

## Squamous Cell Carcinoma of Mandibular Gingiva in Chewing Tobacco: A Case Report

Mariem Meddeb<sup>1\*</sup>, Sameh Sioud<sup>2</sup>, Samia Ayachi<sup>3</sup>, Bouguezzi Adel<sup>4</sup>, Ahmed Besrou<sup>5</sup>, Badreddine Sriha<sup>6</sup>, Jemil Selmi<sup>7</sup>

<sup>1,2,4,7</sup>Department of Medicine and Oral Surgery, Dentistry Clinic of Monastir, Tunisia

<sup>3</sup>Department of Oral and Maxillofacial Surgery, Hospital of Sousse, Tunisia

<sup>5</sup>Department of Fixed Prosthodontic, Hospital of Sahloul, Sousse, Tunisia

<sup>6</sup>Department of Anatomopathology, Hospital of Farhat Hached, Sousse, Tunisia

### Case Report

\*Corresponding author  
Mariem Meddeb

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**Abstract:** Squamous cell carcinoma is a malignant epithelial neoplasm. Chewing tobacco is an important risk factor in the genesis of oral potentially malignant and malignant lesions. Neffa is the predominant form of chewing tobacco in Tunisia. Early diagnosis of gingival carcinoma may pose significant challenges to the clinician because of its diverse clinical appearance. The diagnosis is made based on a histopathological examination of a biopsy specimen. Thus, the early diagnosis and treatment of carcinoma by health care providers is essential in achieving a good prognosis.

**Keywords:** Squamous, Cell, Carcinoma, Tobacco, Chewing, Tunisia, prognosis

### INTRODUCTION

Oral cancer is one of the ten most common cancers in the world. Diseases worldwide with an estimated increase of 275,000 new cases each year. Squamous cell carcinoma is the most common malignant neoplasm of the oral cavity accounting for 70% to 90% of total oral malignant neoplasms [1-3].

To date, the true etiological mechanisms of oral cancers have not been elucidated. However, there are several factors that contribute to the occurrence of this disease. Among these factors we describe smokeless chewing tobacco [4, 5].

The aim of this article is to report case report of squamous cell carcinoma associated to chewing tobacco, which be diagnosed at the department of Medicine and Oral Surgery of the Dentistry Clinic of Monastir, Tunisia.

### CASE REPORT

A 38 year-old-male with no serious systemic disease, consulted for ulcerated lesion localized in the mandibular gingiva. The patient had the habit of chewing tobacco "Neffa" since 16 years.

Extra oral examination, revealed tenderness on palpation of submandibular lymph nodes and left mandibular swelling (Figure-1).

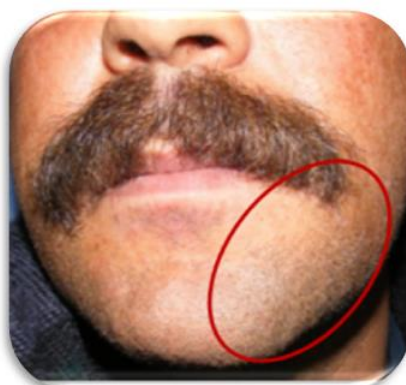


Fig-1: Left mandibular swelling

Intra oral examination, showed the presence of a desquamated lesion on the marginal and attached gingiva. The gingival lesion appeared erythematous with speckled non scrapable white patches and ulcerated surface. We noted, leukoplakic lesion over left border of the gingiva (Figures-2a and 2b). Panoramic radio, showed absence of bone destruction.

(Figure-3) Face to this suspicious lesion a biopsy was performed. The anatomopathological examination revealed a well differentiated squamous cell carcinoma infiltrating with keratosis. The patient was referred to oncological department and many assessments were made to explore this lesion.



**Fig-2a: Erythematous gingival lesion**



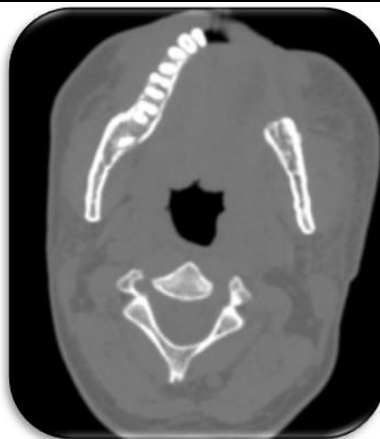
**Fig-2b: leukoplakic lesion accentuated in the right side**



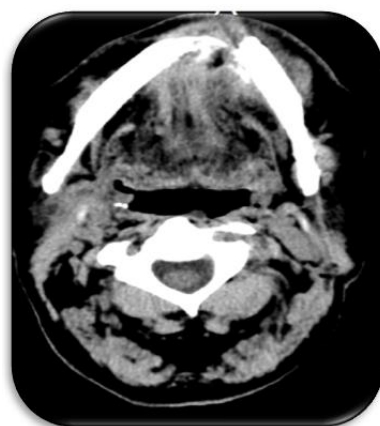
**Fig-3: Absence of bone destruction on panoramic radio.**

The computed tomography of facial area exhibited an extensive and poorly-defined bony destruction with perforation of the buccal and lingual

cortical plates, involvement of the surrounding tissues (Figure-4 and 5).



**Fig-4: Axial computed tomography bone window: hypodense lesion and perforation of the buccal and lingual cortical plates**



**Fig-5: Axial computed tomography tissue window: involvement of the surrounding tissues**

The assessment of extension included: cervical and abdominal ultrasound, bone scintigraphy and assessment of anesthesia (Figure-6).



**Fig-6: Panoramic radio after reconstruction with osteosynthesis plate**

The surgical treatment consisted on resection of the left lesion, reconstruction with osteosynthesis plate and cervical lymph node dissection. Unfortunately, the lesion recurred after 4 months and the patient died because of complications of the second intervention.

#### **DISCUSSIONS**

The WHO predicts a continuing worldwide increase in the number of patients with oral cancer,

extending this trend well into the next several decades. The countries of South Asian region including India, Pakistan, Afghanistan, Bangladesh, Sri Lanka, Bhutan, Nepal, Iran, and Maldives are particularly affected, with oral cancer [4, 6, 7, 12].

Squamous cell carcinoma is a kind of epithelial tumor and the most common malignant tumor of the oral cavity. It accounts for about 90% of all oral

malignancies. The mean age group involved is 40-60 years with males predominant [4, 6, 8].

Except for carcinoma of the lip vermillion, the most common sites of oral Squamous cell carcinoma are the tongue and floor of mouth, followed at a lower frequency by the soft palate, gingiva and buccal mucosa. It is generally agreed that carcinomas of the mandibular gingiva are more common than those of the maxillary gingival, and 60% of those are located posterior to the premolars. Cady *et al.* also reported lesions to be more common in the posterior regions [4, 7, 9-11].

The major risk factors of oral cancer include tobacco smoking, alcohol abuse, human papilloma virus infection, Ebstein-Barr virus infection, candidiasis, precancerous lesions (leukoplakia, erythroplakia, hyperkeratosis, papillomas, dysplasia), Nindustrial pollution. Tobacco products which are used in a way other than smoking are called smokeless tobacco. Any product which contains tobacco is not safe for human health. There are more than twenty-five compounds in smokeless tobacco which have cancer causing activity. The most harmful compounds in smokeless tobacco are tobacco-specific nitrosamines. Others cancer causing agents that are present in smokeless tobacco include cadmium, polonium, formaldehyde, benzopyrene. The habit of placing chewing tobacco, usually in the canine-premolar region of the mandibular sulcus is widespread in the rural population. "Neffa" is the predominant form of chewing tobacco in Tunisia [4, 5, 7, 11-13].

In 2007, the International Agency for Research on Cancer presented compelling evidence that smokeless tobacco is a human carcinogen and its use is attributable for the development of oral Cancer [14].

Clinically, it's characterized by variable manifestations. When located in the gingival, this neoplasm may be misdiagnosed and mimic common inflammatory lesions of the periodontium such as pyogenic granuloma, papilloma, or even fibroid epulis (inflammatory hyperplasia), such as our case report. Often, it appears as an exophytic mass with a granular, papillary or verrucous surface or it presents as an ulcerative lesion. The lesions can be indurated. Depending on their extent and/or location, these lesions may cause painful symptoms and resorption of adjacent bone seen on radiographs. Gingival pain is the most predominant symptom but in the early stages, the disease may be asymptomatic [4, 6-8, 10, 13].

For these lesions, the most commonly imaging techniques used modalities used for both diagnosis and the planning of treatment include magnetic resonance imaging and orthopantomography, cone beam computed tomography. Careful examinations as well as routine biopsy are crucial for accurate diagnosis [14, 15].

Histopathological analysis of biopsy specimen revealed a malignant neoplasia of epithelial. These cells exhibited intense cellular and nuclear pleomorphism, nuclear hyperchromatism, loss of cells cohesion, multiple and clearly visible nucleoli, individual cell keratinization, atypical mitoses, and formation of keratin pearls [10].

Treatment of gingival carcinoma is judged difficult, because their proximity to the underlying periosteum and bone which usually invites early invasion of these structures and also because the invasiveness of the available methods [4, 10, 11].

The most reliable therapy for oral cancer is ablative surgery. Radical neck dissection is the standard treatment for the metastatic lymph nodes. Radiotherapy is used either as a postoperative adjuvant treatment or as definitive treatment for advanced cancer with or without chemotherapy. Chemotherapy has been used as adjuvant or palliative treatment for reducing the tumor bulk and delaying its spread [2, 10].

The prognosis is poor. Patients who are diagnosed early have a better long-term survival ranging from 60% to 90%. In contrast, in cases of late diagnosis the long-term survival ranges from 20% to 50%, and is less than 5% after palliative treatment [2, 14, 15].

Gingival carcinoma survival rate is strongly associated with mode of invasion, presence of lymph node metastasis, extra-capsular spread, surgical margins, and front grade tumor invasion [4, 7, 8].

## CONCLUSION

In this instance dentists play an important role in early detection of high-risk oral premalignant lesions and intervention at premalignant stages could constitute one of the keys in reducing the mortality, morbidity and cost of treatment associated with oral squamous cell carcinoma [4, 7, 9-12].

## REFERENCES

1. Anser SM, Aswath N. Comparison of the carcinogenic potential of smokeless tobacco and smoked tobacco by quantifying the excretion of nicotine metabolite NNAL in patients with oral leukoplakia. *Indian Journal of Clinical Biochemistry*. 2014 Apr 1; 29(2):246-9.
2. Effiom OA, Adeyemo WL, Omitola OG, Ajayi OF, Emmanuel MM, Gbotolorun OM. Oral squamous cell carcinoma: a clinicopathologic review of 233 cases in Lagos, Nigeria. *Journal of Oral and Maxillofacial Surgery*. 2008 Aug 31;66(8):1595-9.
3. Khan Z, Tönnies J, Müller S. Smokeless tobacco and oral cancer in South Asia: a systematic review with meta-analysis. *Journal of cancer epidemiology*. 2014 Jul 6; 2014.

4. Pei-Yu L, Ling A, Shun-Chen H. Squamous Cell Carcinoma of the Mandibular Gingiva. *Chang Gung Med J.* 2004; 27:777-81.
5. Muttagi SS, Chaturvedi P, Gaikwad R, Singh B, Pawar P. Head and neck squamous cell carcinoma in chronic areca nut chewing Indian women: Case series and review of literature. *Indian journal of medical and paediatric oncology: official journal of Indian Society of Medical & Paediatric Oncology.* 2012 Jan; 33(1):32.
6. Rai B. Squamous cell carcinoma of maxillary gingival buccal sulcus: A case report. *International Journal of Dental Clinics.* 2010 Dec 31;2(4).
7. Keshava A, Gugwad S, Baad R, Patel R. Gingival squamous cell carcinoma mimicking as a desquamative lesion. *Journal of Indian Society of Periodontology.* 2016 Jan; 20(1):75.
8. Gupta R, Debnath N, Nayak PA, Khandelwal V. Gingival squamous cell carcinoma presenting as periodontal lesion in the mandibular posterior region. *BMJ case reports.* 2014 Aug 19; 2014: bcr2013202511.
9. Fitzpatrick SG, Neuman AN, Cohen DM, Bhattacharyya I. The clinical and histologic presentation of gingival squamous cell carcinoma: a study of 519 cases. *Oral surgery, oral medicine, oral pathology and oral radiology.* 2012 Oct 31; 114(4): 509-15.
10. Guimarães Cabral LA, das Chagas DA. Gingival Squamous Cell Carcinoma: a Case Report. *J Oral Maxillofac Res.* 2010; 1(3):1-6.
11. Hande AH, Chaudhary MS. Cytomorphometric analysis of buccal mucosa of tobacco chewers. *Rom J Morphol Embryol.* 2010 Jan 1;51:527-32.
12. Janbaz KH, Qadir MI, Basser HT, Bokhari TH, Ahmad B. Risk for oral cancer from smokeless tobacco. *Contemporary Oncology.* 2014;18(3):160.
13. Bhisey RA. Chemistry and toxicology of smokeless tobacco. *Indian journal of cancer.* 2012 Oct 1; 49(4):364.
14. Mallery SR, Tong M, Michaels GC. Clinical and biochemical studies support smokeless tobacco's carcinogenic potential in the human oral cavity. *Cancer Prev Res (Phila).* 2014;7(1): 23–32.
15. Nomura T, Shibahara T, Cui NC, Noma N. Patterns of Mandibular Invasion by Gingival Squamous Cell Carcinoma. *J Oral Maxillofac Surg.* 2005; 63:1489-1493.