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CASE REPORT

Dental management in palliative care of a patient with advanced oral cancer: A case report

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Abstract:

Tongue squamous cell carcinoma is one of the most prevalent and aggressive head and neck carcinomas. When diagnosed in an advanced stage is associated with a reduced overall survival rate due to the increased risk of locoregional recurrence and distant metastases. This article discusses the dental care strategies that were adopted regarding the progression to an incurable state of a 52-year-old man diagnosed with advanced tongue squamous cell carcinoma, which was initially treated with exclusive radiotherapy. In a 5-year-period, this patient developed severe lesions of osteoradionecrosis and also local tumor recurrence without the possibility of curative treatment. Palliative care in the dental context must be adopted in order to provide physical and emotional health still at the final moments in the patient's life.

Keywords: palliative care; tongue neoplasms; dental care for chronically ill

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INTRODUCTION

Oral squamous cell carcinoma (OSCC) represents more than 90% of the cases of malignant neoplasms that affect the oral cavity. Smoking and excessive alcohol consumption are the main risk factors involved in OSCC etiopathogenesis in addition to other genetic and environmental factors. Both diet and infection by the papilloma virus have been related to the condition's development[1].

Tumor resection, radiotherapy, and chemotherapy are the therapeutic modalities available for OSCC. And the association of two or more of these techniques is often adopted based on the clinical and histopathological parameters of the tumor. Under those circumstances, the risk of lymph node impairment is the main factor that will define the specific treatment in order to stop metastases[2,3].

The mortality rate is approximately 50% in 5 years, even if the treatment has been effective for the tumor's remission. When the diagnosis reveals lesions in advanced stages (III and IV), the disease presents greater local invasion and locoregional spread, and an increased risk of distant metastasis. These determinants altogether act as a limiting factor in the individual's survival rate. In addition, this advanced cancer requires the use of a set of therapeutic modalities with mutilating results and several sequelae, all of which deeply disturb the patient, resulting in a reduction in the quality of life and an unfavorable prognosis after cancer therapy[4,5]. Thus, in the cases in which the chance of cure is minimal, palliative treatment must be considered[6].

The World Health Organization conceptualizes palliative care as health care for patients in the face of a life-threatening disease, through the prevention and relief of physical and emotional suffering. Palliative care has is essential for patients whose diseases do not respond to curative treatment. The priority is the control of pain and psychosocial factors while aiming to provide a better quality of life for the patient and their families in the terminal phase of the sick individual's life, including the mourning period[7].

Dentists play a very meaningful role in palliative care. They address to control the oral sequelae of cancer treatment in order to avoid local infections, or their systemic progression. Also managing pain while improving oral function in speech and feeding activities in a way that ensures greater general comfort for the patient. Additionally, the dental practitioner may provide guidelines to caregivers, family members, and other participants of the multidisciplinary team that treat the patient, whether in a hospital or home environment[8]. Henceforth, this case report aims to present Dentistry related palliative measures employed in a patient with advanced OSCC.

CASE REPORT

A 52 years-old white, smoker, and chronic alcoholic man attended the dental clinic for cancer patients (2012) with a diagnosis of stage IV OSCC in the left border of the tongue. The patient sought for dental management prior to his cancer treatment, which consisted of exclusive radiotherapy.

At the beginning of radiotherapy, the patient abandoned dental treatment and, after 3 years (2015), he returned to the clinic with pain in the right posterior region of the mandible. The patient reported he had undergone tooth extractions in the region of the complaint approximately 6 months ago. The intraoral examination revealed an exposed necrotic bone area associated with purulent drainage and compatible with stage III osteoradionecrosis (ORN)[9]. A panoramic radiography was performed and it revealed an unfavorable vertical pathological fracture in the right side of the mandible as a result of ORN (Figure 1). The antifibrotic therapy was adopted (Pentoxifylline 400mg and Tocopherol 5000 Ul, twice a day) along with the prescription of a broad-spectrum antibiotic therapy and a three times daily irrigation with 0.12% chlorhexidine to control the infection and stabilize the process for later planning of surgical intervention.

However, the patient once more abandoned dental treatment and returned after another 2 years (2017) with complaints of dental mobility and pain in the face and tongue. The intraoral examination exposed that the OSCC had recurred, compromising the region of the left border of the tongue again and infiltrating the

Figure 1. Panoramic radiography (Nov / 2015): vertical pathological fracture in the right side of the mandible due to osteoradionecrosis, developed from tooth extraction in the region.

floor of the mouth. The patient had trismus and the anteroinferior teeth showed block mobility. A new panoramic radiography (Figure 2) showed an extension of bone necrosis from the previously observed pathological fractured area, represented by irregular and diffuse radiolucency along the body of the right mandible to the symphysis region. At that time, the patient's family members reported that he was undergoing palliative chemotherapy with cetuximab associated with prednisone, in addition to a treatment for the pain that resulted from neoplastic infiltration.

Given the incurable general condition, ORN dental management approach was conservative, with the introduction of biofilm control in the exposed bone area plus the photodynamic therapy (PDT), chlorhexidine irrigation, and sequestrectomies. Conjointly, performing oral self-care was highly encouraged and repairs to the upper removable partial denture were made per patient's request, rehabilitating the missing teeth of the region of maxillary incisors. At this stage, the patient seemed to have accepted his diagnosis and was resigned to his prognosis. He attended the clinic weekly, usually chatty and in a good humor, despite the progression of the disease. This behavior was the opposite of the one exhibited in previous times, when he was always very quiet, barely interacted with the professionals, and did not adhere to the proposed therapies.

Eight months after the beginning of the aforementioned palliative chemotherapy protocol, the patient consequently developed dysphagia, cachexia, respiratory weakness, pathological rib fracture due to osteoporosis, and vascular injury in the lower limbs. Therefore, the chemotherapy protocol was interrupted and only symptom control was maintained. In this phase, as observed by the panoramic radiography (Figure 3), the patient presented two new vertical and unfavorable pathological

Figure 2. Panoramic radiography (Feb / 2017): endurance of the fracture previously observed and association of an irregular and diffuse radiolucent area along the mandible body to the symphysis region, approximately, corresponding to the extent of bone necrosis.

Figure 3. Panoramic radiography (Oct/2017): Pathological fracture in the body of the right and left mandible, in addition to the ascending branch. It is also possible to observe irregular and diffuse radiolucent images throughout the mandible. Anteroinferior teeth exhibit extensive bone loss.

fractures: one located in the symphysis, associated with the previous ORN area, and the other was in the left jaw body as a consequence of the invasion of bone tissue by recurrent tongue OSCC.

The patient had edema, redness, and multiple acne on the face (Figure 4A). It was also possible to observe significant trismus with approximately 1 cm of mouth opening (Figure 4B). At this stage, the patient was no longer able to use the removable upper partial denture and the extensive mandibular compromise led to a change in the position of the mandible and the anteroinferior teeth traumatized the upper labial mucosa. In order to promote greater patient comfort, the incisors and the canine on the left side were extracted. This procedure was carried out along with the analysis of the complete blood count and the prescription of prophylactic and therapeutic antibiotic therapy, associated with other infection control measures already administered (PDT and chlorhexidine).

The weekly dental follow-up plus the management of oral hygiene and the usage of PDT were all maintained until the patient's hospitalization, who died 3 months (2018) after the interruption of palliative chemotherapy treatment.

DISCUSSION

The ventral surface and the lateral border of the tongue plus the floor of mouth are the most prevalent sites for OSCC in the world[4]. These structures are more susceptible to the occurrence of epithelial dysplasias as they also are more susceptible to the carcinogenic actions of alcohol and tobacco. Moreover, they are the parts of the oral cavity that present lesions with greater aggressiveness and cervical dissemination due to the rich lymphatic network and local vascularization[10].

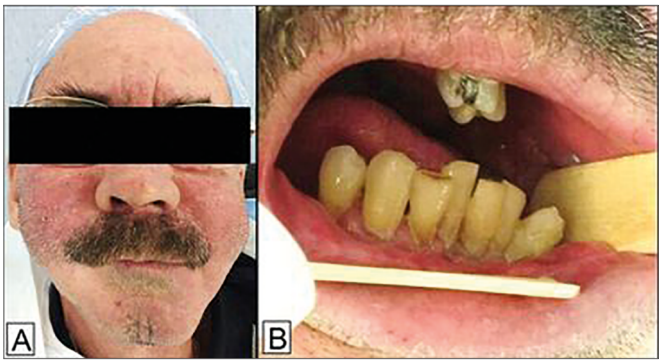

Figure 4. Clinical examination (Oct / 2017): Presence of multiple acne on the face in association with erythema and edema, all due to chemotherapy with cetuximab plus prednisone (A). Significant trismus with approximately 1 cm of mouth opening (B).

The late diagnosis, which is frequent, implies a decrease in the individual's survival rate due to the higher rate of locoregional recurrence, the possibility of distant metastases, and treatment on significant morbidity[6]. The prognosis is also influenced by factors inherent to the patient, such as age, sex, ethnicity, smoking, alcoholism, and socioeconomic status, along with the aspects related to the lesion, e.g., location, histopathological aspects, and expression of certain molecular markers of the tumor[11]. For this reason, curative or life-prolonging goals are evaluated individually, as each case requires a set of thorough evaluation by the medical team.

Exclusive radiotherapy is generally indicated for the treatment of patients with OSCC who are systematically debilitated and with locally advanced tumors[12,13] like the patient in this clinical case report. Some sequelae inherent to this therapy can be observed throughout the dental care treatment.

After 2 years of treatment (2015), the patient returned to the clinic with pathological mandibular fracture due to the ORN in a region previously submitted to tooth extraction. Jaw ORN is a complex chronic complication of radiotherapy treatment in the head and neck region. Tooth extraction is its main precipitating factor[14,15]. Managing ORN is still a great challenge for the dental surgeon. The best strategy is prevention. When in advanced or refractory stages, surgical resection seems to be the most indicated treatment, especially in cases where conservative management has not resulted in an improvement in the clinical picture[16].

The presence of pathological bone fracture is also an aggravating factor for the oral and systemic condition of these patients, as it compromises the masticatory, phonetic, and aesthetic function, besides acting as a potent infectious focus. This circumstance requires a radical surgical approach and reconstruction with a microsurgical flap to restore function and aesthetics[16].

At the time of the ORN diagnosis in the present case, there was an indication for a surgical approach and the patient was initially managed with the administration of the antifibrotic drug protocol associated with cleaning with chlorhexidine and antibiotic therapy, all due to the acute infection presented. Antifibrotic drug management aims to reduce or reverse tissue damage caused by ionizing radiation[17].

Unfortunately, the patient abandoned the follow-up and only returned with a significant worsening in the overall health status, which then culminated in the implementation of palliative oncological care. Thus, at this stage, the strategy for managing the osteoradionecrosis was a conservative one, focusing mainly on local decontamination and symptom reduction, with the use of antiseptic and PDT, both therapies present variable results in the treatment of ORN[18].

Mroueh et al. (2019)[6] observed in their 12-year-experience that the non-curative treatment was recommended for 7% of patients diagnosed with tongue OSCC without any previous treatment, and 78% of patients who present lesion recurrence. Palliative radiotherapy was the most used modality in these circumstances, followed by chemotherapy in combination with drugs such as cetuximab, cisplatin, and 5-fluorouracil. Average survival time for these patients after the decision of undergoing non-curative treatments was 3.7 months.

In this patient, palliative cancer treatment included mono-chemotherapy with the administration of cetuximab associated with prednisone. The protocol was interrupted after 8 months due to its side effects, though. Cetuximab is a monoclonal antibody used to treat tumors that have metastases or non-operable recurrences, included in the basic chemotherapy protocol, with fluorouracil (5-FU) and platinum. These drugs in association demonstrate a significant benefit in the survival of patients with advanced disease compared to basic chemotherapy alone[19].

The adverse effects of cetuximab are mild or moderate, and also manageable. The most common reactions are all cutaneous, with the appearance of acne, itching, dryness, and peeling on the skin. The aforementioned reactions were observed on the face of this patient in addition to other, less common reactions, such as vascular thrombosis in the lower limbs and interstitial lung disease[19]. Corticosteroids are often associated with the

cetuximab treatment in order to minimize the previously reported adverse effects[20]. However, the continuous use of this drug may cause other disturbances, such as osteoporosis[21] which was observed in the present case.

In dentistry, patients undergoing palliative care due to OSCC present several alterations, such as odontalgias, trismus, tooth mobility, prosthetic instability, infections by several types of microorganisms, mucositis, periodontal diseases, dysphagia, dysgeusia, drooling, facial deformation, ORN, and others. These sequelae strongly interfere with quality of life, considering both functional and psychosocial aspects[8,22]. The patient in the present report, despite the physical difficulties in this final phase, was willing to attend consultations and perform the proposed procedures, as all of it was not only a relief from his complaint, but also a form of social interaction when going to an environment distinct from that in which their underlying disease is the focus of attention. In addition to the control of symptoms and the infection due to ORN, some of the patient wishes, which theoretically were not a priority, were accomplished in the consultations. Thus, his anterior removable partial denture was adjusted and its abutments were restored so that the rehabilitation of these teeth could be maintained, ensuring aesthetic comfort and social interaction.

The dental surgeon plays a meaningful role in the treatment and welcoming of these patients, as well as in their families in this moment of extreme vulnerability. The follow-up of these patients concerns not only the search for clinical improvement of the disease but also the improvement in the psychosocial condition that the patient is in. They still need to feel socially present and they all have their individual beliefs, values, and needs.

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