

# Recurrent, oral cavity tumor-like exophytic lesions mimicking neoplastic disease in a patient with history of human papillomavirus-mediated squamous cell carcinoma

SAGE Open Medical Case Reports  
Volume 9: 1–4  
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DOI: 10.1177/2050313X211065884  
journals.sagepub.com/home/sco



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## Abstract

Reactive hyperplasia is a phenomenon responsible for exophytic lesions in the oral cavity, and may appear to be suspicious, especially in patients who have a significant history of malignancy. Here, we present a case of reactive hyperplasia mimicking recurrence in a patient who was previously treated for tonsillar carcinoma. Physicians who commonly see patients with oral lesions, particularly oral surgeons and otolaryngologists, should be cognizant of the unusual presentation of these lesions as they may mimic the physical characteristics of recurrence.

## Keywords

Otolaryngology, oncology, pathology

Date received: 13 September 2021; accepted: 23 November 2021

## Introduction

The identification of any lesions in the mucosa of the oral cavity requires high vigilance for the clinician, as malignant neoplasias in these anatomic regions manifest a variety of forms and clinical presentations.<sup>1</sup> Close observation and low threshold for biopsy should be maintained especially in patients with history of head and neck malignancies, or previous irradiation of the oral cavity.

Reactive hyperplasia is a phenomenon responsible for exophytic lesions in the oral cavity, and may appear to be suspicious, especially in patients who have a significant history of malignancy. They are a group of fibrous connective tissue lesions that occur in the oral cavity as a secondary result of chronic injury or local irritation.<sup>2,3</sup> These lesions are not neoplastic, but arise due to a repeated process of granulation and scar formation following tissue repair. Here, we present a case of reactive hyperplasia mimicking recurrence in a patient who was previously treated for tonsillar carcinoma.

## Case

A 49-year-old male was referred to our clinic with a 4-week history of a 3-cm right submandibular neck mass associated

with mild right discomfort in swallowing. The physical examination revealed additionally an irregular exophytic process in the right pharyngeal tonsil. A computed tomography (CT) neck was performed that demonstrated a heterogeneous mass in the right submandibular space, consistent with a level 1B necrotic nodal mass and asymmetric enlargement in the right tonsil (Figure 1). The patient was taken to the operating room for direct laryngoscopic examination and biopsy and was diagnosed with a human papillomavirus-mediated squamous cell carcinoma of the right tonsil metastatic to the right neck, finally staged as T2N1M0, (Stage I) P16 positive squamous cell carcinoma of the right tonsil.

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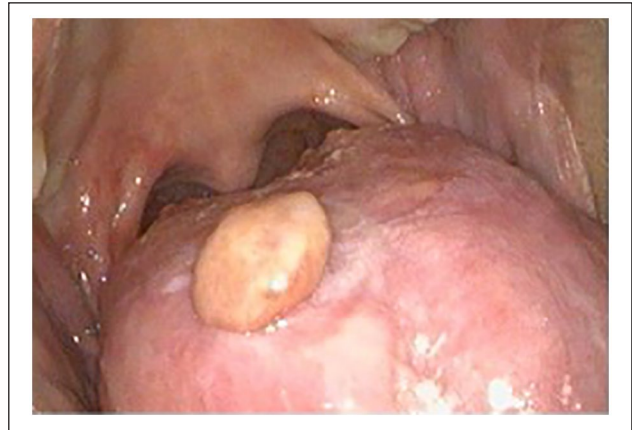


**Figure 1.** Axial cut CT of right oropharyngeal neoplasm with right submandibular neck metastatic lymphadenopathy.

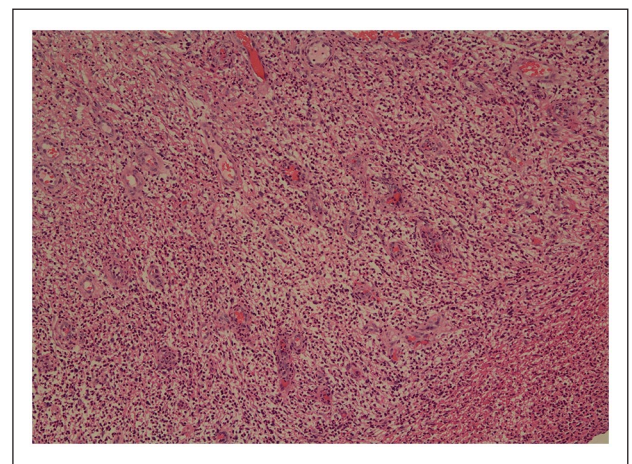
The patient was managed with concurrent chemoradiation. The patient received 8 weeks of radiation to a total amount of 6300 cGy. He was treated concurrently with 4 weeks of docetaxel and carboplatin. Following this, pembrolizumab was added to the treatment to optimize the response, and he completed eight cycles of pembrolizumab without major issues.

Approximately 2 months after completion of his chemoradiation, the patient was transferred to the emergency room with severe oropharyngeal bleeding. A large exophytic nodule in the dorsal tongue was noticed on the physical examination, but the bleeding spontaneously resolved after fluid resuscitation in the emergency room. The patient was seen later in the office, and concerns about recurrent malignancy were raised. He was taken to the operating room and the lesion was excised under general anesthesia, along with a smaller similar exophytic nodule that was noticed near this lesion. To our pleasant surprise, the pathology report was negative for malignancy and was consistent with acellular eosinophilic necrotic material associated with recent hemorrhage for both of the lesions. During the laryngoscopic examination, a smaller nodule in the left piriform sinus was noticed, that was biopsied as well, and reported as inflammatory necrotic debris with attached squamous epithelium with reactive atypia.

The patient returned approximately 6 weeks later with the similar exophytic nodule in the dorsal tongue, approximately 1 cm anteriorly to the previously noticed nodule (Figure 2). He was taken back to the operating room for excisional biopsy, which was consistent this time with granulation tissue without evidence of malignancy (Figure 3). In the direct



**Figure 2.** Recurrent exophytic nodule on dorsal tongue.



**Figure 3.** Acute inflammation and benign vascular proliferation, representing granulation tissue (100× magnification), recurrent dorsal tongue nodule.

laryngoscopic examination, we noticed an exophytic nodule in the left tongue base, which was reported as thrombosis with ulceration and radiation effect. After the second trip to the operating room, the patient had a further uneventful course without any other recurrences of the oral exophytic nodules.

## Discussion

Lesions in the oral cavity generally present with various forms, including ulceration, pigmented lesions, and exophytic lesions. The clinical term “oral exophytic lesions” has been used previously in the literature to describe as pathologic growths projecting above the normal contours of the oral mucosa.<sup>4,5</sup> Reactive hyperplasia is the most frequent phenomenon responsible for exophytic lesions in the oral cavity, typically associated with low-grade injuries and appear as pedunculated or sessile masses with smooth to firm surface, and various colors and consistency.

Radiation effects in the oral cavity are also well-established including mucositis, hyposalivation xerostomia, radiation-induced dental caries, trismus, and osteoradionecrosis.<sup>6</sup> Depending on the staging, external beam radiation therapy and brachytherapy have been used successfully as the primary modality for treating patients with early stage oral cancer, and they are the standard of care for use as adjuvant therapy in post-operative cases of patients with advanced stage oral cancer.<sup>7</sup>

In our patient, the ominous presentation with oral hemorrhage raised immediate concern for regional recurrence of his malignancy or for a metachronous malignant lesion in his oral cavity. The differential diagnosis also included oral cavity sarcomas: irradiation of the oral mucosa has a known association with oral cavity sarcomas,<sup>8</sup> but these typically present late.<sup>9</sup> They are considered as a complication of radiotherapy, but are extremely rare events with a reported incidence of 0.06%–0.17% in large series of patients.<sup>10,11</sup> Medication side effect was also considered, but the patient was only on pembrolizumab having completed his conventional chemotherapy 2 months prior to this presentation. Pembrolizumab is a monoclonal antibody FDA approved since 2016 for specific oncologic indications, which is not known to specifically cause oral exophytic lesions.<sup>12</sup> Pyogenic granulomas, a subset of reactive hyperplasia, are also seen in the oral cavity; this term is a misnomer because the lesion is unrelated to infection and arises in response to various stimuli including low-grade local irritation, hormonal factors, and after oral mucosa trauma.<sup>13,14</sup> These lesions are usually located in the gingival or alveolar areas; however, extra-gingival locations of these granulomas have also been reported.<sup>15,16</sup> In a large series of patients with intra-oral pyogenic granulomas, approximately 5% of them were located on the tongue.<sup>17</sup>

Nevertheless, the pathologic examination ruled out malignancy in the subsequent recurrent presentations. The first time, the tongue lesions examination revealed acellular eosinophilic necrotic material associated with recent hemorrhage in line with the patient's clinical presentation with oropharyngeal bleeding. The subsequent recurrent tongue lesion, which arised almost in the same area of the dorsal tongue approximately 6 weeks after our initial biopsy, demonstrated acute inflammation and benign vascular proliferation, consistent with granulation tissue (Figure 3). The lesion that was noticed in the piriform sinus was reported as inflammatory necrotic debris, with attached squamous epithelium demonstrating reactive atypia also without concerns for malignancy. Although the etiology of these recurrent nodular lesions in our patient is unclear, we expect that his history of radiation and possibly local mechanical trauma may have contributed on this clinical presentation. Reactive granulation tissue is associated with benign vascular proliferation and these lesions bleed frequently, as in the patient's clinical presentation with oropharyngeal bleeding in the emergency room. The patient was followed for additional 9 months after the

second biopsy, and demonstrated no evidence of recurrence on his malignant disease or any nodules in his oral cavity.

## Conclusion

In our patient, the recurrent nature of the lesions, and the recent history of malignant neoplasm in the area required prompt action to exclude the possibility of recurrent neoplasm. This clinical presentation highlights the broad differential diagnosis of exophytic oral lesions. In the present case, despite the suspicious clinical appearance of the recurrent oral mucosa lesions, no malignancy was identified in the two subsequent biopsies. No specific etiology was identified for the development of these reactive lesions, that seemed to be unrelated to the patient's primary malignancy. Excessive diligence and low threshold for tissue biopsy should be applied, especially in the post-treatment surveillance of head and neck cancer patients where delays in the diagnosis may have negative impact in survival.

## Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Ethical approval

Our institution does not require ethical approval for reporting individual cases or case series.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## Informed consent

Written informed consent was obtained from the patient(s) for their anonymized information to be published in this article.

## Research ethics and patient consent

Written informed consent was obtained by the patient. Institutional Review Board (IRB) was exempt as this is a case report with no identifying patient information.

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## References

1. Warnakulasuriya S, Kujan O, Aguirre-Urizar JM, et al. Oral potentially malignant disorders: a consensus report from an international seminar on nomenclature and classification, convened by the WHO Collaborating Centre for Oral Cancer. *Oral Diseases* 2020; 27: 1862–1880.
2. Reddy V, Saxena S, Saxena S, et al. Reactive hyperplastic lesions of the oral cavity: a ten year observational study on North Indian Population. *J Clin Exp Dent* 2012; 4(3): e136–e140.

3. Kfir Y, Buchner A and Hansen LS. Reactive lesions of the gingiva: a clinicopathological study of 741 cases. *J Periodontol* 1980; 51(11): 655–661.
4. Mortazavi H, Safi Y, Baharvand M, et al. Peripheral exophytic oral lesions: a clinical decision tree. *Int J Dent* 2017; 2017: 9193831.
5. Santosh ABR, Boyd D and Laxminarayana KK. Proposed clinico-pathological classification for oral exophytic lesions. *J Clin Diagn Res* 2015; 9(9): ZE01–ZE08.
6. Ortigara GB, Bonzanini LIL, Schulz RE, et al. Late radiation effects in survivors of head and neck cancer: state of the science. *Crit Rev Oncol Hematol* 2021; 162: 103335.
7. Day TA, Davis BK, Gillespie MB, et al. Oral cancer treatment. *Curr Treat Opt Oncol* 2003; 4(1): 27.
8. Ganesan S, Iype EM and Kapali AS. Radiation induced sarcoma of oral cavity: a rare case report and a short review. *J Clin Diagn Res* 2013; 7(11): 2598–2599.
9. De Souza LL, Pontes HAR, Santos-Silva AR, et al. Oral radiation-induced sarcomas: systematic review. *Head Neck* 2020; 42(9): 2660–2668.
10. Feigen M. Should cancer survivors fear radiation-induced sarcomas? *Sarcoma* 1997; 1(1): 5–15.
11. Wei Z, Xie Y, Xu J, et al. Radiation-induced sarcoma of head and neck: 50 years of experience at a single institution in an endemic area of nasopharyngeal carcinoma in China. *Med Oncol* 2012; 29(2): 670–676.
12. Kareemaghay S and Tavassoli M. Clinical immunotherapeutic approaches for the treatment of head and neck cancer. *Int J Oral Maxil Surg* 2019; 48(4): 419–436.
13. Jafarzadeh H, Sanatkhan M and Mohtasham N. Oral pyogenic granuloma: a review. *J Oral Sci* 2006; 48(4): 167–175.
14. Wollina U, Langner D, França K, et al. Pyogenic granuloma: a common benign vascular tumor with variable clinical presentation—new findings and treatment options. *Open Access Maced J Med Sci* 2017; 5(4): 423–426.
15. Akyol MU, Yalçiner EG and Doğan AI. Pyogenic granuloma (lobular capillary hemangioma) of the tongue. *Int J Pediat Otorhinol* 2001; 58(3): 239–241.
16. Sachdeva SK. Extralingival pyogenic granuloma: an unusual clinical presentation. *J Dent* 2015; 16(3 Suppl.): 282–285.
17. Gordón-Núñez MA, de Vasconcelos Carvalho M, Benevenuto TG, et al. Oral pyogenic granuloma: a retrospective analysis of 293 cases in a Brazilian population. *J Oral Maxillofac Surg* 2010; 68(9): 2185–2188.