A to Z’s of Oral Ulcers

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Disclosure

• Dr. Cordell has no financial support or conflict of interest to disclose.

Clinical Evaluation

• Examine:
  • 1. oral mucosa 2. skin 3. eye
  • 4. Ask about genital lesions
• Distribution & morphology of lesions
• Hx of blistering/+ Nikolsky sign
• Medication use
• Topical substances

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
**Aphthous Ulcers**

- **Major**
  - Site:
    - Movable mucosa
  - Large: 1-3 cm
  - Painful
  - May last 2 to 6 weeks
  - May require injections of corticosteroids to aid in healing

- **Herpetiform**
  - resembles herpes
  - Site:
    - Majority of lesions are found on movable mucosa
    - Can be seen on attached mucosa
    - Tiny: 1-3mm
    - Numerous: up to 100 at one time
    - VERY painful

**Treatment of Aphthous Ulcers**

- **Rx:** Fluocinonide gel .05%
- **Rx:** Augmented betamethasone dipropionate gel .05%
- **Rx:** Clobetasol propionate gel .05%
- **ALL Disp:** 15 g tube
  - **ALL Sig:** Apply thin film to affected area 4-6 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

**Topical CCS cont.**

- **Other formulations:**
  - Triamcinolone tablets
  - Beclomethasone dipropionate aerosol spray
  - If systemic is needed, use a swish and swallow rather than tabs – get both topical and systemic effects
**Behçet's Syndrome**
- Oral, ocular and genital ulcers
- Immunodysregulation
- Young adults
  - 99% develop oral lesions
  - Similar to aphthous ulcers, but patients usually have more than 6 lesions
  - Frequently involve the soft palate

**Behçet’s Syndrome**
- 99% of patients develop oral ulcers
  - six or more
  - soft palate and oropharynx most commonly
  - larger zone of diffuse erythema than aphthae

**Behçet’s Syndrome**
- 75% of the patients develop genital lesions
  - vulva, vagina, glans penis, scrotum, and perianal area
  - recur less frequently than the oral ulcerations
  - Deeper - tend to heal with scarring

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**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
- **Fluids to prevent dehydration**
**Behçet’s Syndrome**

- Ocular involvement is present in 70% to 85% of the cases
- Uveitis, conjunctivitis, corneal ulceration, papilledema, and arteritis
- Cataracts, glaucoma, and neovascularization of the iris and retina.
- Arthritis
- Central nervous system (CNS) involvement includes paralysis and severe dementia.

*TX: Topical and/or injected CCSs*

**Crohn’s disease**

- Unknown etiology - immunologically mediated
- **Site:**
  - Anywhere mouth to anus
  - Bowels affected:
    - Distal small intestine
    - Proximal colon

*1* [http://gastrointestinalatlas.com/English/Colon_and_Rectum/Normal_Colon/normal_colon_.html]

*2* [http://easypediatrics.com/pediatric-crohns-disease]

**Crohn’s disease**

- Estimated to affect 700,000 Americans
- M=F
- Age: 15 - 35.
- Oral lesions may precede the intestinal lesions in about 30% of cases
  - Prevalence of oral lesions in Crohn disease ranges from 0.5 to 20 percent.*
  - Do not necessarily correlate with intestinal disease activity.*


**Crohn’s disease**

- Systemic Symptoms:
  - Cramping, pain
  - Diarrhea
  - Constipation
  - Nausea
  - Weight loss, malnutrition
  - Arthritis and arthralgia
  - Hips, knees, ankles

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*2* [http://easypediatrics.com/pediatric-crohns-disease]

**Crohn’s disease**

- Oral findings:
  - Diffuse or nodular swelling of the oral soft tissues
  - Cobblestone appearance of mucosa
  - Deep linear ulceration
    - Usually in buccal vestibule
    - Soft tissue swellings may resemble denture epulis
Epulis fissuratum (inflammatory fibrous hyperplasia)

Crohn’s disease

- Treatment:
  - Sulfa drugs – sulfasalazine
  - Systemic CCS
    - more severe case
  - Complications may lead to:
    - bowel obstruction
    - Fistula
    - Abscess
    - Potential need for bowel resection
  - Oral lesions may tx with topical or intralesional steroid injex

Epithelial dysplasia

Premalignant epithelial change

High risk sites

- Floor of mouth
- Lateral and ventral tongue
- Soft palate / oropharynx
- Lower lip – different etiology – UV damage
Leukoplakia

- White patch or plaque that cannot be characterized clinically or pathologically as any other disease entity
- A clinical term only
- Frequently has sharply defined borders
- *May exhibit areas of ulceration*

**Potentially malignant lesions**

**Leukoplakia**

- *BIOPSY is mandatory for definitive diagnosis*
- Cannot predict which lesions will show dysplastic or malignant changes based on clinical appearance alone
- *pebbly or verrucous lesions should be viewed with increased suspicion*
- Malignant transformation potential
  - 1-7% of thick leukoplakias
  - 4-15% of granular or verruciform leukoplakia
- *Final treatment will be dictated by the histopathologic diagnosis*
  - Excision/Removal for any dysplasia, CIS or carcinoma

**Potentially malignant lesions**

**Erythroplakia** (erythroleukoplakia)

- Persistent red patch cannot be classified as anything else
- ~90% are severe dysplasia, carcinoma in-situ, or SCC
- Sharply demarcated borders
- Frequently asymptomatic, may have ulceration
- *BIOPSY for definitive diagnosis*
- *Final treatment will be dictated by the histopathologic diagnosis*
  - Excision for any dysplasia, CIS or carcinoma
Dysplastic epithelium

- Premalignant epithelial change
- Closer to the surface these changes reach, the worse the dysplasia.
  - Mild = extends to basilar 1/3 of the epithelium
  - Moderate = extends to basilar 1/2 of the epithelial thickness
  - Severe = extends beyond 1/2 of the epithelial thickness, but not full thickness
  - Full thickness changes = "carcinoma in situ" or "intra-epithelial neoplasm" almost cancer

Leukoplakia may represent:

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

Carcinoma in-situ (CIS)

- Histopathology
  - Dysplastic epithelial cells extend from the basal layer to the epithelial surface
  - "Top-to-bottom" change
  - No invasion has occurred
  - "Intact basement membrane"

Histopathologic features:

- ~3% of leukoplakias will show superficially invasive squamous cell carcinoma

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

- Palpate it
- Try and wipe it off (use gauze)
- Compare it to the 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?

What is your next step?

- Several choices:
  - **ALWAYS DOCUMENT THE LESION – PHOTO, measurement**
  - Provide treatment
  - Recommend reevaluation of lesion in 2 weeks
  - Perform an additional adjunctive test
  - Biopsy the lesion
  - Refer the patient for a second opinion or biopsy

Erythema multiforme
**Erythema multiforme minor**

- Blistering and ulcerative mucocutaneous condition
- 50% of cases are preceded by viral, bacterial infection or medication induced
  - *Herpes is the most common precursor*
  - *Mycoplasma pneumoniae* is most common bacterial precursor
- 50% unknown cause
- Age: 20-30
- Slightly women > men
- Disease usually lasts for 2-6 weeks

**Erythema multiforme minor**

- Prodromal symptoms
  - 1 week prior
  - Fever, malaise, headache, cough, sore throat
- Erythematous skin lesions
  - extremities
  - *target lesions / bull's-eye*
  - Can evolve to have a necrotic center

**Erythema multiforme minor**

- Clinical Features:
  - Diffuse erythema and ulceration of oral mucosa
  - Hemorrhagic crusting of the lips
  - *“bloody crusty lips”*

**Erythema multiforme minor**

- Self-limiting
- Tx: systemic corticosteroids
  - If suspected cause is medication:
    - remove the drug
### Erythema multiforme major

- 2 or more mucosal sites are affected with widespread skin lesions

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<thead>
<tr>
<th>Skin +</th>
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<tbody>
<tr>
<td>1. Oral</td>
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<tr>
<td>2. Ocular</td>
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<td>3. Genital lesions</td>
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### Erythema multiforme major

**Treatment:**
- If drug related, discontinue ASAP
- IV rehydration may be needed
- Topical analgesics
- Topical or systemic corticosteroids
- 20% of patients experience recurrences

### Stevens-Johnson Syndrome

- Triggered by drug exposure
- 200 different drugs have been implicated
- Less than 10% of body surface is affected by lesions

**Toxic Epidermal Necrolysis**

- Triggered by drug exposure
- 200 different drugs have been implicated
- More than 30% of body surface is affected by lesions
- More common in people over 60
- In both types theory is that epithelial apoptosis is triggered by meds

### Symptoms of SJS and TEN

- Fever, malaise, sore throat, headache
- Skin lesions begin on the trunk
- Start as flat erythematous macules
- Develop into bullae and skin sloughs
- Diffuse oral ulceration
- 3-5 weeks of skin lesion activity
- Can lead to ocular damage
TEN
- Tx with IV immunoglobulins
- Secondary infection and sepsis are major concerns
- Pneumonia may develop from aspiration of sloughed mucosa
- Mortality rate 25-30%

Hand, Foot and Mouth
Herpangina
Herpes
Herpes Zoster
Histoplasmosis
Refer to infections lecture for this material

Lichen Planus
- Immunologically mediated
- 0.2-5% of population*
  - 4th-8th decade*
  - Women 3:2 men
- Skin: purple, pruritic, polygonal, papules
  - Lichen lesions of the extremities
  - May see Wickham's striae on the surface
  - 60% of pts with skin lesions have oral lesions*
- Oral
  - Reticular
  - Erosive
  - 15% of patients with oral lesions develop skin lesions*
  - Up to 20% of pts w/ oral lesions develop genital lesions*


Skin: purple, pruritic, polygonal, papules
Reticular lichen planus

• Typically asymptomatic – less reported
• Sites:
  — Usually bilateral
  — Posterior buccal mucosa most common
  — Can be seen at any oral location
• Appearance:
  — Interlacing white lines, papules – Wickham’s striae
  — May be plaque-like on dorsal tongue
  — Activity and pattern waxes and wanes

Courtesy Dr. Kristin McNamara
**Erosive lichen planus**

- **Symptomatic** – painful
- **Sites**: same as reticular
- **Appearance**:
  - Atrophic, erythematous areas with central ulceration
  - Surrounding tissue usually see white striae
  - May present as desquamative gingivitis only
  - Spontaneously sloughing, peeling gingiva or tissue that can be easily removed
- **Biopsy to confirm diagnosis**

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**Erosive lichen planus**

- **Differential diagnosis**:
  - Lichenoid mucositis – drug reaction, reaction to dental materials
  - Mucous membrane (cicatricial) pemphigoid
  - Pemphigus vulgaris
  - Systemic lupus erythematosus
- **Must have a biopsy to determine diagnosis**
  - H&E alone vs H&E and DIF

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*Courtesy Dr. Brian Muzyka*
Direct immunofluorescence of oral LP

- **Nonspecific**
  - shaggy fibrin and/or complement (C3) deposits in a granular or linear pattern along the BMZ.
  - IgM-positive colloid bodies can also be identified
- Same pattern can be seen in other inflammatory conditions, as well as in premalignant and malignant oral lesions
- DIF is not needed to diagnose LP, but can be useful to distinguish other vesiculobullous diseases

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LP Management

- Reticular: Regular recall follow-up
- Erosive:
  - Topical CCS and regular re-evals with general DDS or specialist
  - Control, not cure
- Pt reassurance
  - discuss malignant transformation risk
  - ~1% of patients with LP develop SCC
- **Fitzpatrick et al: meta-analysis and systemic review of malignant transformation rates of oral LP**
  - evaluated 16 studies
  - total of 7806 patients
  - overall average rate of 1.09%

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Fitzpatrick et al: meta-analysis and systemic review of malignant transformation rates of oral LP*

- 88 pts/7806 who developed oral SCC
  - most common site: tongue (51%), buccal mucosa (32%)
  - female 3: male 1
  - opposite from conventional oral SCC where the ratio is 1F:3M
  - average age of the OLP pt when they developed SCC was almost 10 years older (60) than the non-cancer OLP group (51)

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Treatment of erosive lichen planus

- **Rx:** Fluocinonide Gel .05% (Lutea)
- **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 4-5X qd. Do not use for longer than 14 days
  - May develop iatrogenic candidiasis
  - Re-eval in 2-3 weeks, then 3-6 months
  - VERY important in "atypical cases – lichenoid mucositis"

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CCS cont.

- Triamcinolone 10mg/ml injectable
  - inject .1ml/cm³

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- Looked at all published randomized controlled trials assessing treatment of mucosal LP
- Found that the following were effective in the treatment of oral lichen planus (OLP) when compared with placebo
  - Topical betamethasone valerate
  - Clobetasol-17-propionate
  - Fluocinonide
  - Calcineurin inhibitors(cyclosporin) and topical retinoids are also beneficial treatment options

- **MuGard** - mouthwash shown to reduce the severity of oral mucositis when started before initiating antineoplastic therapy for head and neck cancers
- double-blind, randomized, placebo-controlled pilot study
- 20 pts w oral lichen planus
  - MuGard (n = 10) or saline-bicarbonate control (n = 10)
  - 1 tsp swished for 1 minute, 5 times a day for 14 days.
  - Oral Mucositis Assessment Scale scores and visual analog scale pain scores
    - obtained before the start of treatment
    - days 2, 7, and 14.

**RESULTS:**
- Significant reductions in all outcome measures occurred in the MuGard-treated group
  - Ulceration, erythema – pts experienced 50% decrease of mucositis
  - Pain at rest/swallowing/speaking – 79% improvement
  - 4 of 10 patients reported no pain at end of 14 days

**CONCLUSIONS:**
- MuGard significantly reduces pain and ulceration associated with oral mucositis in patients with lichen planus

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**Lichenoid Mucositis**
- Same clinical appearance as lichen planus
  - either reticular or erosive, but more frequently erosive
- **Cause:**
  - Medications
  - Dental materials: amalgam, gold, porcelain, composite
  - Artificially flavored cinnamon products
- **Try and identify the possible source, requires asking lots of questions!**
- **Tx:**
  - altering drug therapy with patient’s MD
  - Topical CCS’s
  - Discontinue cinnamon products – then do a challenge

**Lichenoid drug reactions**

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**Pharmacy**

"Each capsule contains your medication, plus a treatment for each of its side effects."
Lichenoïd reaction to dental materials

Artificial cinnamon candy contact stomatitis

Lupus
Systemic lupus erythematosus
Cutaneous lupus (discoid lupus)

Systemic Lupus Erythematosus
• Multisystem autoimmune disease
  – Cause is unknown
  – Exhibits a hereditary pattern
  – Women 8-10x more
  – Ave age: 31
  – >1.5 million people in US
  – “the great imitator”
**Systemic Lupus Erythematosus**

- Initial symptoms non-specific → makes dx difficult
  - Chest pain when taking a deep breath
  - Fatigue
  - Fever with no other cause
  - Malaise
  - Hair loss
  - Oral ulcers
  - Sensitivity to sunlight
  - Butterfly rash (40-50%)
  - Swollen lymph nodes
  - Painful joints - fingers, hands, wrists, and knees

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**Systemic Lupus Erythematosus**

- Signs and Symptoms:
  - Kidney involvement – 40-50%
  - Cardiac involvement –
    - Pericarditis
    - Vegetations of the heart valves in 50% of patients
  - Lung involvement
  - Abnormal clotting
  - Anemia

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**Systemic Lupus Erythematosus**

- Oral findings: 8 to 45% of patients with SLE
  - palate, buccal mucosa and gingiva
  - May have a lichenoid appearance:
    - ulceration
    - erythema
    - striae

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**Systemic Lupus Erythematosus**

- Oral findings: 8 to 45% of patients with SLE
  - palate, buccal mucosa and gingiva
  - May have a lichenoid appearance:
    - ulceration
    - erythema
    - striae
Cutaneous Lupus Erythematosus

- Few or no systemic findings
- Skin
  - Scaly erythematous plaques and patches
  - Sun exposed skin most severely affected
  - Scarring with hypo and/or hyperpigmentation
  - Sun worsens the lesions

Cutaneous Lupus Erythematosus

- 4 to 25% of patients with CLE develop oral lesions
- Oral lesions almost never occur without skin lesions

Lupus Erythematosus

- Diagnosis:
  - Biopsy
    - Formalin: H&E
    - Michels or Zeus solution: DIF
  - Serum testing:
    - ANAs (antinuclear antibodies)
      - 95% of SLE patients’ serum shows antibodies directed against nuclear antigens
      - Nonspecific
    - Anti-dsDNA (antibodies to double stranded DNA)
      - 70% of patients
      - More specific for SLE

Lupus Erythematosus

- Treatment:
  - Disease dependant
  - Avoid sunlight exposure
  - NSAIDs + antimalarial drugs (hydroxychloroquine)
  - Immunosuppressive & immune-modulating drugs
  - Thalidomide
Pemphigus vulgaris

- Autoimmune etiology
- Autoantibodies destroy desmosomal components—desmoglein 1 and 3 (glycoproteins)
- Relatively rare; no sex predilection
- Average age – 50 years
- Usually fatal if not treated

Pemphigus vulgaris

- Oral findings:
  - first sign in 50% of patients (6-12 months prior to skin disease)
  - “first to show, last to go”
  - Bullae or vesicles: rupture quickly to form ragged erosions and ulcers
  - Any location
  - Nikolsky’s sign
  - Biopsy required:
    • H&E, DIF

- Shortly after visiting her DDS, she developed skin lesions
Two step procedure:
- One piece of tissue in formalin for light microscopy
- One piece in Michel’s solution for direct immunofluorescence studies

* Make sure pt has been off of steroids for 2 – 3 weeks
Prior to biopsy place a suture through mucosa
May help prevent epithelial loss
Allows for less traumatic handling of tissue specimen

Pemphigus vulgaris

- H&E:
  - Acantholysis of spinous cell layer
  - Intraepithelial separation superficial to the basal cell layer
  - “tombstoning” of basal cells
  - Tzanck cells on cytology

Immunofluorescence studies

- Direct
  - Fluorescein labeled anti-human IgG
- Indirect
  - Patient serum (with or without antibodies)
  - Control tissue (negative controls)
  - Fluorescein labeled anti-human IgG

**Mucous membrane pemphigoid (cicatricial pemphigoid)**
- Clinically resembles pemphigus due to blister formation
- About 5x more common than pemphigus
- 3:2 female predilection
- Older age group – average age, 60 years
- Autoantibodies directed against hemidesmosomes – target antigens: BP-1, BP-2, Laminin 5

**Pemphigus vulgaris**
- Direct immunofluorescence
  - Antibodies bound to patient’s tissues
  - Deposition of antibodies IgG, IgM and complement components (C3)
  - Intraepithelial deposition pattern ("chicken wire"/"fishnet")

**Pemphigoid - Clinical**
- May affect any mucosal surface; occasionally skin
- Scarring usually seen with conjunctival (symblepharon) and cutaneous lesions
- Desquamative gingivitis
- May see intact blisters intraorally

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*Courtesy Dr. Carl Allen*
Direct Immunofluorescence
• Linear band of immunoreactants at the basement membrane zone - IgG and C3

Cicatricial pemphigoid
• Eye lesions occur in ~25% with oral lesions
• Most significant aspect of the disease is ocular involvement
• Scarring obstructs the orifices of glands that produce the tear film, resulting in a dry eye
• Dryness leads to keratinization of the corneal epithelium, leading to blindness

Cicatricial pemphigoid
—Subconjunctival fibrosis and inflammation
—Symblepharon: adhesion between bulbar and palpebral surfaces
—Entropion
—Trichiasis
—Cornea keratinizes for self protection
—Blindness
Mucous membrane pemphigoid

• Treatment
  - Referral to ophthalmologist
  - Topical corticosteroids
  - Systemic corticosteroids
  - Dapsone
    • sulfa drug derivative
  - Tetracycline and Niacinimide
    • .5 to 2.0gm of each per day

Squamous Cell Carcinoma
Oral and Oropharyngeal

Squamous Cell Carcinoma

• ~90% of cancers of the oral cavity and oropharynx are squamous cell carcinomas
• 11th most common type of cancer in the world
  - 529,000 cases annually in 2012*
  - 292,000 deaths annually in 2012*
• most often older men who have been aware of an alteration in an oral cancer site for 4 to 8 months
• Men 2.5 : 1 women

High risk sites for Oral SCC

- Floor of mouth
- Lateral tongue and ventral tongue
- Soft palate / oropharynx / Retromolar trigone
- Lower lip


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Clinical features of Oral SCC

- Leukoplakia
- Erythroplakia
- Erythroleukoplakia
- Ulceration
- Exophytic, rolled borders with central ulceration
- May see surface telangiectasia
- Mass lesion: indurated, fixed
  - Exophytic and or endophytic
- May see destruction of underlying bone
**Verrucous Carcinoma**

- 1-10% of all oral SCC
- A “low-grade” variant of oral SCC
- More commonly seen in men
- Age 65-70
- More frequently seen in patients who use smokeless tobacco
- Sites:
  - Mandibular vestibule
  - Buccal mucosa
  - Hard palate

**Verrucous carcinoma**

- Diffuse, usually painless, thick white plaque (may have erythematous areas)
- Numerous papillary or verruciform projections
  - Exophytic mass
  - “shag carpet” appearance
  - “Warty” surface texture
- Adjacent leukoplakia or tobacco pouch keratosis

**What do you do if you see something like this?**

- Take a picture
- Measure the lesion
- Examine the neck for possible nodal involvement
- Discuss with patient, be honest about your concern
- Refer for biopsy ASAP
  - Arrange for biopsy before patient leaves the office
- Document your findings and discussion

**Oral cancer statistics**

- American Cancer Society
  - 51,540 new cases of oral and oropharyngeal cancer diagnosed in the US in 2018
    - 37,160 in men
    - 14,380 in women
  - An estimated 10,030 deaths in 2018
    - 7280 in men
    - 2750 in women


Oral cancer statistics

- Stage I: primary tumor <=2cm (T1, N0, M0)
  - 5-year relative survival rate = 76-81%
  - no nodal metastasis
- Stage II: primary tumor >2 but <=4cm (T2, N0, M0)
  - 5-year relative survival rate = 58-66%
- Stage III: metastasis to regional lymph node or primary tumor >4cm
  - (T3,N0,M0 or T1/2/3, N1, M0)
  - 5-year survival rate = 41-59%
- Stage IV: 5-year survival rate = 9-32%
- The majority of cases dx’d at Stages III and IV
  - 65-70% of orally identifiable lesions are stage III or IV

Oral cancer statistics

- 81% of patients survive at least 1 year after diagnosis.
- For all stages combined:
  - 5-year survival rate is 59-63%
  - 10-year survival rate is 44%

Risk factors for Oral and Op SCC

- **Extrinsic factors:**
  - Smoked tobacco
  - Smokeless tobacco
  - Alcohol
  - Betel quid
  - HPV (oropharynx primarily)
  - Sunlight (lip and skin lesions only)
  - Radiation therapy

- **Intrinsic factors:**
  - Age
  - Reduced cellular immunity
  - Immunodeficiency
  - General malnutrition
  - Severe iron-deficiency
**Tobacco smoking**

- Risk is dose and time dependent
  - relative risk (smoker’s risk for oral cancer compared with that of a nonsmoker) is dose dependent for cigarette smokers
  - risk increases as number of years smoking increases
- Cigarettes worst, cigars and pipes slightly lower*

*Tobacco smoking* • Tobacco smoke : 70+ carcinogens
  - ~65-86% of patients with head and neck CA are smokers*
    - 5x greater = smoke 40 cigarettes
    - 17x greater = smoke 80 or more cigarettes daily
    - 10-100x greater in people who drink and smoke*


**Alcohol**

- 2017 WHO updates*
  - Major risk factor for oral cavity SCC remains *smoking with a synergistic association with alcohol consumption*


**Alcohol**

- Excessive consumption/Heavy drinking
  - implicated in oral cancer development
  - Greater than 15/week (Oral Cancer Foundation)
  - CDC: Males: 2+ drinks/day, Females: >1 drink /day
  - greater risk of pharyngeal and oral cancer - number of years of heavy drinking and not the number of drinks per day.*
- alcohol in combination with tobacco is a significant risk factor in cancer development
  - 33% of male patients with oral cancer are heavy alcohol users
  - less than 10% of the general population are heavy alcohol users


**Effects of alcohol**

- Local
  - Solvent action
    - increases the permeability of oral mucosa to carcinogens in tobacco smoke
  - Contaminates in the alcohol
  - Ainters epithelial metabolism
  - Ethanol metabolized by oral flora to acetaldehyde
    - Known carcinogen
- Systemic
  - Nutritional deficiencies
  - Decreases liver ability to detoxify carcinogens
High-risk HPV types

- Predominantly oropharyngeal SCC (OpSCC)
- <5% or oral SCC is HPV associated
- HPV 16 is highly prevalent ~90% in published studies of OpSCC
- Other HPV types 18, -31, -33, -35, -45, -51, -52, -56, -58, -59, -68
- 47%-70% of all cases of oropharyngeal cancers in North American have biologically active HPV **

Patient Education

- Educate your patients about worrisome features of oral lesions
  - A sore that bleeds easily or does not heal
  - A color change of the oral tissue
  - A lump, thickening, rough spot, crust or small eroded area
  - Pain, tenderness or numbness in the mouth
  - Difficulty chewing, swallowing, speaking or moving the jaw or tongue
  - A change in the way the teeth fit together

http://www.sixstepscreening.org/self-exam/

- An oral cancer examination and screening is best done regularly by your dentist
- Patients can also perform this self-examination between dental visits to check for any early signs of oral cancer
- If you are concerned about any of your findings, immediately see your dentist for an evaluation.

Oropharynx

- posterior one-third/base of the tongue
- soft palate
- tonsillar pillars
- pharyngeal walls

Traumatic ulcers

- Due to trauma
  - Tortilla chip, toothbrush jab
  - Bite
  - External trauma
  - Tooth with rough edge/ fracture

- Burns
  - Chemical
  - Thermal

- Idiopathic
- Any location
- Question patient

Kitrina G. Cordell, DDS, MS
LDA Cruise March 2019
• 40 pack year history, quit 2 years prior
• COPD, rheumatoid arthritis, hypertension
• metoprolol, fosamax, plaquenil

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

• 29 year old female with painful lesion floor of mouth
• Area had been sore off and on for 4 months
Thank You!

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