Chronic mechanical trauma and oral squamous cell carcinoma. Case report

Bumbu B.A.[1], Precup A.I.[1], Costea C.P.[1], Daina M.D.[2], Moldovan I.[3], Iurcov R.[1]

[1]*Department of Dental Medicine, Faculty of Medicine and Pharmacy, University of Oradea, Romania*
[2]*Faculty of Medicine and Pharmacy, University of Oradea, Romania*
[3]*AI Dent Center Cluj-Napoca*

Correspondence to:
Name: Alexandru Iosif Precup
Address: Department of Dental Medicine, Faculty of Medicine and Pharmacy, University of Oradea, Romania, December 1st Square no.10, 410068 Oradea, Bihor County, Romania
Phone: +40 743143120
E-mail address: sanduprecup@yahoo.com

Abstract

Oral squamous cell carcinoma (OSCC) occurs in approximately 95% of people older than 40 years; usually, it is diagnosed at the age of 60 years. These types of carcinomas represent 90% of the neoplasms of the oral cavity, the tongue, lips, floor of the mouth. The etiology of OSCC is multifactorial. Chronic mechanical trauma due to sharp teeth has also been suggested as an etiology of oral squamous of the tongue together with alcoholism, smoking, gene pool, human papilloma virus, poor oral hygiene. Base of the tongue is a distinct entity with different implications regarding treatment, prognosis and monitoring.

Keywords: Carcinoma, chronic trauma, oral cancer, sharp teeth, tongue

INTRODUCTION

Ninety-five percent (95%) of oral squamous cell carcinoma (OSCC) cases occurs in people who are older than 40 years; it is usually diagnosed at the age of 60 years [1]. OSCC is more common in men than women; this is due to the high risk of tobacco and alcohol consumption. The etiology of OSCC is multifactorial, including tobacco, alcohol, poor hygiene, human papilloma virus, and nutritional factors. Chronic mechanical trauma due to sharp teeth has also been suggested as a possible etiology of tongue-OSCC (Figure 1) [2]. Treatment of OSCC is determined by the metastatic and degree of tissue dysplasia. The first-choice treatment for tongue OSCC is surgery that is followed by radiotherapy or radio chemotherapy [3].

Figure 1. The tongue presents a lesion with no signs of healing

Unfortunately, almost half of the oral cancers are diagnosed at advanced stages (stage III or IV), with 5-year. survival rates ranging from 20-50%, depending on tumor sites [4]. The overall diagnostic delay would include the period elapsed since the first symptom or sign until the definitive diagnosis [5].

MATERIAL AND METHODS

A 47year old female patient was presented to the Emergency County Hospital Bihor, with pain and a lateral tongue ulcerated lesion (Figure 2) with no signs of healing, for over a month. Intraoral examination shows molars 36 and 37 with mesialization and lingual inclination (Figure 2), the cusps of both teeth are in close contact with the ulceration. With an extraoral examination, no submandibular lymph nodes were palpable.

The patient had no history of smoking, drinking alcohol, or hypertension. There is no history of family-related cancer. The lesion was suspected to be malignant, a computer tomograph with contrast substance was performed with no pathological modifications.

Figure 2. The teeth 36, 37 mesialized and lingualized

The surgical treatment had two phases. Phase one incisional biopsy and histopathology examination. Analysis showed that the microscopic diagnosis is oral squamous cell carcinoma (OSCC) with infiltration and minimal keratinization. The patient is informed about the diagnosis, prognosis and therapy. She is also scheduled for surgery. Tooth extractions 36 and 37 are performed in phase II; the patient underwent a partial hemiglossectomy under general anesthesia. The excision was made 2 cm from the affected site, and the malignant mass and healthy surrounding tissue were removed (Figures 3,4). The defect was repaired and sutured. After performing the surgery, the excised tissue was taken for histopathology examination. The result was with no tumoral infiltration.

After a postoperative histopathology examination, the patient was referred to an oncologist for staging and to be recorded. Follow-up and long-term clinical evaluation is needed to prevent the recurrence.

Figure 3. Tooth extractions 36, 37

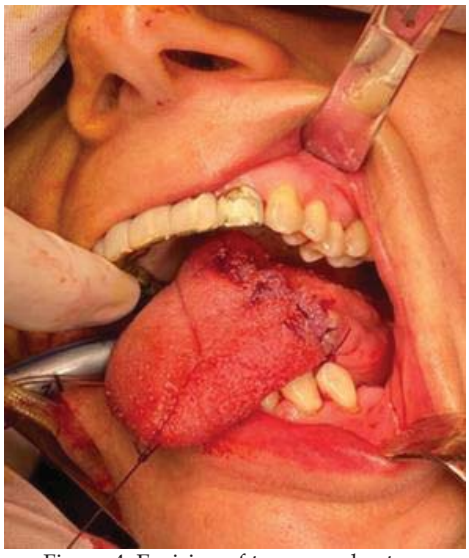

Figure 4. Excision of tumor and suture

RESULTS

Post operative the patient had a good healing. Pain and discomfort after the procedure were managed with medication; the patient was given antibiotics, anti-inflammatory, and analgesic drugs. Mentally she was optimistic and understood the importance of the early

detection and reaction to the neoplasm she was diagnosed with. She tolerated the tube feeding for 5 days very well (Figure 5) and maintained a good oral hygiene. She did not speak knowing that the movement of the tongue could delay the healing. The sutures remained for 7 days. The patient needs surgical and oncological follow-up as scheduled at 3, 6 and 12 months.

Figure 5. Enteral tube

DISCUSSIONS

In the present case, a 47-year-old female patient presented an OSCC due to mechanical trauma caused by sharp teeth. In the literature, it is mentioned that tongue cancer can be seen in young patients, under 45 years old, mainly in females who abstain from tobacco and alcohol [6]. Mechanical trauma, like sharp teeth and other etiologies such as fractured fillings and ill-fitting dentures, can induce the development of OSCC [7,8]. The pathogenesis is debatable, but the characteristic of the trauma must be low intensity and persistent [9]. The lateral of the tongue is the highest area close to trauma, because, during the physiological function of a normal swallowing pattern, this area is trapped between dental arches approximately three times per minute. [9] This trauma can promote epithelial cell transformation [10]. Tobacco and alcohol have long been implicated in the etiology of tongue cancer in older adults [11].

Although the mouth is visually accessible for examination, the diagnosis of OSCC is frequently delayed because it may be difficult to distinguish clinically from other diseases.

We consider that colleagues from other specialities, like otolaryngologists and dentists, have an important role for oral screening and detecting oral cancers.

Generally, oral cancer has a poor prognosis. When carcinoma has metastasized to the lymphatic gland, the survival rate will decrease.

In this case, we were able to diagnose quickly. Early diagnosis of OSCC is helpful to increase the survival rate of the patient.

CONCLUSIONS

Early diagnosis of OSCC is essential for a good outcome. Communication between dentist, oral surgeon, oncologist and radiotherapist is essential for the benefit of the patient.

Mechanical trauma, like sharp teeth, fractured fillings and ill-fitting dentures must be quickly identified because it can induce the development of OSCC.

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