

# Unusual Presentation of Oral Squamous Cell Carcinoma in a Young Woman

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## عرض غير عادي لسرطان الخلايا الحرشفية في الفم عند امرأة شابة

دايوريان فرانكا، ليرا مونتي، إلفيمار دي كاسترو، أنا سبوحية، لويس فولباتو،  
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**المخلص:** سرطان الخلايا الحرشفية في الفم من أكثر الأورام الخبيثة، ويصيب بشكل رئيسي الأشخاص فوق سن 50 سنة الذين يعتادون على تعاطي التبغ والكحول. يندر حدوث هذا النوع من السرطان عند من هم أقل من 40 سنة، وعندما يحدث لا يكون هناك علاقة بعوامل الخطر، ويكون انتشاره أكثر شدة. نظرا لندرة التقارير في هذه الفئة من السكان، فإنه من الصعب أن يثبت الاتجاه المتزايد للمرض. نوضح في هذا التقرير حالة سرطان الخلايا الحرشفية في الفم عند امرأة عمرها 39 عاما، وليس لها تاريخ من تعاطي التبغ أو الكحول. وناقش الاستنتاجات السريرية والتشخيصية المرضية، المسببات المرضية والعلاج. الاتجاه المتزايد لحدوث سرطان الخلايا الحرشفية في الفم عند الشباب دون وجود عوامل الخطر المعروفة يسلط الضوء على أهمية استعداد الأطباء لتشخيص هذه الآفة بسرعة وبدقة، وتوفير أفضل النتائج، لإبقاء المريض على قيد الحياة، وتحسين نوعية حياة المريض.

**مفتاح الكلمات:** سرطان، الخلايا الحرشفية، أورام الفم؛ عوامل الخطر، تقرير حالة، البرازيل.

**ABSTRACT:** Oral squamous cell carcinoma (OSCC) is the most common oral malignant neoplasm, mainly affecting individuals over 50 years old with a history of tobacco and alcohol use. The occurrence of this oral cancer in individuals under 40 years old is unusual and, when it does occur, shows a weaker relation to those risk factors and a more aggressive clinical course. Due to the paucity of reports in this population, it is difficult to prove its increasing trend. A case of oral squamous cell carcinoma in a 39-year-old woman with no history of tobacco or alcohol use is reported. Clinical and histopathological findings, aetiology, and treatment are discussed. The increasing trend of oral squamous cell carcinoma in young women without known risk factors highlights the need for clinicians to be prepared to diagnose this lesion quickly and precisely, providing a better prognosis, chance of survival, and quality of life for the patient.

**Keywords:** Carcinoma, Squamous cell; Mouth neoplasms; Risk factors; Case report; Brazil.

THROUGHOUT THE LAST CENTURY, the number of cancer cases increased worldwide, now representing one of the most important public health problems in the world. The incidence of oral cancer has also increased.<sup>1</sup> Oral squamous cell carcinoma (OSCC) represents between 90% and 95% of all malignant neoplasms of the oral cavity. Lesions are located mainly on the tongue, especially on the lateral posterior border.<sup>2</sup>

Historically, scientific literature has demonstrated a preferential incidence of oral cancers in men aged 50 to 70 years.<sup>2-7</sup> However,

recent epidemiological studies have shown an increase in the development of OSCC in patients under 45 years old.<sup>8,9</sup> In those cases, tumour behaviour is different and patients have a poor prognosis in comparison to cancer in older adults.<sup>10</sup>

The modification of social and cultural habits, specifically those concerning male and female behaviours, could be related to the increase in the occurrence in women.<sup>1,11,12</sup> However, the absence of traditional risk factors such as alcoholism and excessive tobacco use<sup>2,7</sup> in young patients has suggested that in these cases cancer may be



**Figure 1:** Front and lateral profile of patient showing facial asymmetry with swelling at the right side of cheek.

a different disease from that occurring in older patients, and may have a different aetiology and clinical progress.<sup>13–15</sup>

In this article, we report the case of OSCC in a woman with no history of tobacco or alcohol use, and discuss the clinical and histopathological findings, aetiology and treatment.

## Case Report

A 39-year-old female patient with no history of alcoholism, excessive tobacco use, or any other harmful habit, sought treatment for the complaint of an ulcerated lesion with one month's evolution in the buccal mucosa. The lesion was defined by the patient as a common aphthous ulcer. The patient revealed a family history of cancer, as her grandmother had died of stomach cancer.

Clinically, facial asymmetry with tumefaction at the right side was observed [Figure 1]. Intra-orally, there was an ulcerated lesion 5 cm in diameter, with irregular borders, and a necrotic bed located at the right buccal mucosa [Figure 2]. Whitish areas could be observed in the periphery of the ulceration. The radiographic examination did not reveal any signs of bone destruction, and the proposed clinical diagnosis was a traumatic ulcer.

An incisional biopsy was performed. Areas of great inflammatory infiltrate were identified as well as hornish pearls, intact stratified paved epithelium, islets of neoplastic epithelium, polymorphism, and hyperchromatism, thus establishing the diagnosis as OSCC [Figure 3]. The tumour-node-metastasis (TNM) staging system

revealed was stage III disease (T3N0M0) based on the mouth cancer TNM classification criteria of the American Joint Committee for Cancer Staging (UICC/AJC).

The patient was referred to an oncological centre for treatment, which included surgery for resection of the oral mucosa involving the upper alveolar ridge, labial commissure, and mandibular retromolar area, and radiotherapy (5040 cGy). Currently, the patient is in complete remission, and follow-up treatment includes speech therapy and nutritional counselling.

## Discussion

OSCC occurs less frequently in young individuals (<40 years). Those cases represent 3 to 6% of all OSCCs.<sup>3,4,7</sup> In up to 72% of these younger patients, one or more behavioural risk factors are present. Also, men are affected twice as often as women.<sup>16</sup>

Of the many different factors associated with an increased risk for OSCC, tobacco and alcohol seem to be the most studied. Individuals who smoke more than 20 cigarettes a day and consume more than 100 g of alcohol a day are at increased risk of oral epithelial dysplasia, but ex-smokers of 10 or more years seem to have no greater risk than non-smokers.<sup>16</sup>

Few reports have shown distinct molecular differences between younger and older patients with OSCC, as well as between non-smoking and smoking patients, supporting the hypothesis that different subgroups of OSCC exist, especially with respect to exposure to tobacco carcinogens.<sup>7</sup>



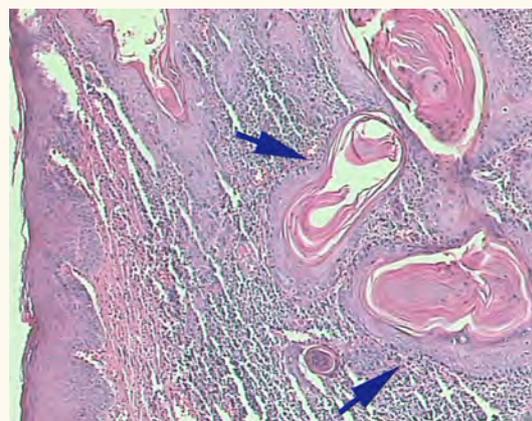
**Figure 2:** Intra-oral view of the right buccal mucosa showing the presence of an exophytic ulcerated lesion with irregular margins and necrotic bed.

It is hypothesised that a subgroup of individuals, characterised by the development of the disease at early ages and by shorter exposure time to behavioural risk factors, develops a histologically similar, but genetically different OSCC, as compared to their older counterparts. This may be due to an increased susceptibility to the development of oral cancer as a result of a lower expression of single nucleotide polymorphisms of the GSTP1 gene. This encodes an enzyme that functions in xenobiotic metabolism of polycyclic aromatic hydrocarbons, which is involved in the metabolism of carcinogens and/or DNA repair, as seen in other tumour types.<sup>7</sup>

Clinical manifestations of OSCC in younger patients have no features to distinguish them from that of older patients; nevertheless, many clinicians tend not to include OSCC as a differential diagnosis in young patients, simply because such disease does not often present in that age range.<sup>2</sup>

The reported case presents different characteristics from the OSCC usually reported in epidemiological studies; the patient was young and without a history of alcoholism or excessive tobacco use. In this case, in consideration of the family's health history, the genetic hypothesis must be reinforced in the lesion aetiology. This is consistent with the observation of other workers who report OSCC without a history of alcoholism or excessive tobacco use.<sup>3,14,17</sup>

Alcoholism or excessive tobacco use have been reported in only a small number of young patients, and even in cases where a correlation is found, the exposure to carcinogens was not sufficient for the development of a malignant lesion.<sup>14,18</sup> Moreover,



**Figure 3:** Photomicrograph of the right buccal mucosa showing areas of inflammatory infiltration, presence of hornish pearls (arrows), stratified pavement epithelium, and islets of neoplastic epithelium (haematoxylin-eosin stain, x 10 magnification)

many people are exposed to such risk factors and only a small percentage develops the disease, which determines the necessity of searching for other risk factors such as immunological or nutritional deficiencies, genetic factors, and microbiological agents in etiogenesis. Among these factors, human papillomavirus and Epstein-Barr virus have already been suggested as aetiological factors.<sup>1,12</sup>

In summary, the factors that should be investigated in order to explain the aetiology of OSCC in young patients, include genetic predisposition, previous viral infections, nutritional patterns, immunodeficiency, occupational exposure to carcinogens, socioeconomic conditions, and oral hygiene.<sup>2</sup> There is some agreement regarding the poor prognosis and short survival rates in younger patients who develop OSCC in the absence of the usual risk factors,<sup>3</sup> although some studies were based on small numbers of patients.<sup>4,15</sup>

## Conclusion

We described the case of a 39-year-old lady who was diagnosed to have OSCC of the buccal mucosa.<sup>2,7,16</sup> There were no known risk factors. OSCC in this age is rare, but should always be considered in the differential diagnosis of non-healing buccal ulcers. The association a young female patient without exposure to the most common risk factors, and more aggressive tumoural behavior in an unusual area, suggest that OSCC, when occurring in non-smokers, represents a different clinical

and molecular disease. Further studies would be necessary to identify other risk factors involved in tumoural development in order to improve prevention programmes and early detection.

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