Common Oral Mucosal Lesions in Adults

Donald Yeatts, James C. Burns

(American Family Physician, dec 1991, vol 44, no 6, 2043-2050)

Patients often present to family physicians with oral lesions. According to a recent study, the 10 most common oral mucosal lesions comprise almost three-quarters of oral lesions. The most common oral lesions are leukoplakia, tori, inflammatory lesions, fibromas, Fordyce's granules, hemangiomas, ulcers, papillomas, epuli and varicosities.

Oral lesions are common in the adult population. As a group, oral lesions are more common than tension headaches, phlebitis or arthralgias. In 1986, the Journal of the American Dental Association reported a study that identified the most common oral soft tissue lesions in an adult population of 23.616 patients. The 30 most common lesions accounted for 93 percent of all reported lesions. This article discusses the clinical appearance, differential diagnosis and management of the 10 most common lesions found in the study (Table 1). These lesions accounted for 74 percent of all reported oral lesions in the study population.

Table 1. The 10 Most Common Soft Tissue Oral Lesions

Entity	Percentage of all oral lesions
Leukoplakia	18.2
Palatal or mandibular torus	17.2
Inflammation or irritation	10.8
Irritation fibroma	7.4
Fordyce's granules	5.9
Hemangioma	3.4
Inflammatory ulcer	3.2
Papilloma	2.9
Epulis fissurata	2.6
Varicosities	2.1
Total	73.7.

Leukoplakia

Leukoplakia is a nonspecific clinical term used to describe a white patch on the oral mucosa that cannot be rubbed off (Figure 1). Leukoplakia does not correlate with any particular microscopic findings and may be related to a variety of lesions, from benign hyperkeratosis to carcinoma.

The presumptive causative factors of leukoplakia include tobacco use, alcohol consumption, oral sepsis, local irritation, syphilis, vitamin A deficiency, endocrine disturbances, dental galvanism and actinic radiation (in the case of lip involvement).

Leukoplakia occurs chiefly in older persons, with approximately 90 percent of the lesions found in patients over 40 years of age. Leukoplakia occurs with greater frequency in males than females, although a few studies show no gender preference.

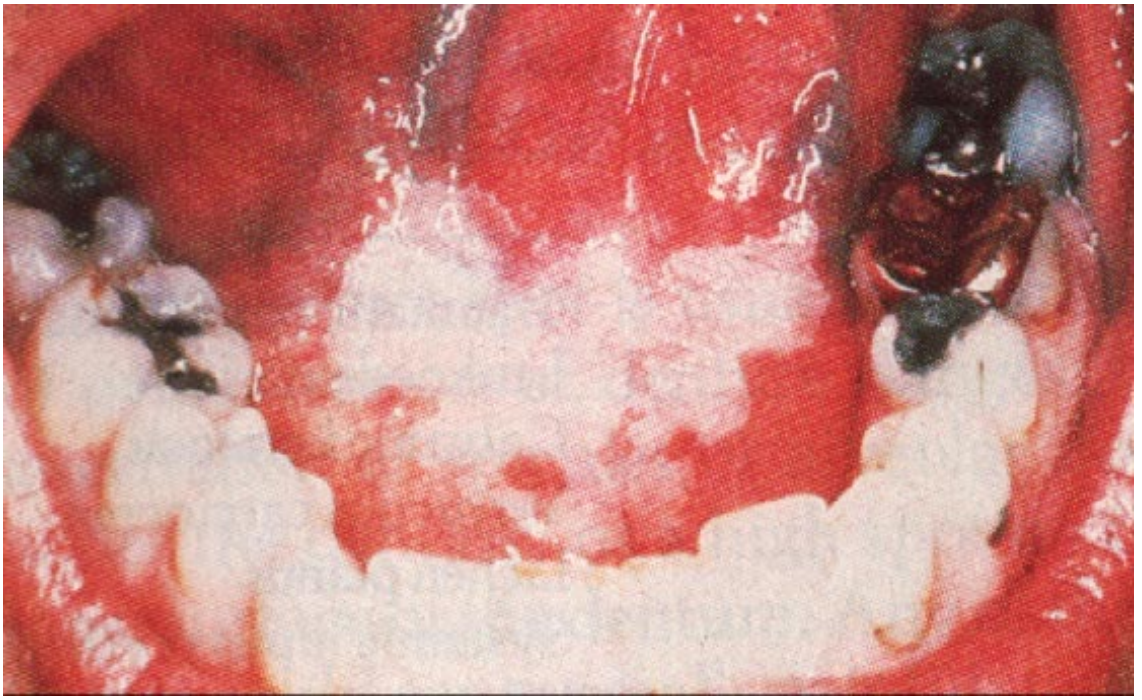

Figure 1. Leukoplakia, a white plaque that does not rub off, seen here on the floor of the mouth.

Leukoplakia is located on the tongue, mandibular alveolar ridge and buccal mucosa in about 50 percent of patients. The palate, maxillary alveolar ridge and lower lip are somewhat less frequently involved, and the floor of the mouth and the retromolar regions are comparatively infrequently involved.

Clinically, leukoplakia may vary from nonpalpable, faintly translucent white areas to thick, fissures, papillomatous, indurated lesions. The surface is often wrinkled or shriveled in appearance and may feel rough on palpation. The color may be white, gray, yellowish-white, or even brownish-gray in patients with heavy tobacco use.

The range of lesions that appear to be leukoplakia can be narrowed by simply wiping the surface of the lesion with a gauze pad (Table 2). If it cannot be wiped away, lesions such as candidiasis and aspirin burn may be disregarded. Leukoplakic lesions should be biopsied to obtain a definitive diagnosis.

A major problem with leukoplakia is that the histologic status of the lesion - whether benign or malignant - cannot be distinguished by clinical appearance alone. Studies have shown that approximately 6 percent of patients with leukoplakia have invasive carcinoma on initial biopsy, and in 4 percent, the

lesion undergoes subsequent malignant transformation. This is a major difference from erythroplakia (a red plaque that does not rub off), which is a dysplastic lesion (or worse) in 90 percent of cases. Thus, immediate management is required in patients with erythroplakia.

Initially, etiologic factors such as trauma from habitual biting, dental appliances or restorations, or dislodged or carious teeth should be identified and eliminated. Tobacco and/or alcohol use should be discontinued immediately. If the lesion persists, biopsy is mandatory. If the area of involvement is large, multiple biopsies may be necessary.

In the absence of dysplasia or atypical epithelium, periodic and careful follow-up is appropriate. If elements of dysplasia or anaplasia are evident, the lesion must be removed.

Palatal or Mandibular Torus

A torus is a nonneoplastic, slowly growing nodular protuberance of bone. Of little clinical importance, a torus is rarely a source of discomfort. Occasionally, the mucosal surface may become ulcerated, but usually the only problem encountered with a torus is interference with denture construction and placement. There is evidence that both mandibular and palatal tori are hereditary.

Figure 2A. Palatal torus.

The palatal torus is a slowly growing sessile, nodular bony protuberance in the midline of the hard palate (Figure 2a). This type of torus is frequently symmetric, occurring in the midline of the hard palate, and has either a flat, spindled, nodular or lobular configuration. The incidence of palatal tori in the USA is as high as 20 to 25 percent; females are affected twice as often as males. The peak incidence occurs shortly before age 30.

Figure 2b. Mandibular torus.

The mandibular torus is a bony, exophytic growth along the lingual surface of the mandible, usually near the bicuspid teeth and above the mylohyoid ridge (Figure 2b). Mandibular tori usually occur bilaterally, but about 20 percent are unilateral. They present as solitary or multiple nodules that appear to coalesce. The incidence of mandibular tori in the USA is 6 to 8 percent, with no gender predilection. The onset is usually before age 30.

Treatment is unnecessary unless the torus causes interference with prosthetic devices or is subject to frequent trauma. Simple excision is preferred, and recurrences are rare.

Inflammation and Irritation

Many of the lesions that are classified as inflammatory or irritative are denture-related, including buccal irritation along the occlusal plane (frictional hyperkeratosis), denture "sore spot" and denture "sore mouth" (Figure 3).

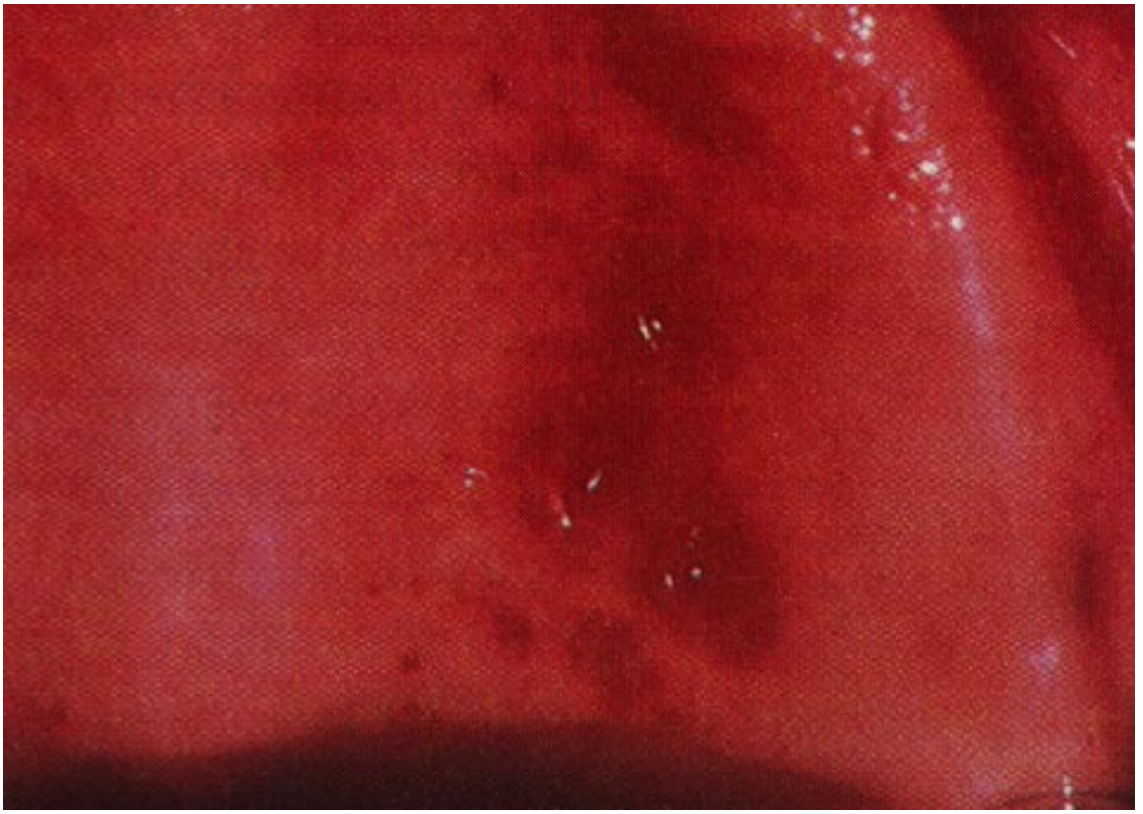

Figure 3. Denture "sore spots" in the palate and edentulous ridge.

Frictional hyperkeratosis is caused by chronic friction against an oral mucosal surface, resulting in a hyperkeratotic white lesion, analogous to a callus on the skin. The lesion is a protective response to low-grade, long-term trauma. When the friction occurs along the buccal mucosa in the line where maxillary and mandibular teeth contact each other, it can produce a white line called linea alba. If the physician is clinically confident of a traumatic cause for the lesion, no biopsy is required. Removal of the cause of irritation usually resolves the problem. If the cause is uncertain, the lesion should be treated as idiopathic leukoplakia, and biopsy should be obtained.

Denture sore spot is usually the result of overextension of denture flanges, sequestration of spicules of alveolar bone under the denture, or a high spot on the inner surface of the denture. Any of these factors could cause small, painful ulcers, characterized by an overlying, grayish necrotic membrane and surrounded by an inflammatory halo. Treatment is aimed at correcting the underlying cause. After the cause is removed, the

ulcer usually heals quickly. Biopsy should be obtained if the lesion does not heal in two to three weeks following elimination of the suspected cause.

Denture sore mouth, also called denture stomatitis, is a relatively frequent condition, found in up to 65 percent of elderly persons wearing complete maxillary dentures. The mucosa beneath the denture becomes extremely red and swollen, with either a smooth or granular appearance. A severe burning sensation is common. The redness of the mucosa is rather sharply outlined and restricted to the tissue that is in contact with the denture. This sharp delineation separates denture sore mouth from erythroplakia.

Denture sore mouth occurs more often on the palatal mucosa than the mandibular alveolar arch. Women are affected more often than men. Although the exact cause is not known, it is thought to be secondary to trauma from a poor prosthesis fit, unbalanced occlusal relationships or poor denture hygiene, including failure to remove the appliance at night. The reaction is not a true allergy to acrylic, since patch testing is usually negative. Fungi are thought to play a major role; yeast-like organisms are cultured in above 90 percent of cases.

Denture sore mouth is treated by leaving the denture out as much as possible and applying nystatin suspension or cream (Mycostatin, Nilstat) to the affected tissue and to the denture itself. Dentures should be removed during sleep. The antifungal regimen should be continued for one week after the disappearance of the lesion.

Irritation Fibroma

Irritation fibroma is the most common benign oral soft tissue neoplasm. It is found frequently in traumatized areas of the mouth, such as the buccal mucosa, lateral border of the tongue and the lower lip (Figure 4). The fibroma is a painless, sessile or occasionally pedunculated swelling that can be firm and resilient or soft and spongy in consistency. The color is slightly lighter than the surrounding mucosa, due to a relative lack of vascular channels. It may be subject to irritation, inflammation or even ulceration. An oral fibroma usually has limited growth potential, seldom growing larger than 1 cm in diameter. Fibromas can occur at any age, but most often are found in persons 20 to 49 years of age. There is no gender or racial predilection.

The differential diagnosis of irritation fibroma is based mainly on the location of the soft tissue swelling. If it is located on the tongue, the possibility of neurofibroma, neurilemmoma or granular cell tumor must be considered. On the lower lip or buccal mucosa, the lesion might be a lipoma, mucocele or salivary gland tumor. Although rare, benign neoplasms of mesenchymal origin should also be considered.

Figure 4. Irritation fibroma on the cheek.

To rule out other pathogenic processes, fibromas can be removed by simple surgical excision. Infrequently, recurrences may be caused by continued trauma at the area. Irritation fibromas have no malignant potential.

Fordyce's Granules

Fordyce's granules are an ectopic collection of sebaceous glands (sebaceous choristomas) at various sites in the oral cavity. The collections are multiple, often occurring in aggregate or in a confluent arrangement. Most frequently, they are bilaterally symmetric on the buccal mucosa opposite the molar teeth (Figure 5). They can also be found on the inner surface of the lips, the retromolar region, the tongue, the gingiva, the frenum and the palate.

Although there is no significant gender difference in the occurrence of this condition, males have a greater number of glands per unit area than females. Because sebaceous glands and the hair system do not reach maximal development until puberty, patients with these lesions are usually post-pubertal. The peak incidence occurs at 20 to 30 years of age.

The possibility that these clusters could be caused by *Candida albicans* can be ascertained by attempting to wipe them

off with a gauze pad; candidal lesions wipe off, but Fordyce's granules do not.

These ectopic glands cause no known untoward effects, and no treatment is required.

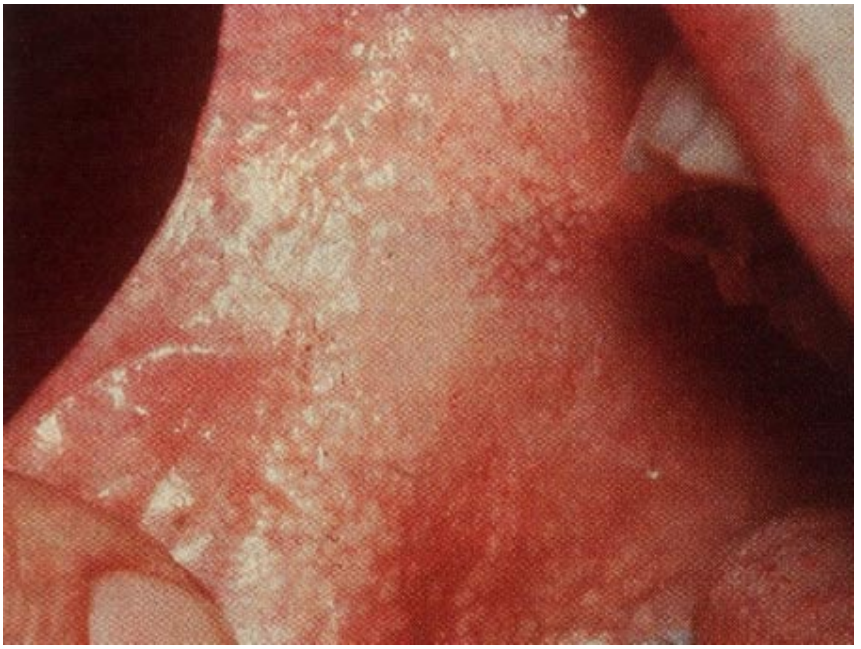

Figure 5. Fordyce's granules (ectopic sebaceous glands) of the buccal mucosa.

Hemangioma

Hemangioma, characterized by a proliferation of blood vessels, is often congenital. Hemangiomas in the oral cavity are flat or raised, with a deep red or bluish-red color (Figure 6). They are seldom well circumscribed. The most common sites are the lips, tongue, buccal mucosa and palate. Because of their location, they are frequently traumatized and can undergo ulceration and secondary infection. One large study of 1.308 hemangiomas found that 85 percent of the lesions had developed by the end of the first year of life. Females were affected at a greater rate than males, by a ratio of almost 2:1.

When the diagnosis of hemangioma is under consideration, the primary lesion to rule out is arteriovenous fistula. A history of trauma to the area of the lesion at the time the lesion is discovered makes arteriovenous fistula more likely.

Many hemangiomas spontaneously regress at an early age. If they require treatment, surgery, sclerosing agents, carbon dioxide "snow" or cryotherapy may be used. The prognosis is excellent, since hemangiomas do not become malignant and do not recur after adequate treatment.

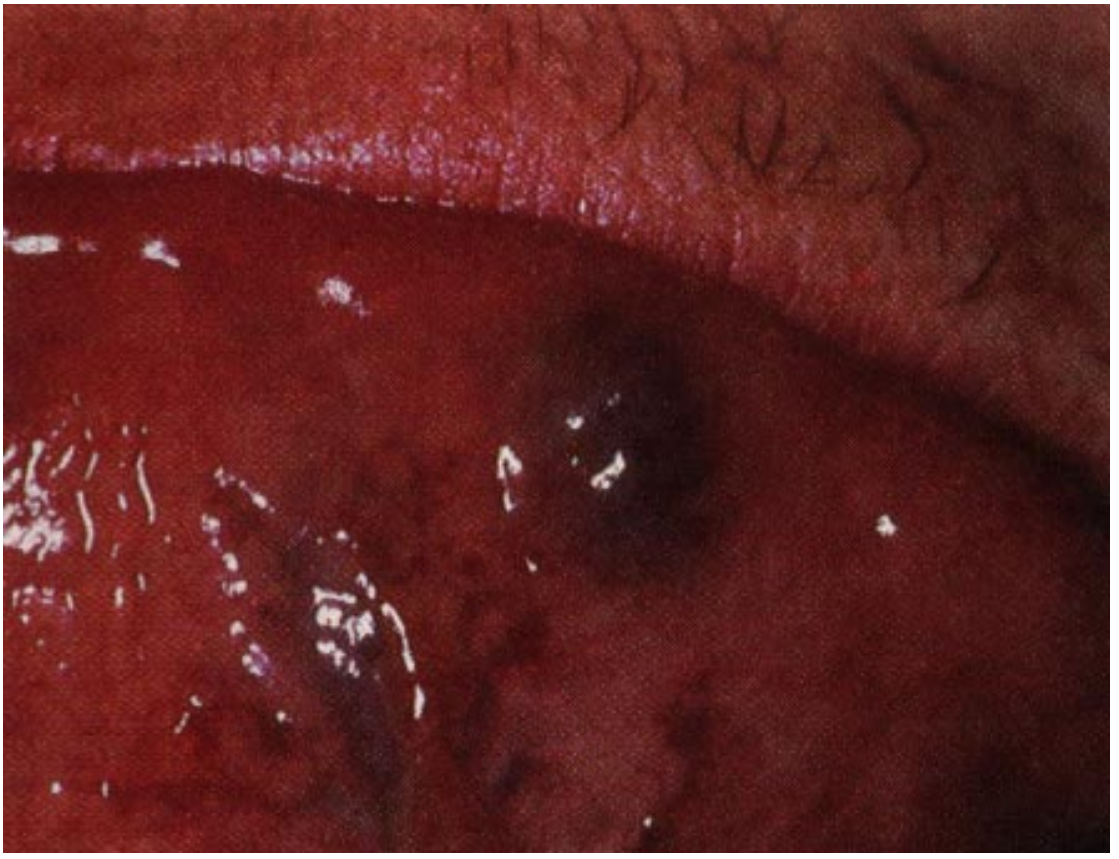

Figure 6. Hemangiomas on the ventral tongue.

Inflammatory Ulcer

The lesions described as inflammatory ulcers include aphthous and traumatic ulcers. Aphthous ulcers are painful, recurring, solitary or multiple necrotizing ulcerations of the oral mucosa. The incidence of these lesions ranges from 20 to 60 percent, depending on the population studied. The cause of aphthous ulcers is unknown, although immunologic, microbiologic and nutritional factors have been implicated.

Clinically, aphthous ulcers present as painful lesions. Patients occasionally have prodromal burning or tingling. Most commonly, aphthous ulcers occur on the buccal and labial mucosa, buccal and lingual sulci, ventral tongue, soft palate and floor of the mouth. Oral mucosa that is bound to periosteum, such as the gingiva and hard palate, are rare locations for aphthous ulcers, providing an important method of distinguishing aphthous ulcers from secondary herpetic ulcers.

The three recognized forms of aphthous ulcer are thought to be part of the same disease spectrum and to have a common etiology. The minor form is usually solitary, oval and under 1 cm in diameter; it lasts seven to 10 days. Major aphthous ulcers are multifocal, have ragged edges and may be up to 2 cm in diameter. They may last up to six weeks and may be immediately succeeded b

a recurrent ulcer. The third type, herpetiform ulcers, occurs in crops that heal in one to two weeks.

A history of vesicles preceding the ulcers, a location on periosteally bound mucosa and crops of lesions are indicative of secondary herpetic ulceration. Other painful oral ulcerative conditions to consider are trauma, pemphigus vulgaris and cicatricial pemphigoid. In addition, aphthous ulcers may be a manifestation of systemic disorders such as Crohn's disease, neutropenia and sprue.

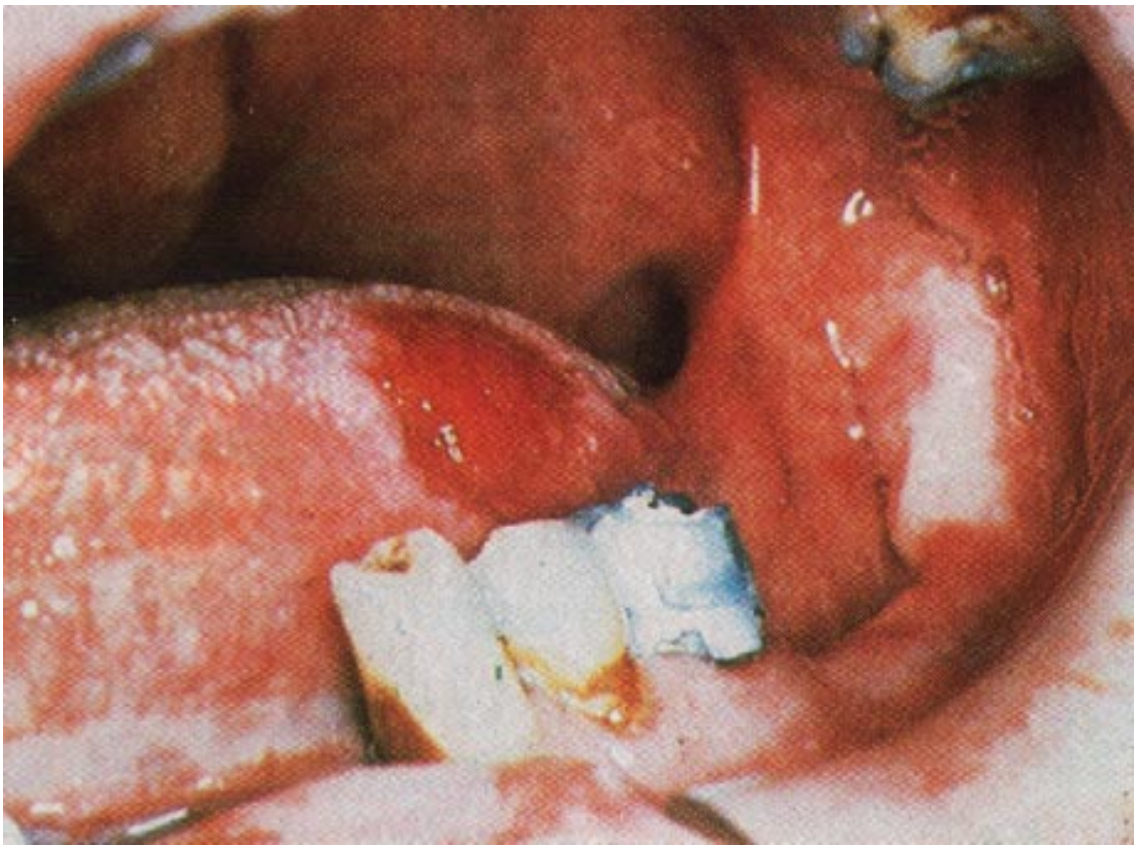

Figure 7. Traumatic ulcer caused by ill-fitting temporary crown.

There is no cure for aphthous ulcers. Minor ulcers usually require no specific treatment. However, painful or more severe ulcerations should be treated. Topical steroids (0.5 percent hydrocortisone), in a vehicle that allows adherence to the ulcer, such as Kenalog in Orabase, can be relatively safe and effective in the treatment of mild to moderate lesions. Systemic steroids are effective for more severe ulcers. Tetracycline mouth wash (Achromycin V Oral Suspension) provides fair to good results, possibly by eliminating secondary bacterial infection. Chlorhexidine gluconate oral rinse (Peridex) also may provide some relief, possibly by diminishing oral bacteria or the binding of free nerve endings and epithelial cells.

Traumatic ulcers are caused by oral injury or irritation such as biting, denture irritation, toothbrush injury, exposure to a sharp or carious tooth, or an external irritant (Figure 7). These lesions often occur on the lateral border of the tongue, the buccal mucosa, the lips and the palate. In most cases, healing is rapid and uneventful when the trauma is removed. The history usually makes the diagnosis of traumatic ulcer simple, but physicians should be alert to the possibility of carcinoma when an ulceration does not heal.

Papillomas

Papillomas are papillary and verrucal growths that are composed of benign epithelium and a small amount of supporting connective tissue. Whether all intraoral squamous papillomas are etiologically related to cutaneous verruca vulgaris is not clear. Some oral papillomas have been associated with the same human papillomavirus subtype that causes cutaneous warts, as well as with other subtypes of the virus.

Figure 8. Papilloma on the lateral border of the tongue.

Intraoral papillomas are asymptomatic, well-circumscribed, usually pedunculated growths with numerous, small finger-like projections. They are generally less than 1 cm in diameter and are most often solitary. Papillomas may be found on any intraoral mucosal site and the vermillion border of the lips, but they have a predilection for the hard and soft palate, the uvula, and the tongue (Figure 8). The most common site is the soft palate.

Other lesions have a similar appearance. Verruciform xanthomas have a distinct predilection for the gingiva and

alveolar ridge. Warty dyskeratoma tends to occur as multiple lesions. Condylomata acuminata are usually larger and multifocal, with a broader base than papillomas.

The route of viral transmission is unknown, although it is presumed to be direct contact. The treatment of choice is surgical excision, which should include the base of the mucosa into which the pedicle or stalk inserts. With proper excision, papillomas rarely recur, except in cases involving the larynx.

Epulis Fissurata

Also called denture-induced fibrous hyperplasia, fibrous inflammatory hyperplasia and denture hyperplasia, epulis fissurata is a common tissue reaction to chronically ill-fitting dentures. The epulis usually occurs in the vestibular mucosa, where the denture flange contacts the tissue (Figure 9). As the bony maxillary and mandibular alveolar ridges resorb over a prolonged period, the flanges extend further into the soft tissue of the vestibule, causing chronic irritation and trauma, which can lead to an exuberant fibrous connective tissue response. This same response occurs in traumatic fibromata, but there the denture is specifically defined as the causative agent.

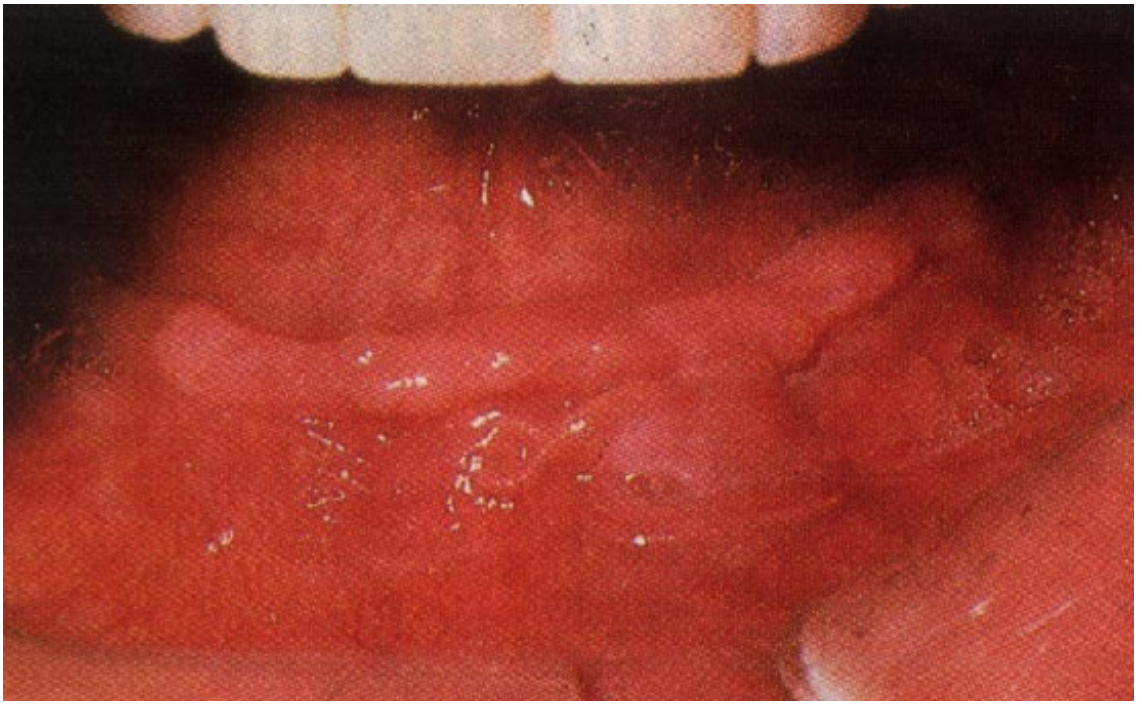

Figure 9. Epulis fissurata (focal inflammatory fibrous hyperplasia) in the labial vestibule, caused by an ill-fitting denture.

Epulis fissurata consists of painless folds of fibrous connective tissue that are firm to palpation and into which the denture flange conveniently fits. The lesion is not usually highly inflamed, but may be irritated or even ulcerated in the base where the edge of the denture flange fits.

Conservative treatment consists of constructing new dentures, relining or rebasing the old denture and surgical excision of the epulis.

Varicosities

Dilated, tortuous veins in the oral cavity are attributed to increased hydrostatic pressure and poor support by surrounding tissues. They are commonly located on the ventral aspect of the tongue (Figure 10), but may also be found on the upper and lower lips, the buccal mucosa and the buccal commissure. They are blue and blanch when compressed. Occasionally, they are accompanied by thrombosis, which gives them a firm texture. Oral varicosities have not been directly associated with any other specific organic disease. They are of little clinical significance, and therefore no treatment is required.

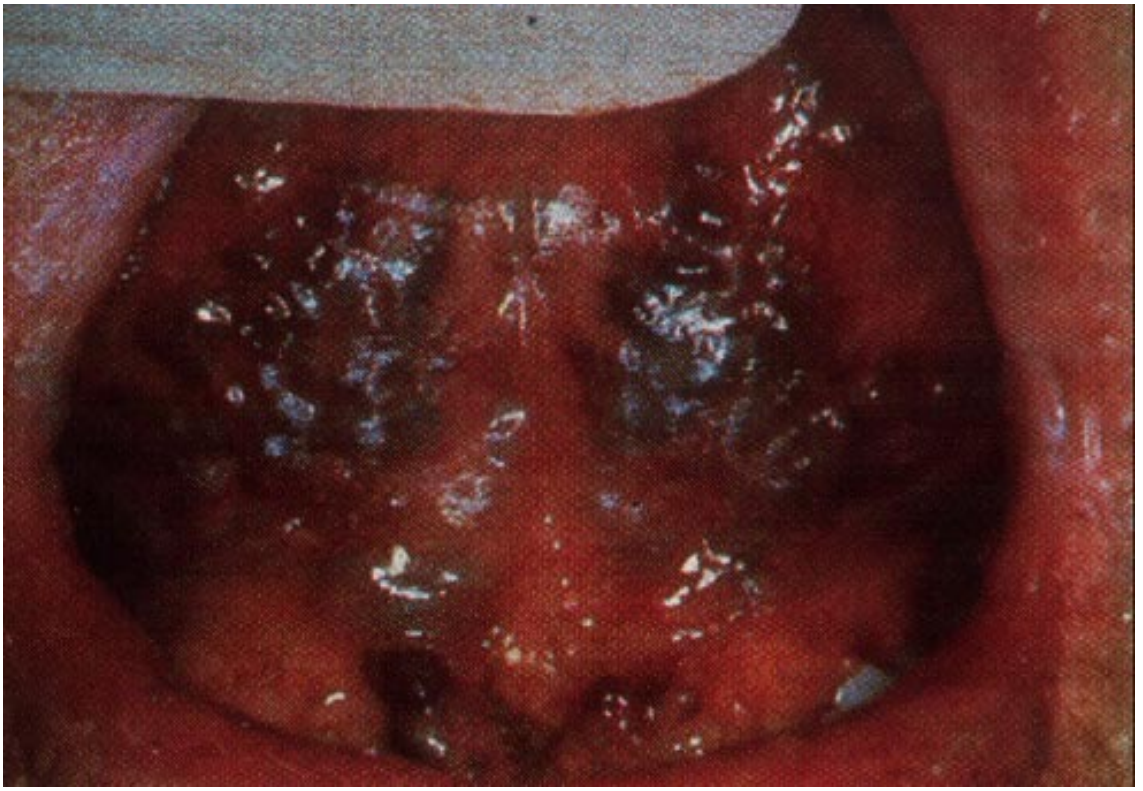

Figure 10. Sublingual varicosities.