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Case Challenge
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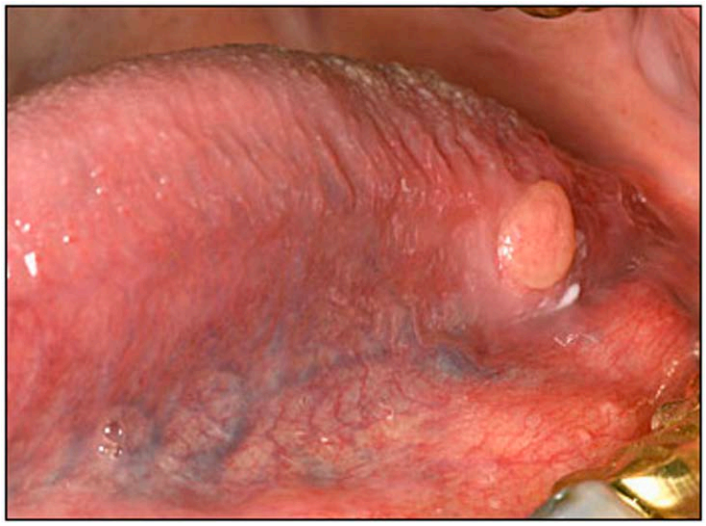
A Small Nodule on the Lateral Tongue

Angela C. Chi, DMD; James A. Rivers, DMD; Brad W. Neville, DDS



The following Case Challenge is provided in conjunction with the American Academy of Oral and Maxillofacial Pathology.

Case Summary

This 71-year-old white male presented for routine dental prophylaxis and oral examination. He reported the recent development of a small growth on the left posterior lateral border of his tongue, which had not been present at his last visit. The patient indicated the lesion was not painful but had slowly increased in size over the past two to three months.

After you have finished reviewing the available diagnostic information, make the diagnosis.

Diagnostic Information

Additional History

The patient was otherwise healthy and did not recall any trauma to the area. His dentition was well restored with no evidence of sharp cusps that would irritate this site. The patient had a history of cigarette smoking, which was estimated at one pack per day for a period of 50 years. However, he had stopped smoking four years earlier. He reported a consumption of two or more alcoholic drinks per day.

Clinical Findings

The patient was a well-nourished Caucasian male who appeared his stated age and was in no acute distress. Extraoral examination was within normal limits with no facial asymmetry or cervical lymphadenopathy evident. Intraoral examination revealed a firm, smooth-surfaced, sessile nodule on the left posterior lateral tongue (Figure 1).

The lesion was yellowish pink in color and measured approximately 6 mm in diameter. Focal white surface changes were noted at the posterior aspect of the nodule. Neither pain nor discomfort was elicited upon palpation.

Excisional Biopsy and Photomicrographs

An excisional biopsy was performed. Microscopic examination revealed a wedge of mucosa partially covered by stratified squamous epithelium. On the mucosal surface was an irregular nodule that exhibited ulceration of the covering epithelium (Figures 2 and 3).

The intact areas of epithelium demonstrated dysplastic changes that included nuclear hyperchromatism, pleomorphism, dyskeratosis, and atypical mitotic figures. Cords and islands of these dysplastic cells were seen infiltrating into the lamina propria and deeper skeletal muscle (Figures 4-6).

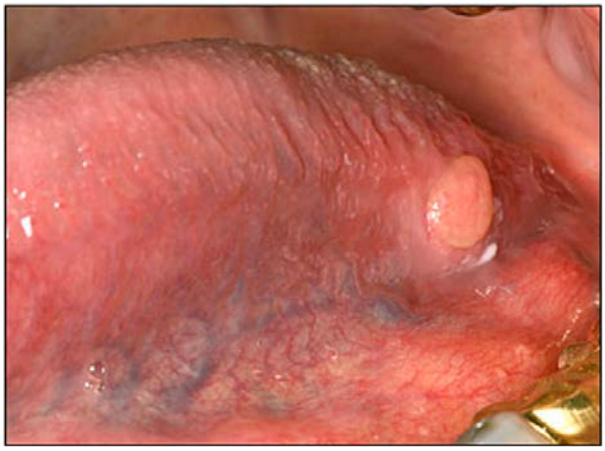


Figure 1. A small yellowish pink nodule on the left posterior lateral border of the tongue.

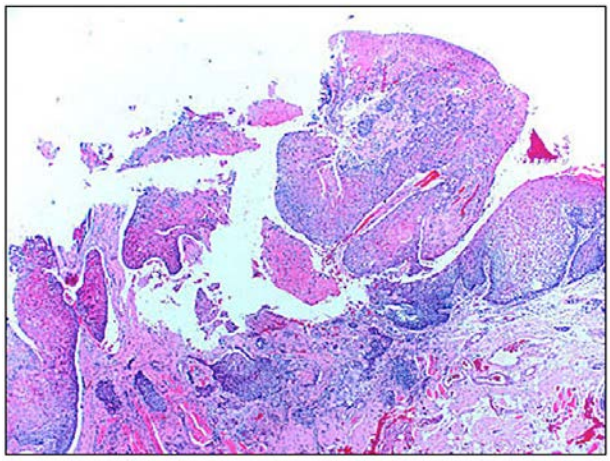


Figure 2. A low power photomicrograph showing a wedge of mucosa with an ulcerated surface nodule. (Hematoxylin and eosin stain)

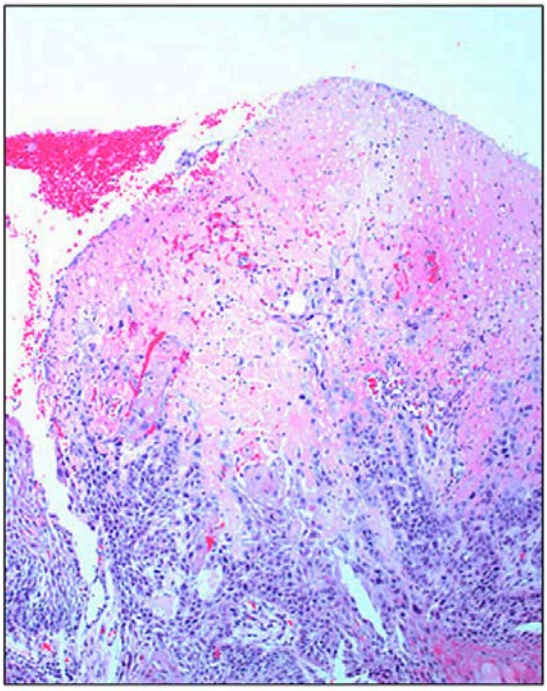


Figure 3. A medium power photomicrograph showing partially ulcerated squamous epithelium covered by an eosinophilic fibrinopurulent membrane. The viable epithelial cells at the bottom exhibit hyperchromatism and pleomorphism. (Hematoxylin and eosin stain)

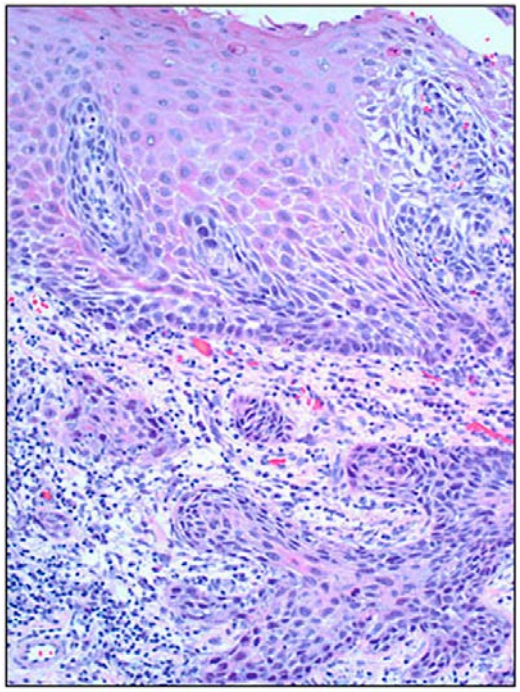


Figure 4. In the bottom half of this medium power photomicrograph islands of dysplastic squamous epithelial cells can be seen invading into the lamina propria beneath the surface mucosal epithelium. (Hematoxylin and eosin stain)

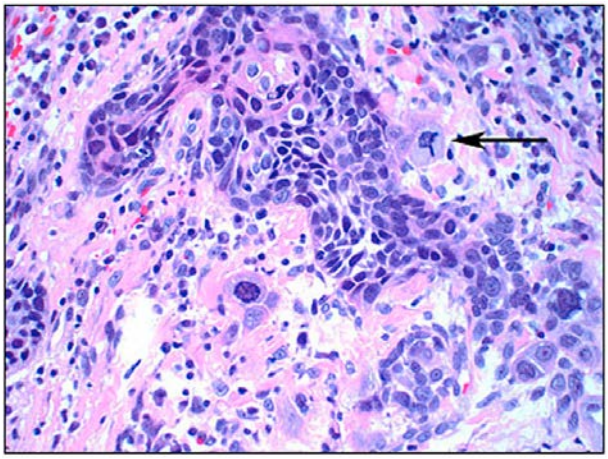


Figure 5. High power photomicrograph showing hyperchromatic and pleomorphic squamous epithelial cells within the connective tissue. An abnormal mitosis is seen in the upper right (arrow). (Hematoxylin and eosin stain)

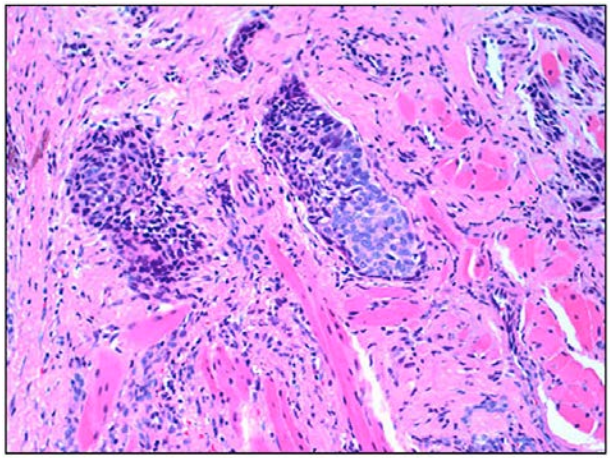


Figure 6. Medium power photomicrograph showing islands of hyperchromatic squamous epithelial cells infiltrating between skeletal muscle bundles in the lower right. (Hematoxylin and eosin stain)

Can you make the diagnosis?

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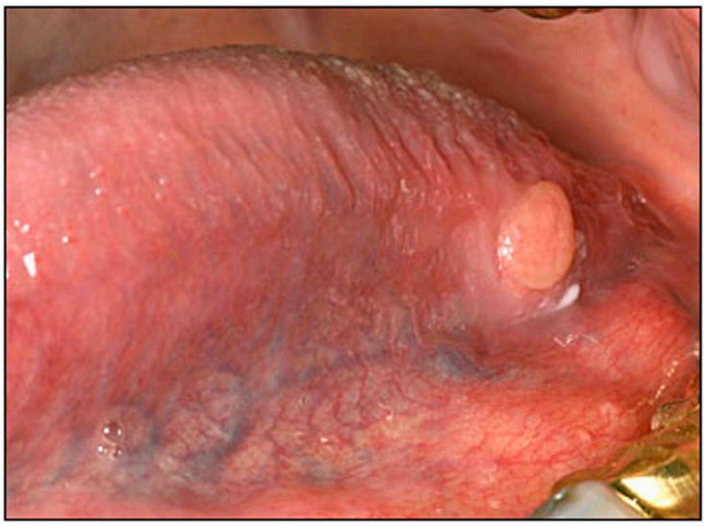

Select the Correct Diagnosis

A. Fibroma
B. Granular Cell Tumor
C. Lymphoepithelial Cyst
D. Squamous Cell Carcinoma

Fibroma

Choice A. Sorry, this is not the correct diagnosis.

The fibroma is a common reactive hyperplasia of fibrous connective tissue which develops in response to local irritation or trauma.[1,2] Because the fibroma typically presents as a slowly growing, firm, smooth-surfaced sessile or pedunculated nodule that is similar in color to the surrounding mucosa[3] it might be considered in the differential diagnosis for this lesion. Fibromas occur most frequently on the buccal mucosa, labial mucosa, anterior tongue, and gingiva; however, it would be unusual for a fibroma to develop this far posteriorly on the lateral tongue. In addition, microscopic examination in this case did not reveal a nodular mass of fibrous connective tissue beneath the epithelial surface.

Please re-evaluate the information about this case.

Granular Cell Tumor

Choice B. Sorry, this is not the correct diagnosis.

The granular cell tumor is a benign connective tissue neoplasm thought to be of neural origin.[4,5] It typically presents as a smooth-surfaced, slowly growing submucosal nodule usually pink or slightly yellowish in color. Because the tongue is the most common site for this tumor, it might be included in the clinical differential diagnosis for this lesion.

Microscopically, granular cell tumors are known for their ability to induce atypia and hyperplasia of the overlying mucosal epithelium which can mimic an invasive squamous cell carcinoma ("pseudoepitheliomatous hyperplasia").[6] Within the connective tissue there is an unencapsulated proliferation of ovoid to polygonal cells, often arranged in nests or sheets, which may infiltrate between collagen bundles and muscle fibers. The tumor cells have centrally placed nuclei and abundant, coarsely granular, eosinophilic cytoplasm. On an ultrastructural level, these granules correspond to lysosomes.[6,7] However, in the present case, no evidence of large cells with abundant granular cytoplasm could be identified in the connective tissue.

Please re-evaluate the information about this case.

Lymphoepithelial Cyst

Choice C. Sorry, this is not the correct diagnosis.

The oral lymphoepithelial cyst is a developmental anomaly in which epithelium becomes entrapped within lymphoid tissue. This epithelium is probably derived from a tonsillar epithelial crypt, which becomes pinched off from the surface to form a small keratin-filled cyst. Such lesions develop most frequently in the palatine tonsil, lingual tonsil, and accessory lymphoid tissue in the floor of the mouth.[8,9] Clinically, the lesion presents as an asymptomatic white or yellowish pink, smooth-surfaced nodule that is usually less than 1 cm in diameter.[10]

Although the location and yellowish pink hue of this patient's lesion might be suggestive of a lymphoepithelial cyst of the lingual tonsil, no keratin-filled cyst and surrounding lymphoid tissue were identified in the biopsy specimen.

Please re-evaluate the information about this case.

Squamous Cell Carcinoma

Choice D. Congratulations! You are correct.

Cancers of the oral cavity comprise approximately 3% of all malignancies in men and 2% of all malignancies in women in the United States.[11] The American Cancer Society estimates there will be over 34,000 new cases of oral and oropharyngeal cancer diagnosed in the U.S. in 2007, plus over 7,500 deaths attributed to this disease.[12] Squamous cell carcinoma is by far the most common form of oral/oropharyngeal cancer, accounting for up to 90% of all of these malignancies. The major known risk factors include tobacco usage and alcohol consumption.[13]

The most common site for oral squamous cell carcinoma is the lateral border of the tongue; other frequent locations include the floor of mouth, lower lip vermilion, and tonsil.[11] Early stage lesions are often asymptomatic, but as the disease progresses, pain, paresthesia, and cervical lymphadenopathy may develop. A rough, irregular, granular ulceration of the mucosal surface often is noted in overt cases of oral squamous cell carcinoma. However, early lesions may present as subtle white and/or red mucosal lesions. Because many carcinomas develop from a white patch (clinical leukoplakia) or red patch (clinical erythroplakia), unexplained white and red changes to the oral mucosa must be viewed with suspicion. In spite of the location of this patient's lesion, the clinical presentation of a well-defined, smooth-surfaced nodule was favored to represent a benign lesion and was not felt to be highly suggestive of squamous cell carcinoma. This case underscores the importance of biopsy for the diagnosis of unexplained mucosal pathology even when cancer is not strongly suspected.

The patient in this case was referred to a head and neck cancer treatment center for further evaluation and wider assured excision of the tumor site. In such cases, decisions on the extent of the excision and the possible need for neck dissection and/or radiation therapy are based on the results of a detailed clinical examination and imaging studies of the head and neck region by a multidisciplinary team. Team members may include a head and neck surgeon, plastic surgeon, general or oral and maxillofacial pathologist, radiation oncologist, medical oncologist, general dentist, oral and maxillofacial surgeon, maxillofacial prosthodontist, speech pathologist, nutritionist, and tobacco cessation counselor.[14]

The overall five year survival rate for oral cancer has remained at approximately 50 to 55% over the past several decades.[11] Factors found to have a significant impact on prognosis include disease stage, extracapsular spread (dissemination of metastatic deposits beyond the lymph node capsule), resection margins free of disease, and tumor thickness. In recent years there has been much interest in the study of molecular markers of potential prognostic significance. Insights into the molecular pathogenesis of oral cancer may lead to the development of more effective anticancer therapies in the future.[15]

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Note: Bio information was provided at the time the case challenge was developed.

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