



Critical appraisal of determinant factors of an extensive oral squamous cell carcinoma - Report of case

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Abstract:

Introduction: Oral squamous cell carcinoma (OSCC) is the most frequently occurring oral malignant neoplasm. Early diagnosis is essential for determining the treatment and prognosis of OSCC. **Objective:** The aim of this study was to report a case of an extensive OSCC, to discuss factors involved in the diagnosis of advanced lesions and to clarify difficulties experienced in referring patients with OSCC for treatment to a healthcare system. **Methods:** The study included male patients aged 50 years who were chronic alcoholic and tobacco smokers, who had severe trismus, and who presented with ulceroproliferative growth with indurated raised margins, involving the left palate and lower gingiva, extending into the buccal mucosa, and overlying the skin. **Results:** An incisional biopsy confirmed the diagnosis of OSCC, and the patient was referred for treatment. **Conclusions:** The factors that delay the diagnosis of OSCCs are misinformation, self-care negligence, socioeconomic aspects, inappropriate oral mucosa examinations, unknown oral diseases, and failure to obtain a conclusive diagnosis and forwarding the patient to the treatment.

Keywords: Mouth Neoplasms; Risk Factors; Diagnosis.

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INTRODUCTION

Oral cancer may have an efficient treatment and a good prognosis when diagnosed in its early stage¹. Preventive strategies for oral squamous cell carcinoma (OSCC) early diagnosis should be attempted as a public health challenge². The most relevant factors associated with OSCC are related to chronic tobacco and alcohol consumption³. In Brazil, according to the Brazilian National Institute of Cancer (INCA), approximately 15,000 new cases of OSCC were estimated to occur in 2018⁴. The mortality and morbidity of OSCC are strictly related to the TNM stage at initial treatment^{1,5}.

Secondary prevention, which aims to detect the disease as soon as possible, may be most beneficial for patients who have a high risk³. The purpose of this study was to report a case of extensive OSCC that originated in the oral mucosa and that was diagnosed after face skin ulceration and to discuss possible factors associated with delayed diagnosis and treatment of this particular patient.

CASE REPORT

A 50-year-old man who was a bricklayer, divorced, and lived in Teresópolis/RJ was searching for a clinical dentist to treat his painful oral lesion with a clinical presentation at approximately 1 year previously. The patient was previously prescribed an antibiotic medication and was forwarded to a specialist. This patient presented to the Stomatology clinic of the São Leopoldo Mandic School, Rio de Janeiro with extensive intra- and extraoral lesions. He also presented with a cachectic state (i.e., he had lost 20 kg in the last year), dysphonia, and severe cough.

He was a resident of a country community that was located 175 km from the medical center where the diagnosis was made. His risk factors were chronic alcohol and tobacco consumption.

During the extraoral examination, an ulceroproliferative growth with indurated raised margins that involved the left buccal mucosa and overlying skin was observed (Figure 1A and 1B). The intraoral examination was prejudiced by trismus (Figure 1C), which was observed as an ulcerative lesion involving the left palate, lower gingiva, and buccal mucosa. In the radiographic examination, an osteolytic image of the left mandibular body was obtained (Figure 2). Based on these findings, the diagnosis was supposed to be malignant neoplasia or deep fungal infection.

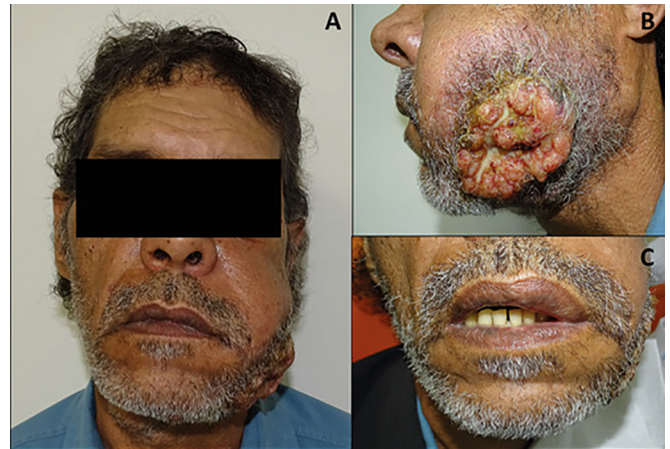


Figure 1. Extra-oral clinical images. A) Frontal view. B) Tumor growth involving the left buccal mucosa and overlying skin. C) Reduced maximum mouth opening.



Figure 2. Panoramic Radiographic examination showing a "moth-eaten" aspect image with irregular margins in the left mandibular body.

Extraoral incisional biopsy showed islands of malignant epithelial cell proliferation that infiltrated into the connective tissue and exhibited nuclear and cellular pleomorphisms and keratin pearls (Figure 3). The patient was diagnosed with OSCC and was referred for oncologic treatment in the postoperative period (21 days after incisional biopsy; Figure 4). Unfortunately, the patient died before the treatment.

DISCUSSION

Several factors can contribute to the delayed diagnosis of OSCC⁶. This study proposed a critical reflection on one patient with extensive and mutilating OSCC, established the role of each stage, and defined the responsibilities of patients, healthcare professionals, and healthcare systems.

Alcohol and tobacco abuse is dose-dependently magnified by multiple exposures, which include the frequency and duration of the habit³. High alcohol consumption increases the probability of cancer

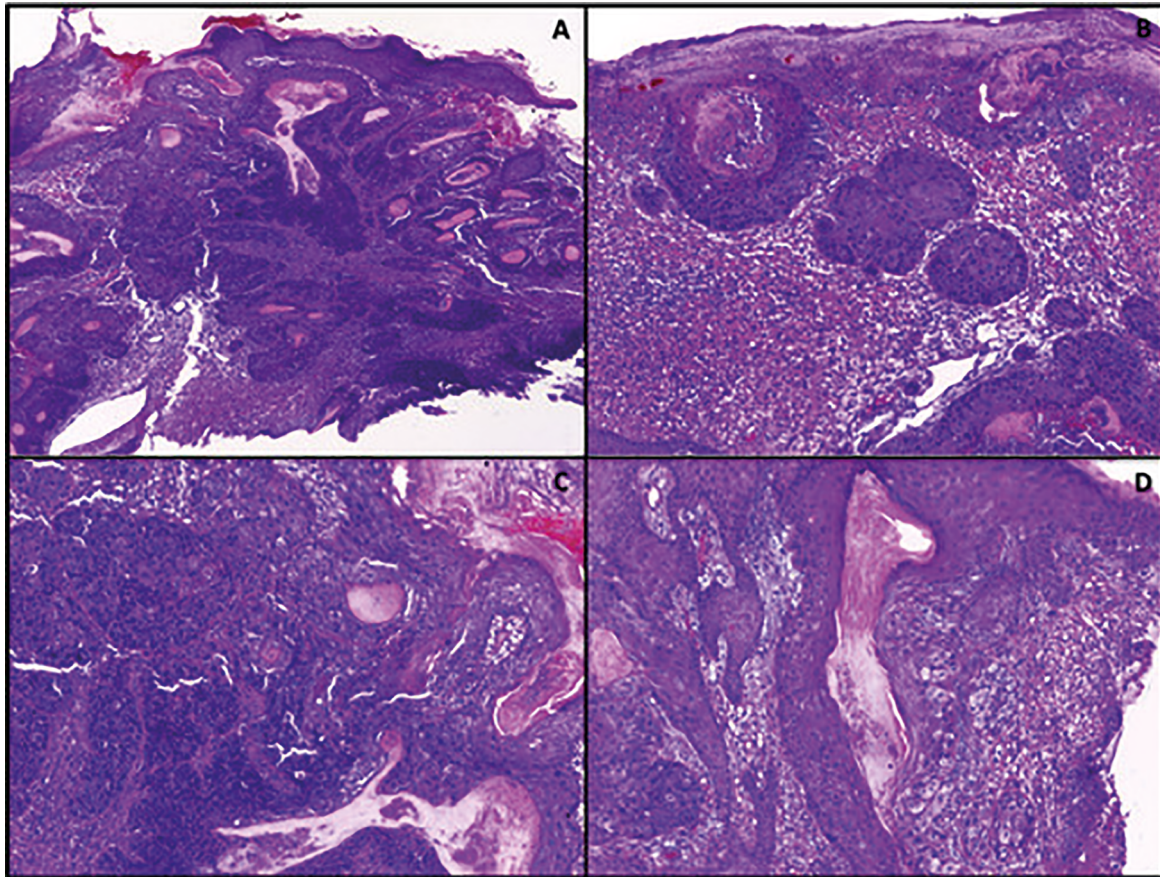


Figure 3. Histopathological examination. A) Malignant epithelial cell proliferation that formed keratin aggregates. B) Epithelial islands invading the connective tissue. C) Neoplastic cells exhibit cellular and nuclear pleomorphism and hyperchromatism. D) Malignant epithelial cells present with pleomorphism and nucleus/cytoplasm ratio alterations. (H/E, 4X, 10x and 20X).



Figure 4. Post-operative clinical aspect. Clinical aspect of neoplasm 21 days after incisional biopsy.

development by 9.7 times, whereas smoking increases the probability of cancer development by 7.1 times compared to non-exposed individuals⁷. Furthermore, the associated consumption of both carcinogenic substances increases the risk of developing head and neck SCC by 40 times⁸.

Another patient-associated factor that may be considered is oral hygiene, which can contribute to neoplasia progression⁹. However, oral hygiene is not considered an independent risk factor for OSCC¹⁰. The proposed theory is that the oral microflora increases the inflammatory component and modifies metabolic pathways to initiate oral carcinogenesis development¹¹. In the current case, the patient had the abovementioned carcinogenic habits, which presented as abuse in his anamnesis and were evident during his radiographic examination as advanced bone alveolar loss, dental caries, and residual roots.

In addition to individual habits, sociodemographic factors may interfere with OSCC development. The epidemiologic analysis showed that a majority of affected patients had a low educational level (64.8%) and their occupations, such as farmer, truck driver, and general services, majorly comprised manual activities. Furthermore, more than half of the examined patients reported incomes below the minimum wage¹². The patient in this study was a bricklayer and had a low educational level and economic standing, which

corroborates with published literature. The role of cognitive and psychological processes in diagnostic delay was highlighted by Panzarella et al.¹³ who found that personal experience or unawareness of cancer strongly correlated with patient delay.

Marital status can also predict the risk of developing OSCC, i.e., people without partners (single, divorced, or widowed) have higher chances of cancer development¹⁴. Married people undergo preventive healthcare examinations, such as dental examination, mammography, and uterine preventive cytopathological examination¹⁵, and have lower incidences of harmful habits, such as alcohol consumption, tobacco use, and promiscuity¹⁶. The patient in this study was a single man who never consulted the dentist before this episode.

Regarding the patient's place of residence, the geographical location may sometimes influence OSCC outcomes. The treatment of patients who reside in rural areas usually include auxiliary therapies, such as radiotherapy or chemotherapy, whereas that of patients residing in urban areas only include surgical tumor resections. This is because patients who live in rural areas often exhibit tumors with more advanced stages (III and IV) at diagnosis. The chances of death occurring due to oral neoplasia of patients who reside in rural areas are 3.7 times greater than those who reside in urban areas. With respect to survival rates after anti-neoplastic treatments, patients who reside in areas at a distance greater than 100 km from cancer centers are 40% less likely to survive than those who reside at a distance within 50 km from cancer centers¹⁷.

Early disease diagnosis is an important active role of dental surgeons. Spalthoff et al.¹⁸ compared patients with OSCC and concluded that individuals who visited a dentist at least once a year presented with smaller tumor sizes, less lymph node metastases, and lost fewer teeth during oncology treatment than those who visited a dentist less than once a year. This difference consequently resulted in better prosthetic rehabilitation and psychological status after tumor treatment, which directly affected the quality of life.

Clinical oral surgeons have difficulty in diagnosing malignant oral lesions¹⁹. Difficulties regarding such failures include insufficient theoretical knowledge, inadequate academic training, and lack of self-reliance for managing patients²⁰. Knowledge on carcinogenic factors is well established among dentistry students. The education gaps occur in the indication of suspicious lesion biopsies and the execution of procedures by

general practitioners, resulting in delays in the referral and treatment of these patients²¹. In addition to knowledge on diseases that affect the mouth, the time of clinical examination was determined to be a crucial factor for the diagnosis of oral cancer. Dentists who spend more than half of the time of the initial consultation in examining their patients were more likely to detect oral cancer than those who spend less time in examining their patients²².

An inappropriate professional management can also contribute to a delay in OSCC diagnosis. Inadequate clinical treatments and referrals before a definitive diagnosis of the neoplasm can delay diagnosis, whereas an accurate biopsy during an initial examination can facilitate prompt diagnosis²³. In the present case, the patient reported that he had noted the lesion 1 year ago but had only searched for professional assistance during the last month. Furthermore, the clinical oral surgeon prescribed antibiotic therapy and referred the patient to a center that specialized in mouth diseases.

The overall delay in the treatment of head and neck neoplasia can be divided into patient and professional delays. In an international literature review, Stefanuto et al.²⁴ concluded that patients' treatment can be delayed by 3.5-5.4 months while searching for a proper healthcare provider. Furthermore, the period from initial referral to definitive treatment was found to be approximately 14-21 weeks; this period varied in Brazil, and Abdo et al. showed that the periods could be 174.2 days (5.8 months) for patient delay and 73.1 days (2.4 months) for professional delay²⁵. da Silva et al.¹⁹ reported a higher-than-average 11.4 months for patient delay and 3.5 months for professional delay. In the current case, the patient delay was approximately 12 months owing to his search for a healthcare provider, and the professional delay was 3.5 months.

In addition to individual variables, the public healthcare system contributes to delays in OSCC management. In primary healthcare systems, the late referral of patients with OSCC for treatment was associated with difficulty in accessing healthcare services owing to the quality of communication between specialists at different levels, lack of specialized centers for referral in certain cities, and quality of information in the reference documentation²⁶. In this aspect, we asked the following question: how many professionals and healthcare units can a patient with OSCC have access to for diagnosis and correct treatment?

The oral surgeon can attempt that OSCC is an aggressive disease to the patient. This study emphasizes

the need for a strong action to prevent and actively search for individuals at risk, including those who require action by healthcare professionals and institutions that are involved in the diagnosis of each case. Furthermore, the most immediate solution possible is required to ensure that situations such as the one reported in this study will become progressively rare. Finally, what would be the role of each individual in the prevention, diagnosis, and treatment of this pathology?

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