


Multidisciplinary diagnosis and treatment of oral squamous cell carcinoma after oro-antral communication: 2 years of follow-up

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Abstract:

Introduction: Oral squamous cell carcinoma (OSCC) is the most common malignant oral neoplasm and its early diagnosis is preferred, since late diagnosis requires a much more complex treatment. The mutilations caused by OSCC and its treatment can strongly affect patients quality of life, which demands reconstructive oncology plastic surgery and prosthetic rehabilitation. **Objective:** the aim of the present case report is to present the results of a late diagnosis of OSCC, its treatment and oral rehabilitation. **Case report:** 70-year old male smoker and alcoholic patient attended Department of Oral Surgery with main complain of odynophagia and dysphagia. Patient reported that has noticed an intra-oral lesion approximately one year before. Extra-oral examination revealed infarcted lymph nodes, intra-oral examination showed a lesion with irregular and hardened edges of rose coloration with ulceration on the surface measuring 4 cm x 3 cm in palate. An incisional biopsy was performed and additional histopathological exam was realized. Therefore, the diagnosis of OSCC was settled. Patient was submitted to partial maxillectomy and neck lymphnodes deflation on the right side, combined with radiotherapy and chemotherapy. As a treatment sequel, an oro-antral communication was developed. A palatal obturator prosthesis was manufactured. Instructions of oral hygiene included chlorhexidine gluconate 0,12% for mouth rinsing. Followup appointments were realized regularly during 19 months. **Results:** Surgery accompanied by radiotherapy and chemotherapy were efficient in treating OSCC. The palatal obturator prosthesis provided adequate esthetic and functional results, improving patients quality of life. After 19-months follow-up treatment, no recurrent lesions were developed and the obturator was adequately adapted. **Conclusions:** As early diagnosis was not possible, OSCC was properly treated by surgical enucleation accompanied by radiotherapy and chemotherapy. Its sequels were adequately rehabilitated through palatal obturator prosthesis.

Keywords: Oral Manifestations, Oral Health, Mouth Neoplasms, pathology, Surgery, Oral

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INTRODUCTION

In Brazil 2020, cancers in the oral cavity represents 5% of all cancers and the oral squamous cell carcinoma (OSCC) is the most common type. The individuals affected by this neoplasia are usually man over 55 years old¹. OSCC is originated from cellular genetic variations, due to carcinogens factors or malignant transformation predisposition. As a consequence of this non-lethal genetic transformation, uncontrolled cellular proliferation causes a malignant neoplasia². This neoplasia, when originated in the oral mucosa epithelium, is capable of invading conjunctive tissue with spoliative behavior. Despite the fact that OSCC is considered a multifactorial disease, tobacco and alcohol consumption are the main risk factors, especially when acting synergistically³.

Recommended treatment for palate OSCC is surgical removal which may also be associated with neck dissection. Radiotherapy and chemotherapy are also important and can reduce the risk of metastasis, therefore increasing survival rates. Also, a usual mutilation of surgical treatment is the oro-antral communication, for which a palatal obturator prosthesis can be manufactured. This device acts on the obliteration of the oral sinus communication, providing improvement of important functions, such as swallowing and phonation⁴.

Therefore, the aim of this paper is to discuss the favorable results obtained through the management of a OSCC patient, including diagnosis, treatment, oral rehabilitation and proservation.

CASE REPORT

A 70-year-old male patient presented in November 2017 with the main complain of odynophagia and dysphagia. Patient reported that an intra-oral lesion was noticed approximately one year before attending the ambulatory. Patient omitted the severity of the condition until it became symptomatic. Anamnesis revealed that the patient was a heavy smoker (30 cigarettes per day) and an excessive alcohol consumer. Intraoral examination revealed a lesion of great extension at limits of right hard and soft palate, measuring 4 x 3 cm. The lesions edges were irregular and overall appearance was composed by reddish and whitish ulcerated areas (Fig. 1). Extraoral examination revealed bilateral infarcted neck lymph nodes. Clinical suspicion was a malignant neoplasia. Patient was recommended to quit smoking and stop consuming alcohol.



Figure 1. Clinical presentation showing a great extension lesion with reddish and whitish ulcerated areas at limits of right hard and soft palate.

Therefore, an incisional biopsy was realized. Lesion specimen was maintained at formalin solution 37% in appropriate recipient. The histopathological examination confirmed the diagnosis of well-differentiated squamous cell carcinoma. Microscopic features evidenced malignant epithelial cellular proliferation invading conjunctive tissue. Keratin beads, atypical mitoses, pleomorphic hyperchromatic epithelial cell islands and chronic inflammatory infiltrate were also visualized at connective tissue (Fig. 2).

The treatment plan involved partial maxillectomy and neck lymph nodes dissection on the right side which were performed in February 2018, considering that the tumor was classified as T3N1M0. It was complemented by radiotherapy and chemotherapy sessions for 4 months. The radiotherapy treatment employed 6MV Linear Photon Accelerator (66Gydose), through parallel and opposite fields that were directed to the operated area and adjacent lymphatic drainage areas. Chemotherapy, in its turn, was performed in three sessions, for which Cisplatin 100 mg/m² was administered through intravenous infusion. Subsequently, the dose was increased to 200mg/m².

In March 2018, patient began the rehabilitative prosthetic treatment due to oro-antral communication after surgical treatment (Fig. 3). At the time, food consumption was realized exclusively by tube. Patient presented phonetic issues due to hipernasal speech and hyposalivation. In agreement with the medical team it was decided to perform a temporary obturator palate without

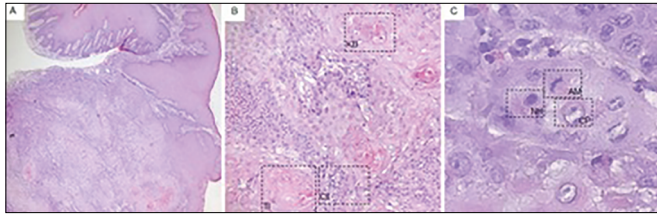


Figure 2. Histopathological features of the OSCC. (A) Keratinized hyperplastic stratified squamous epithelium of the oral mucosa. In addition, area of tumor invasion in connective tissue invading the underlying fibrous connective tissue containing chronic inflammatory infiltrate (HE, x40). (B) (KB) Keratin beads, (CI) chronic inflammatory infiltrate, (TI) tumor island (HE, x100). (C) (AM) Atypical mitoses, (CP) cell pleomorphism, (NH) nuclear hyperchromatism (HE, x400).



Figure 3. Post-operative clinical presentation showing extensive oro-antral communication caused by surgical treatment.

teeth, manufactured of acrylic resin. Since patient had limited mouth opening at the time, it was impossible to perform a definitive prosthesis. Considering the patient was being exposed to radiotherapy, the temporary obturator palate was relining with GC-America Coe-Soft, a temporary resilient material. The provisional palate obturator enabled the introduction of solid and pasty foods on patient's diet, helping with phonation. It also prevented the leakage of nasal cavity fluids into oral cavity. The provisional obturator allowed the patient to ingest liquids orally without the sensation of drowning, therefore providing treatment for hyposalivation caused by radiotherapy. After the placement of the temporary obturator, palate exercises were started with a speech therapist to strengthen the muscles associated with the oral cavity and improve the mouth opening, making it possible to perform a definitive prosthesis.

Upon completion of the medical preconized treatment, patient returned in August 2018 to begin the definitive prosthesis. Clinical examination revealed an area of 0.5 cm of painless exposed bone, localized

at superior alveolar ridge canine bossa region. Clinical suspicion of osteoradionecrosis was settled. Surgical intervention was not recommended due to recent radiotherapy history and chlorhexidine digluconate 0.12% was prescribed for mouth rinsing twice a day. Due to an area of exposed bone patient attended for frequent changes of the relining material, avoiding friction in the area and worsening of the clinical picture.

Intraoral impression was realized using personalized tray with condensation silicon. A plastic sheet was employed to prevent material overflow at the sinus oral communication area, avoiding discomfort to the patient. Overall maxilomandibular relationships were properly transferred to a semi-adjustable articulator. Teeth assembly was realized and prosthesis was made of acrylic resin and relining with temporary resilient material due to the area of exposed bone (Fig. 4). Adequate oral functions, adaptation, retention and esthetics were obtained. Patient was instructed to clean the prosthetic device with sodium hypochlorite and oral hygiene by means of mouthwashes with chlorhexidine digluconate 0.12%. After definitive prosthetic delivery, patient attended biweekly follow-up to change the reloading material in view of the exposed bone area. With the placement of the definitive prosthesis the patient speech became clearer, improving patient's communication abilities. In addition, oral chewing functions were recovered and also hyposalivation improved due to fluid intake orally. (Fig. 5).

DISCUSSION

When initial symptoms of cancer are neglected, late diagnosis unfortunately occur, implicating survival



Figure 4. Side view of the prosthesis with emphasis on the posterior obturator region.



Figure 5. Clinical aspect of the patient's occlusion obtained with the palatal obturator prosthesis.

rates lower than when early diagnosis is realized (40 vs 80% respectively)⁵. Moreover, late diagnosis results in a much more aggressive treatment, in which not just surgical treatment is necessary, but also radiotherapy and chemotherapy are required. Thus, its respective sequels strongly affect patient quality of life. The present case report indicates that patients who are diagnosed with OSCC and go through invasive treatment can have their quality of life restored by means of a well-designed treatment plan.

When treatment mutilation do occur, oral rehabilitation and/or cosmetic surgery are necessary. Oro-antral communication can be treated by obturator palatal prosthesis, as performed in the present case report, which is a low cost attractive alternative. The technique described in this article provided comfort and safety to the patient during the manufacturing of the prosthesis⁶. However, its limitations include frequent nausea due to the need of overextension of the prosthesis until completely obliterating oral sinus communication. The reported patient was not affect by this complication because during follow-up posterior locking and occlusal pressure tests were performed, ensuring the best prosthesis adaptation without causing discomfort to the patient. It is also important that patients exposed to radiotherapy have well adapted prosthesis, without friction areas. Reloaded soft materials can be employed when necessary⁷. Other alternative would be implant placement, which would offer advanced prosthetic fixation, but historic of recent radiotherapy does not allow this possibility⁸. It has been shown that when implant-supported prosthesis are employed, the prosthesis is extended only in the oro-antral communication avoiding the excess of material that could cause nausea but necessary when it is a conventional prosthesis⁹.

Given the complex care pathway of a patient diagnosed with OSCC the cooperation of professionals, such as medicians, nutritionists and speech therapists, involved in the treatment is important to improve quality of life, patient outcome and survival chances. Cancer treatment usually comes with physical and functional complexities requiring multimodality approaches. Dental support is crucial for those patients, they must be monitored before, during and after treatment. Possible dental complications and necessary procedure must be performed before cancer treatment, avoiding the risk of complications such as osteoradionecrosis. Some of the drugs administered in chemotherapy can cause mucositis and hyposalivation, the use of medications and oral hydration or the use of saliva substitutes for treatment, respectively, is indicated. Oral hygiene with fluoride must be maintained avoiding the appearance of caries due to radiotherapy. In addition frequent follow-up are mandatory in order to evaluate the progress of the case, since patients with OSCC in advanced stages have a high chance of metastasis and recurrence¹⁰.

CONCLUSION

As a treatment for oro-antral communication the obturator prosthesis is effective. Proper knowledge of rehabilitation techniques for such cases is mandatory because the quality of life improvement is dependent of a well adapted prosthesis. This can be achieved by means of a obturator prosthesis, which is a low-cost, quick and safe approach, resulting in disappearance of hipernasal speech and food reflux in patients with palate perforation after surgical removal.

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