Oral mucosal disease is an integral part of the dental practice. Dental practitioners are the first-line providers a patient sees for an evaluation of oral lesions, so they must know the basics of oral pathology and forming a differential diagnosis. Knowing the difference between benign and malignant lesions can save lives. Accurate diagnosis not only leads to early intervention or specialist referral, but also avoids unnecessary office visits and inappropriate treatments. So, let's see if you can name that lesion!
**One**

Here’s an image of the left buccal mucosa. A 65-year-old patient who presented to the dental clinic for a hygiene visit states he has a “sore” in his mouth that has been there for a month. He also broke a tooth around the same time. The lesion has not changed in size over the past month and causes a mild level of pain.

**Answer: Traumatic ulceration.**

Traumatic ulcerations will show an area of erythema surrounding a yellow fibrinopurulent membrane. Sometimes there can be a rolled white border of hyperkeratosis adjacent to the ulcerated area. Notice the proximity of the ulceration to tooth #18, which is fractured. The clinical appearance of this lesion points to a clear traumatic etiology. While these lesions generally heal in 2 weeks, they will not heal appropriately if the source of trauma is not removed. In this patient’s case, he needed to have #18 treated for the site to heal.

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**Two**

A healthy 22-year-old patient presents with a growth on her lip. She reports a history of biting on it, which causes pain. Clinical exam shows a soft, ulcerated, well-defined growth on the lower left labial side of the lip. When the patient closes, the lesion approximates the occlusal line.

**Answer: Traumatic fibroma.**

A fibroma is a reactive hyperplasia of fibrous connective tissue. This occurs because of a local irritant or trauma. They are commonly located on mucosa that approximates the occlusal line (such as the buccal mucosa, lower lip) but can occur anywhere in the mouth. Clinically, the lesion usually appears as a sessile nodule with a smooth, pink surface. The overlying mucosa is typically similar to the surrounding mucosa, but sometimes can appear pigmented, keratotic or ulcerated. It is generally soft-feeling on palpation. Conservative surgical excision is treatment of modality for a symptomatic lesion.
A 72-year-old patient presents with pink areas on the tongue and hard palate that were noticed at a routine dental recall appointment. He is asymptomatic. The clinical exam reveals a large, well-defined, depapillated pink area on the dorsal surface of the tongue, as well as a diffuse erythematous region on the hard palate. Both lesions are located near the midline of the sites. The patient is a smoker and has medication-induced xerostomia. His medications include cyclobenzaprine for back-muscle spasms and tamsulosin for benign prostatic hyperplasia.

Answer: Erythematous candidiasis.
(Tongue: central papillary atrophy/median rhomboid glossitis; palate: chronic multifocal candidiasis)

Candidiasis is a common fungal infection that affects the oral cavity. This is an opportunistic infection that occurs when the oral flora is altered from dry mouth, smoking, immune suppression, antibiotic use and the like. There are several types, including pseudomembranous, erythematous, central papillary atrophy, chronic multifocal, angular cheilitis, denture stomatitis and hyperplastic. Central papillary atrophy is a form of erythematous candidiasis that does not display the typical white, wipeable lesions of candidiasis. Patients may complain of sensitivity, such as burning of the mucosa. The clinical presentation of this lesion will show a well-demarcated area of erythema and depapillation at the midline of the tongue. When the tongue is at rest, it can contact the palate, which then becomes infected. When other sites like this are affected, the presentation is called chronic multifocal candidiasis. Antifungal medication is the treatment of choice.

Common mistakes
- There are several different types of oral candidiasis. Pseudomembranous candidiasis is the most common form, but the other, less common types are often overlooked.
Diagnostic pearls

• If a lesion persists after two weeks of follow-up, a referral to a specialist and a biopsy should be considered.

• Understand how to establish a differential diagnosis. Use a systematic approach when diagnosing an oral lesion.

• There are three major categories that oral lesions fall under: developmental, neoplastic, and reactive. Developmental lesions are congenital and hereditary. Neoplasms are abnormal growths of tissue, and these may be benign or malignant. Reactive lesions may occur as a result of trauma, infection, inflammation, or autoimmunity. A helpful way to categorize the type of oral lesions is to know the types of tissue that the oral lesion involves (i.e. epithelium vs. connective tissue).

A healthy 60-year-old patient presents for a routine dental recall visit; on examination, you find a well-defined sessile vascular lesion on the left lateral border of the tongue. She tells you it’s been there for decades. It has not changed in size and does not cause any pain. Upon palpation, it does not blanch.

Answer: Vascular malformation.

A vascular malformation is a structural abnormality of a blood vessel. These are present at birth and persist throughout life, unlike a hemangioma, which occurs at birth but gradually involutes. The types of vascular malformations include capillary, venous, lymphatic and arteriovenous. These are common lesions that account for about 7% of all benign tumors. Most vascular malformations occur in the head and neck. Treatment depends on the size and symptoms for the patient and can involve surgical removal, sclerotherapy, lasers or radiographic embolization. In this case, the lesion was small, and the patient was asymptomatic. No treatment was rendered.
A 76-year-old patient presents for an evaluation of the right side of his tongue. The right side of the tongue shows a large erythematous, keratotic, firm, verrucoid mass. He has severe pain over the tongue mucosa and has restricted range of motion of the tongue musculature. When he protrudes his tongue, it deviates to the right side. He smokes a pack of cigarettes a day, and has done so for the last 45 years.

Answer: Squamous cell carcinoma.

Squamous cell carcinoma is the most common type of oral malignancy. While a single causative agent has not been identified, there are certain risk factors, including tobacco and alcohol use. Squamous cell carcinoma may also be preceded by a potentially malignant lesion such as leukoplakia. High-risk sites are the tongue and floor of mouth. Early detection is paramount. Nerve involvement indicates progression of the disease and poorer prognosis. In this case, the patient has pain (which suggests trigeminal nerve involvement) as well as deviation of the tongue on protrusion (which suggests hypoglossal nerve involvement). Prompt referral to a head and neck surgeon is necessary for a comprehensive diagnostic work-up and treatment.

A 65-year-old patient presents with ulcers all over his mouth. He reports these lesions began 2 years ago. He’s already seen another dentist, an oral surgeon, and an ear, nose and throat physician, and reports having had two biopsies done with a nonspecific histopathologic diagnosis. He states he was diagnosed with burning mouth syndrome—he experiences pain and cannot eat spicy foods. His medical history is noncontributory. He denies oral blisters preceding the ulcerations. The lesions are constant, but they can wax and wane in severity.

Answer: Oral lichen planus, erosive type.

Lichen planus is an immune-mediated mucocutaneous disease that often involves the oral mucosa. It occurs through a T-cell mediated process. It is more common in women (3:2 female/male ratio) and may affect the skin, presenting as purple, pruritic, polygonal papules. There are different forms: reticular, erosive, plaque-type and bullous.

The erosive type causes symptomatic lesions, while the reticular form is more common and does not cause symptoms. Clinically, the patient will exhibit ulceration surrounded by atrophic, erythematous areas. These lesions can present similarly to mucous membrane pemphigoid and pemphigus vulgaris, so biopsies should be done under light microscopy and immunofluorescence. Management involves topical and/or systemic corticosteroids or other immunomodulating medications.
Common mistakes

- It’s easy for dental professionals to focus on the oral cavity during the examination. However, we have easy access to examine the entire head and neck, including the skin. Remember to look for suspicious skin lesions!

An 85-year-old patient presents with a persistent, painful lesion on his lower lip that began 2 years ago. A few months ago, he noticed involvement of the upper lip as well. Local treatments such as lip balm application and sunscreen are not helping.

Answer: Actinic cheilitis; possible squamous cell carcinoma.

Actinic cheilitis is a common, potentially malignant lesion that usually affects the lower lip vermilion. It is due to chronic UV light exposure. This lesion typically affects middle-aged to elderly and fair-complexioned men. Spending increased times outdoors is a risk factor. Actinic cheilitis is a slowly developing lesion, so most are unaware of it. Clinical features include atrophy, dryness, fissures and crusting. The margin between the vermilion and adjacent skin can be blurred. The lesion can progress to a chronic ulceration, which can persist and ultimately progress to squamous cell carcinoma. A biopsy should be performed to rule out squamous cell carcinoma. Patients also need to see a dermatologist. Reduced sun exposure and other protective measures, such as sunscreen application, should be emphasized.

A 56-year-old female was referred to the clinic with a lesion on the gingiva. She feels a rough area there but otherwise does not report any symptoms. She denies any trauma to the site and is not aware of any pattern to the lesion. She has never smoked and does not drink any alcoholic beverages.

Answer: Squamous papilloma.

A squamous papilloma is a small, benign growth resulting from the proliferation of stratified squamous epithelium. It is an HPV-induced lesion (Types 6 and 11). These types are the nononcogenic type, and this particular lesion has an extremely low infectious potential and virulence rate. Clinically, it will exhibit a verruciform, papillary, wartlike appearance. Squamous papillomas can occur commonly and at any age. They are often found in children, but also in adults 30–50. Conservative surgical excision is the treatment modality; the base of the lesion must be excised. Lesion recurrence is very low.

Differential diagnoses include: verruca vulgaris (common wart); verruciform xanthoma; condyloma acuminatum.
A 66-year-old female presents for an evaluation of a white lesion on the right side of the tongue, which was noticed by her hygienist at a routine dental recall. She is not sure how long it’s been there, and does not experience pain. All adjacent teeth are smooth. She has never smoked and occasionally drinks alcoholic beverages (1 glass of wine, once a month). Her medical history is noncontributory.

Answer: Leukoplakia (clinical, descriptive term), mild epithelial dysplasia (histopathologic diagnosis).

Leukoplakia is a descriptive term for a white plaque or patch that cannot be classified clinically or pathologically as any other disease. It is, therefore, a diagnosis of exclusion; other disorders that cause white lesions—such as frictional keratosis, candidiasis, and lichen planus, drug-induced—must be excluded. Leukoplakic lesions are considered to be potentially malignant; therefore, a biopsy is necessary to rule out other causes of keratosis and to assess for the presence of epithelial dysplasia. Leukoplakia can be characterized as thin or thick; homogenous or nonhomogenous; and granular, nodular or verrucous.

This particular lesion is a homogenous leukoplakia and was diagnosed as mild epithelial dysplasia after biopsy. Management depends on the grade of epithelial dysplasia and overall clinical context. Most mild epithelial dysplasias can be monitored every 3 months. Rebiopsy is necessary if the lesion recurs or changes in characteristics. Moderate and severe epithelial dysplasias should be excised.