Chapter 7: Lesions of the Oral Cavity

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Ulcerated Lesions - Single, Painful

Traumatic Ulcer

Subjective Complaints

The patient with a traumatic ulcer will complain of an isolated intraoral "sore" with pain and/or tenderness in the area of the lesion. The patient can usually identify lesional etiology (ie, a broken tooth). Lesions can occur on any mucosal surface, but are common on the tongue, lips, buccal mucosa, and gingiva. Short-term (no more than 3 weeks) tenderness may be found in these areas.

Objective Findings

Mucosal ulcers of less than 3 weeks' duration are usually identified. Lesional borders may be slightly raised, with a peripheral red halo. The center of the lesion is frequently filled with yellow to brown necrotic debris. The surface may be crusty, especially in the areas on the lips which are not continually bathed in saliva. The traumatic ulcer will often conform to the shape of the initiating agent (ie, broken tooth, broken prosthetic appliance, trauma from athletic injury, or trauma from an automobile accident). Occasionally a small amount of purulent material can be identified on the surface of the ulcer; mild lymphadenitis from contamination of the lesion by oral microorganisms may result.

Assessment

Carefully identify the etiology or elicit the cause of injury. Most traumatic ulcers become painless after 3-4 days and heal within 10-14 days. Occasionally lesions will persist for several weeks if repeated trauma occurs. The differential diagnosis should include squamous cell carcinoma, intraoral chancre, ulcer secondary to systemic disease, herpes simplex ulcer, and recurrent aphthous ulcer.

Plan

Debride the ulcer thoroughly. Examine the surface extensively for induration (a common feature of squamous cell carcinoma, but not traumatic ulcer). Remove or restore the etiologic agent if it is a fractured tooth. Application of a topical protective emollient such as Orabase (before bedtime and after meals) may provide some symptomatic relief. Triamcinolone (Kenalog in Orabase) should not be used without ruling out a viral etiology, since steroid preparations can enhance viral activity. Smears from herpetic ulcers will show cells with ballooning degeneration and multinucleated giant cells. Persistent ulcers not responding to the foregoing regimen should be surgically excised, closed primarily, and submitted for microscopic tissue examination.
Recurrent Aphthous Ulcer

Subjective Complaints

Patients characteristically complain of shallow painful mucosal ulcers ranging in diameter from 0.5 to 3 cm. Lesions are usually confined to the freely movable mucosa of the lips, buccal mucosa, tongue, soft palate, and mucobuccal fold.

Objective Findings

The initial lesions of recurrent aphthous ulcers may be macular or papular, but ultimately they ulcerate and become rimmed by a persistent red halo. Recurrent aphthous ulcers usually present as a single mucosal lesion as opposed to the crop or cluster form presentation of herpetic lesions. The mature aphthous lesion is a nonspecific ulcer which is frequently difficult to differentiate from squamous cell carcinoma, systemic ulcer, herpetic ulcers, or ulcerated vesiculobullous diseases such as erosive lichen planus, benign mucous membrane pemphigoid, or a syphilitic ulcer.

Assessment

Mucosal trauma must be evaluated in an attempt to rule out traumatic ulcer. A serology and a smear for giant cell inclusions will be helpful in eliminating a syphilitic lesion and recurrent herpes simplex. Lymphadenopathy is a nonspecific finding that can accompany any of the lesions listed. There is no age specificity for recurrent aphthous lesions.

Plan

Most recurrent intraoral aphthae resolve in 7-14 days without treatment. An oral suspension of uncoated Achromycin crystals, 250 mg per teaspoon in 5 mL of water, to be flushed over the lesion for 2-3 minutes may be helpful. Triamcinolone acetonide emollient may be helpful after meals and prior to going to bed (herpetic lesions must have been ruled out via a smear for giant cell inclusions, prior to this steroid application). Occasional analgesics are useful for pain.

Syphilis (Oral Chancre)

Subjective Complaints

Subjective symptomatology includes a solitary painful mucosal ulcer (usually on the lips or tongue). Tender lymph nodes are a common complaint in the early stages of the disease.

Objective Findings

Inspection will generally reveal a crateriform ulcer with a shiny center that is devoid of necrotic material. The borders may be indurated. Chancres may last for periods ranging from 2 weeks to 2 months, therefore, a differential diagnosis should include squamous cell
carcinoma, persistent traumatic ulcer, herpetic ulceration, and recurrent aphthous ulcer. Definitive diagnosis is quite difficult on the basis of clinical observation alone.

Assessment

The history of a mucosal ulceration is of course not specific for syphilis, nor is lymphadenopathy. Numerous screening tests may assist in establishing a diagnosis including a Kahn, Wassermann, or reactive plasma reagin test. If these are positive, a fluorescent treponemal antibody test may prove helpful. Biopsy and microscopic tissue examination are rarely diagnostic; however, microscopic findings of vasculitis and endarteritis may be highly suggestive.

Plan

Syphilis can be managed by systemic penicillin in its early stages. Secondary lesions (macules, papules, and papillomatous lesions) and gummatous ulcerations can occur as secondary and tertiary phases, respectively; however, intraoral mucous patches and gummas are relatively uncommon findings today.

Ulcers Secondary to Systemic Disease

Subjective Complaints

Nonspecific painful ulcerations on any oral mucosal surface.

Objective Findings

Examination will reveal a painful, well demarcated, shallow ulcer with an erythematous halo. Lymphadenitis is nearly always present. A thorough history and screening tests are necessary to rule out syphilitic disease, aphthous ulcers, and herpetic ulcers. Biopsy is necessary to diagnose squamous mucosal neoplasia. Antineoplastic chemotherapeutic agents frequently cause oral mucosal and gastrointestinal ulceration. A thorough drug history is therefore mandatory in the cancer patient.

Assessment

The frequency of oral mucosal ulcerations secondary to non-neoplastic systemic disease is limited. Such ulcers most often occur in uncontrolled diabetes, anemia, and uremia.

Plan

Depending on history, a thorough hematologic and chemistry workup, evaluation of renal function, and glucose tolerance test may be warranted.
Squamous Cell Carcinoma (Ulcer) - Single, Painless

Subjective Complaints

Persistent ulceration of the oral mucosa. The most common sites are the lips, tongue, and floor of mouth. The patients are commonly heavy smokers or alcohol abusers.

Objective Findings

Classic clinical findings include a solitary crateriform lesion with an elevated, rolled, indurated border. The ulcer is usually devoid of necrotic debris. The ulcer base usually appears red and granular due to the lack of keratinization. Occasionally when a large lesion occurs on the tongue, detectable alteration in speech patterns may be discerned. The lateral border of the tongue is the most frequent site of intraoral occurrence. Superficial cervical, submaxillary, or submental lymphadenopathy may be present. Distant metastases can be observed in the lungs, liver, or other nodal sites in late stage disease.

Assessment

It is often difficult to distinguish squamous cell carcinoma from benign nonspecific ulcers, such as the type that occurs in herpes simplex, recurrent aphthous ulceration, or traumatic ulcer. As a rule, squamous cell carcinoma is much more persistent than the aforementioned, although it is rarely painful as an early lesion. The patient will commonly fit the classic pattern of being a male over 40 who smokes and/or drinks heavily. By ruling out a history of trauma and obtaining a negative serology, one becomes even more suspicious that an isolated indurated oral ulcer may be squamous cell carcinoma.

Plan

As a general rule, when a suspicious ulcer is identified on the oral mucous membrane, it should be followed extremely closely to determine whether it is transient or persistent. Lesions that do not show signs of regressing within 10 days to 2 weeks require biopsy. If the clinician is extremely suspicious of the lesion on initial observation, there is no need for an observation period, and biopsy or referral are indicated at that juncture. It is always to use a Tumor Board approach to the management of oral malignancy. These lesions require a cooperative management approach often involving general practitioners of dentistry or medicine, otolaryngologists, chemotherapy, oncologists, and therapeutic radiologists. Squamous cell carcinomas require staging to include exact lesional size and extent, degree of infiltration of surrounding structures, lymph node involvement, and the presence or absence of distant metastases. The irradiated patient requires special consideration, and close cooperation between the dentist and physician is required to ensure meticulous oral hygiene and frequent applications of fluoride to minimize radiation cares. Frequent evaluation for postirradiation xerostomia or bony necrosis is also mandatory. Maxillofacial and social rehabilitation of the patient often require the efforts of a maxillofacial prosthodontist, speech therapist and psychiatric social worker.
Multiple Ulcerated Lesions

Herpes Simplex Ulceration - Multiple, Painful

Subjective Complaints

The most frequent complaint tends to be recurrent painful superficial ulcers of 7-14 days' duration on fixed oral mucous membrane that is tightly bound to periosteum (including the hard palate, alveolar ridge, and gingiva). Prior to ulceration, the lesions may have consisted of rather small, nontender, discrete gray or white vesicles without a halo.

Objective Findings

Initial lesion - small vesicles which ulcerate leaving punctate ulcers less than 1 mm in diameter. These punctate ulcers frequently coalesce to form a large solitary lesion. Tender submental, submaxillary, or cervical lymphadenopathy may be present. Herpetic lesions must be differentiated from recurrent aphthous ulcers, traumatic ulcers, squamous cell carcinoma, chancre, intraoral gumma, and ulcers secondary to systemic disease. Primary herpetic gingivostomatitis is a disease of childhood, secondary exacerbations are common in the adult. Lymphadenopathy is almost always present in the child, as is involvement of the labial mucosa; these findings are less common among adults with secondary herpetic lesions.

Assessment

The complaint of pain associated with an oral ulcer does not allow one to specifically identify the disorder involved, since nearly all oral ulcers ultimately become painful. Lymphadenitis also frequently accompanies oral ulcers. As a general rule, squamous cell carcinoma and other intraoral malignancies are not painful in their early stages. A chancre may be ruled out if a smear of the lesion is negative for spirochetal immobilization by syphilitic antiserum. Traumatic ulcer should be considered if a source of physical injury can be determined. Recurrent aphthous ulcers generally present a freely movable mucosa, as opposed to herpetic ulcers which occur on mucosa tightly bound to periosteum. A positive smear can be helpful in identifying herpetic lesions, of one can identify epithelial cells with ballooning degeneration and multinucleated giant cells microscopically.

Plan

Recurrent intraoral herpes simplex ulcers usually resolve in 8-14 days regardless of management. Kenalog in Orabase is contraindicated, since a corticosteroid may contribute to viral dissemination. Cryotherapy and photochemical activation have been tried, but have been largely unsuccessful, and may be dangerous. Debridement with application of a topical protective emollient (eg, Orabase) may provide symptomatic relief. Longstanding, persistent ulcers that do not resolve or that become indurated require biopsy to rule out neoplasia.
Gingival Ulcers, Multiple (Acute Necrotizing Ulcerative Gingivitis)

Subjective Complaints

Tender or intense generalized pain in the gingiva with fetid breath and intermittent gingival bleeding is the common symptomatic complaint.

Objective Findings

Clinical examination will generally reveal partial or complete destruction of the interdental papillae. A gray-white pseudomembrane with focal areas of ulceration and necrosis with often cover interdental papillae and marginal gingiva. Removal of the pseudomembrane leaves a raw bleeding surface. Patients frequently have regional lymphadenopathy and an elevated temperature. There is no apparent sex predilection for this disease that most often affects adolescents and young adults.

Assessment

One clinical manifestation of acute necrotizing ulcerative gingivitis (ANUG) (punched out interdental papillae) is frequently pathognomonic. Occasionally localized gingival candidiasis, diffuse gangrenous stomatitis associated with systemic disease or malignancy, and gingivitis associated with sickle cell anemia have to be considered in the differential diagnosis. A sickle cell hemoglobin electrophoresis preparation and smear for Candida albicans organisms will help eliminate two of the aforementioned. An oncologic and clinical laboratory workup may be necessary to rule out systemic or neoplastic disease.

Plan

The management of acute necrotizing ulcerative gingivitis involves eliminating etiologic agents (presently thought to be anaerobic fusiform and spirochetal organisms) and managing the underlying periodontal disease. Treatment involves careful scaling, curettage, and debridement of the area and rinsing or lavage with a solution of 3% hydrogen peroxide in saline (1:3) as many as 15 times daily. The administration of penicillin (500 mg qid) for 5-10 days may be necessary to effect regression of the disease.

Buccal Ulceration (Erosive Lichen Planus)

Subjective Complaints

The patient with erosive lichen planus will complain of a continual painful or burning sensation, most often in the buccal mucosa. The tongue, palate, lips, and gingiva may also be involved. Mucosal hemorrhage may also be identified.

Objective Findings

Eroded, hemorrhage areas with necrotic centers are noted on mucous membrane surfaces. These central ulcerated areas may be surrounded by white keratotic foci (the reticular form of the disease), or bullae (the vesiculobullous form of the disease). Women are
affected much more frequently than men. A pseudomembrane composed of necrotic cells and fibrin may cover the most severe areas of erosion. Patients are frequently tense or hyperactive, and emotional stress may be an initiating factor. Skin involvement is seen in 20-30% of the cases. Skin lesions often appear crusty or centrally striated.

**Assessment**

It is often difficult to delineate erosive lichen planus from pemphigus vulgaris, erythema multiforme, discoid lupus erythematosus, and benign mucous membrane pemphigoid. Tzanck smears may prove helpful in identifying the acantholytic cells of pemphigus; an antinuclear antibody (ANA) determination, lupus erythematosus (LE) preparation, and evaluation for eosinophilia may be helpful in ruling out lupus erythematosus and erythema multiforme, although a microscopic examination remains mandatory for definitive diagnosis.

**Plan**

No specific or uniformly successful management modality has been determined for erosive lichen planus. Symptomatic relief may be obtained by using vitamin A or topical steroids such as beta-methasone. Occasional relief can be obtained by intralesional steroid injections.

**Buccal or Labial Ulcerations (Erythema Multiforme)**

**Subjective Complaints**

Symptoms include a sudden onset of oral mucosal ulcers, vesicles, or bullae. The bullae remain only a short time, passing rapidly to an ulcerative phase. Lesions are most common on the buccal mucosa and the lips. The lips often burn, fissure, and bleed readily.

**Objective Findings**

A denuded hemorrhagic surface covered by a pseudomembrane is a common finding. The patient may complain of pain, a foul oral discharge, and lymphadenopathy. Frequently a recent herpes simplex infection or drug allergy can be documented. A history of previous attacks may be useful in supporting the diagnosis.

**Assessment**

No specific laboratory studies are useful. A biopsy may prove quite helpful although the histology is not always diagnostic. Similar oral lesions may be seen in pemphigus vulgaris, benign mucous membrane pemphigoid, allergic reactions, and herpetic gingivostomatitis. Biopsy with adjunctive immunofluorescent studies are necessary to definitively differentiate the latter diseases from erythema multiforme.
Plan

Erythema multiforme is usually self-limiting. Management, therefore, primarily involves supportive care. Some authorities recommend supportive antibiotic therapy or a steroid oral suspension used as a mouthwash. The management needs further evaluation.

Maculopapular Lesions - Nonpigmented

Inflammatory Fibrous Hyperplasia (Denture Hyperplasia)

Subjective Complaints

This lesion is invariably located at the periphery of a denture border as nonpainful, asymptomatic, lobulated, redundant, or excess tissue.

Objective Findings

The redundant tissue is soft, flabby, or spongy and will frequently blanch on digital pressure. The denture flange will fit reasonably well into an impression or soft tissue cleft within the lesion or along its edge. Tissue most frequently proliferates on either side of the denture flange. The anterior maxillary mucosa is most often involved. Mucosal erythema may be present and occasionally, following continued denture trauma, the mass will ulcerate.

Assessment

This is the most common of all exophytic oral lesions found at the edges of dentures. At times, the lesion will present as a pebbly, corrugated mass of tissue on the hard or soft palatal mucosa underneath a denture; in this case, it is called inflammatory papillary hyperplasia. The dentures must be removed for thorough inspection of mucosal surfaces. The remote possibility of a malignant neoplasm remains and may be considered in the differential diagnosis.

Plan

If the lesion is small, reduction of the denture flange by a dentist may allow it to subside in 3-4 weeks. If it is large and firm, surgical excision and denture adjustment, rebasing, refabrication are justified.

Buccal Nodular Lesions ("Irritation" Fibroma)

Subjective Complaints

The patient generally presents with a painless, asymptomatic, discrete, nodular swelling of the oral mucosa. The duration is usually unknown; the buccal mucosa is the most common site.
Objective Findings

A pink, sessile or pedunculated soft tissue nodule with a smooth contour can be identified. The lesion is frequently spongy to firm to palpation and well circumscribed. A history of trauma (such as cheek biting) may be elicited.

Assessment

The fibroma can easily be confused with other benign soft tissue tumors; it is in fact not a true tumor, but an inflammatory hyperplasia usually due to trauma or chronic irritation. Fibrolipoma, neurilemoma, rhabdomyoma, and leiomyoma must be entertained as differential diagnostic possibilities.

Plan

Excisional biopsy is the management modality of choice. If the etiology is determined to be contact mucosal trauma due to malocclusion, habitual cheek biting, or irritation from broken restoration or prosthetic appliances, corrective measures should be implemented by a dentist.

Gingival Nodules (Pyogenic Granuloma)

Subjective Complaints

An asymptomatic gingival nodule, papule, or polypoid mass with a hemorrhagic, granulomatous, or ulceratic necrotic surface is usually identified. The lesion most often involves the gingiva and bleeds readily when manipulated, a symptom that commonly brings the lesion to the patient's attention.

Objective Findings

The pyogenic granuloma is solitary, sessile, and granular to firm on palpation, depending on the degree of lesional fibrosis that has occurred. A hemorrhagic surface may be prominent. Erythema of the surrounding mucosa may also be present. Irritants such as a calculus, overhanging margins of crowns, or silver amalgams or other composite dental restorations are often identified. Foreign material, fractured teeth, or chronic biting of the soft tissues are often identified as the initiating irritant.

Assessment

A host of other benign soft tissue lesions can have a clinical appearance similar to that of pyogenic granuloma. Traumatized fibromas, "denture hyperplasia", peripheral giant cell granuloma, and capillary hemangioma can readily mimic pyogenic granuloma clinically.
Plan

If the lesion is less than 4 mm in diameter, removal of the causative agent will often cause the lesion to regress. The vast majority require surgical excision and microscopic tissue examination for confirmation.

Gingival Nodule (Peripheral Giant Cell Granuloma)

Subjective Complaints

The lesions most frequently presents as a nodular to polypoid asymptomatic gingival soft tissue mass of unknown duration.

Objective Findings

Examination will reveal a nodular, well circumscribed, exophytic soft tissue growth that may feel hard to soft depending on the relative proportions of collagen and inflammatory component present. The lesion can be granular or have a necrotic surface if repeatedly traumatized. The tintorial quality ranges from pink to blue. The lesion frequently causes a radiographically evident cup or saucerization defect in the underlying bone. Because of this finding, a periapical radiograph can aid in establishing the diagnosis.

Assessment

An acceptable differential diagnosis should include pyogenic granuloma, since the two lesions are frequently identical on clinical examination. The peripheral giant cell granuloma will often appear dark blue, a feature that is rather uncommon with pyogenic granuloma. Traumatized fibroma and denture hyperplasia are also acceptable differential diagnoses; however, both lesions are generally much firmer than the peripheral giant cell granuloma.

Plan

Surgical excision is the treatment of choice. There is considerable reason to believe that this lesion arises from trauma or chronic irritation. Chronic irritants must therefore be removed. Patients with hyperparathyroidism will on occasion develop lesions that are clinically and histologically identical to peripheral giant cell granuloma (brown tumors). Serum calcium, alkaline phosphatase, phosphorus, and occasionally a bone scan and renal function studies are necessary to rule out the latter.

Lingual and Palatal Papilloma

Subjective Complaints

The most common findings is an exophytic, nontender soft tissue tag or growth on the mucosal surface. The lesion is most often found during a routine oral examination; few subjective findings can be delineated.
**Objective Findings**

Papillomas present as spongy, pedunculated or sessile, corrugated or cauliflower-like growth. The surface may have deep finger-like clefts. Seldom do papillomas attain a size larger than 3 cm in diameter. The most frequent sites are on the tongue, and soft palate and uvula. The surface is usually hyperkeratinized, imparting a white color.

**Assessment**

The most common lesions to mimic the papilloma are verruca vulgaris and verrucous carcinoma. Verruca vulgaris is common on the skin, but infrequent in the oral cavity. Verruca vulgaris also tends to be sessile, whereas papillomas are more often on a stalk. The two are easily separable on histologic grounds. Many pathologists in fact do not differentiate the two lesions. Verrucous carcinoma is nearly always a diffuse mucosal growth, much larger than 1 cm in diameter at the time of discovery. It tends to grow in a linear pattern along the mucosal surface, and ulceration is frequent. The patient with verrucous carcinoma will usually provide a history of tobacco use (especially the smokeless variety). Most patients are beyond the age of 65, much older than the typical patient with a papilloma.

**Plan**

The treatment of choice is surgical excision to include the stalk (if pedunculated) and a margin of normal tissue. The clinician should examine the skin surfaces for verruca vulgaris. If numerous skin lesions exist, they may be contributory to the oral disease, and should be eliminated as well.

**Interdental Papilla Nodule**

*(Peripheral Odontogenic Fibroma, Peripheral Fibroma with calcification)*

**Subjective Complaints**

This asymptomatic, polypoid gingival lesion is very often discovered by the patient. A slight separation of adjacent teeth may frequently cause the patient to present to a dentist.

**Objective Findings**

The peripheral odontogenic fibroma is almost exclusively seen on the free gingival interdental papilla. Most patients are between the ages of 5 and 25 with a peak incidence of 13. Females are more often affected than males. The lesion will normally be identified anterior to the molars. Radiographically, minimal bone resorption may be seen beneath the lesion. Early lesions are soft, vascular, and red, and bleed quite readily; older lesions are more firm. Irritation is a common cause; over-extended margins of dental restorations or calculus are frequently identified as the etiologic agents.

**Assessment**

Inflammatory fibrous hyperplasia, pyogenic granuloma, and peripheral giant cell granuloma should be included in the differential diagnosis. If calcified foci can be palpated
within the soft tissue overgrowth, the aforementioned disorders are less likely and the peripheral odontogenic fibroma should be the principal clinical diagnosis. Calcifications in this lesion probably represent osseous metaplasia.

**Plan**

The peripheral odontogenic fibroma should be excised, with special care to remove the lesion's origin in the periodontal ligament. Recurrence is a distinct management problem. Clinicopathologic features of 36 of these lesions have been examined critically on the Surgical Oral Pathology Service at the University of Colorado School of Dentistry. The recurrence rate can exceed 50%. The lesion has no malignant potential.

**Lipoma**

**Subjective Complaints**

The patient will complain of a slow-growing, painless mucosal mass. The patient may be aware that the lesion has a yellow color or that he is biting it.

**Objective Findings**

Inspection will reveal a nontender, soft, sessile or pedunculated polypoid mass. A distinct yellow color will be evident if the lesion is a superficial one. Lipomas are generally freely movable and solitary; however, multiple lesions have been documented. Most lipomas involve the buccal mucosa. There is no age or sex predilection.

**Assessment**

A differential diagnosis should include inflamed lymph node, dermoid cyst, and lymphoepithelial cyst. Intraoral inflamed lymph nodes are commonly painful or tender to palpation, unlike the lipoma. Aspiration should aid in differentiating lipoma from dermoid cyst or lymphoepithelial cyst. The latter lesions should have contents (fluid, proteinaceous debris, or keratin). If the lipoma is deeply situated in the tissues, it may be impossible to differentiate it from an irritation fibroma.

**Plan**

Most lipomas are adequately managed by surgical excision. Occasionally patients will refuse any treatment. Recurrence is exceptionally rare.

**Squamous Cell Carcinoma (Macule or Papule)**

**Subjective Complaints**

The patient with an exophytic macular or papular squamous cell carcinoma will usually present with an obvious intraoral mucosal elevation. These lesions are often painless and the only complaint is that the patient can identify a "spot" or mass.
**Objective Findings**

The clinician will be able to palpate a firm, nodular mass that is usually fixed to underlying tissues. Cervical, submental, or submaxillary lymphadenopathy may be present.

**Assessment**

The exophytic squamous cell carcinoma has to be differentiated from minor salivary gland tumors, common reactive lesions (such as pyogenic granuloma and peripheral giant cell granuloma), cysts, and odontogenic infections. Odontogenic infections are usually rubbery, fluctuant, painful, and hot. Pus will be identified on aspiration. Differentiation from reactive lesions is discussed elsewhere in this chapter.

**Plan**

Refer to Squamous Cell Carcinoma (Ulcer).

**Pigmented Maculopapular Lesions**

**Pigmented Oral Nodules (Nevus)**

**Subjective Complaints**

The patient will present with an asymptomatic, pigmented intraoral macule or papule. It may have recently increased in size or been noticed for the first time, although present for years.

**Objective Findings**

A flat, nodular or polypoid, blue, black or brown soft tissue growth that is totally asymptomatic is the most common finding. There is no age, sex, or racial predilection. The palate and gingiva are the most frequent sites. The lesion does not blanch on digital pressure.

**Assessment**

Nodular nevi are usually firm; this tends to separate them from more compressible salivary gland retention cysts and hemangiomas, lesions that can also be pigmented. The mouth should be examined thoroughly for amalgam restorations, since the pigmented amalgam tattoo can resemble a nevus. The amalgam tattoo arises in association with previous restorative dental procedures and is frequently adjacent to a large amalgam restoration. Intraoral gingival pigmentation is common to Blacks and Hispanics. It tends to be diffusely present throughout the mucosa, and should not be confused with a nevus. The malignant counterpart of the nevus, melanoma, must always be considered in the differential diagnosis.
Plan

A nevus should be excised with adequate margins and should be carefully examined microscopically. There is no certain clinical means of differentiating a nevus from an early melanoma.

Melanoma

Subjective Complaints

The melanoma can present as a pigmented macule, pigmented nodule, or large exophytic pigmented mucosal mass. The lesion is painful if ulcerated and usually shows dramatic enlargement over a short span of time (quite noticeable to the patient). Bleeding may be a presenting symptom.

Objective Findings

A pigmented mucosal mass is usually identified. The most frequent site of occurrence is the anterior maxilla, or hard or soft palate. The tumor rapidly infiltrates adjacent and deeper tissue (including bone), causing tumor tissue to become firm and fixed when palpated. Lymphadenopathy may be present. Most intraoral melanomas occur during the 6th decade of life. When the lesion is solitary, asymptomatic, and flat, it is not always possible to differentiate it from a nevus or an amalgam tattoo.

Assessment

The rapidly enlarging pigmented exophytic melanoma is not easily confused with other pigmented mucosal lesions. The less ominous-appearing pigmented oral macule or nodule could easily represent a nevus, peripheral giant cell granuloma, amalgam tattoo, or hemangioma. When evaluating a pigmented lesion it is important to determine if the lesion has been enlarging, and if so, for how long. A change in the degree of pigmentation, explained bleeding, or change in surface appearance is a suspicious sign. A high index of suspicion on the part of the clinician is often the key to diagnosis.

Plan

Surgical excision is characteristically the treatment of choice. If a primary care physician or dentist is at all suspicious of melanoma, it is mandatory to take measurements of the lesion and photograph it as well. Size is extremely important to clinical and pathologic staging. The pathologist and the person who will ultimately manage the disease process must know the extent of the initial disease. Melanomas have recently been subclassified into a variety of subtypes including a superficially spreading form and a vertical growth form. The prognosis is often dependent upon these subclassifications. Oral melanoma remains a neoplasm with an exceedingly poor overall prognosis.
Amalgam Tattoo

Subjective Complaints

The patient will present with an asymptomatic black, brown, or blue "spot" on the gingiva or edentulous alveolar mucosa. Recent amalgam (silver) restorations or a history of extensive dental restorative procedures in the past are common.

Objective Findings

Findings will include a flat, pigmented macule on the oral mucous membrane. Most lesions are less than 1 cm in diameter, and painless. Trauma to the mucosa by a rubber dam clamp or dental burr at the time of placement of a dental restoration may leave evidence of surface abrasion in the area of pigmentation. The foreign material (silver amalgam) that actually causes the pigmented area cannot be palpated within the tissues. Amalgam tattoos do not blanch upon digital pressure as do pigmented lesions such as hemangioma or mucocele. Satellite lesions such as those found in melanoma are uncommon.

Assessment

The amalgam tattoo cannot be differentiated from a nevus or melanoma. Palpation may be helpful as a differential diagnostic aid. If an amalgam restoration can be identified adjacent to an asymptomatic, pigmented lesion, it is good supportive evidence that the lesion is in fact an amalgam tattoo.

Plan

In general, amalgam tattoos require no treatment. If there is the least bit of suspicion that the lesion might be a melanoma or nevus, biopsy is justified. If the patient is unduly concerned about the lesion, removal is indicated as well.

Leukoplakic Lesions

(The nonspecific term leukoplakia means white plaque. It may be used as a differential diagnosis for white lesions if the clinician understands that the term is a nonspecific one meaning white spot only and that it actually denotes no malignant or premalignant potential.)

Squamous Cell Carcinoma

Subjective Complaints

An asymptomatic white mucosal plaque is usually identified on routine examination or observed while brushing the teeth.

Objective Findings

This hyperkeratinized painless lesion cannot be scraped off with a tongue blade. The lesion may be speckled such that small, velvety red areas are dispersed throughout the broader
white lesion. As a rule, lymph node involvement is late in this type of carcinoma. The vast majority of these lesions are discovered in individuals over 40 years of age. The most frequent sites are the tongue, lower lip mucosa, and mucosa of the floor of the mouth. The borders may be distinct or indistinct and the surface can range from smooth to finely granular, mottled, or rough. Most patients elicit a lengthy history of tobacco or alcohol use. Occasionally the etiology can be determined by observing the lesion in the direct line of a pipestem or in the area where the patient holds a bolus of smokeless tobacco or snuff. Lymphadenopathy may signal the occurrence of metastatic spread.

Assessment

The primary procedure to perform when confronted with a white lesion is to determine whether it can be easily removed by scraping. A squamous cell carcinoma plaque cannot be removed. If the lesion can be removed by scraping, then it is most likely within the realm of a sloughing pseudomembranous disease. The true differential diagnosis is then narrowed to lesions such as hyperkeratosis from cheek biting, lichen planus, leukoedema, white sponge nevus, verrucous carcinoma, and papilloma. Cheek biting hyperkeratosis can usually be identified by carefully questioning the patient and discussing habits, especially those associated with stress. Lichen planus is generally a diffuse lesion found on several mucosal surfaces as opposed to the more solitary appearance of squamous cell carcinoma. In addition, lichen planus may undergo a more diagnostic vesicular or bullous phase, not seen with squamous cell carcinoma. Leukoedema is usually limited to the buccal mucosa and tends to disappear when the cheek mucosa is stretched. Verruca vulgaris and verrucous carcinoma (a squamous cell carcinoma variant) tend to be exophytic, corrugated, and quite elevated above the mucosal surface as solitary and diffuse lesions, respectively. Hyperkeratotic forms of squamous cell carcinoma are usually identified in adults over 40 years old.

Plan

The clinician must make every effort to identify a local etiology, since local irritation remains the most common cause of the white oral mucosal plaque. If the lesion fails to subside after 2 weeks of observation, surgical excision is justified. Large lesions may require extensive mucosal stripping and skin graft procedures. Tumor Board referral and management are the modalities of choice when a diagnosis of squamous cell carcinoma is rendered (see Ulcerative and Maculopapular Squamous Cell Carcinoma).

Leukoedema

Subjective Complaints

Asymptomatic diffuse, white, bilateral opalescence of buccal mucosa is usually observed during routine oral examination.

Objective Findings

Close inspection will reveal a dense, folded, milky opalescence, usually on the buccal mucosa. The white areas are not elevated above the surface. They are painless and cannot be removed with a tongue blade. These clinical findings are frequently seen in Blacks; however,
careful inspection will show that the lesion can be identified in Whites as well. Stretching or tensing of the buccal mucosa will cause the whiteness to disappear. Occasionally the disorder occurs on oral mucosal surfaces other than buccal mucosa.

**Assessment**

Hyperkeratosis from cheek biting, lichen planus, and white sponge nevus should be included as differential diagnoses. White sponge nevus is hereditary and a disease of the young. Lichen planus can be painful if in the ulcerative or bullous state, unlike white sponge nevus. The constant cheek biter will usually elicit a history of trauma.

**Plan**

Leukoedema is merely an anatomic mucosal variation of normal. It is important to recognize the disorder and realize that no treatment is necessary.

**Reticular Lichen Planus (also see Erosive Lichen Planus)**

**Subjective Complaints**

Asymptomatic keratotic plaques on the oral mucous membrane are the typical finding. The patients tend to be of the nervous variety and may indicate that they also have lesions on their skin.

**Objective Findings**

Oral lesions present as reticular, white, lacelike striae. The buccal mucosa is most commonly involved although other mucous membrane surfaces are not immune to the disease. Lesions can also take on a patchy, circular, or annular form. They do not strip off when rubbed vigorously. There is no apparent relationship to tobacco use, nor is there a propensity for the disease among specific ethnic groups. Lesions tend to exacerbate during periods of emotional stress (commonly they undergo ulceration or progress to the bullous or erosive form of the disease). The reticular form is rarely painful; the bullous and erosive forms are characteristically painful. Skin lesions present as small flat papules which often coalesce to form larger flat plaques. Lesional borders are well delineated.

**Assessment**

Lichen planus can mimic traumatic hyperkeratosis, leukoedema, geographic tongue of the ectopic variety, and white sponge nevus. A thorough history usually is sufficient to identify traumatic hyperkeratosis. Leukoedema can be identified by putting tension on lesional sites. Under tension, the white plaques should disappear if they present leukoedema. White sponge nevus tends to be elevated above the mucosal surface; it shows an inheritance pattern and has usually been present since birth. If erosive lichen planus and ectopic geographic tongue remain reasonable differential diagnoses, biopsy is necessary to distinguish between them.
Plan

The reticular hyperkeratotic form of lichen planus requires no treatment except for its identification (by microscopic tissue examination if necessary) and informing the patient. There are a few reports in the literature that suggest increased squamous epithelial malignancy in association with lichen planus. Periodic reexamination is therefore warranted. Lesions that progress to the painful, ulcerative or erosive phase of the disease may require applications of triamcinolone in a base (eg, Kenalog in Orabase) applied at bedtime. Very severe cases have been treated with systemic cortisone; reported results have been quite variable.

White Sponge Nevus

Subjective Complaints

Lesions will most often be identified as rough, elevated, nonpainful areas on the oral mucous membrane.

Objective Findings

Diffuse, white, corrugated, hyperkeratinized areas are identified on the oral mucosa. These areas are often elevated above the mucosal surface and can take on a papillomatosous appearance. The most common side is the buccal mucosa. The lesions are entirely asymptomatic. An autosomal dominance pattern can be established by pedigree studies or careful history. The lesions are generally present from birth, but may exacerbate at puberty. White sponge nevus cannot be scraped off with vigorous rubbing.

Assessment

Clinically, white sponge nevus has to be differentiated from leukoedema, traumatic hyperkeratosis, and lichen planus. Tension applied to the mucosa helps to support a clinical diagnosis of leukoedema, since the lesion will disappear when tension is applied. Leukoedema is not as rough or corrugated as white sponge nevus. Lichen planus is rarely identified in the childhood age group; white sponge nevus is common to this age group. In addition, a familial pattern is often documented in white sponge nevus, unlike lichen planus. The etiology can generally be determined for traumatic hyperkeratosis.

Plan

Accurate identification is usually all that is required. On rare occasions, the lesion can become traumatically ulcerated. Palliative procedures are justified in such cases.
Hard Palate Leukoplakic Lesions

Nicotine Stomatitis - Hard Palate, Nodules or Fissures, Nonpainful

Subjective Complaints

Variable red and white "parboiled" palatal mucosa is generally identified. The lesion is asymptomatic. Patients are frequently heavy pipe or cigarette smokers.

Objective Findings

Inspection will reveal marked clefting or fissuring of the palatal mucosa. The fissures tend to divide the mucosal surface into small, nodular white areas; each nodule will contain a central red area. The red focus represents the inflamed orifice of a minor salivary gland duct. Patients are uniformly heavy smokers and it is often easy to identify the exact hyperkeratotic area where the patient keeps his or her pipestem or holds the cigarette.

Assessment

Many lesions have a "dried river bed" appearance. If the smoking habit is discontinued, the disorder will usually abate rapidly.

Plan

Nicotine stomatitis seldom, if ever, becomes malignant. As with all white lesions, a high index of suspicion should be maintained, however. Ulceration is an ominous sign when seen in connection with this otherwise benign condition. Such a finding justifies biopsy.

Other Leukoplakic Lesions

Mucosal Scar

Subjective Complaints

The patient will present with an asymptomatic white spot or linear hypertrophy in the area of previous surgery (usually an extraction site or site of trauma).

Objective Findings

Clinically, one can identify a white focus that is generally firm and does not rub off when scraped with a tongue blade. The lesion may be linear and resemble a healed incision; or nodular and hypertrophic in areas where the wound has healed by secondary intention.

Assessment

Oral scars are uncommon, but rarely represent a difficult diagnostic challenge. A thorough history is of paramount importance in establishing a diagnosis.
Plan

Generally no treatment is required, although occasionally adhesions (following major oral surgery) may have to be excised.

Candidiasis

Subjective Complaints

The patient with candidiasis will present with a chief complaint of mucosal soreness or burning, and a "film" of dead tissue in the mouth. The patient may be chronically debilitated from diseases such as diabetes, hypothyroidism, or cancer. A history of long-term broad spectrum antibiotic use or extended use of immunosuppressive agents is common. Patients are frequently denture wearers.

Objective Findings

Examination will reveal a white "milk curd-like" pseudomembrane that can be easily stripped or peeled off, leaving a raw, red, often bleeding surface. A large percentage of the patients have the lesion under an ill-fitting denture. Patients may have an associated angular cheilitis. Lesions of candidiasis often cause a generalized burning sensation throughout the mouth.

Assessment

The clinical pseudomembranous picture seen in these patients is rather specific. Occasionally, chemical burns and drug reactions can cause pseudomembranous sloughing. An exfoliative cytologic smear of the lesion often proves useful in establishing a diagnosis. Periodic acid-Schiff (PAS) staining will allow the clinician to identify the septate hyphae of Candida albicans. Cultures are less diagnostic.

Plan

Drug suspension or drug regulation in the chronically debilitated or cancer patient may be necessary. When candidiasis is demonstrated under an ill-fitting denture, reconstruction of the prosthesis may be necessary. In general, the lesions respond well to either a nystatin oral suspension or vaginal tablets used as oral troches.

Chemical Burn

Subjective Complaints

The most common chief complain of the patient is a burning sensation in the mucosa adjacent to the site of a toothache. A history of local aspirin application to the mucosa can usually be obtained. A second common historical finding may be recent dental or medical application of a medicant to the mucosa.
**Objective Findings**

Examination will reveal a localized red mucositis in the case of a mild burn. In the case of a severe burn, a white necrotic focus can be identified. When the coagulated dead tissue is removed, a raw, bleeding, painful surface remains. Occasionally the lesions become secondarily infected, resulting in a hemorrhagic granulomatous mass with a purulent discharge.

**Assessment**

Adequate history should enable the clinician to arrive at a proper diagnosis.

**Plan**

The management modality of choice is application of a protective coating such as Orabase and initiation of a bland diet. If the lesion is painful, systemic analgesics may be prescribed. It is mandatory to have the offending tooth treated if it is in fact what stimulated the patient to apply aspirin to the mucosa. The patient should be informed that analgesic tablets such as aspirin work systemically and not topically.

**Intraoral Abscesses and Swellings**

**Mucocele**

**Subjective Complaints**

The patient will commonly complain of an intermittent mucosal swelling that ruptures and drains periodically. The lesion is painless, and usually has a blue color.

**Objective Findings**

The most common site is the lower lip mucosa. The lesion is usually a rounded or dome-shaped elevation that is freely movable, but cannot be moved independently of the mucosal layer. The mucocele cannot be emptied by digital pressure; aspiration will usually yield a viscous, clear fluid. The ranula represents a mucocele that occurs in the floor of the mouth, generally involving a sublingual gland.

**Assessment**

The mucocele can mimic early mucoepidermoid carcinoma of salivary gland origin, hemangioma, or lymphangioma. On aspiration, all of the aforementioned will yield superficial pools of mucoid-appearing material. True salivary gland tumors are exceedingly rare on the lower lip; however, a palatal, buccal mucosa, or upper lip mucocele may be more problematic. Inclusion cysts and benign lymphoepithelial cysts can also resemble a mucocele clinically. Microscopic tissue examination is the only way to adequately differentiate these lesions.
Plan

All mucoceles should be completely removed surgically. The tissue must be excised in a manner that is least damaging to associated salivary gland acinar and ductal elements. Often all glandular elements that protrude into the incision are removed to avoid recurrence of the lesion.

Salivary Gland Neoplasm

Subjective Complaints

The classic history is one of a slowly expanding, nonpainful, nodular or polypoid soft tissue mass.

Objective Findings

A fluctuant or firm soft tissue nodule is usually identified. Salivary gland tumors are rarely seen on the lower lip. The two most frequently intraoral salivary gland tumors are the mixed tumor and mucoepidermoid carcinoma. Aspiration of both tumors may yield sticky fluid contents, although typically the lesions are solid. In their late stages, salivary gland tumors may be painful, firmly bound down to connective tissue structures, or ulcerated. Most salivary gland neoplasms occur in patients over 40.

Assessment

Advanced salivary gland tumors may contain discrete, soft, fluctuant areas. A lesion on the palatal mucosa, upper lip or buccal mucosa should be viewed with some suspicion, since the mucocele, the most common oral salivary gland lesion, is less common in these areas.

Plan

Wide surgical resection is the treatment of choice. If the lesion is diagnosed on the basis of an incisional biopsy, management parameters generally dictate a Tumor Board approach to management. Excisional biopsy is recommended.

Chronic Draining Alveolar Abscess

Subjective Complaints

Patients will frequently give a history of pain that started as a dull ache and progressed to a severe throbbing pain. The lesion will present as a swelling on the maxillary or mandibular alveolar ridge. A nonvital carious tooth can usually be identified in the area.

Objective Findings

A well-circumscribed, soft tissue swelling that is warm, fluctuant, and tender to palpation can be identified. A sinus tract may be identified within the swelling or adjacent to
it. When a sinus tract is identified, patients complain of little pain. The mucosal sinus may be red or bleed easily, and it is commonly surrounded by hemorrhagic granulation tissue. Occasionally, after temporary emptying of the abscess, the sinus tract will heal and form a raised, firm, blue or red nodule. Radiographic examination is mandatory when one suspects a chronic draining alveolar abscess. Periapical films will reveal a poorly delineated radiolucency generally in the area of the root apex of the offending tooth. The lesion can vary in size, from small to quite large, often involving much of the jaw. Radiographs of the related tooth will frequently show such features as large restorations, narrowed pulp chambers or canals, or resorption of the root apex. The tooth may be painful to percussion; as a rule it will not respond to electrical pulp tests.

**Assessment**

It is important to realize that all abscesses involving teeth and extending into the soft tissue are not of pulpal origin. The lateral periodontal abscess, for instance, originates in a deep periodontal pocket, and is associated with periodontal disease, not pulpal disease. Adequate radiographs will usually show the absence of a periapical radiolucency and the presence of a periodontal pocket in lateral periodontal abscess. In addition, the pulp of teeth with such lateral periodontal abscess is nearly always vital. Sinus tract in the maxilla should be evaluated by paranasal sinus x-rays, and tissue from the tract should be biopsied to rule out oral antral fistula associated with carcinoma of maxillary sinus.

**Plan**

The acute abscess should be treated rather aggressively to alleviate the patient's pain as well as to ensure that no untoward sequelae (diffuse osteomyelitis) develop. Drainage may be established by opening the pulp chamber of the suspected tooth or by a trephination procedure, whereby an opening is made through the mucosa and bone to the abscess at the apex of the offending tooth. When a vestibular, palatal, or lingual space abscess has formed, a through-and-through drain may be placed in the abscess and frequently irrigated with a solution of hydrogen peroxide and saline. A sample of pus should be obtained for culture and sensitivity tests. In severe cases, antibiotic therapy may be indicated. It is generally considered unwise to extract a severely abscessed tooth unless the patient has been adequately treated with antibiotics. After drainage has been established, routine dental endodontic procedures may be performed. When there is a chronic abscess with a draining sinus, the origin of the lesion may be identified by placing a gutta-percha cone to the extent of the sinus and radiographing the area. Complete management of the acute and chronic draining alveolar abscess requires a thorough knowledge of dentistry, and management by a dentist or oral surgeon. Occasionally the lesion can progress to an oral antral communication (oroantral fistula) or diffuse osteomyelitis. Combined dental and medical management are more common when the disease progresses to this stage.
Hematoma

Subjective Complaints

A history of traumatic injury, accident, surgery, administration of local anesthetic, cheek biting or self-inflicted trauma will be elicited. The traumatized area will be tender and occasionally hemorrhagic.

Objective Findings

Hematomas can undergo early and late stage development. The early hematoma is warm, and digital pressure may cause the patient to experience a stinging sensation. The lesion is elevated above the mucosa, fluctuant to rubbery, and fairly well delineated from surrounding tissues. Most appear red or blue. The late hematoma will be harder, black, and painless. Early and late lesions can continue to leak or discharge blood at the periphery. If the lesion becomes secondarily infected, it may become quite granular.

Assessment

The hematoma must be differentiated from other pigmented lesions including mucocele, ranula, hemangioma, and lymphangioma. A history of sudden onset after recent traumatic injury strongly suggests a diagnosis of hematoma. The hematoma will not blanch on digital pressure as will the hemangioma or lymphangioma. Aspiration will usually reveal dark blue blood, if the lesion is an early one.

Plan

Hematomas are usually self-limiting lesions. Exceptions can be noted when the lesion arises from trauma to a large vessel. Large vessel damage may require a pressure bandage or evacuation with an aspirating syringe. Occasionally surgery may be required to locate the offending vessel. An organizing hematoma is mandatory to healing of a tooth extraction site, and should not be removed during the immediate 48-hour postextraction period.

Lesions of the Tongue

Hairy Tongue

Subjective Complaints

The patient usually identifies a pigmented dorsal tongue surface. He or she may complain that it feels as if hairs are present on the tongue; the patient may also complain of a gagging sensation.

Objective Findings

The dorsal tongue surface is the site involved. The mucosal surface will show elongation of filiform papillae and an alteration in color. The most common color is black, but white, yellow, and brown pigmentation may also be encountered. Pain is not a common
feature. A thorough history will often indicate that the patient is a habitual user of oxidizing agents in oral preparations. Excessive local use of antibiotics or antiseptics or poor oral hygiene with a subsequent accumulation of pigmented debris on the tongue surface, especially in heavy smokers or alcoholics, is a second common history.

Assessment

Few disorders mimic hairy tongue; recognizing the disorder is not a difficult diagnostic challenge.

Plan

Removal of the offending chemical agent (oxidizing oral rinses) or antibiotics will cause resolution of the disorder. Improved tongue-brushing techniques will help alleviate the disorder, especially if the etiology is poor oral hygiene. Extreme instances have been reported in which elongated papillae had to be sheared surgically to alleviate the condition.

Hemangioma

Subjective Complaints

The patient will present with a blue nodular swelling involving the lateral border of the tongue or the tongue dorsum. The lesion is most often congenital, but it may be initiated by an episode of trauma. Large lesions may cause speech difficulties.

Objective Findings

Most hemangiomas identified within the oral cavity are superficial and, therefore, appear as blue, red, or black lesions. Occasionally, deeply situated hemangiomas have no such tintorial qualities, and simply appear as nodules or swelling within the tongue. Oral hemangiomas most often involve the tongue; the next most common sites are the lips and buccal mucosa. The lesion will characteristically blanch and empty upon the application of digital pressure. The lesion is not fluctuant.

Assessment

The hemangioma must be differentiated from the mucocele, ranula, and superficial cyst. Features that are useful in establishing this differentiation include the fact that the hemangioma is nonfluctuant and can be evacuated by pressure; the other lesions listed cannot be evacuated by pressure. A pulse may be detectable in a hemangioma; this finding is not seen with the mucocele, ranula, or cyst. The clinician can further establish a working diagnosis of hemangioma by aspiration of blood through a fine-gauge needle.

Plan

Surgery (including cryosurgery), sclerosing techniques, or both, are used in the treatment of hemangioma. Sodium psylliate injections can cause the lesion to fibrose, thus shrinking vascular spaces. Angiograms may be necessary to determine the extent of the lesion.
if it is large. The excision of a large lesion should not be attempted as an outpatient procedure; exsanguination remains a hazard.

**Lymphangioma**

**Subjective Complaints**

The most common finding is a painless swelling of the dorsal tongue surface or the lateral border of the tongue. Large lesions may cause speech difficulties. Like the hemangioma, the lymphangioma is often congenital.

**Objective Findings**

The lymphangioma is usually pink and not nearly as blue as the hemangioma. The surface is often corrugated or pebbly. Digital pressure will cause the lesion to blanch due to content evacuation. Aspiration can be quite helpful, often revealing yellow-gray contents as opposed to the red or blue contents of a hemangioma.

**Assessment**

The differential diagnosis of lymphangioma is essentially the same as that for hemangioma. Aspiration with a fine-gauge needle may help differentiate the two, based upon content appearance.

**Plan**

Surgical excision (including cryosurgery) remains the management modality of choice. Combination hemangioma/lymphangioma lesions have been identified. Operating room precautions should be taken in the case of lesions greater than 3 cm. As with hemangioma, it may require more than one surgical procedure to eradicate a lymphangioma.

**Ventral Varicose Veins**

**Subjective Complaints**

These lesions are identified as asymptomatic, distended vessels on the ventral tongue surface.

**Objective Findings**

Superficial, painless, red or blue distended and congested veins are easily identified.

**Assessment**

These lesions present little diagnostic challenge. Occasionally when there is marked distention of a venous channel; it can simulate other fluid-filled bluish lesions such as the mucocele, ranula, or hemangioma. Varicosities cannot easily be evacuated in a distal direction.
by digital pressure, because valves present in the normal segment of the vein will not allow retrograde blood flow.

**Plan**

Accurate clinical diagnosis is all that is required after a thorough differential diagnosis is entertained. They rarely bleed, but if that occurs, they may be electrocoagulated.

**Geographic Tongue (Benign Migratory Glossitis)**

**Subjective Complaints**

This condition is usually discovered as an asymptomatic tongue lesion. Occasionally it will cause the patient to complain of a burning sensation, tenderness, or pain within the tongue. Patients often indicate that the lesions "move from place to place on the tongue".

**Objective Findings**

This disease of unknown etiology results in irregularly shaped depapillated, circular lesions most often on the tongue dorsum, less frequently on the ventral tongue surface. Filiform papillae will desquamate for approximately a week; the area of desquamation will enlarge and then regress, resulting in a depapillated pattern that moves from week to week or month to month. Pain may be present if the depapillated areas are exceedingly large.

**Assessment**

Benign migratory glossitis is not a difficult diagnostic problem, although it can occasionally be confused with candidiasis or erosive lichen planus. A smear for *Candida albicans* organisms will help establish a diagnosis of candidiasis. With candidiasis a pseudomembrane can be stripped from the surface of the lesion, a feature not seen with geographic tongue. Erosive lichen planus can result in depapillated lesions on the tongue; unlike geographic tongue they are usually quite painful and do not migrate from week to week.

**Plan**

Psychological influences have been implicated in the etiology of geographic tongue in recent years, especially stress. If stress can be eliminated, the disorder will sometimes regress. If burning and tenderness are constant symptoms, coating the denuded surface with triamcinolone in Orabase may relieve discomfort. Geographic tongue can occasionally occur ectopically on mucosal surfaces other than the tongue. Frequently when it occurs ectopically, biopsy is justified to establish a diagnosis.
Median Rhomboid Glossitis

Subjective Complaints

Patients will frequently complain of a visible "sore" on the dorsal tongue surface; however, the lesion is generally asymptomatic.

Objective Findings

Median rhomboid glossitis will present as a pale red to brown depapillated lesion on the dorsal surface of the tongue. The area can be smooth, nodular, or fissured. It is well delineated, painless, and quite often situated exactly in the middle of the tongue dorsum. The lesion has been reported most frequently in children, but can be found in all age groups.

Assessment

Median rhomboid glossitis has been confused with squamous cell carcinoma. The location of the lesion is the most helpful clinical finding used to differentiate the two. The midportion of the dorsal surface of the tongue is perhaps the most unlikely focus for squamous cell carcinoma in the entire oral cavity. Median rhomboid glossitis is rarely confused with other mucosal disorders.

Plan

In the majority of cases, no treatment is necessary. Occasionally the lesion can become ulcerated due to trauma; in such cases, symptomatic relief (application of a petroleum base) may be required.

Reactive Lymphoid Aggregate (Accessory Tonsillar Tissue)

Subjective Complaints

An asymptomatic nodule on the tongue is the common finding.

Objective Findings

Smooth-surfaced papules and nodules on the posterolateral border of the tongue and posterior wall of the oropharynx can be identified. The lesions remain painless and asymptomatic.

Assessment

Lymphoid tissue is often abundant throughout the oral cavity. It can be confused with fatty deposits. Biopsy is often the only means of distinguishing the two.
Plan

The nodules represent no true pathologic reaction; their importance relates only to the differential diagnostic challenge.

Fissured Tongue

Subjective Complaints

Deep fissures or clefts can be identified disseminated throughout the dorsal tongue surface. These fissured areas are usually asymptomatic. If food debris accumulates in the fissures, inflammation may arise and the ridges of the clefts can occasionally become hemorrhagic and edematous.

Assessment

Fissured tongue is seen in about 5% of the population and affects both sexes equally. It is rarely confused with other disorders.

Plan

Fissured tongue requires no treatment other than proper oral hygiene instruction.

Lingual Thyroid Nodule

Subjective Complaints

An asymptomatic nodular enlargement of the tongue is usually encountered. Occasionally gagging is the presenting symptom.

Objective Findings

A nodular, spongy to firm mass is encountered on the posterolateral border of the tongue or the dorsal surface in the area of the primitive foramen cecum. The lesion is generally located posterior to the area in which median rhomboid glossitis is identified. The lingual thyroid may be the only functioning thyroid tissue in the body. Thorough inspection and palpation of the normal thyroid gland is mandatory.

Assessment

Thyroid uptake studies may be helpful in determining if the lesion is functional. Excisional biopsy should be undertaken with extreme caution in order to avoid total removal of a patient's thyroid tissue.

Plan

Thorough evaluation of thyroid function is mandatory prior to any surgical procedure. If the lesion proves to be the only functioning thyroid tissue, it should not be removed.
Granular Cell Myoblastoma

Subjective Complaints

A superficial, asymptomatic nodular swelling of the tongue is usually identified.

Objective Findings

The lateral and dorsal tongue surfaces are the most frequent sites involved. Lesions are usually small, slightly elevated, smooth-surfaced, and asymptomatic. The lesion may be freely movable within the tongue body. No age or sex predilection is encountered.

Assessment

The lesion does not usually interfere with mastication or speech. Since it is characteristically an asymptomatic nodule, it parallels the clinical presentation of several other asymptomatic tongue nodules including syphilis, squamous cell carcinoma, irritation fibroma, neurofibroma, and lipoma. The lipoma usually has a yellow color; neurofibroma is commonly associated with multiple neurofibromatosis, and skin lesions are common. The effective method of establishing a diagnosis is to biopsy the lesion. A VDRL should be ordered.

Plan

Treatment consists of excision, which is curative.