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An aggressive verrucous carcinoma of the palate with rare presentations and recurrence: A case report and literature review

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Case Report

Abstract

BACKGROUND AND AIM: Oral verrucous carcinoma (OVC) is a rare malignant tumor with a complex etiology. This tumor is more prevalent in men and buccal mucosa is the most common site of OVC. Altogether, OVC has a relatively good prognosis.

CASE REPORT: In this case report, a rare case of a 64-year-old female with history of consuming opium and involvement of hard palate was reported. Because of the high recurrence rate, a more aggressive approach was considered for second surgery. After 18 months of follow up, the patient was in good health condition and no sign of recurrence was noted.

CONCLUSION: Precancerous lesions may develop into OVC; Differentiation of OVC from other oral lesions is challenging for oral pathologists due to different origins of the lesion. In case of immediate relapse or recurrence after surgery, surgeons are forced to use more aggressive approaches to eliminate the lesion.

KEYWORDS: Carcinoma; Verrucous; Precancerous Conditions; Mouth Neoplasms; Cell Transformation, Neoplastic

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Oral verrucous carcinoma (OVC) is a rare malignant tumor of the oral cavity. It is considered a well differentiated, verrucous, low-grade variant of oral squamous cell carcinoma (OSCC). OVC accounts for 2-12% of all cancers in the oral cavity. This cancer was first introduced by Fridell and Rosenthal and was distinguished from OSCC by Ackermann.[1,2]

Generally, OVC has a complex etiology. Use of alcohol and tobacco (e.g., smokeless tobacco) is regarded as a major risk factor for OVC, although other factors, such as chronic inflammation, ulcers, ill-fitting removable dentures, poor oral hygiene, human papillomavirus (HPV), and immunosuppression have been also described as etiological factors in the literature. Other studies have suggested precancerous lesions, such as oral verrucous leukoplakia or proliferative verrucous leukoplakia, as possible risk factors for OVC. Grover et al.[3] and Moutasim et al.[4] differentiated these precancerous lesions into oral verrucous hyperplasia (OVH) and OVC.

The most common site of OVC is the buccal mucosa. Other common sites include the tongue, lips, gingival and alveolar ridges, and mouth floor. The glottic larynx is the most common extra-oral site of this malignancy. OVC is more prevalent in men aged 60 years or above. Clinical presentations normally include a thick plaque or a slow-growing, well-defined, homogeneous, smooth, pedunculated, exophytic, white-grey, and painless lesion with a verrucous or papillary surface.[1,2,5]

In this case report, we described a rare case of aggressive verrucous carcinoma with rapid recurrence despite usually benign nature of oral verruca carcinoma and with field-cancerization that possibly was arisen

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from pre-cancerous lesions.

Case Report

A 64-year-old Caucasian woman was referred to the Department of Oral Medicine, School of Dentistry, Kerman University of Medical Sciences, Kerman, Iran in December 2017 with a complaint of exophytic lesion in the palate. The lesion had appeared three years before the referral time for the first time and was removed by an oral and maxillofacial surgeon (OMFS) one year before the referral time; nevertheless, it recurred after a short period. The tissue was not histopathological after the surgery. The patient reported that the lesion had not changed considerably in the past few months. Additionally, she reported no pain, paresthesia, or bleeding. Due to the lesion, she was unable to use her removable denture since the last year. She received treatment for hypertension and osteoporosis and was administered 0.5 mg of alprazolam per day, 20 mg of propranolol every 12 hours, and calcium supplements. She had smoked opioid twice a day over the past 20 years.

In the intraoral examination, an exophytic sessile lesion (2.5 × 2.5 cm) extended bilaterally and located on the midline, posterior to the rugae. The surface was pebbly, with white keratotic sites. A thin white keratotic plaque extended from the left maxillary alveolar ridge to the palate (Figure 1).

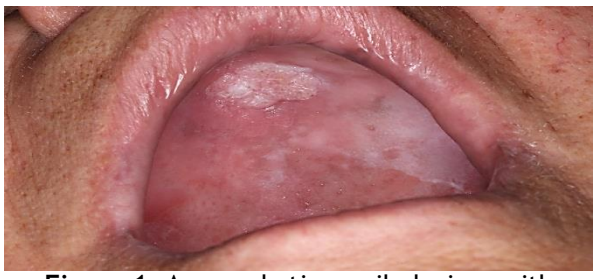

Figure 1. An exophytic sessile lesion, with pebbly white keratotic surface on the midline, posterior to the rugae. A thin white keratotic plaque extended from the left maxillary alveolar ridge to the palate.

The computed tomography (CT) scan of the palate showed a local increase in the mucosa thickness (9 mm) on the roof of the mouth (Figure 2). Differential diagnoses included verrucous carcinoma, oral squamous papilloma (OSP), oral verrucous hyperplasia (OVH), OSCC, and proliferative verrucous leukoplakia (PVL).

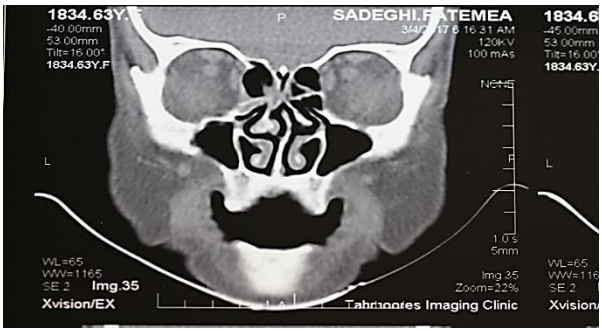

Figure 2. Computed tomography (CT) scan of the palate showing a local increase in the mucosa thickness (9 mm) on the roof of the mouth

The lesion was removed completely via excisional biopsy with routine scalpel technique by an oral medicine specialist under local anesthesia (lidocaine and epinephrine, 1:100000). The surgery site was dressed by secondary intention (co-packed). The specimen was fixed in 37% formaldehyde solution and sent for pathological evaluation. The pathology report confirmed verrucose carcinoma. According to the pathological assessment, the sections indicated a well-differentiated hyperplastic squamous epithelium with orderly maturation, hyperplastic surface papillae with keratin in invaginations, and broad blunt downward-pushing rete pegs with minimal atypia (Figure 3).

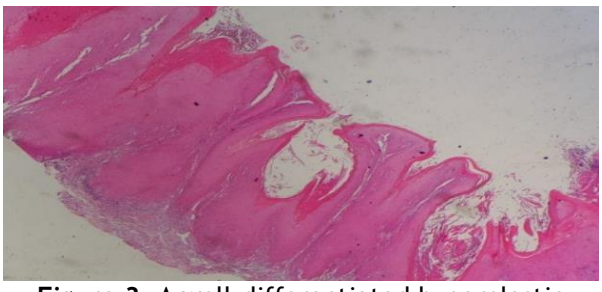

Figure 3. A well-differentiated hyperplastic squamous epithelium with orderly maturation, hyperplastic surface papillae with keratin in invaginations, and broad blunt downward-pushing rete pegs with minimal atypia (Hematoxylin-Eosin, original magnification x40).

One month later, another lesion developed on the palate at the same site as the previous lesion (Figure 4).

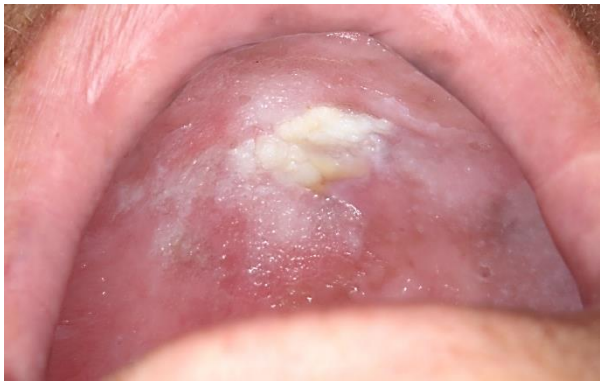

Figure 4. Reappearance of white keratotic lesion on the palate at the same site as the previous lesion one month later

Due to the lesion recurrence over one year and consultation with OMFS, a more aggressive approach was selected for removing the lesion. Surgery was performed by OMFS under general anesthesia. As a result of aggressive resection, the palate perforated to the nasal cavity (Figure 5). After the surgical site healed completely, an obturator was made to cover perforation by maxillofacial prosthesis. Moreover, whole body examination and CT scan of lymphatic metastasis were negative.

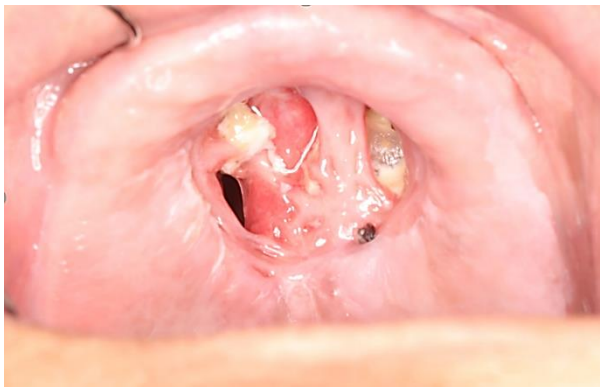

Figure 5. Surgical site; As a result of aggressive resection, the palate perforated to the nasal cavity

In the six-month follow-up, the patient complained of a burning sensation in her tongue. On the left side of the dorsal surface of the tongue, a white keratotic plaque with a reticular pattern and erythema was observed. The filiform papillae of the tongue were atrophic in multiple sites (Figure 6). Incisional biopsy was performed on the keratotic plaque, and pathological evaluation showed moderate epithelial dysplasia. According to this finding, the lesion was completely removed by CO2 laser therapy (10600 nm, SLI, Italy).

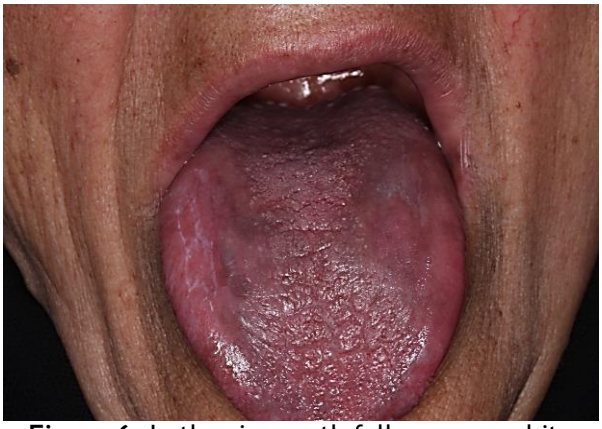

Figure 6. In the six-month follow-up, a white keratotic plaque with a reticular pattern and erythema was observed on the left side of the dorsal surface of the tongue. The filiform papillae of the tongue were atrophic in multiple sites.

Laser therapy was performed in one session. The tip of the device was held 5 mm above the mucosa for five seconds, and the machine was adjusted to 4 Watts in a continuous mode. Fluconazole (50 mg per day) and Benzydamine mouthwash (three times a day) were prescribed for the patient. After three months, the healing process was completed in the surgical sites (tongue and palate). Keratotic plaque of the alveolar ridge of maxilla was removed by laser CO2 in one session. In the follow-up session (2.5 years after the first session), non-pathological changes were observed (Figure 7).

The patient was fully informed of the use of their information for scientific publications and a consent form was obtained and they were ensured that their information would be kept confidential.

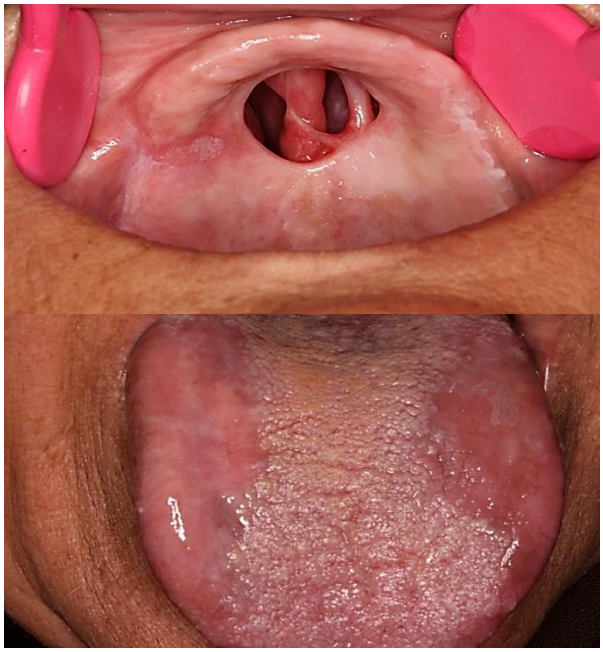

Figure 7. Same patient after 2.5 years, non-pathological changes were observed

Discussion

Cancer is one of the most challenging public health concerns, with oral cancer being among the ten most common cancers worldwide. Compared to more prevalent oral cancers, such as OSCC, OVC is considered a rare phenomenon with a less aggressive clinical behavior.[6,7] In this study, we described a case of OVC with clinical presentations of OSCC.

One of the rarest types of OVC was reported by Loffler et al. in a patient with phosphatase and tensin homolog (PTEN) hamartoma tumor syndrome (PHTS); mutations in PTEN were called PTEN. They reported concurrent OVC and malignant peritoneal mesothelioma (MPM).[8] Singh et al. reported another rare presentation of OVC, with tumor extending from the buccal mucosa to the skin. They highlighted the importance of an aggressive approach for resection of such tumors, which was similar to the treatment plan adopted in the present case.[9]

Furthermore, Kamarthi et al. reported a rear case of intra-bony OVC, arising from an orthokeratinized odontogenic keratocyst.[10] Dalirsani et al.[11] and Peng et al.[12] also reported other cases of intra-bony OVC. In the study by Dalirsani et al.,[11] the tumor was attributed to an infected dentigerous cyst, whereas Peng et al.[12] reported a case of intra-bony OVC due to ameloblastoma. Besides, Kang and Leem described another case associated with an intra-bony cystic lesion.[13] Yano et al. also reported an unusual case of maxillary OVC concurrent with colorectal adenocarcinoma with cervical lymph node metastasis;[14] the location of OVC in this patient was similar to our case.

Generally, diagnosis of OVC is challenging. Similar to our case, because of similar clinical presentations of OVC and OSCC or other oral lesions, it may be difficult to establish the final diagnosis. In this regard, Garcia et al. described a case of OVC, which imitated the clinical presentations of chronic candidiasis, leading to the initial candidiasis treatment.[15] Therefore, it is important to differentiate OVC from other oral lesions, especially OSCC via clinical and histopathological evaluations.

In addition, Terada reported a case of OSCC arising from OVC.[16] Montjean et al. reported that there were focal SCC sites in 20% of OVC cases.[17] This finding may be responsible for the aggressive nature of some OVC cases, including our patient. Moreover, Nagao and Sata,[18] Tomb et al.,[19] and Warshaw et al.[20] reported different cases of OVC, arising from oral lichen planus (OLP). It is known that OLP progresses to SCC over time; this is another factor which makes histopathological evaluation more difficult in some patients.

Recent studies have suggested the use of biomarkers for OVC diagnosis. In a systematic review, Hosseinpour et al. showed that the use of biomarkers such as Ki67 and P53 can be beneficial for establishing the final diagnosis, since it is difficult to distinguish OVC from other lesions, such as OSCC and OVH, based on the histopathological features. In our patient, considering the high rate of recurrence, aggressive surgical resection was performed for the patient.[21]

In a study by Koike et al., a tongue flap was used to reconstruct static function in a patient with verrucous carcinoma of the lower lip.[22]

Lu et al. also performed one-stage surgery for a case of OVC with noma-induced bilateral ankyloses.[23] In addition, El Ghelbazouri et al. showed that HPV16 infection increased the risk of recurrence after surgery.[24] In the present case, a major limitation was the lack of immune-histological examination of HPV. Our patient used a removable complete denture at the time of developing OVC. Rahali et al. reported a case of OVC following continuous trauma due to ill-fitting denture.[25] However, the effect of this etiological factor was unclear in our case.

Precancerous lesions may develop into OVC; nevertheless, we could not confirm this possibility in the present case. In this regard, Grover et al. reported OVH in a patient, who showed no relapse in the five-year follow-up despite the possibility of OVC development after resection. This finding shows the unpredictable clinical nature of such lesions.[3] In the present case, we used CO2 laser therapy for removing the lesion due to dysplastic changes in microscopic examination in one of the follow-up sessions. Generally, it seems that CO2 laser therapy is useful for the treatment of refractory OVC lesions.[26]

Conclusion

This study indicated the importance of further analysis of OVC due to several factors, which are described below:

- Etiological factors of OVC are unclear. In the present case, the effects of smoking opioid and wearing removable denture were uncertain.
- OVC is more common in the buccal mucosa of male patients; however, our patient was female and the lesion site was on the hard palate, which is an unusual site for this type of carcinoma.
- Differentiation of OVC from other oral lesions is challenging for oral pathologists due to different origins of the lesion.

In case of immediate relapse or recurrence after surgery, surgeons are forced to use more aggressive approaches to eliminate the lesion; however, there are still controversies about the best surgical plan for these patients.

Conflict of Interests

Authors have no conflict of interest.

Acknowledgments

None.

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