


## Squamous cell carcinoma in the dorsum of the tongue as a second primary tumor in oral cavity

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### Abstract:

The squamous cell carcinoma (SCC) of the dorsum of the tongue is the less common among all SCC of the tongue. It may be misdiagnosed, because the clinical presentation can resemble other benign lesions, such as median rhomboid glossitis and lichen planus. After the treatment of an oral cancer, the risk of developing a second primary tumor (SPTs) is reported in 3-18,4% of the cases. The SPT have a significantly worse prognosis on patients with head and neck SCC. The aim of the present study is to report a case of a patient diagnosed with a SCC in the dorsum of the tongue as a second primary tumor in oral cavity. A 54-year-old man, previously diagnosed with SCC in the floor of mouth, T3N1M0 and surgically treated by surgery and adjuvant radiotherapy in 2017 was referred to the Service of Oral and Maxillofacial Surgery. He was a smoker since 18-year-old and had a history of alcohol consumption. During a follow-up examination in March 2019, a mass formation in the dorsum of the tongue was identified. Incisional biopsy was performed at the same day. Pathological examination of a biopsy confirmed the diagnosis of well-differentiated and invasive squamous cell carcinoma. Surgery and an adjuvant radiotherapy were performed. The report of this case aims to draw attention to the occurrence of SPT. The dorsal oral tongue is a very rare site for SCC, and patient at a younger age group must go through regular follow-up in cases of primary oral tumors, especially when the patient maintains habits such as smoke and alcohol consumption.

**Keywords:** Squamous Cell Carcinoma of Head and Neck; Tongue Neoplasms; Mouth Neoplasms

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## INTRODUCTION

The squamous cell carcinoma (SCC) of the tongue usually affects individuals over 50 year of age<sup>8</sup>. SCC of the lateral borders of the tongue is the most common, followed by the base, the ventral surface, the apex, and the dorsum, which is reported to be only 2.9%-7.2% of all cases<sup>3,8</sup>.

The clinical diagnosis of SCC in the dorsum of the tongue may be difficult or it can be misdiagnosed, because the clinical presentation can resemble other lesions such as granular myoblastoma, median rhomboid glossitis, oral candidiasis, lichen planus<sup>2,4</sup> or an oral manifestation of a systemic disease<sup>2</sup>.

After the treatment of an oral cancer, the risk of developing a second primary tumor (SPTs) is reported in 3-18,4% of the cases. Risk factors include a continuation of smoking and alcohol consumption and the presence of multiple oral dysplastic lesions<sup>5</sup>.

The SPT have a significantly worse prognosis on patients with head and neck SCC. Usually they have a poor prognosis because SPTs occur in important sites, such as the lungs or esophagus or in previously irradiated or operated areas<sup>6</sup>.

The aim of the present study is to report a case of a patient diagnosed with a SCC in the dorsum of the tongue as a second primary tumor in oral cavity.

## CASE REPORT

A 54-year-old man, previously diagnosed with SCC in the floor of mouth, T3N1M0 and surgically treated by surgery and adjuvant radiotherapy in 2017 was referred to the Service of Oral and Maxillofacial Surgery. He was a smoker since 18-year-old and had a history of alcohol consumption. The patient was attended in April 2018 due to pain in the right mandible region.

Intraoral examination revealed an area of exposed bone 0,5 x 0,5 cm in the right lingual mandibular body diagnosed as Osteoradionecrosis (ORN) of the jaw. A non-invasive treatment protocol was initiated. The patient started using the Pentoxifylline-Tocopherol protocol and Chlorhexidine 0,12% mouthwash.

During a follow-up examination in March 2019, a mass formation in the dorsum of the tongue was identified. The mass was hard and had a diameter of 2 x 2 cm (Fig. 1). No spontaneous pain was observed.

Incisional biopsy was performed at the same day, under local anesthesia. Pathological examination of a biopsy confirmed the diagnosis of well-differentiated and invasive squamous cell carcinoma.



Figure 1. Intraoral photography during a follow up examination, before surgery

A partial glossectomy and reconstruction using the antero-lateral thigh free flap (ALT) was performed under general anesthesia, by the Department of Head and Neck Surgery and Department of Plastic Surgery of the Erasto Gaertner Hospital in May 2019. The postoperative course was uneventful and the patient was hospitalized for four days. An adjuvant radiotherapy treatment was performed. The patient has been followed up every 3 months during 2019 with no signs of recurrence (Fig. 2).



Figure 2. Intraoral photography after the second surgery, in a follow-up examination.

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## DISCUSSION

The report of this case aims to draw attention to the occurrence of SPT. The dorsal oral tongue is a very rare site for SCC, and patient at a younger age group must go through regular follow-up in cases of primary oral tumors, especially when the patient maintains habits such as smoke and alcohol consumption.

Dorsal oral tongue SCC is a rare entity with reported incidence ranging from 2,9% to 5% of all tongue cancer<sup>4</sup>. As presented in this case, the earlier cancer detection of the SCC of the dorsum of the tongue, in comparison to all cases of SCC in the tongue, may occur because the dorsum of the tongue is easily visualized by opening the mouth and it is possible to feel the mass formation on the palate, so it can be detected by the patient during a simple self-examination. The easy detection of the tumor may be the reason that lesions are identified at an early stage<sup>8</sup>. In contrast, some cases of SCC of the dorsum of the tongue are reported in advanced stages, because the SCC was treated by benign lesion for a long time<sup>8</sup>.

In this case, the patient was not diagnosed with a previous benign lesion, but many studies have been reporting that there is often a benign lesion such as median rhomboid glossitis, bald tongue, oral candidiasis or lichen planus, detectable before the SCC at the dorsum of the tongue<sup>3,8</sup>. So, the clinical diagnosis of dorsal tongue SCC is difficult because of its rarity and because it may be mimicked by a wide variety of benign and premalignant lesions.

Besides that, in this case, the inflammatory process caused by the radiotherapy may have hide the lesion for a period of time, preventing earlier diagnosis. Even so, an incisional biopsy was performed as soon as a malignant lesion was suspected, what enable an early treatment and a chance of a better quality of life to the patient.

Functional disorders in the tongue such as dysarthria and dysphagia may occur during the treatment<sup>8</sup>, and early diagnosis can lessen the discomfort caused by these functional disorders.

Despite the scientific advances of the past two decades, survival rates for head and neck cancer are rather low<sup>6</sup>. Nowadays, the most common causes of

death amongst head and neck cancer patients is the tumor recurrence and the development of a SPT<sup>6,7</sup>. The interval between the initial disease and the SPT usually ranges from 2 to 4 years<sup>6</sup>. In the present study, besides the continuation of smoking and alcohol consumption, an adjuvant radiotherapy treatment was performed for the first tumor, and, according with the literature, the rate of radiation-related neoplasms has been estimated at 15% within 5 years of radiotherapy in treatment of head and neck cancers, most of which frequently arise in the head and neck, esophagus or lung<sup>1</sup>. Therefore, the radiotherapy may have been one of the causes of the second primary tumor in this patient.

The high index of SPT in head and neck cancer must guide the follow-up and bring awareness to prevention.

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