Tongue squamous cell carcinoma in young nonsmoking and nondrinking patients: 3 clinical cases of orthodontic interest

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Oral squamous cell carcinoma traditionally affects older men who smoke and drink. A change in this profile has been reported because of an increased incidence in young nonsmoking and nondrinking patients. The purpose of this article was to describe a series of young nonsmoking and nondrinking patients diagnosed with tongue squamous cell carcinoma who had recently received orthodontic treatment or evaluation. Details regarding diagnosis, treatment, follow-up, and disease evolution are presented, with a review of the pertinent literature. Orthodontists often treat young adults, who have frequent dental appointments and long-term follow-ups. Thus, practitioners should pay special attention to young patients during dental consultations, since the incidence of malignant oral lesions in this segment of the population seems to be increasing. (Am J Orthod Dentofacial Orthop 2014;145:103-7)

Squamous cell carcinoma (SCC) accounts for more than 90% of all oral malignancies; it is most common in men in their sixth and seventh decades of life who have used tobacco and alcohol for long periods.[1-3]

In the overall population, the most common anatomic site for oral SCC is the lower lip, and the intraoral site with the highest incidence is the lateral border of the tongue, followed by the floor of the mouth, the soft palate, the retromolar area, and the gingiva.[3] Early recognition of oral SCC appears to confer a survival advantage and is also associated with less morbidity and requires less mutilating surgery. In this context, several potentially malignant lesions can progress to oral SCC. The 3 most often seen potentially malignant oral lesions are actinic cheilitis, a reddish swelling induced by chronic exposure to sunlight that precedes lower-lip SCC; erythroplakia (red patch), the type of lesion most likely to progress to carcinoma; and leukoplakia (white patch), which can present clinically as nodular leukoplakia, speckled leukoplakia (erythroleukoplakia), or proliferative verrucous leukoplakia. Oral SCC may also present clinically as leukoplakia or erythroplakia but is mainly seen as indurated ulcers or lumps, granular ulcers with tissue infiltration and raised exophytic margins, or a nonhealing extraction socket.[3] Thus, clinicians should be aware when any of these features persist for more than 2 weeks because it might be a sign of oral malignancy.

Recently, evidence based on research in several countries has shown an important increase in the incidence of these tumors among young patients.[2,4-8] Despite this evidence, oral SCC and potentially malignant disorders are still considered uncommon in young patients, although one cannot deny the difficulties involved for general practitioners to be able to correctly interpret these lesions, which could result in underestimation of their prevalence during dental care.[4,9-11] Thus, oral SCC is generally only diagnosed in more advanced stages and then requires more aggressive treatment, and the prognosis is also worse. However, there are still controversies regarding the prognosis of oral SCC in younger people. Some studies report a favorable clinical prognosis,[4,7,12] whereas others show a worse prognosis for young people.[5,13] Only a few studies

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All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest, and none were reported.
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Submitted, October 2011; revised and accepted, September 2012.
0889-5406/$36.00
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http://dx.doi.org/10.1016/j.ajodo.2012.09.026

have so far focused on gaining a better understanding of oral cancer in young patients.[14-17] Therefore, the aim of this article was to describe 3 clinical cases of oral SCC diagnosed in nonsmoking and nondrinking patients under 40 years of age who attended an oral medicine center within a short time frame. Interestingly, all the patients had recent orthodontic treatment or evaluation. In addition, a literature review was undertaken to provide more information about the emerging issue of oral SCC in young patients.

CASE REPORTS

Patient 1 was a 21-year-old white woman, a nonsmoker and nondrinker in the final stage of orthodontic treatment (Fig 1), who came to our clinic at Piracicaba Dental School, Piracicaba, São Paulo, Brazil, complaining about a white spot on her tongue. She reported a mildly uncomfortable sensation associated with the lesion, which had evolved over 6 months. She mentioned that she had asked the orthodontic staff about the lesion and was told that it was not a significant lesion. The intraoral examination showed an erythroleukoplakia on the left lateral border of the tongue, measuring approximately 2.0 × 2.0 cm (Fig 2). An incisional biopsy was performed, and histopathologic analysis showed nests and cords of atypical hyperchromatic and pleomorphic epithelial cells invading deep connective tissue. Atypical mitoses were found in several areas of the analyzed tissue (Fig 3). Thus, the diagnosis of SCC was confirmed, and the patient was referred for medical treatment. Additional examinations did not identify any regional or distant metastases, and the clinical staging of the patient at diagnosis was a T1N0M0 classification. (T describes the size of the primary tumor, N describes regional lymph nodes that are involved, and M describes distant metastasis.) Treatment consisted of a left partial glossectomy associated with homolateral supraomohyoid neck dissection. A reconstruction was immediately performed with microsurgery grafting using a mucocutaneous flap from her left biceps. The patient is still under follow-up and has shown no recurrence or metastasis after 48 months.

Patient 2 was a 34-year-old white man, a nonsmoker and nondrinker, who was referred from a physician to our clinic. He had completed orthodontic treatment with fixed appliances 4 years earlier, but he was not under postorthodontic follow-up. The intraoral examination showed an infiltrative ulcer on the right lateral border of the tongue, and the main diagnostic hypothesis was SCC. The lesion was approximately 4.0 × 3.0 cm in size and was painful on palpation (Fig 4). The diagnosis of oral SCC was confirmed through incisional biopsy and histopathologic analysis. The patient was referred to medical staff, who staged his tumor as T2N0M0. However, he refused the therapeutic proposal of a partial glossectomy with supraomohyoid neck dissection. The patient, of his own accord, went to

Fig 1. Oral examination of patient 1 demonstrating excellent occlusion during the final stage of orthodontic treatment. This photo was obtained at the moment of diagnosis of tongue SCC.

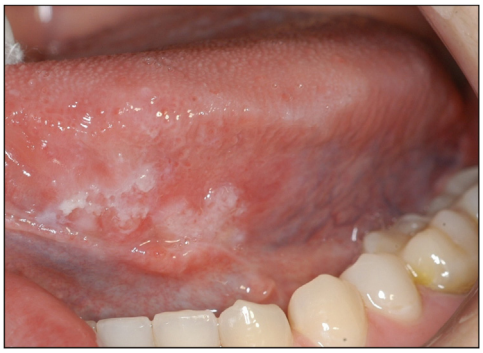

Fig 2. Erythroleukoplakic lesion on the left lateral border of the tongue of patient 1.

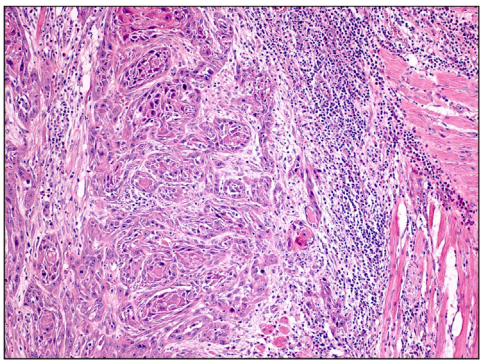

Fig 3. Histopathologic aspects of the SCC diagnosed in patient 1. Note the nests and cords of atypical hyperchromatic and pleomorphic epithelial cells invading deep connective tissues and muscle fibers.

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