Northlake Dental Association Meeting
10/27/2022

Presentation handout

Molly Rosebush DDS, MS

Burning mouth disorder

- Pain condition, considered to be **neuropathic** in etiology
  - Likely affects both taste and sensory nerves
- **Clinical features**
  - **Women** > men (4-7:1)
  - **Peri- and post-menopausal** age is most common
  - Tongue, lips and anterior palate
  - **Mucosa appears clinically NORMAL!**

Burning mouth disorder

- **Symptoms**
  - Any one, two, or all three of the following sensations can be affected:
    - **PAIN:** burning, raw, or irritated sensation
      - Does not follow peripheral nerve distributions
    - **TASTE:** 2/3 of patients report altered taste (**metallic**, bitter, foul, etc.)
      - May have diminished taste
    - **TEXTURE:** sensation of **dryness**, swelling, cotton, hairs, too much saliva

Burning mouth disorder

- **Symptoms**
  - Onset is usually abrupt (comes on suddenly)
  - Discomfort is typically minimal in the morning and gets worse as the day progresses
  - Does not interfere with sleep
  - Waxing and waning pattern (patients have good and bad days/weeks)

Burning mouth disorder

- **Differential Diagnosis (rule out these)**
  - **Candidiasis**
  - **Erosive oral conditions**
    - **Lichen planus, mucous membrane pemphigoid**
  - **Systemic diseases**
    - **Pernicious anemia, hypothyroidism, diabetes**
  - **Medication side effect**
    - **ACE inhibitors (particularly suspect if oral burning is temporally associated with starting new medication)**
  - **Red flag: unilateral symptoms, loss of sensation (may indicate CNS tumor)**

Burning mouth disorder

- **Management and Prognosis**
  - Patients can be challenging to manage → **REFER**
  - **Reassure patient (TLC)**
    - Disease is bothersome but completely benign
    - A **real** dysfunction of nerves (**not psychosomatic**)
  - **Long term prognosis is variable**
    - Gradual or spontaneous remission in 1/3 to 1/2 of patients
    - Amount of time it may take to improve or resolve is unpredictable (months, years)

Candidiasis

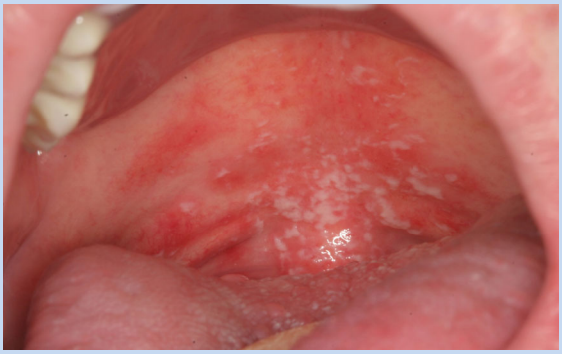
- Organism: ***Candida albicans***
  - common oral fungal infection
- Many different clinical presentations
  - **Pseudomembranous "thrush"** (cheesy white plaques that wipe off)
  - **Erythematous** (dorsal tongue atrophy, red patch on hard palate, denture stomatitis)
  - **Angular cheilitis** (cracking and fissuring of the lip comissures)

Candidiasis

- **Predisposing factors**
  - Broad-spectrum antibiotic use
  - Use of steroid inhalers
  - Dentures or other oral appliances
  - Xerostomia
  - Immunocompromised patient

Pseudomembranous Candidiasis

White adherent plaques that can be scraped off
Underlying mucosa is normal or slightly red
Mild or no symptoms

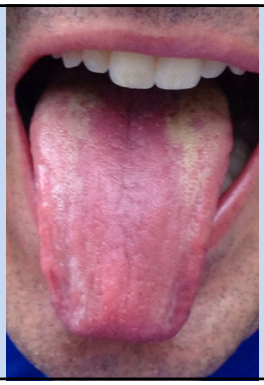


Erythematous candidiasis

- **Central papillary atrophy**
  - Usually **asymptomatic**
  - **Focal** redness and loss of the filiform papillae on the midline, posterior dorsal tongue

Erythematous candidiasis

- **Acute atrophic candidiasis**
  - Often occurs after broad-spectrum antibiotic therapy
  - Patients complain that their mouth feels like they have "scalded" it
  - **Diffuse** loss of the filiform papillae on the dorsal tongue– tongue looks red and bald





About 2 weeks later (after taking antifungals)

Angular cheilitis

- Erythema, cracking, and fissuring at the corners of the mouth
- Can occur in anyone, but especially in patients with decreased VDO– saliva pools in the accentuated folds, keeping them moist
- **May become a combined bacterial/fungal infection**
  - **60% are *C. albicans* and *Staph aureus* together**


Chronic hyperplastic candidiasis

- An uncommon form of candidiasis
- **Anterior buccal mucosa** (near commissures) is the most common location
- Often speckled red/white in appearance
- **Cannot** be scraped off!
- **Should resolve completely after antifungal therapy**


*

Candidiasis → TREAT

- **TREATMENT**
  - **1st choice: Fluconazole 100mg** (Diflucan)- systemic
    - 10-day course, taken once per day
    - Interferes with MANY medications
  - **Clotrimazole** (Mycelex)- topical
    - Oral troches: 10-day course, taken 5 times per day
    - 1% cream, OTC (for angular cheilitis), applied t.i.d.
  - Nystatin suspension
    - I rarely prescribe for intraoral use
    - Good for disinfecting oral appliances

Fluconazole

- Rx: Fluconazole (Diflucan) 100 mg tablets
- Disp: 11
- Sig: Take 2 tablets on day 1, then 1 per day until gone
- Note: Compliance is usually better compared to clotrimazole
- **Drug interactions**: Oral hypoglycemics, Coumadin, Dilantin, some statins

Clotrimazole

- Rx: Clotrimazole (Mycelex) 10 mg oral troches
- Disp: 50
- Sig: **Dissolve** one in mouth 5 times per day until gone
- Note: Topical therapy-- effectiveness depends on direct contact with the mucosa (won't work if patient chews it up and swallows it)
- Does not interfere with other medications, more expensive than fluconazole

Clotrimazole cream 1%- for angular cheilitis

- Available OTC, marketed as a cream for athlete's foot or vaginal yeast infection
- Apply to affected areas 3-4 times per day for 10 days

Treatment of Oral Appliances

- **Complete dentures / hard bitesplints (NO metal)**
  - 1 cup water + 1 tsp bleach
  - Soak overnight x10 days
  - Rinse well before reinserting
  - 100% bleach for 10 minutes if unwilling to remove nightly
- **Partial dentures with metal clasps / Anything with a soft liner / Athletic or soft bite guards**
  - Nystatin suspension
  - Soak overnight covered in liquid x10 days
  - Change liquid every other day
- **Eliminate chapsticks, lipsticks - could be source of reinfection**
- **Get new toothbrush**

Herpes Simplex Virus (HSV)

- Two distinct types (HSV-1 and HSV-2)
  - Structurally similar (50% DNA sequence homology)
  - Both types **infect epithelial cells**, then **establish latency in nerve ganglia**
- HSV-1
  - Tends to affect the **oral, facial and ocular regions**
  - Spread through infected saliva or active lesions
- HSV-2
  - Tends to affect the **genital mucosa**
  - Spread through sexual contact

Herpes simplex virus (HSV)

- Spread through infected saliva or active perioral lesions
- **Primary herpes** (initial exposure)
  - Children, usually asymptomatic
    - 31% of children age 6-13 have serologic evidence of HSV-1 infection*
  - Symptomatic infection = **acute herpetic gingivostomatitis**
    - Fever, nausea, swollen lymph nodes
    - Multiple intraoral ulcers (widespread)
      - **any mucosal site**
    - Painful, swollen, red gingiva

*Xu F, et al. Seroprevalence of herpes simplex virus type 1 in children in the United States. J. Pediatr. 2007; 151:374–377.

Acute Herpetic Gingivostomatitis- TREAT

Treatment - Within first 72 hrs of onset

- Children*
  - **Acyclovir Suspension 200mg/5ml**
    - Amount: 15mg/kg (until child is over 40kg)
    - 5 times daily for 1 week
- Adults*
  - **Valacyclovir 500mg tabs**
    - 1 g bid for 7 days
- **Palliative care**
  - **Dyclonine HCl – kids (.5% - 1% topical solution)**
  - **2% Viscous xylocaine – not for kids**
  - ***Antipyretics***
- **Restrict contact with others who are uninfected**
- **Postpone any elective tx until resolved**

*Cernik, C et al. The Treatment of Herpes Simplex Infections. Arch Intern Med. 2008;168(11):1137-1144

Recurrent HSV

- Virus remains latent in **nerves** after the initial infection and can be reactivated later
- **Recurrent HSV infection**
  - **Herpes labialis**
    - lip vermillion and perioral skin
    - vesicles, followed by rupture and crusting
  - **Recurrent intraoral herpes**
    - attached mucosa (gingiva or hard palate)
    - multiple pinpoint erosions or ulcers

Herpes labialis

- "cold sores" or "fever blisters"
- Numerous potential triggers
  - **Exposure to UV light**
  - Physical or emotional stress
  - **Manipulation of tissues during dental procedures**
- Characteristic **prodrome** 6-24 hours before clinical lesions develop
  - **Pain, burning, tingling, itching, erythema**
- Clusters of fluid-filled vesicles form, rupture and crust within 2 days
- Mechanical rupture of intact vesicles can result in spreading of the virus
  - Re-appoint a patient who presents for non-urgent dental care with lesions in the vesicle stage

Recurrent intraoral herpes

- Involvement is limited to **keratinized, attached mucosa**
  - **Attached gingiva**
  - **Hard palate**
- Often triggered by dental treatment
- A cluster of tiny vesicles that quickly rupture to form shallow ulcerations that coalesce

Recurrent Herpes- TREAT

- Adults and Children over 40kg (88lbs)
  - ***Valacyclovir 500mg – most rapidly absorbed***
    - 2g po stat at onset of symptoms, 2g 12 hrs later
- *Penciclovir Cream 1%*
  - Apply every 2 hours for 4-5 days

*Cernik, C et al. The Treatment of Herpes Simplex Infections. Arch Intern Med. 2008;168(11):1137-1144

Impetigo – *potential mimic of herpes labialis*

- **Common superficial bacterial skin infection**
  - *Staph aureus*
  - *Area of minor skin abrasion*
- **Symptoms**
  - Face and extremities
  - Vesicles or bulla → honey colored crusts
  - May be itchy
  - Cervical lymphadenopathy may be seen
  - *Usually no prodrome*
- **Contagious**

Impetigo

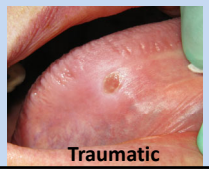
- **TREAT:** ***Mupirocin (Bactroban) 2% ointment***
  - *Disp:* 15 g tube
  - *Sig:* Apply to affected area tid for 2-3 weeks or until 1wk after lesions heal
  - Highly effective against staphylococci and Streptococcus pyogenes
- **REFER:** ***More extensive cases- Systemic antibiotics***
  - 1 week course
  - Clindamycin
  - Cephalexin

Traumatic ulcers

- **Ulcer =** entire epithelial thickness is lost
- **Trauma** = the most common cause of ulceration in the oral cavity
- May be **physical, thermal, chemical,** or even **electrical** trauma
- Often on tongue, lips or buccal mucosa (areas easily traumatized by the teeth)
- Usually resolves within 2 weeks

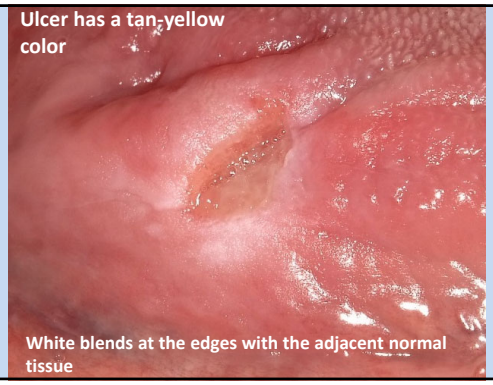
Helpful tips about traumatic ulcers

- **Lesions often have a white border**
  - **particularly if result of repeated frictional irritation**
- **Tend to have blending margins with adjacent mucosa - NOT sharply defined like a leukoplakia**
- **Aphthous ulcers usually have a red halo**



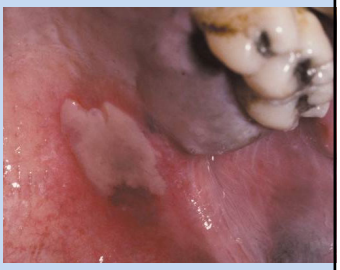
Traumatic

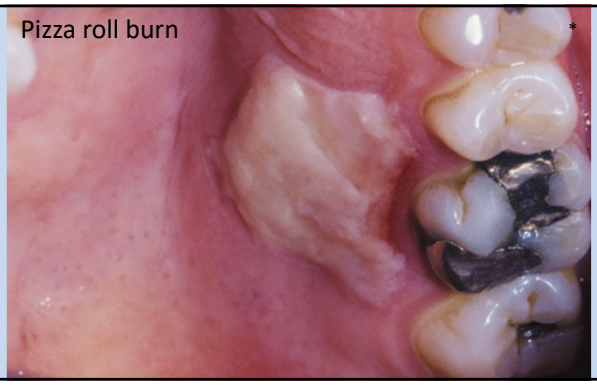
Aphthous



Burns

- **Chemical burns**
  - Chemical application
    - Iatrogenic
    - Self inflicted, ingestion of chemicals
  - Ask questions
- **Thermal Burns**
  - Hot foods or liquids
  - Question patient / parent
  - Buccal and palatal mucosa





Traumatic ulcer- TREAT

- **Determine if there is a history/source of trauma**
- **Remove/treat suspected cause**
- **Palliative care**
  - **Topical anesthetic**
  - **Over the counter products available that create a protective film over the ulcer for temporary pain relief**
- ***Re-evaluate area 2 weeks after removal of cause of trauma***
- ***If lesion does not resolve in 2 weeks, a biopsy is indicated***

Palliative Care

- ***Zilactin B - OTC***
  - Cellulose based
  - forms a protective seal over ulcer
- ***Canker cover***
  - Forms a protective seal over ulcer
- ***2% Viscous Lidocaine – pain relief***
  - do not give to children, risk of seizures
  - teenagers okay if responsible
- ***Dyclonine HCl .5 or 1.0% for children***
  - Swish and spit PRN pain
  - Pain relief in children
  - Available OTC in Sucrets
  - Some types of Cepacol spray
- ***Fluids to prevent dehydration***

Aphthous Ulcers

- **Mucosal destruction as a result of T-cell mediated immunologic reaction**
  - Analysis of peripheral blood in patients with aphthae:
    - decreased ratio of CD4+ to CD8+ T lymphocytes
    - increased tumor necrosis factor
  - Epithelial destruction:
    - local T-cell mediated process: TNF
    - macrophages and mast cells
- **What is the initiating factor?**
  - Primary immune dysregulation
  - Decrease of the mucosal barrier
  - Increase in antigenic exposure

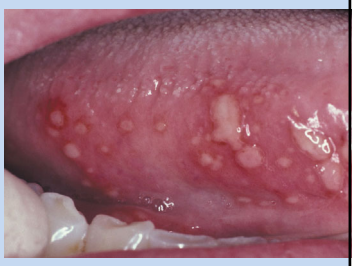
Aphthous Ulcers

- **Minor**
  - Autoimmune
  - 20-60% of population
  - *Movable mucosa only*
  - Small: 3-10mm
  - Multiple: 6 or less
  - Painful
  - Yellow-white fibrinopurulent membrane with erythematous halo
  - Heals in 7-14 days

Courtesy Dr. Carl Allen

Major

Herpetiform



Aphthous ulcers- TREAT:
Topical corticosteroid gels- OFF LABEL

- ***Augmented betamethasone dipropionate gel .05%***
- **Clobetasol propionate gel .05%**
- **Fluocinonide gel .05%**
  - **All: Disp:** 15 g tube
  - **All: Sig:** Apply a thin film to lesion 4-6 times per day
    *as early in the course of the process as possible
    *do not use for longer than 14 days
- Bioadhesives can be applied over top of the gel to help keep it in place longer

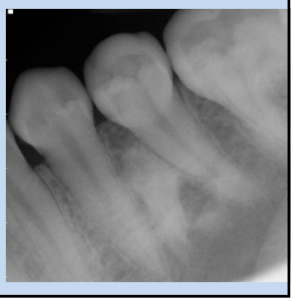
Don't confuse aphthous ulcers with **THIS**

Idiopathic osteosclerosis

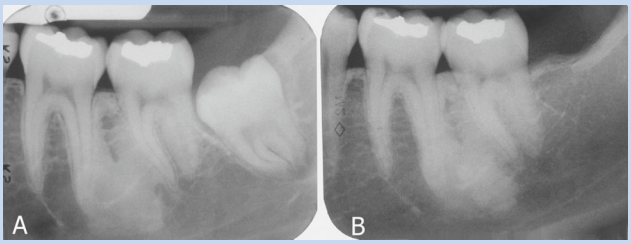
- A focal area of increased bone density that cannot be attributed to any specific cause
- Common (5% estimated prevalence)
- Also seen in other bones
- Teens and young adults
- **Mandible** (90% of cases)
  - Premolar and 1st molar area
- Asymptomatic, no expansion

Idiopathic osteosclerosis

- **Radiographic appearance**
  - Homogeneous radiopacity
  - Well-defined but may have irregular shape
  - Often located in the root apex area
  - Stays the same size over time
  - If multiple radiopaque lesions, consider osteomas in Gardner syndrome



B = 10 years after A was exposed



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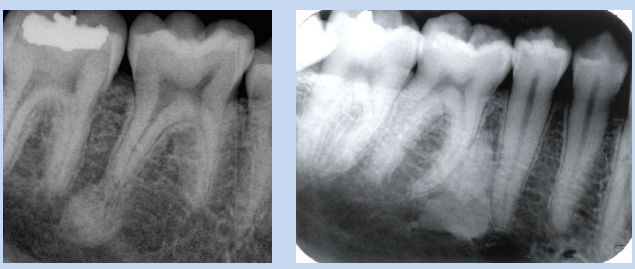
Idiopathic osteosclerosis



Idiopathic osteosclerosis -18 yo M

Idiopathic osteosclerosis

- **TREAT (monitor only)**
  - Check for clinical expansion
  - Verify teeth are vital
  - Periodic radiographic examination
  - **Biopsy is not usually indicated**
    - **If symptomatic or jaw expansion noted, then biopsy**
- **Differential Dx:**
  - Osteoma
  - Condensing osteitis
    - Widened PDL, tooth is often **non-vital**
    - Sclerosis of bone around roots in response to chronic inflammation

Condensing osteitis

Condensing osteitis- 48yoF

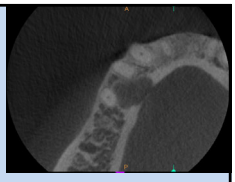
Cemento-osseous dysplasia

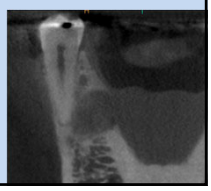
- A common fibro-osseous lesion that occurs in the <u>tooth-bearing areas</u> of the jaw
- **Radiographic appearance**
  - Dentulous and edentulous areas
  - Often surrounds the apex of teeth
    - intact PDL
  - **Progression over time**: <u>radiolucent → mixed RL/RO → radiopaque</u>
  - Even the most mature lesions usually have a thin, peripheral **<u>radiolucent rim</u>**
- Types: Focal, periapical, florid
  - **Female** predilection for all types
  - Florid and Periapical = **black females**

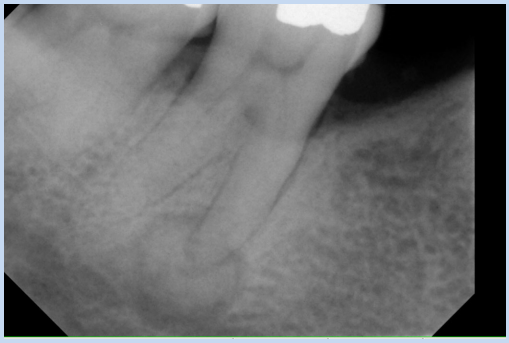
<u>Focal</u> COD

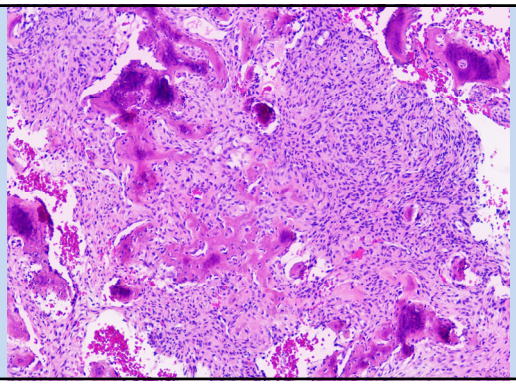
- **Females** (90%)
- Adults (3rd-6th decade)
- No definitive race predilection
- <u>Posterior mandible</u> is the most common location
- **Asymptomatic** (found incidentally on radiographs)
- Most are smaller than 1.5 cm in diameter

Focal COD





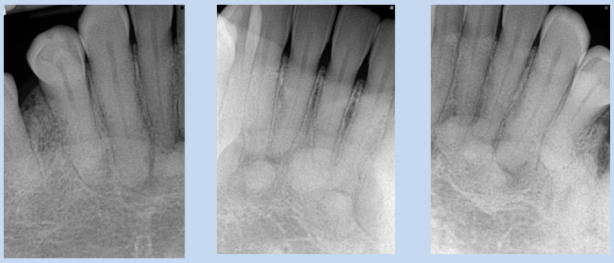




Periapical COD

- **Anterior mandible, periapical region**
  - **Usually multiple lesions**
- Asymptomatic
- Early lesions mimic periapical inflammatory pathology
  - **Vitality testing is normal**

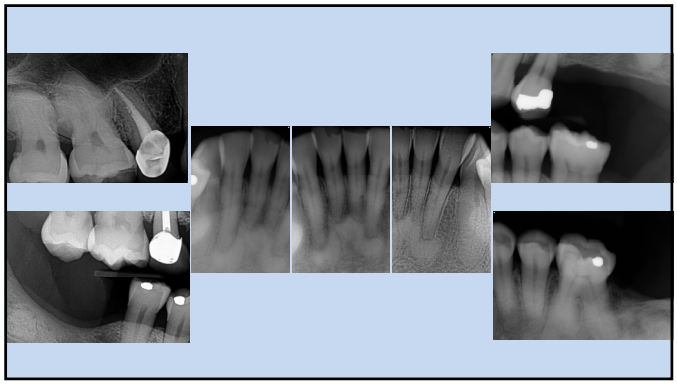
57 yo AA F

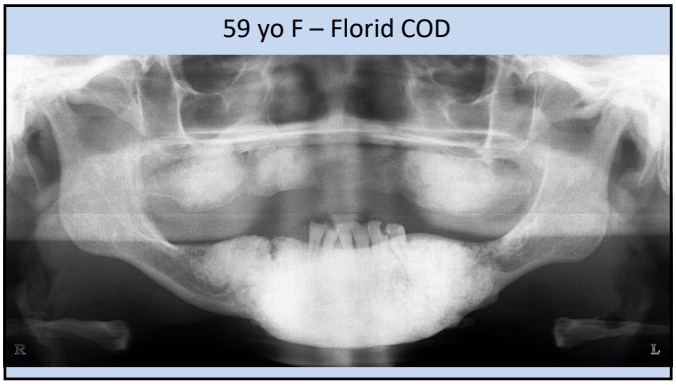


Florid COD

- **Multifocal lesions**
  - Not limited to anterior mandible
  - Often bilateral and symmetric
- **Many cases are asymptomatic**
- Some cases can be symptomatic
  - Dull pain, bony expansion
  - Sinus tract formation
  - Exposure of mature lesions to the oral cavity

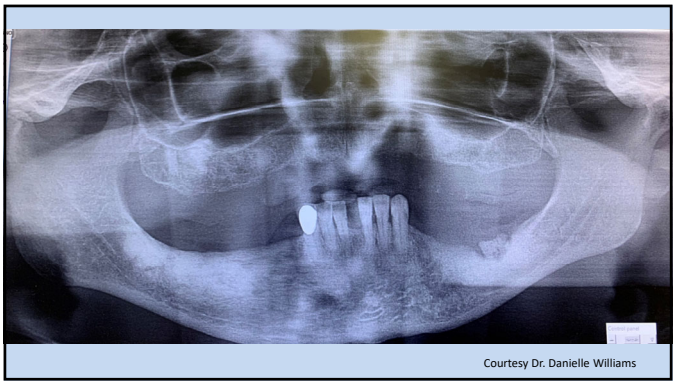
39 yo AA F

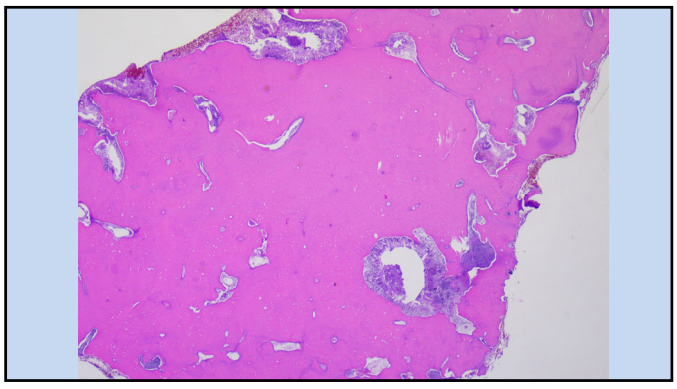


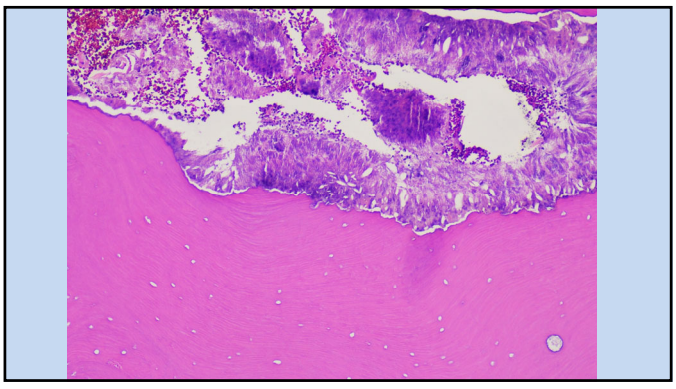


Cemento-osseous dysplasia

- **TREAT or REFER? It depends**
- Avoid biopsy if lesions are radiographically diagnostic
- **Observation for the asymptomatic patient**
- Early (radiolucent) focal lesions cannot be differentiated from other pathologic entities and usually necessitate biopsy
- Mature, sclerotic lesions are avascular and prone to necrosis and secondary infection
  - DO NOT DISTURB

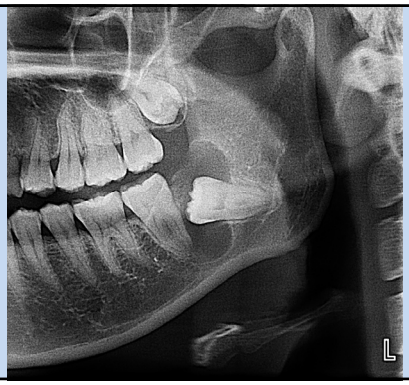






Unilocular pericoronal radiolucencies

- **REFER FOR BIOPSY**
- **Differential diagnosis**
  - Dentigerous cyst
  - Odontogenic keratocyst
  - Orthokeratinized odontogenic cyst
  - Ameloblastoma (solid or unicystic)
  - Ameloblastic fibroma
  - Adenomatoid odontogenic tumor
  - Calcifying odontogenic cyst

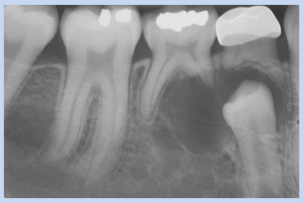


Dentigerous cyst

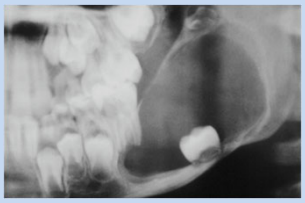
- Most common developmental odontogenic cyst
  - Site: **Mandibular 3rd molars** most common
  - May cause expansion, tooth displacement
  - Non-painful
- **Radiographs:**
  - **Unilocular RL**
  - **Always** assoc w/ crown of an unerupted tooth
  - Well-defined, corticated

Pericoronal radiolucencies

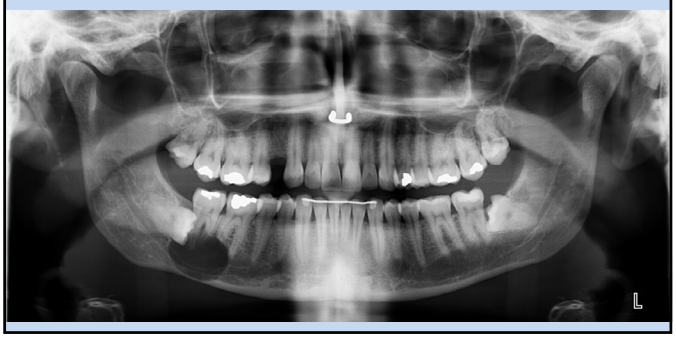
Odontogenic keratocyst



Unicystic ameloblastoma



Calcifying epithelial odontogenic tumor



Frictional keratosis

- A white lesion induced by **chronic mechanical irritation**
- **Unintended**
- Essentially a "**callous**" of the oral mucosa
  - Characterized by increased production of keratin
- "Blending" margins
- Reversible upon elimination of the cause- **TREAT**




Courtesy of Dr. Walter Jackson

Tobacco pouch keratosis / smokeless tobacco keratosis

- White plaque that develops where the mucosa directly contacts the tobacco product
  - Mandibular buccal/facial vestibule and mucosa
  - Wrinkled, fissured, rippled appearance


Tobacco pouch keratosis

- Can occur with moist snuff, dry snuff, or loose-leaf chewing tobacco
- Margins of lesion should blend gradually into surrounding normal mucosa

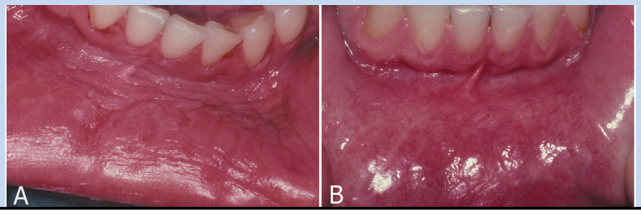
Smokeless tobacco

- **Smokeless tobacco contains 28 carcinogens***
  - non-volatile alkaloid-derived tobacco-specific *N*-nitrosamines (TSNA), *N*-nitrosoamino acids
  - volatile *N*-nitrosamines, volatile aldehydes
  - traces of some polynuclear aromatic hydrocarbons such as benzo[*a*]pyrene
  - Urethane, Polonium-210, Uranium-235 and -238
- **Oral cancer risk increases with long-term usage**
  - Tends to develop where the product is held
  - Risk reported 2-26 times greater than in nonusers
  - ADA reports 4x greater risk

*World Health Organization. Smokeless Tobacco and Some Tobacco-Specific N-Nitrosamines. International Agency for Research on Cancer, Monographs on the Evaluation of Carcinogenic Risks to Humans, Vol.89. Section 1.3.2. Lyon, France: World Health Organization, 2007.

TREAT- Tobacco Pouch Keratosis *

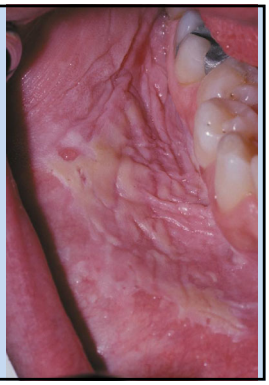
- Counsel patient to quit
  - If unwilling, have them place product in a different site
- Lesion should resolve in 2 to 6 weeks following cessation
- Biopsy if lesion persists after 6 weeks without contact with tobacco



REFER- Tobacco Pouch Keratosis

STAT Biopsy indications

- Intensely white
- Sharply defined borders
- Verrucous surface
- Ulceration
- Erythematous areas
- Induration or raised mass



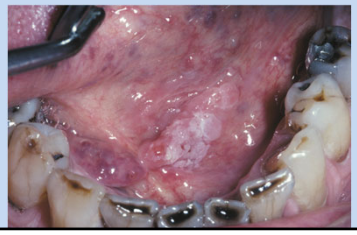
84 yo WM

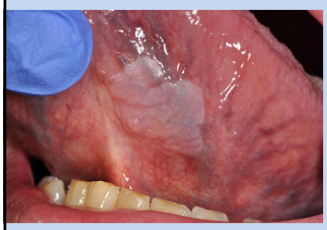
Leukoplakia- REFER FOR BIOPSY

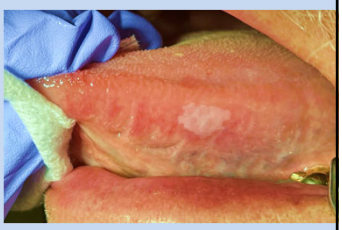
- An adherent white patch or plaque that cannot be characterized clinically as any other disease
  - A diagnosis of exclusion
- **A clinical term only**
  - Does not suggest what might be seen microscopically
- **Precancerous lesions (epithelial dysplasia) often present as a leukoplakia**
- **SHARPLY-DEFINED MARGINS** are a worrisome feature

Leukoplakia

- Cannot be wiped off
- More commonly - sharply defined borders
- Cannot diagnose it as anything else clinically







When biopsied, leukoplakia may be

- Hyperkeratosis
- Acanthosis/hyperplasia
- Atypia
- Dysplasia
- Carcinoma in-situ
- Squamous cell carcinoma

Epithelial dysplasia

- Atypical cellular changes (see next slide)
- The closer to the surface these changes reach, the worse the grade of dysplasia
  - Mild = extends to basilar 1/3 of the epithelium
  - Moderate = extends to basilar ½ of the epithelial thickness
  - Severe = extends beyond ½ of the epithelial thickness, but not full thickness
  - Carcinoma in situ = full thickness changes or "intra-epithelial neoplasm" (almost cancer)

What do you do when you identify any suspicious oral lesion?

- Palpate it
- Try to wipe it off (use gauze)
- Compare to contralateral side
- Look for possible sources of irritation:
  - Adjacent teeth, is it even accessible by the teeth?
  - Any oral appliances?
  - Oral habits?
- *Ask the patient about it*
  - Are they aware it is there? If so, how long? Does it hurt?
- ***ALWAYS DOCUMENT – PHOTO & MEASUREMENT***
- Re-eval in 2 weeks OR Biopsy / Refer for biopsy

Proliferative Verrucous Leukoplakia (PVL)

A unique, high risk form of oral leukoplakia

- First reported in 1985 by Hansen et al in OOO Sep;60(3):285-98
- Persistent
- Any intraoral location – *gingiva is most common site*
- Often multifocal, slowly spreading plaques
- High risk of recurrence
- High risk of malignant transformation
- Etiology is unknown*
  - Not associated with tobacco, alcohol, HPV ** or other virus

* Tumours of the oral cavity and mobile tongue. In: El-Naggar AK, Chan JKC, Grandis JR, Takata T, Slootweg PJ, editors, WHO classification of tumours of the head and neck. 4th ed. Lyon: IARC Press; 2017.
**Retrospective case-control study of viral pathogen screening in proliferative verrucous leukoplakia lesions. García-López R et al. Clin Otolaryngol. 2014 Oct;39(5):272-80.

PVL / PL	**Leukoplakia**
Multifocal	Single site
Women **>** Men (2.5-5:1)	Men **>** Women (2-3.5:1)
6^{th} - 8^{th} decades	5^{th} decade & beyond
Lower correlation with tobacco & alcohol	Higher correlation with tobacco & alcohol
<10% have dysplasia on first biopsy	~40% have dysplasia at first biopsy
High rate of malignant transformation (70 – 100%)	Moderate rate of malignant transformation (3 - 15%)

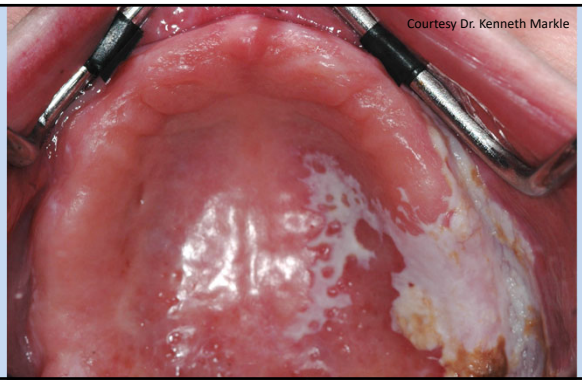
Villa et al. Proliferative leukoplakia: Proposed new clinical diagnostic criteria. Oral Dis. 2018 Jul;24(5):749-760.

55yoM

Courtesy Dr. Chuck McCabe

Courtesy Dr. Afarin Arghami

Courtesy Dr. Kenneth Markle



Courtesy Dr. Kenneth Markle

Managing PVL- REFER!

- Photos at every visit
- Follow patients every 3-6 months
- Periodic biopsies, especially where there has been change in appearance
- No dysplasia = observe
- Mild-moderate dysplasia = excise vs. closely follow depending on extent of lesion
- Severe dysplasia or worse = definitely excise

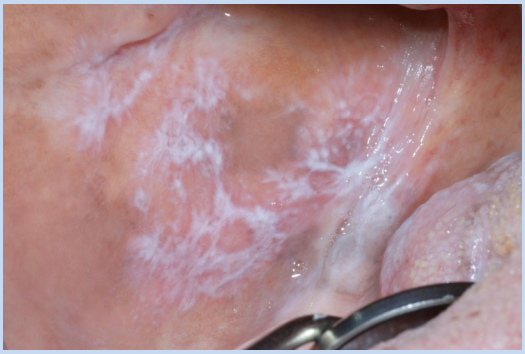
Villa et al. Proliferative leukoplakia: Proposed new clinical diagnostic criteria. Oral Diseases 2018;24:749-760

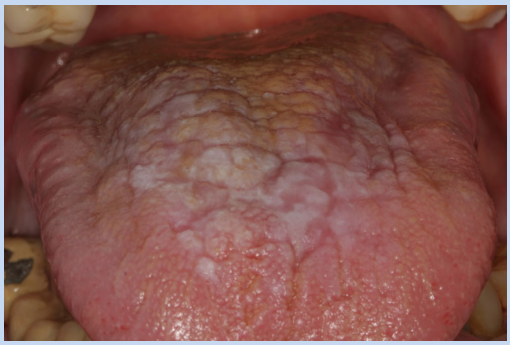
Lichen planus

- A common, chronic immune-mediated disease that can affect the oral mucosa and/or skin
- Name comes from resemblance to lichens that grow on rocks
- Middle-aged adults
- Women > men (3:2)
- **Oral lesions** have two clinical forms– **Reticular** and **Erosive**

Reticular oral lichen planus

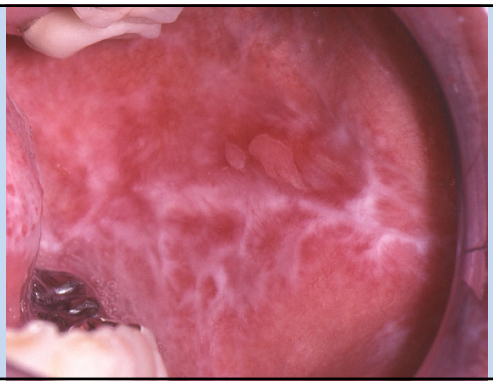
- **TREAT (monitor only)**
- **Asymptomatic**
- **Bilateral posterior buccal mucosa/vestibule**
  - Other locations: Gingiva, lip, tongue
- Characteristic intersecting, lacy white lines (**Wickham's striae**) that wax and wane
  - Dorsal tongue lesions tend to be more plaque-like





Erosive oral lichen planus

- **REFER**
- **Symptomatic**
- **Red, atrophic, and ulcerated** areas surrounded by the classic white striae at the periphery
- Sometimes the gingiva is the only area affected and presents as a **desquamative gingivitis**
- Biopsy should be performed since other conditions can present similarly
  - mucous membrane pemphigoid, pemphigus vulgaris, PVL



Treatment of erosive lichen planus

- *Rx: Fluocinonide Gel .05% (Lidex)*
- ***Rx: Augmented betamethasone dipropionate Gel .05% (Diprolene)***
- *Rx: Clobetasol propionate Gel .05% (Temovate)*
  - *ALL Disp:* 15 g tube
  - *ALL Sig:* Apply thin film to affected area 4-5 times qd
  - Do not use for longer than 14 days
- *Rx: Dexamethasone Elixir .5mg/5mL (.01%)*
- ***Rx: Prednisolone Syrup 5mg/5mL or 15mg/5mL***
  - *ALL Disp:* 240 mL/480 mL bottle
  - *ALL Sig:* Swish with 1 teaspoon for 2 min, then spit 4-6X qd. Do not use for longer than 14 days
- May develop iatrogenic candidiasis
- Re-eval in 2-3 weeks, then 3-6 months

Diagnostic challenges

- **Mimickers** of oral lichen planus (clinical and histopathologic):
  - Lichenoid contact stomatitis
  - Lichenoid drug reaction
  - Chronic ulcerative stomatitis
  - Lupus erythematosus
  - Chronic graft vs. host disease
  - Mucous membrane pemphigoid
  - Proliferative verrucous leukoplakia
  - Epithelial dysplasia

Lichenoid drug reactions

*

Table 2 Causative agents in oral lichenoid reactions

Antianxiety/psychotropic agents	**Nonsteroidal anti-inflammatory drugs**
Benzodiazepine	Aspirin
Lithium	Diclofenac
Tricyclic antidepressants	Ibuprofen
Antibiotics	Indomethacin
Isoniazid	Naproxen
Rifampin	**Miscellaneous**
Streptomycin	Allopurinol
Tetracycline	Bismuth
Anticonvulsants	Dapsone
Carbamazepine	Gold salts
Phenytoin	Penicillamine
Valproate	Sulfasalazine
Antidiabetics	**Statins**
Insulin	Fluvastatin
Sulfonylureas	Lovastatin
Glipizide, Glyburide	Pravastatin
Tolbutamide	Simvastatin
Antifungals	**Dental metals**
Amphotericin B	0.1% Mercury chloride
Ketoconazole	1% Ammoniated mercury
Antihypertensives	Beryllium
Atenolol	Bismuth
Captopril	Chromium
Chlorothiazide	Cobalt
Enalapril	Copper
Furosemide	Gold
Hydroclorothiazide	Metallic mercury
Metoprolol	Nickel
Propranolol	Palladium
Antimalarials	Silver
Chloroquine	Tin
Hydroxychloroquine	**Other dental materials**
Quinacrine	Acrylate compounds
Quinidine	Composite
Antiretrovirals	Glass ionomer
Zidovudine	Porcelain
Biologic agents	**Flavoring agents**
Obinutuzumab	Balsam of Peru
Tumor necrosis factor α (TNF-α) inhibitors	Cinnamon (cinnamic aldehyde)
Infliximab	Eugenol
Certolizumab	Menthol
Etanercept	Mint (mentha piperita)
Abatacept	Tartar control toothpaste

*Müller S. Oral lichenoid lesions: distinguishing the benign from the deadly. Mod Pathol. 2017 Jan;30(s1):S54-S67.

Suspected lichenoid drug reaction (ACE inhibitor)

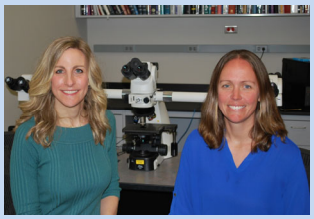
Lichenoid reaction to dental materials

Controversy about malignant transformation of oral lichen planus

- The WHO classified oral lichen planus as a premalignant lesion in 2005
  - Average malignant transformation rate: 1.09%[1] (88pts/7806)
- Challenges with making this designation[2]
  - Clinical and/or histopathologic evidence are often missing in published reports
  - Many other oral diseases can show similar clinical and microscopic features ("mimickers")
  - No widely accepted diagnostic criteria for oral lichen planus

1. Fitzpatrick et al. The malignant transformation rate of oral lichen planus and oral lichenoid lesions: a systematic review. J Am Dent Assoc 2014; 145(1):45-56.
2. Cheng et al. Diagnosis of oral lichen planus: a position paper of the AAOMP. Oral Surg Oral Med Oral Pathol Oral Radiol 2016;122:332-354

Thank You!



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