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# ORAL CARCINOMA OF SQUAMOUS CELLS (OCSC) AND NEOPLASM RECURRENCE: CASE REPORT

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### ABSTRACT

**Introduction:** 95% of oral cancers are squamous cell carcinomas (SCC). Despite all advances in diagnosis and therapy, oral cavity cancer continues with an unfavorable prognosis, high rates of relapse and mortality. **Case report:** Patient AFL, 69 years old, caucasian, male gender, alcoholic, smoker, diabetic, with a history of ulcerated lesion on the floor of the mouth without painful symptoms was referred to the Head and Neck Surgery Service of the Oncology Center of the Hospital University of Pernambuco - CEON / HUOC / UPE, where he was diagnosed with squamous cell carcinoma moderately differentiated, ulcerated with perineural infiltration, angiolymphatic and in bone tissue, as well as lymph node metastasis. Staging IVa (T4a N1 Mx). Multimodal therapy (surgery, radiotherapy and chemotherapy with cisplatin) was performed. Dental monitoring was maintained in pre, trans and after treatment in order to carry out the previous oral adequacy and control of oral complications due to antineoplastic therapy. After 2 years and 11 months of treatment, the patient returned to the dental clinic of the CEON / HUOC / UPE, complaining of intense pain in the oral cavity, clinically verified: ulcerated lesion with areas of reddish and whitish color, base hardened to palpation in the buccal floor region. After exams, a local recurrence of the carcinoma was diagnosed, and a new therapeutic course was planned, and salvage surgery was chosen. **Conclusion:** Early diagnosis of oral ECC and medical and dental monitoring are factors that help reduce morbidity and mortality and improve the patient's quality of life.

**Keywords:** Mouth Neoplasms, Carcinoma, Squamous Cell, Neoplasm Recurrence, Local, Public Health.

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## INTRODUCTION

Oral cancers (oral cancer and oropharynx) are the sixth most common cancer in the world. For Brazil, according to data from the National Cancer Institute (INCA), an estimated 11.200 new cases of oral cavity cancer in men and 3.500 in women for each year of the 2018-2019 biennium are estimated. It is considered the fifth most frequent tumor in men and the twelfth among women.<sup>1,2</sup>

Of the tumors of the mouth, 95% are squamous cell carcinomas (SCC) and the other 5% correspond to sarcomas, lymphomas and tumors of the salivary glands.<sup>3</sup>

The etiology of oral cancer is multifactorial, with the most known risk factors being tobacco and excessive alcohol consumption. Excessive exposure to ultraviolet solar radiation, without proper protection over the years, may represent a possible risk factor for lip cancer. Other factors, such as HPV infection, nutritional deficiencies, and poor oral hygiene, have been studied in order to investigate its implication in carcinogenesis, mainly of cancer of the tongue and throat.<sup>4,5</sup>

Some factors may influence the prognosis. These factors may be related to the patient (age, sex, race, socioeconomic conditions and habits, such as smoking and alcoholism), to the tumor (site, stage, tumor thickness, histopathology and expression of certain molecular markers) and to treatment (type of treatment, adjuvant therapy). It is known that cervical metastasis of oral cavity OCSC and involvement of the margins of surgical resection influence the survival of patients.<sup>3,6</sup>

The standard treatment consists of radiotherapy and surgery, separately or in combination. Chemotherapy is added for advanced disease. Immunotherapy is a new option for advanced or recurrent cancer.<sup>7</sup>

Despite surgical treatment combined with adjuvant chemoradiotherapy, the direct cause of CPB fatality is uncontrollable local recurrence at the surgical site or metastasis. The current rate

of local and locoregional recurrences is 10 to 30% in patients with OCSC, and the mean 5-year tumor-free survival rate generally does not exceed 50%.<sup>8,9</sup>

Thus, disease prevention and control should be prioritized. The literature shows the current need for continuing education and programs for the prevention and early diagnosis of oral cancer among professionals and the population, in order to reduce the time interval between the beginning of the symptomatology and the diagnosis, aiming at reducing morbidity and mortality of individuals affected by cancer.<sup>10,11</sup>

## CASE REPORT

In the case reported below, the participant signed the Free and Informed Consent Term, consenting to the disclosure of his case for academic purposes.

Patient AFL, 69 years old, Caucasian, male, alcoholic, smoker, diabetic, with history of ulcerated lesion on the floor of the mouth without painful symptoms, was referred by the dental surgeon of the Family Health Unit (USF) near Sirinhaém -PE, city of patient's origin, for the Head and Neck Surgery Service of the Oncology Center of the Oswaldo Cruz University Hospital of the University of Pernambuco - CEON / HUOC / UPE, in September 2015. An incisional biopsy of the tumor on the floor of the mouth, whose anatomopathological report was conclusive for moderately differentiated squamous cell carcinoma. Ultrasonography of the cervical region showed a solid nodule in the topography of the left submandibular region (measuring 2,4 X 1,4 cm), as well as bilateral lymph node enlargement (on the right measuring 1,4 X 0,4 cm and on the left measuring 1,2 X 0,5 cm). Staging IVa (T4a N1 Mx).

The pretreatment of the oral cavity was performed prior to the antineoplastic treatment, through extraction of the last six dental elements, AFL, which presented severe periodontal involvement in city USF patient. After three months AFL was subjected to the treatment of cancer by surgery, which

corresponded to tumor resection of oral floor, showing in pathology report (anatomopathological report: 157 502) to moderately differentiated squamous cell carcinoma cells, ulcers and the presence of perineural infiltration and angiolymphatic. Marginal mandibulectomy was also performed with atypical cell nodes associated with reactionary bone trabeculae (anatomopathological report: 157,502). After three months, with full post surgical healing, began on 35 radiotherapy sessions in the primary lesion region, with a total dose of 7000 cGy and 28 sessions lymphatic drainage region with total dose of 5040 cGy associated with five sessions of chemotherapy, weekly, using the drug cisplatin (CDDP 62mg).

Clinical dental follow-up was maintained at the CEON / HUOC / UPE and the Standard Oral Care Operative Protocol was established<sup>12</sup>, with use of toothbrush with small head and soft bristles, non-abrasive toothpaste, mouthwash with oral bicarbonate solution (8 / 8h), mouthwash with oral solution of nystatin (100,000 IU) 6 times a day and topical use of vitamin E (12 / 12h), with the purpose of prevention and control of oral side effects from chemotherapy and radiotherapy in the head and neck region, such as opportunistic fungal infection (candidiasis), oral mucositis, dysgeusia and xerostomia. AFL evolved with oral mucositis grades I and II, under follow-up and control of the dentistry service of the CEON / HUOC / UPE.

After the end of the oncological treatment the patient was followed by both the medical and dental staff of CEON / HUOC / UPE and was advised on the sequelae of the treatment performed and advised to use artificial saliva. AFL has expressed interest in performing prosthetic oral rehabilitation and is advised to postpone due to the marked risk of developing osteoradionecrosis due to prosthesis trauma. The patient remained stable with no indication of disease during the first months of follow-up. Bone scintigraphy was performed three months

after the end of treatment, showing no secondary bone lesions.

However, in July 2018, AFL returned to the dental service of the CEON / HUOC / UPE, with complaint of intense pain, Numerical Pain Scale: 9, in oral region. After 11 months without attending and returned due to pain, the clinical examination revealed: ulcerated lesion, with areas of reddish and whitish color, base hardened to palpation in the region of the buccal floor (Figure 1). Computed tomography of the face was requested, which revealed a heterogeneous lesion with calcifications on the floor of the mouth, to the left of the midline, causing erosion of the mandible body to the left of the midline measuring 2.3 x 1.0 cm (Figure 2). Digital computed tomography of the chest revealed no abnormalities. Local recurrence of squamous cell carcinoma was diagnosed after 2 years and 11 months (period between initial treatment of the primary lesion until confirmation of local recurrence) and planning for rescue surgery. The surgical treatment consisted of resection of the recurrent lesion including the anterior two thirds of the tongue and the anterior portion of the mandible body, with bilateral cervical emptying. The patient was referred to the speech therapy and physiotherapy service in order to work on the adequacy of the functions of the stomatognathic system. Patient recovery is awaited for new rehabilitation management planning.

## Discussion

There have been recent improvements in the treatment of advanced oral squamous cell carcinoma. Surgical treatment for advanced resectable OCSC is the most common approach, postoperative radiotherapy (RT) and chemotherapy have become important adjunctive treatments for advanced OCSC (stages III and IV).<sup>13</sup>

Until recently, primary surgery of locally advanced head and neck OCSC was traditionally followed by postoperative radiotherapy. The mandible may be partially resected (marginal mandibulectomy) in case of

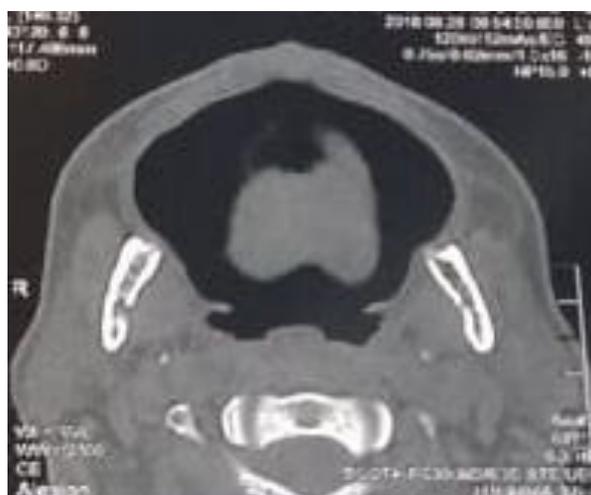
minimal invasion. Although this bimodality of treatment was relatively aggressive, this approach resulted in locoregional recurrence, metastasis and survival in 5-year of 30%, 25% and 40%, respectively.<sup>14</sup>

Consequently the researchers tested new treatment techniques such as the addition of

chemotherapy. Studies have shown that, compared with isolated postoperative radiation, chemotherapy in conjunction with radiotherapy was more effective in terms of locoregional control and disease-free survival, because cells resistant to radiotherapy may become sensitive in the presence of chemotherapy.<sup>14</sup>



**Figure 1: Clinical aspect of tumor recurrence in the buccal floor: ulcerated lesion, with areas of reddish and whitish color, base hardened to palpation.**



**Figure 2: Computed tomography of the face, which showed a heterogeneous lesion with calcifications on the floor of the mouth, to the left of the midline, causing erosion of the mandible body to the left of the midline measuring 2,3 x 1,0 cm.**

Recent studies have indicated that the addition of concomitant cisplatin (CDDP) to postoperative RT improved outcomes, including overall survival in patients with OCSC of the head and neck.<sup>13,15</sup> Thus, a multimodal therapy was adopted for the case in question. After the

surgical approach, we underwent chemotherapy (CDDP) associated with local radiotherapy.

After therapeutic definition by the medical team, previous dental care, trans and post-surgical treatments, radiotherapy and / or chemotherapy are essential, in order to control and minimize the repercussions of the respective treatments

and to maintain the functions of the stomatognathic system.<sup>16,17,18</sup>

Oral changes can be prevented or at least better controlled if dentists and doctors work together. Initial dental assessment should include evaluation and elimination of all infectious foci, such as extensive carious lesions, periapical pathology, and advanced periodontal disease. Poor dental status often requires multiple exodontia before the start of radiotherapy.<sup>19</sup> This case report, where multiple exodontia was performed as a means of eliminating the outbreaks of infection. A minimum period of 2 weeks is recommended between extraction and initiation of radiotherapy to avoid the occurrence of osteoradionecrosis.<sup>18</sup>

During the radiochemotherapy treatment, the patient presented oral mucositis grades I and II, controlled with the Standard Operational Protocol of Oral Care.<sup>12</sup> Dysgeusia and xerostomia remained for four months after the end of treatment and were minimized with the aid of artificial saliva.

This case report corroborates with the literature because the data suggest that 80% of locoregional recurrences occur within the first 2 years after initial therapy and that recurrence time is an important predictor of successful end-stage treatment.<sup>20</sup>

The poor prognosis probably reflects a combination of more advanced disease at initial presentation, resistant tumor biology, and limited salvage options. These findings suggest that patients whose disease fails in maximal combined therapy (surgery, radiotherapy and chemotherapy) have a low probability of relapse success.<sup>20</sup>

One of the main aspects for the diagnosis and prognosis of patients with oral CSC is knowledge of the histopathological characteristics of the lesion such as tumor gradation, vascular invasion, defined by the presence of tumor cell nests within the vascular space, perineural invasion, characterized by the presence of tumor cell nests in the perineural space, and the tumor

/ host relationship. The literature has reported that lymphovascular invasion and perineural invasion of oral CSCs are associated with poor prognosis, as well as high rates of recurrence, aggressive behavior, metastasis, and poor survival.<sup>21,22</sup> The case in question is a moderately advanced local disease, invading adjacent structures such as cortical bone, deep tongue muscles, perineural and vascular invasion (T4), and homolateral lymph node metastasis (N1) measuring 2.4 x 1.4 cm, favorable characteristics to suffer local and / or regional recurrence.

The recurrence OCSC occurs in up to 30% of patients, with most local and / or regional relapses. Many of these patients are offered salvage surgery, but despite advances in reconstructive techniques, salvage treatment can result in morbidity, including dysphagia, dysarthria, and disfigurement. Previous studies have shown poor prognosis for patients with recurrent OCSC.<sup>23,25</sup>

When relapses occur, salvage surgery is generally the only possible treatment option with curative intent, since in most cases it is not possible to have a new course of radiotherapy.<sup>24</sup>

Patients who had previous head and neck radiation can be performed salvage surgery and reirradiation in some cases if at least one year has passed since the completion of their initial definitive radiotherapy. However, morbidity (33% severe toxicity) and mortality (10% related death treatment) are high with reirradiation. Although reirradiation after salvage surgery has been related to improved disease control and survival, no effect on overall survival has been demonstrated. As such, irradiation is often reserved for patients with positive surgical margins and disease with regional extracapsular lymph node extension.<sup>25</sup>

In the case under discussion, even opting for the complete therapeutic protocol, there was a local recurrence with mandibular involvement, as a consequence of the anatomopathological nature of the tumor, being suggested salvage surgery as a curative treatment.

## CONCLUSION

Squamous cell carcinoma is the most frequent histological type of malignant neoplasm of the oral cavity and is quite aggressive, with high rates of locoregional recurrences and low survival. Early diagnosis and medical and dental follow-up are factors that help reduce morbidity and mortality and improve the patient's quality of life.

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