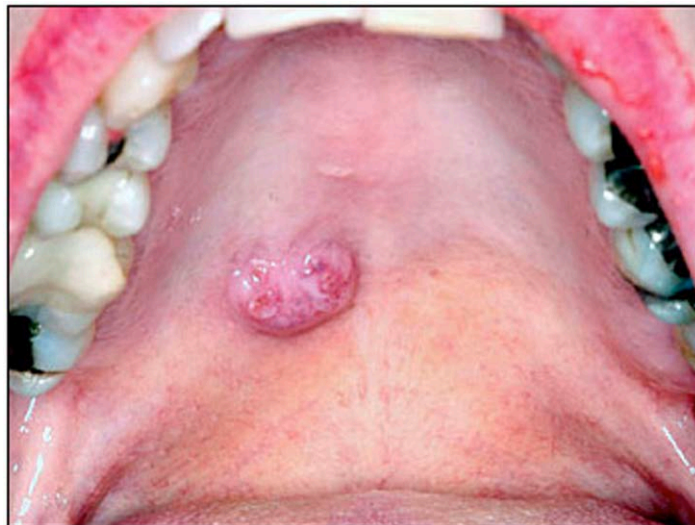


A Nodule of the Palate

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

Case Summary

A 72-year-old Caucasian female presented for evaluation of a painless palatal lesion. She described it as a soft bump and had been aware of its presence for six months before bringing it to the attention of her general dentist, who referred her for a biopsy. The patient denied smoking and there was no known history of trauma.

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

Diagnostic Information

Past Medical History

The patient's past medical history was significant for a history of hiatal hernia and a partial gastrectomy secondary to gastric ulcers.

Clinical Findings

Extraoral examination revealed no lymphadenopathy and no facial asymmetry. Intraoral examination demonstrated a 1.0 cm

slightly firm, sessile nodule on the right posterior hard palate. The lesion was red-purple in color and non-tender. Focal areas of ulceration were evident on the surface (Figure 1).

Excisional Biopsy and Histopathological Findings

An excisional biopsy was performed. Microscopic examination revealed a well-circumscribed tumor composed of islands of mucous and epidermoid cells as well as cystic spaces (Figures 2-4).

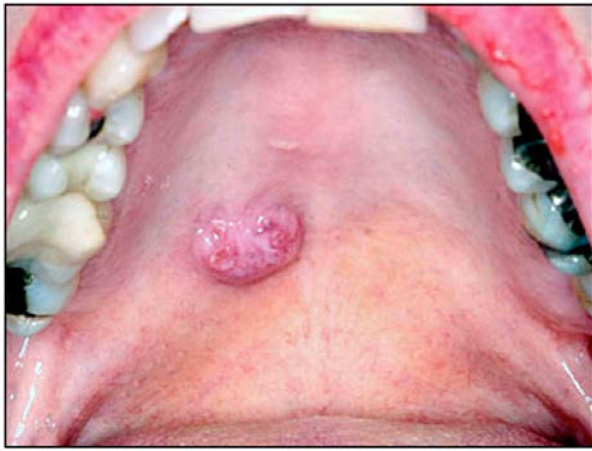


Figure 1. An ulcerated red nodule on the right posterior hard palate.

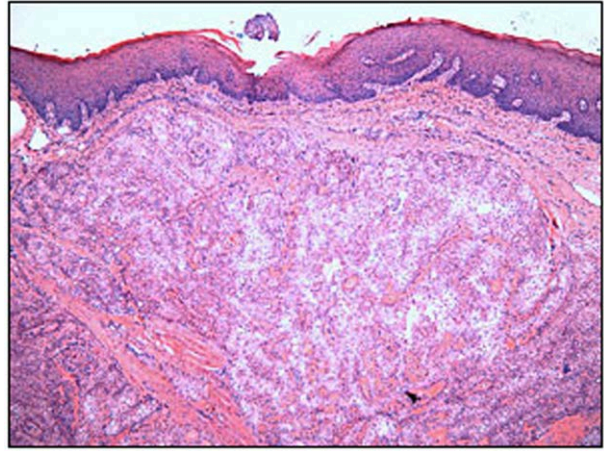


Figure 2. A low power photomicrograph reveals stratified squamous epithelium overlying connective tissue containing an unencapsulated proliferation of islands of epithelial cells. (Hematoxylin and eosin stain)

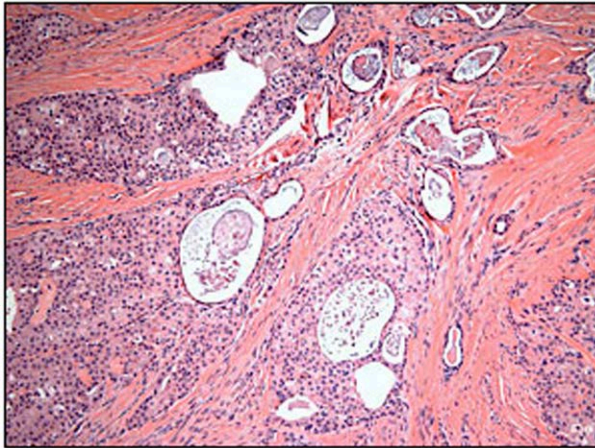


Figure 3. Islands of epidermoid cells are noted containing small cystic and ductal structures. (Hematoxylin and eosin stain)

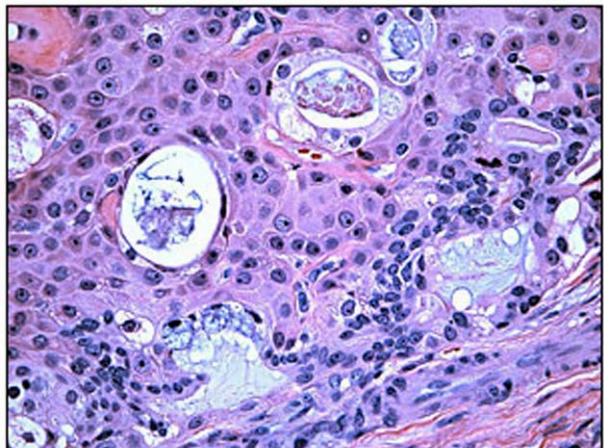
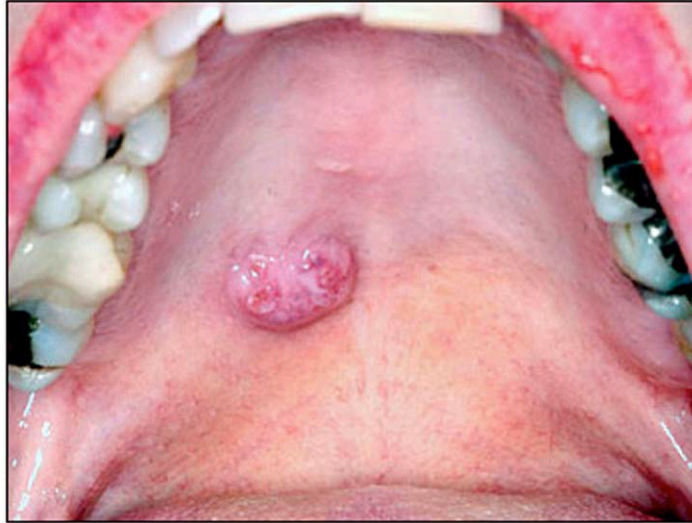


Figure 4. Mucous cells are demonstrated throughout the tumor. (Hematoxylin and eosin stain)

Can you make the diagnosis?

A 72-year-old Caucasian female presented for evaluation of a painless palatal lesion. She described it as a soft bump and had been aware of its presence for six months before bringing it to the attention of her general dentist, who referred her for a biopsy. The patient denied smoking and there was no known history of trauma.



Select the Correct Diagnosis

- A. Pyogenic Granuloma
- B. Necrotizing Sialometaplasia
- C. Squamous Cell Carcinoma
- D. Mucoepidermoid Carcinoma

Pyogenic Granuloma

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

A pyogenic granuloma (PG) is a common tumor-like growth of the oral mucosa or skin that is considered to be reactive in nature.^{1,2} PGs of the oral cavity typically present as red, lobulated, exophytic nodules often exhibiting surface ulceration.¹ These lesions occur

most often on the gingiva and are noted with increased frequency in pregnant women (in which case they are known as pregnancy tumors or “granuloma gravidarum”). Histopathology of PGs demonstrates a highly vascular proliferation of granulation tissue often with a lobular architecture.³ Although PGs may present on the hard palate as ulcerated red lesions, the histopathology in this case is inconsistent with this diagnosis.

Please re-evaluate the information about this case.

Necrotizing Sialometaplasia

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

Necrotizing sialometaplasia (NSM) is a reactive condition that typically involves the minor salivary glands of the hard palate. It presents most commonly as a painful deep ulcer with raised indurated edges and is believed to be secondary to ischemia. NSM may occur in the setting of a variety of insults, including local anesthesia injection, surgery, or radiotherapy.⁴ Histopathology demonstrates the presence of squamous metaplasia of the salivary gland ducts and coagulative necrosis of salivary gland acini.⁵

Because NSM presents clinically as an ulcer (usually of rapid onset and sometimes painless) and histologically with squamous metaplasia and/or pseudoepitheliomatous hyperplasia, NSM may be mistaken for squamous cell carcinoma.⁵ NSM is, however, a benign condition and will resolve spontaneously within three–12 weeks.⁶ Although any swelling of the palate should be suspicious for salivary gland pathology, NSM does not typically present as a nodular lesion but rather a diffuse swelling that quickly ulcerates. The absence of coagulative necrosis in this case rules out the diagnosis.

Please re-evaluate the information about this case.

Squamous Cell Carcinoma

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

Squamous cell carcinoma (SCCa) is the most common form of oral cancer, accounting for more than 90% of all malignancies in the oral cavity.⁷ The major known risk factors include tobacco usage and alcohol consumption.⁸ The most common site for oral SCCa is the lateral border and ventral surface of the tongue; it is rarely noted on the hard palate.⁷ SCCa often

presents clinically as leukoplakia, erythroplakia, or a non-healing ulcer. Its histopathology typically features an unencapsulated tumor consisting of invasive islands of neoplastic squamous cells, often exhibiting keratin pearl production, cellular pleomorphism, and atypical mitotic figures.⁹ Although the ulceration in this case suggests a malignant process, the rarity of SCCa on the hard palate and the presence of mucous cells within the tissue argue against the diagnosis of SCCa.

Please re-evaluate the information about this case.

Mucoepidermoid Carcinoma

Choice D. Congratulations! You are correct.

Mucoepidermoid carcinoma (MEC) is the most common malignancy of major and minor salivary glands in adults and children.^{10,11} The greatest incidence of this tumor is between the third and sixth decades of life, but MECs may develop at any age.^{11,12} MECs typically present as asymptomatic swellings that vary from fluctuant to firm and, like other malignancies, may be ulcerated.

The presence of mucous cells and epidermoid cells is required for the diagnosis of MEC. MECs are classified as low, intermediate, or high grade tumors. In the past, the classification was based on the ratio of mucous cells to epidermoid cells with low grade tumors having many mucous cells and exhibiting large cystic spaces, and high grade tumors having few mucous cells, sheets

of epidermoid cells, and few cystic spaces. However, a recent study showed that features such as the presence of anaplasia, mitotic activity, necrosis, and perineural invasion correlate better with survival than the older criteria.¹³

Adequate excision is important in all grades of tumor. Low-grade tumors have the most favorable outcome in that approximately 90%-95% of patients are considered cured. High grade tumors have a markedly worse prognosis; only 30%-54% of patients survive.¹⁴ A worse biologic outcome is associated with increased patient age, larger tumor size, and symptoms of pain or paresthesia.¹⁵ Radical surgery is the treatment of choice for all high-grade MECs and for low- or intermediate-grade tumors that are large and involve the bone.^{12,16} Although the mucoepidermoid carcinoma in this case was diagnosed as low-grade, the surgical margins were positive and the patient was referred for a wider excision.

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

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