High yield oral pathology

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Benign radiopaque lesions

Odontoma

- Most common odontogenic “tumor”
  - More likely a developmental anomaly (hamartoma) rather than a true neoplasm
  - Consists of varying amounts of dentin, enamel, cementum, and pulp
- Kids and teenagers
- **Compound odontoma**
  - Anterior maxilla is most common site
  - X-ray: looks like multiple “tooth-like” structures of varying size and shape with a radiolucent rim
- **Complex odontoma**
  - Posterior jaws (mandible or maxilla)
  - X-ray: irregular mass of calcified material with a radiolucent rim

Compound odontoma

Complex odontoma
### 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 ("dense bone island")
- 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

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### Idiopathic osteosclerosis

- No treatment indicated other than re-evaluation on future radiographs
- Biopsy only in the case of symptoms or clinical expansion (in which case it is probably something else)
- **Rule out condensing osteitis**
  - Widened PDL, tooth is often **non-vital**
  - Sclerosis of bone around roots in response to chronic inflammation
**Condensing osteitis**

- A common fibro-osseous lesion that occurs in the tooth-bearing areas of the jaw.
- **Radiographic appearance**
  - Dentulous and edentulous areas, superior to mandibular canal
  - Often surrounds the apex of teeth (intact PDL)
  - **Progression over time:** radiolucent $\rightarrow$ mixed RL/RO $\rightarrow$ radiopaque
  - Even the most mature lesions will have a thin, peripheral radiolucent rim
- **Types:** Focal, periapical, florid

**Focal COD**

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

**Periapical COD**

- Adult females
  - Usually between 30-50 years old
- Blacks (70% of cases)
- **Anterior mandible, periapical region**
  - Usually multiple lesions
- Asymptomatic
- Early lesions mimic periapical inflammatory pathology
  - Vitality testing is normal
Florid COD

- Adult females, blacks (over 90% of cases)
- **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

Management: Cemento-osseous dysplasia

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

Soft tissue radiopacities

- Amalgam tattoo
- Other foreign body
- Sialolith
- Tonsilolith
- Calcified lymph nodes
- Carotid artery calcification
Sialolith

• Clinical Features
  – Calcification ("stone") within a salivary gland or duct
    • Submandibular, parotid, minor glands
  – May be painful due to blockage of salivary flow
  – May be seen on radiographs depending on the degree of calcification (radiopaque)
  – Submandibular duct sialoliths may be superimposed over the mandible on panoramic radiographs— an occlusal film can help exclude an intrabony lesion

Sialolith

• Treatment
  – If small, can sometimes be worked toward the orifice and “passed” by heat, increased fluid intake, and milking/massaging of the gland
  – Otherwise surgical removal is indicated

Tonsilloliths

• The tonsils have crypts which are often filled with foul-smelling concretions
  – A combination of bacteria, food debris, and desquamated surface cells
• Tonsillolith = calcification of a tonsillar concretion
• Most often discovered incidentally on a panoramic radiograph
  – Small calcifications superimposed over the mid-portion of the mandibular ramus
Benign radiolucent lesions

Simple bone cyst (Traumatic bone cyst)

- An empty or fluid-filled cavity of bone
  - No epithelial lining (not a true cyst)
- Kids and young adults
  - 2nd decade most common
- +/- history of trauma
- Can occur in any bone of the body
  - Most common location = long bones

Simple bone cyst (Traumatic bone cyst)

- **Mandible**, usually molar or premolar area
  - Incidental finding usually
  - Painless jaw swelling (20%)
- **X-ray**: well-defined radiolucency
  - **Often scallops between the roots of teeth**
- **Tx**: Scraping of the walls of the lesion promotes bone to fill in
  - Little tissue harvested, but still submit for biopsy

Painless jaw swelling (20%)
Nasopalatine duct cyst

- "Incisive canal cyst"
- Most common oral non-odontogenic cyst
- Adults (4th-6th decade)
- **Possible clinical features**
  - Anterior palatal swelling, pain, drainage
- **Radiographic appearance**
  - Well-circumscribed, round or ovoid, corticated radiolucency
  - Between/apical to the central incisors
  - Large canal (non-pathologic) vs. small cyst?
    - Diameter ≤6mm considered a normal foramen
  - Tx: enucleation

Odontogenic cysts

- Encountered commonly in the dental practice
- Caused by stimulation and proliferation of odontogenic epithelium
  - Inflammatory (periapical cyst, residual cyst)
  - Developmental
- An epithelium-lined space, often fluid-filled
- Internal pressure → resorption of surrounding bone → growth of cyst

Dentigerous cyst

- Most common developmental odontogenic cyst
- ONLY occurs with impacted/unerupted teeth
  - Separation of the follicle from the crown
- Incidental radiographic finding or painless expansion depending on size
- X-ray: unilocular, corticated radiolucency surrounding the crown of an unerupted tooth
- Most often involves the 3rd molars, maxillary canines, mandibular premolars
Dentigerous cyst

- Can cause displacement of the impacted tooth, root resorption of adjacent teeth
- Dx: needs to be submitted for biopsy!
  - Same clinical and radiographic features can be seen with other odontogenic cysts and tumors
- Tx: Enucleate cyst along with tooth removal
  - Marsupialization/decompression for large lesions
  - Recurrence is rare
  - Small risk for malignant transformation of the cyst lining if not treated

Odontogenic keratocyst (OKC)
formerly Keratocystic odontogenic tumor

- Classified as cystic neoplasm by WHO in 2005
  - Increased cell proliferation and greater growth potential than other odontogenic cysts
- Now reclassified back to a developmental cyst by WHO in 2017
- Posterior mandible and ramus are most common locations
- X-ray: well-defined radiolucency
  - Unilocular or multilocular
- 25-40% associated with an impacted tooth
Odontogenic Keratocyst (OKC)

• Recurrence rate:
  – 30%
  – Most recur within first 5 years
  – Long-term radiographic follow-up
    • Lesions should be followed for at least 7-10 years post surgery to detect recurrences
  – Evaluation for other OKCs
    • More than one OKC = Nevoid basal cell carcinoma syndrome

Differential diagnosis:
Multilocular radiolucency (MACHO)

• Odontogenic Myxoma
• Ameloblastoma
• Central giant cell granuloma
• Hemangioma
• OKC

Ameloblastoma

• 2nd most common odontogenic tumor
• Benign but behaves aggressively
  – Slow-growing, locally invasive
• Adults (equal prevalence from 20s-60s), M = F
• Mandible (80-85%) > Maxilla
  – Especially molar and ramus area
• Painless expansion of the jaw
• X-ray: Radiolucency, often multilocular, may have a “soap bubble” or “honeycomb” appearance
• Root resorption of adjacent teeth
Ameloblastoma

- **Treatment**
  - Lesion is infiltrative and extends beyond the apparent radiographic margin
  - Conservative treatment (curettage) = 50-90% reported recurrence
  - **Resection** (15% recurrence)
    - Removal of the entire lesion AND usually 1cm beyond apparent radiographic margin

Radiographic features of **malignancy**

- Radiolucent (most)
  - Can be radiopaque if the malignancy produces calcified material (osteosarcoma, chondrosarcoma)
- Poorly-defined, infiltrative borders
- Rapid destruction of bone
- Loosening of teeth, “floating in space” look
- Irregular widening of PDL space
- Destruction of lamina dura

Widening of PDL spaces, altered trabecular pattern
Bone destruction, teeth “floating in space”

Osteosarcoma

Chondrosarcoma

Soft tissue lumps and bumps

Soft tissue nodule
Differential diagnosis
- Fibroma
- Lipoma
- Mucocele
- Traumatic neuroma
- Granular cell tumor
- Neurofibroma
- Schwannoma
Fibroma
- A proliferation of fibrous connective tissue, usually in response to local trauma or irritation
- Very common!
- Buccal mucosa (along the occlusal plane) is the most common location
- Pink nodule, smooth surface
- Can range in consistency from doughy soft to rubbery firm

Lipoma: benign neoplasm of mature fat

Mucocele
- Mucus spillage into the soft tissues due to rupture of a minor salivary gland duct
- Caused by local trauma (common in kids)
- Fluid-filled lesion that is often blue or translucent in color
- Lower lip is the most common location
- Ranula = a mucocele in the floor of the mouth

Gingival nodule
Differential diagnosis ("4Ps")
- Pyogenic granuloma
- Peripheral ossifying fibroma
- Peripheral giant cell granuloma
- Peripheral odontogenic fibroma
Pyogenic granuloma

- A tumor-like growth in response to local irritation or trauma
- Most common on the gingiva (75-85%)
  - Can occur in other locations also
    - Lips, tongue, buccal mucosa, skin
- High frequency in pregnant women
- Soft, fleshy
- Smooth surface
- Red or pink
- Sessile or pedunculated
- Sometimes lobulated, often ulcerated

Peripheral ossifying fibroma

- Gingiva only!
- Often emanates from the interdental papilla
- Anterior regions (50% incisor-canine area)
- Pink or red
- Rubbery firm
- Smooth surface
- Often ulcerated
- Benign proliferation of fibrous connective tissue with calcifications

Peripheral giant cell granuloma

Infections

- Candidiasis
- Herpes simplex virus
- Human papillomavirus
Candidiasis

- The most common oral fungal infection
- **Organism:** Candida albicans
- **Predisposing factors**
  - Broad-spectrum antibiotic use
  - Use of steroid inhalers
  - Dentures
  - Xerostomia
  - Immunocompromised patient

Candidiasis

- 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 commissures)
  - **Hyperplastic candidiasis** (non-wipeable white plaque, resolves with antifungal therapy)

Pseudomembranous Candidiasis

- Also known as “thrush”
- White adherent plaques that can be scraped off
  - Underlying mucosa is normal or slightly red
- Mild or no symptoms
- **Most common clinical scenarios**
  - Recent use of broad spectrum antibiotics
  - Impairment of immune response (local or systemic)
  - Infants
Erythematous candidiasis

• Common, but often overlooked or misdiagnosed clinically

• Several clinical presentations:
  – Dorsal tongue
    • Acute atrophic candidiasis
      – Diffuse atrophy of filiform papillae, symptomatic (“scalded” sensation)
  • Central papillary atrophy
    – Focal atrophy of filiform papillae, asymptomatic, midline
    – “Median rhomboid glossitis”
  – Palate

B = after antifungal therapy

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 be a combined bacterial/fungal infection
  - 60% *C. albicans* and *Staph aureus* together

Candidiasis

- **TREATMENT**
  - Antifungal medications
    - Nystatin
    - Clotrimazole (Mycelex)
    - Fluconazole (Diflucan)
  - A patient’s dentures (or other oral appliances) must be treated in addition to their mucosa

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, many others

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**
Clotrimazole cream 1% - for angular cheilitis (not intraoral use)

• 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

Nystatin (for partial denture)

• Rx: Nystatin oral suspension (100,000 units/mL)
• Disp: 480 mL
• Sig: Soak partial denture overnight for 10 days. Refresh suspension every 2-3 days.

Diluted bleach (for complete denture)

• Combine one tablespoon of bleach in one cup of water
• Soak complete denture overnight for 10 days
• Note: Make sure to instruct patient to rinse denture thoroughly before inserting back into mouth to avoid chemical irritation

Herpes simplex virus (HSV)

— Spread through infected saliva or active perioral lesions
— Primary herpes (initial exposure to virus)
  • Children, usually asymptomatic
  • Symptomatic infection = acute herpetic gingivostomatitis
    — Fever, nausea, swollen lymph nodes
    — Multiple intraoral ulcers (widespread)
    — Painful, swollen, red gingiva
Herpes simplex virus (HSV)

- Virus remains latent in nerves after the initial infection and can be reactivated later

- **Recurrent HSV infection**
  - **Herpes labialis** (vesicles, followed by crusting of the lip vermillion and perioral skin)
  - **Recurrent intraoral herpes** (multiple pinpoint erosions usually on the hard palate or gingiva)

Herpes labialis

- Also known as “cold sores” or “fever blisters”
- Numerous potential triggers
  - **Exposure to UV light**
    - The only trigger that has been shown to induce lesions experimentally
  - Physical or emotional stress, fatigue
  - Trauma (including manipulation of tissues during dental procedures)

Herpes labialis

- 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
- Clinical presentation may be subtle
- A cluster of tiny vesicles that quickly rupture to form shallow ulcerations that coalesce
- Commonly triggered by dental treatment
Management: HSV

- Depends on the severity of symptoms
- **Antiviral medications** are only effective if started within the first 2-3 days
- Palliative care
  - Hydration
  - Analgesics (Tylenol, Ibuprofen)
  - Viscous lidocaine (adults) or Dyclonine HCl 0.5-1% rinse (kids)

Treating primary OR recurrent herpes (adults and kids over 12)

- Rx: Valacyclovir (Valtrex) 1 g caplets
- Disp: 5
- Sig: Take 2 caplets p.o. initially, then 2 after 12 hours, then 1 at 24 hours
- **Note:** Initiate treatment during the prodrome or as early as possible in the course of the infection
- Kids 12 and under: use acyclovir suspension

Papillary lesion

Differential diagnosis

- **Single lesion**
  - Squamous papilloma
  - Verruca vulgaris (usually multiple if on skin)
  - Giant cell fibroma
  - Verruciform xanthoma
- **Multiple lesions**
  - Condyloma acuminatum
  - Multifocal epithelial hyperplasia (Heck’s disease)

Squamous papilloma

- Benign papillary proliferation of the surface epithelium, attributed to HPV 6 or 11
- **Very common in the oral cavity**
- White or pink in color
- Exophytic
- Sessile or pedunculated
- May be “finger-like” or “cauliflower-like”
- Variable features make it hard to distinguish from verruca and condyloma both clinically and microscopically

Oral HPV infection

- Virus is epitheliotropic
  - Mucosal HPV types are categorized as low-risk (6, 11) or high-risk (16, 18)
- Evidence suggests oral infection is predominantly sexually transmitted
- 6.9-7.5% prevalence
  - 3.1% low risk, 3.7% high risk
  - 3 times higher in men
  - Increased prevalence with # of lifetime sex partners and smoking
- Most prevalent type: HPV 16 (1-1.6%)

HPV genome

- Circular double-stranded DNA virus
- Open reading frames coding for early (E) and late (L) proteins
- E6 and E7 are viral oncogenes

Low-risk HPV infections

- Viral genome remains as an episome in the nucleus
  - Independent of the host DNA
  - No transcription of E6 and E7 oncogenes

High-risk HPV infections

- HPV genome typically becomes integrated into the host DNA
- Integration can involve disruption of the E2 gene and its regulatory function
  - Resulting increased production E6 and E7 accounts for the carcinogenic potential of HPV
  - E6: targets p53 tumor suppressor protein
  - E7: targets pRb tumor suppressor protein
  - Net effect = accelerates neoplastic transformation

Pigmented lesion

Differential Diagnosis

- Amalgam tattoo
- Melanotic macule
- Mucosal nevus
- Drug-induced pigmentation
- Melanoma

Amalgam tattoo

- The result of accidental implantation of amalgam particles in the oral mucosa
- Often gray/black in color
- Flat
- Most common sites: gingiva, buccal mucosa
- Radiopaque metallic fragments may be visible on an x-ray if enough material is present
Melanotic macule

- A benign mucosal lesion caused by focal increase in melanin deposition
- Well-defined, flat, uniformly brown lesion
- Smaller than 10 mm in diameter
- Often appears suddenly, but does not increase in size thereafter
- Common locations: lip, buccal mucosa, gingiva, palate
Pigmented Oral Lesions- Indications for biopsy

- Located on hard palate or maxillary gingiva (most common sites for oral melanoma)
- Recent onset
- Recent enlargement
- Size > 10 mm
- Irregular pigmentation
- Irregular borders

Adherent white plaque
Differential diagnosis

- Frictional keratosis
- Morsicatio (cheek or lip chewing)
- Contact stomatitis
- Hyperplastic candidiasis
- Epithelial dysplasia

Frictional keratosis

- A white lesion induced by unintended chronic mechanical irritation
- Essentially a “callous” of the oral mucosa
- Margins blend into surrounding mucosa
- Reversible upon elimination of the cause
- Common locations
  - Edentulous alveolar ridge (“ridge keratosis”)
  - Retromolar pad
  - Lateral tongue (if a sharp tooth is in the vicinity)
Leukoplakia

- An adherent white patch or plaque that cannot be characterized clinically as any other disease
- A clinical term only
- SHARPLY-DEFINED MARGINS are a worrisome feature
- How precancer (epithelial dysplasia) often presents
- High-risk locations (more likely to be precancerous or malignant)
  - Lateral and ventral tongue, floor of mouth, soft palate

Management: Leukoplakia

- Re-evaluation in 2 weeks is reasonable if there is suspicion for a reactive process
  - Eliminate potential etiologic factors
- Biopsy is necessary and the results will guide the course of treatment
Erythroplakia

- A red patch that cannot be characterized clinically as any other disease
- A less common precancerous oral lesion than leukoplakia
- Much more likely than leukoplakia to show considerable epithelial dysplasia microscopically

Severe 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)

Carcinoma-in-situ
Ulcers: Many potential causes

- Traumatic
- Immune-mediated
  - Aphthous ulcers, erosive lichen planus, mucous membrane pemphigoid, pemphigus vulgaris
- Infectious
  - Herpes simplex, herpes zoster, syphilis, histoplasmosis
- Neoplastic
  - Squamous cell carcinoma

Traumatic ulcer

- Trauma = the most common cause of ulceration in the oral cavity
- May be physical, thermal, or chemical trauma
- Often on tongue, buccal mucosa, lip (areas easily traumatized by the teeth)
- Usually resolves within 2 weeks

Treatment - traumatic ulcers

- Eliminate potential sources of irritation
- Topical anesthetics and bioadhesives for temporary pain relief (Zilactin)
- If the cause is not apparent and there is no resolution at 2-week follow-up, biopsy is indicated

Recurrent aphthous ulcers

- “Canker sores”
- Children and young adults
- Heredity is a factor
- Different triggers/causes for different people
  - Trauma, certain foods, stress
- Non-keratinized (moveable) mucosa
- Yellow/white ulceration surrounded by a distinct red halo
- PAINFUL
Tx of aphthous ulcers: topical corticosteroid gels

- Rx: Betamethasone dipropionate, Clobetasol propionate, or Fluocinonide 0.05% gel
- Disp: 15 g tube
- Sig: Apply a thin film to lesion, 4-6 times per day, as early in the course of the process as possible
- Note: Start using as soon as pt feels one developing. Zilactin can be applied over top of the gel to help keep it in place longer.

Don’t confuse aphthous ulcers with...
Erythema migrans

- Primarily affects the **tongue** ("geographic tongue", "benign migratory glossitis")
  - Often seen concurrently with **fissured tongue**
- Common, affects 1-3% of the population
  - Usually asymptomatic
- Multiple lesions are usually present
- **Zones of erythema surrounded by a yellow-white border**
  - Lesions heal over days or weeks, then develop in a different area

Desquamative gingivitis

- **Clinical term only** – not a definitive dx
- Gingiva that sloughs spontaneously or with minor manipulation
- Biopsy is necessary to determine etiology
- **Differential diagnosis:**
  - Erosive lichen planus
  - Mucous membrane pemphigoid
  - Pemphigus vulgaris

Reticular oral lichen planus

- Much **more common** than the erosive form
- **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

- 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
Lichen planus

- Diagnosis can be challenging
  - Both clinically and microscopically
  - Mimickers (“lichenoid” lesions)
  - Solitary lichenoid lesions in high-risk locations should be biopsied because dysplasia will occasionally exhibit a lichenoid appearance

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 reaction to dental materials

Squamous cell carcinoma

- Squamous cell carcinoma (SCC) accounts for over 80% of all cancers of the oral cavity and oropharynx

- SCC is a malignancy derived from the surface epithelial cells that line the oral cavity
Etiology of oral cavity SCC

- Risk factors
  - **Tobacco smoking**
    - Dose dependent increase in risk
  - **Alcohol consumption**
    - Interacts synergistically with smoking
  - **Smokeless tobacco**
  - **Betel quid chewing**
  - **Sunlight** (for SCC of lip vermillion)
- Recognized dysplastic precursor lesions
  - Leukoplakia and erythroplakia
- Heredity does not seem to play a major role
- **20-25%** of OSCCs are **not** associated with any identifiable risk factors

Oral cavity SCC- Clinical features

- Risk increases with age, **Males > Females** (2.5:1)
  - Median age at diagnosis = 63
- Early OSCCs are usually **asymptomatic**
- **Character**
  - May be exophytic or endophytic
  - May be ulcerated
  - Feels **firm** when palpated
  - Often has a granular surface texture
- **Color**
  - Leukoplakic (white), erythroplakic (red), or **erythroleukoplakic** (“speckled”)

Oral cavity SCC- Location

- Most common site is **TONGUE** (50%)
  - **Lateral and ventral surfaces**!!!
  - Only 4% of tongue OSCCs present on the dorsum
- Other locations (in order of decreasing frequency)
  - Floor of the mouth (35%)
  - Soft palate
  - Gingiva (especially elderly women with no risk factors)
  - Buccal mucosa

Courtesy of Dr. Walter Jackson

Courtesy of Dr. Ralph Wilson
Oral cavity SCC- Treatment and Prognosis

- **Staging** = quantifying the size of the tumor and the extent of metastatic spread
- Overall U.S. 5-year survival rate = 64.3%
- Highly stage-dependent
  - Stage I best prognosis, Stage IV worst
  - 70% of all new cases are diagnosed at a late stage
- Each person’s treatment is guided by the stage of their disease
  - Surgery (may involve neck dissection), radiation, chemotherapy, targeted therapies

Oral and oropharyngeal squamous cell carcinoma

- 2017 WHO updates
  - **Oropharynx SCC** is now its own chapter separate from oral cavity SCC
- HPV+ oropharyngeal SCC is a different disease than HPV- oropharyngeal SCC
- 2 separate pathways of carcinogenesis?
  - Environmental carcinogens vs. high-risk HPV infection

Oropharynx (not oral cavity)

- [Search for related information](http://www.headandneckcancerguide.org/trends/cancer-basics/explore-cancer-types/throat-cancer/oropharyngeal-cancer/)
• Tonsils and base of tongue
• HPV 16 accounts for at least 90% of cases
• 3-5 times more common in men vs. women
• From 1988-2004, 225% increase in incidence in the U.S.
• Oropharyngeal SCC has surpassed cervical cancer in terms of total # of HPV-induced cancers