUMO

O câncer oral mostra-se como problema de saúde pública, o diagnóstico tardio muitas vezes leva a cirurgias mutiladoras e prognóstico sombrio. A maioria dos casos é diagnosticada tardiamente, sendo que o prognóstico e a sobrevida melhoram consideravelmente quando se tem diagnóstico precoce. No Brasil a neoplasia ainda apresenta altos níveis de incidência e mortalidade, afetando

Jardel dos Santos Silva e Gesom Avohai Dias Sombra - Graduation in Dentistry at the Federal University of Amazonas, Manaus/AM.
Luciana Botinelly Mendonça Fujimoto - PhD in Biotechnology from Federal University of Amazonas and Professor at the Department of Pathology and Legal Medicine, Federal University of Amazonas, Manaus/AM.
Fernando Andre Martins Ferreira - Head and Neck Surgery in Cancer Hospital, Manaus/ AM.
Lia Mizobe Ono - PhD in Maxillofacial Surgery and Traumatology, UNICAMP, Campinas/SP and DDS in Cancer Hospital, Manaus/AM.
Naíza Menezes Medeiros Abrahim - MSc in Surgery and Professor at the Department of Pathology and Legal Medicine, Federal University of Amazonas, Manaus/ AM.
Corresponding author: Naiza Menezes Medeiros Abrahim. Rua 30, Quadra 35, n-4, Condominio Vila Verde II. Manaus/AM. Telephone: (55) 92 99962.0222. E-mail: naizamedeiros@hotmail.com

principalmente o sexo masculino. A cavidade oral é um sitio anatômico de fácil acesso para o exame e permite visão direta das estruturas, fato que facilita a identificação de lesões iniciais, possibilitando o diagnóstico precoce de condições patológicas orais. Este artigo descreve um caso de Carcinoma Epidermoide acometendo ventre de língua, classificado como T1N0M0, em paciente do sexo masculino, feoderma, 57 anos, fumante e etilista. Fatores etiológicos, características clínicas e microscópicas e prognostico são discutidos, bem como a importância do cirurgião dentista no diagnóstico precoce do câncer oral, sugerindo a necessidade de programas de educação à população e profissionais para a identificação de sintomas precoces da doença.

Palavras-chave: neoplasias bucais; carcinoma de células escamosas; neoplasias da língua; diagnóstico bucal.

INTRODUCTION

Squamous Cell Carcinoma (SCC), also known as Spinocellular Carcinoma, is the most common malignant neoplasm of the oral cavity (1-2). This neoplasm represents approximately 5% of all human malignancies, and is considered in some regions, such as Asia and India the most frequent cancer (3-5).

The cause for OSCC (Oral Squamous Cell Carcinoma) is multifactorial, but the main risk factors associated with neoplasia are smoking and alcoholism, since they together show synergism to the origin of oral cancer (2,4). Moreover, other factors may be related to cancer, such as vitamin deficiencies, infection by HPV and solar radiation, the latter being associated with the lower lip SCC (3,6-8).

OSCC is most commonly found in males, aged 50 to 80 years, although in some areas women are affected almost a similar number to men or even higher due to a change in the female behavior, which became more exposed to the alcohol-tobacco association (5,7, 9).

The approach to OSCC becomes complex, since neoplasia in the vast majority of cases is diagnosed late, which is related to the patient's fear and lack of knowledge of the signs, as well as limited health services (2,4,10). Early diagnosis and treatment are crucial to improve the prognosis, emphasizing the importance the role of the dental surgeon in the prevention of OSCC, through educational measures and periodic exams, contributing to an increase in the survival and quality of life of patients with OSCC (7,10-12).

The treatment of neoplasia is multidisciplinary and depends on the pathological characteristics of the tumor, its staging and location. Several approaches are described, ranging from complete surgical excision of the lesion, chemotherapy, radiotherapy or association of methods, and should always consider a possible dissemination to regional lymph nodes, which in some cases may not demonstrate clinical signs of metastasis, being indicated the association of treatment with elective neck dissection, since occult metastasis rate is higher than 20% (13-15).

In this context, this article aims to present the role of the dental surgeon in the early diagnosis of OSCC and to describe a case report of Moderately Differentiated Squamous Cell Carcinoma in ventral of the tongue.

CASE REPORT

A male patient, feoderm, 57 years old, teacher, presented lesion in the tongue, with evolution of approximately one month. In the intraoral clinical examination, ulcerated exophytic lesion was observed, with raised and hardened borders and irregular contour in ventral of the tongue, measuring 2 cm in its largest diameter approximately (Figure 1 and 2). During palpation of the lymph node chains, no changes were detected. During the anamnesis, patient reported nothing remarkable about the medical history. Patient described being a smoker and alcoholist for approximately 30 years.

Figure 1 - Initial clinical appearance: Ulcerated lesion with raised borders, with whitish areas, measuring about 2.0 cm in diameter in ventral of the tongue, occupying the anterior third.

Figure 2 - Initial clinical appearance: Ulcerated lesion with raised borders, with whitish areas, measuring about 2.0 cm in diameter in ventral of the tongue, occupying the anterior third.

According to the clinical history of the lesion and the data collected during the anamnesis, the diagnostic hypothesis was of OSCC. Under local anesthesia, incisional biopsy was performed , with the following referral for histopathological analysis, revealing Moderately Differentiated Squamous Cell Carcinoma.

The treatment of choice was the surgical excision of the lesion. The therapy consisted of partial glossectomy, accompanied by cervical emptying of the lymph nodes. In the histopathological examination , paraceratinized stratified squamous epithelium was observed , characterized by the proliferation of epithelial cells presenting cellular polymorphism, hyperchromatic nuclei , with evident nucleoli, with formation of corneal pearls, revealing the diagnosis of the surgical specimen as of Moderately Differentiated Squamous Cell Carcinoma (Figures 3, 4 and 5). The lymph nodes analyzed were negative for presence of malignancy, the staging was PT1N0, according to the TNM classification criteria. Currently, with two years of proservation, the patient is well and in follow-up of speech therapist and nutritionist.

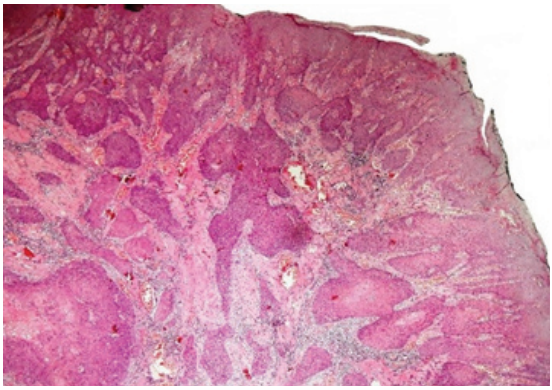

Figure 3 - Nests of neoplastic epithelial cells invading the underlying connective tissue.

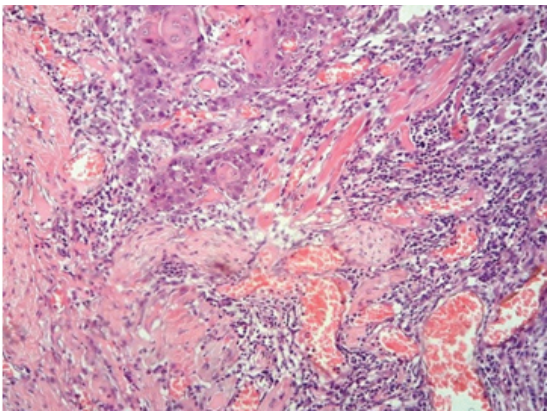

Figure 4 - Perineural and muscular invasion by neoplastic cells.

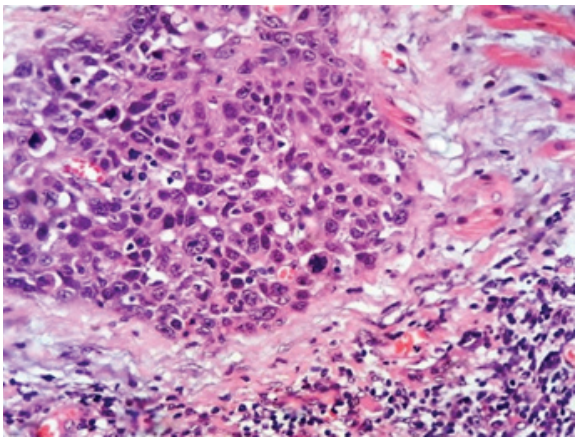

Figure 5 - Pleomorphic cells with bizarre, hypertrophic and hyperchromatic nuclei, binucleation and atypical mitoses.

DISCUSSION

Overall, oral cancer is considered the sixth most common cancer, in which about 62% of cases occur in developed countries. The most common of these is Squamous Cell Carcinoma accounting for 90% to 95% of malignant tumors of the oral cavity (1,2,5). The neoplasia affects more frequently males, however, some studies show similarities in the incidence of cases among men and women, which can be explained by changes in female behavior and the increased exposure to carcinogens (1,3-5). The present case corroborates with the literature, since the neoplasia affected a male patient and aged 57 years.

The tongue is the most common intraoral region affected by the SCC, being the lateral borders and the two thirds anterior the sites most frequently affected by the neoplasia. However, many other sites may be affected (2,3,5). Although the tongue is the intra-oral region most affected by SCC, the oral mucosa is considered the most common site in Southeast Asia, which is closely related to the habits of chewing tobacco and tobacco (2).

In the early stages, OSCC can manifest itself as a small and discreet ulceration, which usually does not heal. In the later stages, it is commonly seen as an ulcerated or nodular lesion, with raised and hardened borders, and may or may not present painful symptomatology. Some studies show that the presence of a painful symptomatology is related to a poor prognosis, since in these cases the SCC may have aninfiltrative, endophytic character, often with nodal involvement (3,7). In our case, the patient did not report complaints of painful symptoms, and the lymphatic chains showed no changes during palpation.

Lesions affecting the lower lip demonstrate smaller size at the time of diagnosis and are related to lower episodes of pain and lymphatic involvement. The ease of detecting

a change in the lips is more readily detected in the self-examination when compared to the intraoral lesions, allowing early diagnosis and good prognosis, as opposed to localized lesions in the tongue that may present a worse prognosis, since it is a region difficult to visualize by the patient, contributing to the late diagnosis (3,6,8). Due to the intraoral presence of the neoplasia, the patient states that she did not notice the appearance of the tumor, which contributed to the search for treatment only one month after the appearance of the lesion.

About 30% of patients wait for a period ranging from one to three months to seek medical / dental care after the discovery of the lesion, generally implying late diagnosis of the neoplasia. Such a condition may be related to the delay by the patient in seeking professional care, because it is a generally asymptomatic lesion in the early stages as well as the patient find that it is not dangerous or traumatic injuries (6,11-12). Professionals poorly prepared to diagnose neoplasia, social and cultural factors are also associated with the late diagnosis of the lesion. Many studies show that early diagnosis followed by appropriate treatment is crucial for improving prognosis (2,5,10). In this sense, dental surgeon plays an important role in the early detection of oral cancer, since they act at primary and secondary levels of health care, becoming generally the first professionals that the population has contact with.

It is important to emphasize that other ulcerative lesions affecting the oral cavity should be taken into account, since they may be similar to the SCC. The clinical findings of Tuberculosis, Syphilis, deep fungal infections, chronic traumas, may be indistinguishable from oral cancer manifestations, and the dentist should be aware of these conditions to establish the differential diagnosis with OSCC (3,7,9).

Most intraoral SCCs arise from cancerous lesions and early detection by the dental surgeon of the oral cancer, especially in the premalignant stage, significantly decreases mortality rates. Of all cancerous lesions, leukoplakia and erythroplakia are among the most common (6,8). The presence of these conditions on the lateral border of the tongue and the floor of the mouth deserve special care, as the literature shows higher rates of epithelial dysplasia in the lesions associated with these sites. For detection, a good clinical examination of the condition and knowledge by the professional is necessary to exclude other similar pathologies

The OSCC presents multifactorial etiology, however, smoking and alcoholism are widely considered as the main risk factors (2,3-5). The amount of tobacco that the individual is exposed to is directly proportional to the early occurrence of carcinoma (5). Many studies affirm that the alcohol/smoking association presents synergism in the occurrence of OSCC, which is justified by the increased permeability of oral tissues caused by alcohol, promoting greater penetration of the carcinogenic agents of tobacco (1,2,7). In addition to smoking and alcoholism, other factors have contributed to the occurrence of neoplasia, such as genetic inheritance, eating habits, especially vitamin A deficiency and HPV infection (4,5,7,11). The intense and chronic exposure to ultraviolet light (UV) is associated with lower lip SCC, more frequent in light-skinned men (1,3)

The elaboration of projects and actions aimed at oral cancer prevention, such as measures to combat smoking and alcoholism, should be initiated and encouraged in oral health teams in order to provide information on risk factors, etiological agents and the importance of periodic visits to the dental surgeon (2,6,12). In the present case, the factor that probably led to the origin of the lesion was smoking. Evolution may have been enhanced by the patient's history of alcoholism.

In addition to the late diagnosis, several other parameters may influence the prognosis of the lesion, among them the TNM System, which evaluates many tumor characteristics, such as local extension (T), regional spread (N) and distant metastasis (M), being considered by some authors as one of the best indicators of prognosis and survival for SCC. In this system, the higher the classification the worse the prognosis of the condition and many authors affirm that the mortality rate increases according to the stage at which the diagnosis is made. A retrospective study by Malhotra et al (2), in the period 2007 to 2013, showed that 45.94% of the cases of patients diagnosed as OSCC were in stage IV. Another study by Singh et al (5), in India, presented results similar to those of Malhotra et al (2), in which in the analysis of 611 cases of OSSC in the period from 2010 to 2013, most of the cases was diagnosed as stage IV of the disease, representing 59.41% of the cases. The literature shows that the later the neoplasia is diagnosed, it is generally necessary to use higher doses of chemotherapy, radiotherapy and multi-operative surgery (8,11). In our case, the patient presented T2N0M0 clinical staging, that is, the presence of lymphatic involvement and distant metastasis was not observed.

Neoplasms that are in the early stages (I / II) without lymph node involvement are usually treated with single modality therapy, either surgery or radiotherapy. The lesions that are in the more advanced stages (III / IV) require the combination of radiotherapy, surgery, and chemotherapy. The therapy to be chosen based on the location of the primary tumor, histopathological features, and its staging, individualizing the treatment of all patients (1,11,13,16). For the patient of the case, the treatment of choice adopted followed the parameters recommended for SCC of tongue, consisting of partial glossectomy with elective cervical emptying, being the surgery the only treatment modality. In the microscopic analysis the presence of lymphatic involvement was not observed.

The palpation of the cervical lymph nodes is of great value, but in some cases, lymph node involvement may occur without evident clinical manifestations (15). A study by Bittar et al (15) in São Paulo observed the presence of occult metastasis in 30 patients of the 157 analyzed. According to the author of the study, perineural infiltration, stage IV and thickness greater than or equal to 4mm of the tumor are predictive factors for occult cervical metastasis. In the case presented, although there was no change in palpation of the lymph node, cervical emptying was preferred, since the literature describes that the rates of occult metastasis are 20% (15).

It is widely accepted that despite advances in modern techniques for diagnosis and treatment OSCC, early diagnosis is still the best way to increase patient survival. The education of patients and health professionals, especially dental surgeons, about the knowledge of initial lesions that present potential for malignancy and subsequent referral

to the specialized service would contribute significantly to the prognosis of patients with the lesion. Because it is a site of easy access for both the dental surgeon and the patient, self-examination should be addressed in educational programs so that the population can be made aware of the clinical signs of oral cancer. In addition, the general public should be aware of the risk factors and prognostic factors for OSCC and the importance of periodic examinations of the oral cavity. It is unfortunate, however, that most cancers, even in developed countries, are detected late. Evidence suggests that early diagnosis of cancer leads to less complex treatment and improves prognosis and quality of life.

CONCLUSION

The article shows the importance of the early diagnosis of oral cancer by the dental surgeon, which can be reached through educational and preventive campaigns, focusing on smoking and alcoholism, leading to information about the risk factors and clinical signs of the disease OSCC.

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