



**FLORIDA SOCIETY OF ORAL &  
MAXILLOFACIAL SURGEONS  
2018 ANNUAL MEETING**

**EARLY ORAL CANCERS AND PRE-CANCERS  
& POTPOURRI OF ORAL PATHOLOGY**

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### Conflicts of Interests

- Neither my immediate family nor I have any financial interests that would create a conflict of interest or restrict our independent judgment with regard to the content of this course.

### Course Objectives

- Upon completion of this course, participants should be able to:
  - Recognize and formulate a differential diagnosis, understand the etiology and management of various oral and maxillofacial conditions.
  - Better recognize early malignancies, improve diagnostic skills for oral soft and hard tissue lesions through practice sessions utilizing the audience response devices.



**TWO WEEK FOLLOW UP!!**



### IDIOPATHIC LEUKOPLAKIA

- FEATURES TO WORRY ABOUT
  - Occurrence in non-smoker
  - Thickened often corrugated appearance
  - Associated erythema
  - High risk location-horseshoe shaped area
  - ??pain
  - Multifocal or recurrent

### NON-SMOKERS LEUKOPLAKIA

- 5-8 times INCREASED risk of oral cancer
- More frequent on tongue/floor of mouth(64 vs. 11%)
- More dysplasia(38 vs. 5 %)
- Younger patients
- Often very subtle lesions under tongue and on lingual frenum
- Likely high risk HPV related

### TONSILLAR CRYPT EPITHELIUM

- Stratified squamous but basaloid so virus can invade epithelium **w/o surface ulceration**
- Well known localization for the replication of viruses
- Tonsillar crypt epithelium serves as reservoir for Epstein Barr virus and also HPV
- Majority of OPSCCA originate from tonsillar epithelium

### SEVERE KOILOCYTIC DYSPLASIA



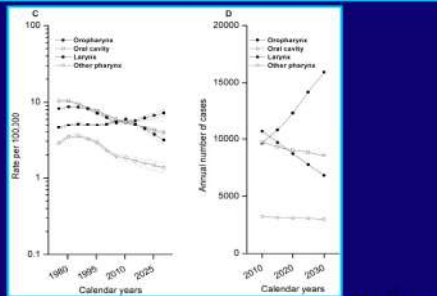
### WHY TALK TO DENTISTS ABOUT HPV???

- Dentists may be next group of providers to participate in prevention of HPV and OPCancer
- Improve HPV knowledge and dentists communication skills with patients
- Highlight barriers to discuss HPV with patients
- Put HPV vaccination question on dentists patient health history
  - 47% DDS no discuss HPV with patients
  - 33% discuss with some patients(papilloma)
  - 19% Discuss with all patients
    - JADA 149(1) Jan 2018 pp 9-17

### HPV & ORAL CANCER

- 70% of sexually active adults are HPV positive
- Prevalence of oral HPV in US population 7%
- Oro-pharyngeal cancer most common H & N cancer shortly

### HEAD AND NECK CANCER INCIDENCE PROJECTIONS

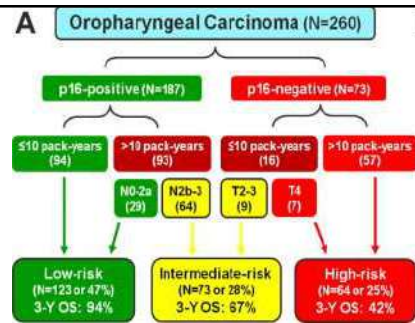


### HPV & ORAL CANCER

- ☐ 10% male, 3.6% female
- ☐ Peak incidence: 30-34 y/o -7.37%  
60-64 y/o -11.45%!!!
- ☐ HPV-16 incidence 1% (2.13 million people)
- ☐ But only 15,000 cases of oropharyngeal cancer/yr

### HPV & ORAL CANCER

- ☐ Oropharyngeal cancers occur in younger age group.
- ☐ Especially troubling increase in non-smoking males with oropharyngeal ca
- ☐ Men 45 -60 2-3 x more likely to get oro-pharyngeal cancer
- ☐ Fortunately HPV associated cancers have a better prognosis
- ☐ HPV+HNSCC: Less chromosomal mutations (compared to smoking/drinking associated tumors)



Ang KK & Sturgis EM. Seminars in Radiation Oncology Volume 22, Issue 2 2012 128 – 142A



#### TESTING FOR HPV-TISSUE SAMPLES

- HPV+ cases express high levels p16 tumor-suppressor protein
- Diffuse nuclear and cytoplasmic p16 protein-staining correlates strongly with presence of HPV by in-situ hybridization, and PCR.

#### IDIOPATHIC LEUKOPLAKIA

##### • FEATURES TO WORRY ABOUT

- Thickened often corrugated appearance
- Associated erythema
- High risk location-horseshoe shaped area
- ??pain
- Multifocal or recurrent

#### VERRUCO-PAPILLARY HYPERKERATOSIS



**(ERYTHRO-) Leukoplakia**

- 82% of transformed leukoplakias
- 4 times risk of oral cancer (23.4%)

**ERYTHROPLAKIA****ERYTHROPLAKIA**

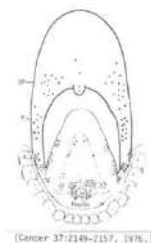
- **HISTOLOGIC SPECTRUM:**
  - Benign keratosis – 0%
  - Mild dysplasia - 10%
  - Severe dysplasia or ca-in-situ - 40%
  - Invasive carcinoma - 50%

**ERYTHROPLAKIA**

- Red lesions should be viewed with suspicion, biopsied.
- Suspicious red lesion may be observed for 10-14 days, if persists biopsy
- Recurrence and multifocal involvement are common
- Long-term follow-up is needed

**HIGH RISK LOCATIONS ORAL CANCER**

- **90% LOCATED IN:**
  - LATERAL OR VENTRAL TONGUE
  - FLOOR OF THE MOUTH
  - LINGUAL FRENUM
  - SOFT PALATE ANTERIOR PILLAR COMPLEX
  - FREE AND MARGINAL GINGIVA- ring around the collar

**HIGH RISK LOCATIONS**

LATERAL BORDER OF THE TONGUE  
ULCER, INDURATED



VENTRAL TONGUE-ERYTHRPLAKIA



FLUFFY  
WHITE  
STUFF



FLOOR OF THE MOUTH  
LINGUAL FRENUM



SOFT PALATE / TONSILLAR PILLAR



EARLY ORAL CANCERS: GINGIVA  
"RING AROUND THE COLLAR"



## Proliferative Verrucous Leukoplakia (PVL)

- Middle aged females(4:1F>M)
- Mean age 63.9( over 62)
- Little relation to smoking
- Little known of etiopathogenesis

**TABLE 1:** Diagnostic Criteria for Proliferative Verrucous Leukoplakia.<sup>19</sup>

The diagnostic criteria are met if an individual has three major criteria (including E) or two major criteria (including E) and two minor criteria.

**Major Criteria:**

- A. A white lesion involving two different oral sites, most frequently found in the gingiva, alveolar process and palate
- B. Presence of a verrucous area
- C. The lesions are evolving and have spread
- D. Presence of recurrence in a previously treated area
- E. Histologically, the tissue sample may display hyperkeratosis, verrucous hyperplasia, verrucous carcinoma or squamous cell carcinoma

**Minor Criteria:**

- A. A white lesion that measures at least 3 cm when including all the affected sites in the oral cavity
- B. Female
- C. Nonsmoker
- D. Disease progression longer than five years

## Proliferative Verrucous Leukoplakia (PVL)

- Recurrent(av.71%)/persistent
- Progresses to multiple sites
- ??HPV 16,18 positive ( 0-80%)
- High (40-100% av.64%) risk for transformation
- Time to transformation 4.7-11.6 years mean 6 years
- Verrucous carcinoma or squamous
- 39% of 277 patients died of disease within 7 year F/U

Otolaryngol Head Neck Surg 2015 Oct;153(4):504-11

## PROLIFERATIVE VERRUCOUS CARCINOMA



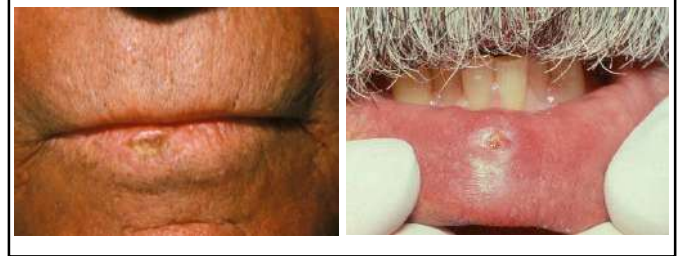


### Proliferative Verrucous Leukoplakia (PVL)

- No specific treatment modality has proven effective
- Laser ablation rapid & high rate of recurrence
- 2 not so recent papers no association with HPV
- But surgery alone **18/25** recurrences within 6 months
- Surgery plus antiviral (anti-HPV immunomodulatory agent) isoprinosine or methisoprinol--**2/25**
- 18 months post op 2 additional recurrences in anti viral group(**4/25**) none in surgery group(**18/25**)



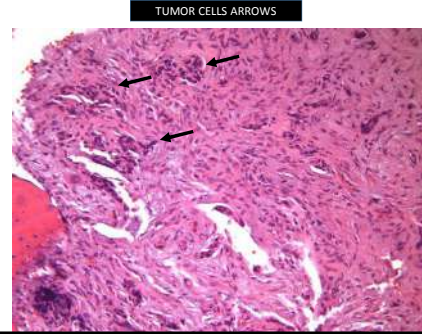
LOWER LIP NON-HEALING ULCER



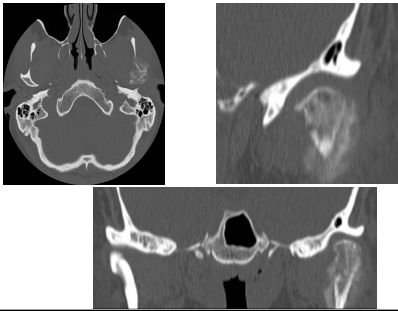


CASE STUDY

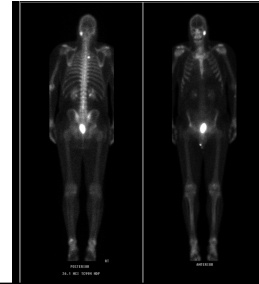
This 65 year old female complains of mild pain involving the area of the maxillary right first premolar.



METASTATIC TUMOR TO THE TMJ



BONE SCAN METASTATIC TUMOR PROSTATE TO TMJ



METASTATIC TUMORS TO THE JAWS- SYMPTOMS

- Pain
- Swelling
- Loosening of teeth
- Presence of a mass
- Paresthesia

METASTATIC TUMORS TO THE JAWS

- Breast 23%
- Lung 15%
- GI 8%
- Male Repro 7%
- Female Repro 3%
- Renal 3%
- Thyroid 3%

### METASTATIC TUMORS TO THE JAWS

- Usually present as radiolucent defects.
- Defect well circumscribed or ill defined ("moth-eaten" appearance).
- Some carcinomas (prostate and breast), osteoblastic resulting in radiopaque or mixed radiolucent and radiopaque lesions.

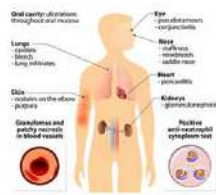
### CASE STUDY

- a. One of the 3 P's
- b. **Gingival manifestation of a systemic disorder**
- c. Peripheral odontogenic neoplasm
- d. Malignancy



### GRANULOMATOSIS WITH POLYANGIITIS (Formerly Wegener Granulomatosis)

- Unknown cause
- Wide age range
- No gender predilection
- 90% of cases in Caucasians
- Can involve almost every organ system in the body
- Early stage (before renal involvement) = Strawberry gingivitis and enlargement of one or more major salivary glands
- Late stage (after renal involvement) = Oral ulcerations
- Diagnosis:
  - PR3-ANCA (previously c-ANCA): Seen in 90-95% of generalized Wegener granulomatosis and 60% of early or localized cases
  - ELISA test for antibodies against PR3
- Mean survival for untreated patients with disseminated disease = 5 months
- 80% of patients die within 1 year and 90% die within 2 years
- Treatment: Oral prednisone and cyclophosphamide
  - With appropriate therapy, 75% of patients have prolonged remission



### 3 FLAVORS OF WEGENER'S GRANULOMATOSIS

- **Generalized Wegener's Granulomatosis**
  - Initial upper & lower respiratory tract and rapid renal involvement
- **Limited Wegener's Granulomatosis**
  - Respiratory tract w/o rapid kidney involvement
- **Superficial Wegener's Granulomatosis**
  - Lesions primarily of skin and mucosa
  - Systemic involvement develops slowly

### HYPERTROPHIC LICHEN PLANUS???



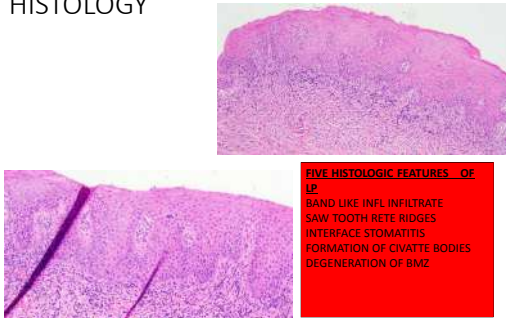
### PRETEST LP OR CANCER?

52 y/o female with irregular white and red lesion on right buccal mucosa for 3 years



5/10/2011

HISTOLOGY




**FIVE HISTOLOGIC FEATURES OF LP:**  
 BAND LIKE INFL INFILTRATE  
 SAW TOOTH RETE RIDGES  
 INTERFACE STOMATITIS  
 FORMATION OF CIVATTE BODIES  
 DEGENERATION OF BMZ

HISTOLOGIC OVERLAP

- 29% OF DYSPLASTIC AND MALIGNANT ORAL LESIONS HAD 3 OR MORE OF THE FIVE HISTOLOGIC FEATURES OF LICHEN PLANUS

PRETEST LP OR CANCER?

I have a patient I have been seeing for some time. Originally presented with well localized erythematous lesion of palate. A biopsy prior to my evaluation Dx: lichen planus. Did another biopsy 2009 and immunoflourescence confirmed diagnosis. Treated her with clobetasol ointment and diflucan to no avail. I'm not sure I'm actually dealing with 'run of the mill' lichen planus and would like you to take a look. I've attached a few pictures from September.



Epidemiology  
Lichen planus

- Common mucocutaneous disorder- 2% of population.
- Increasing frequency
- Disease of middle aged and elderly.
- More common in females.

Oral Lichen Planus has distinctive clinical features and classical distribution... or does it??



## LICHEN PLANUS

- 90% of patients have bilateral reticular lesions in the posterior buccal mucosa.
- The tongue is the next most commonly involved followed by the gingiva and alveolar ridge.

## Reticular Lichen Planus



## EROSIVE LICHEN PLANUS



## Factors in the Etiopathogenesis of LichenOID MUCOSITIS

- Drug induced
- Foreign body (gingiva) – prophyl jet
- Dental materials

## TRIGGERS of LichenOID MUCOSITIS/Lichen Planus

- ? Stress
- Trauma
- Aspirin( actually NSAID's /Amalgam
- Yeast
- Idiopathic (true lichen planus)

## STAY

- Reduce stress
- Exercise 5x week for 30 minutes
- Must sweat to be effective

### TRAUMA

- Triggers the condition in susceptible individuals

### KOEBNER PHENOMENON

- Development of isomorphic pathologic lesions in the traumatized uninvolved skin of patients who have cutaneous disease

### TRAUMATIC LICHENOID MUCOSITIS



### A

- Aspirin (actual NSAIDS)
- Amalgam

### Drugs Implicated in Oral Lichenoid Reactions Category Drugs

Antimicrobials	<ul style="list-style-type: none"> <li>• Dapsone</li> <li>• Ketoconazole</li> <li>• Para-aminosalicylic acid</li> <li>• Sodium aminosalicylate</li> <li>• Streptomycin</li> <li>• Sparfloxacin</li> <li>• Sulfamethoxazole, Sulfasalazine</li> <li>• Tetracycline</li> </ul>
Antiparasitics	<ul style="list-style-type: none"> <li>• <b>Antimony compounds (stibophen, stibocaptate)</b></li> <li>• Organic arsenicals</li> <li>• Chloroquine</li> <li>• Pyrimethamine</li> <li>• Quinacrine</li> <li>• ACE inhibitors - Captopril</li> <li>• Chlorothalidide, Hydrochlorothiazide</li> </ul>
Antihypertensives	<ul style="list-style-type: none"> <li>• Lisinopril, Prazosin, Propanolol</li> <li>• Lasix</li> <li>• Mercurial diuretics</li> <li>• Methyldopa</li> </ul>

### Drugs Implicated in Oral Lichenoid Reactions Category Drugs – Cont.

Antiarthritics	<ul style="list-style-type: none"> <li>• Aurothioglucose</li> <li>• Colloidal gold (Europe only)</li> <li>• Gold sodium thiomalate and thiosulfate</li> </ul>
Anxiolytics	<ul style="list-style-type: none"> <li>• Lorazepam</li> </ul>
Non-Steroidal Anti-inflammatory Agents	<ul style="list-style-type: none"> <li>• Fenclofenac</li> <li>• Ibuprofen</li> <li>• Naproxen</li> <li>• Phenylbutazone</li> </ul>
Hypoglycemic agents	<ul style="list-style-type: none"> <li>• Chlorpropamide</li> <li>• Tolazamide</li> <li>• Tolbutamide</li> </ul>
Uricosurics	<ul style="list-style-type: none"> <li>• Allopurinol</li> </ul>

### Drugs Implicated in Oral Lichenoid Reactions Category Drugs – Cont.

Miscellaneous	<ul style="list-style-type: none"> <li>• Amitriptyline</li> <li>• Clopidrogel (Plavix)</li> <li>• Imipramine</li> <li>• Iodides Lithium</li> <li>• Omeprazole</li> <li>• Penicillamine, Procainamide</li> <li>• Phenytoin</li> <li>• Quinidine Sulfate</li> <li>• Sildenafil (Viagra)</li> <li>• Paraphenylenediamines used in color film developers</li> </ul>
Dental Materials	<ul style="list-style-type: none"> <li>• Dental composite filling materials</li> <li>• Dental casting alloys and amalgam restorations</li> </ul>
Lipid Lowering	<ul style="list-style-type: none"> <li>• Simvastatin</li> <li>• Gemfibrozil</li> </ul>

### Drug Induced

- Often erosive
- May involve the lips
- Often asymmetric

### LICHENOID DRUG ERUPTIONS



### Lichenoid Drug Eruption

- Takes an average 12 months to develop.
- Can develop after 10 years on same drug
- Ebbs and flows while on drug
- May take up to 24-months to clear.
- Usually improves in 2-8 weeks..

### YEAST

- Red, fuzzy lesion
- Exacerbate the condition

### Yeast + Lichen Planus



### Treatment

- Not entirely satisfactory
- No cure available
- Immune suppression is the key
- Only 1 out of 15 resolve spontaneously.

Topical steroids are the mainstay of therapy.

### Lichen Planus Treatment

- Clobetasol gel 0.05%
- Dsp. 15 or 30 gm.
- Sig. apply sparingly b.i.d.
- Very strong use for Tx initiation

### TREATMENT 2 WEEKS TOPICAL CLOBETASOL

• BEFORE



• AFTER



### Lichen Planus Treatment

- Lidex gel 0.05%
- Dsp. 15 or 30 gm.
- Sig. Apply sparingly 3-4 times a day.
- Good for long term treatment

### Lichen Planus Treatment

- **Stringent oral hygiene and prophylaxis procedures Q 3-6 months.**

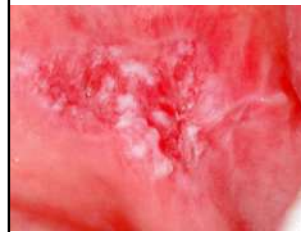


### Follow-up

- Patients must be seen 1-2 times a year.
- Return if condition worsens.
- Erosive / atrophic types much more risky.
- Biopsy IF lesions change clinical appearance or resist Tx.

### POSTTEST LP OR CANCER?

5/10/2011



8/12/2013



### POSTTEST LP OR CANCER?

I have a patient I have been seeing for some time. Originally presented with well localized erythematous lesion of palate. A biopsy prior to my evaluation Dx: lichen planus. Did another biopsy March of 2009 and immunofluorescence confirmed diagnosis. Treated her with clobetasol ointment and diflucan to no avail. I'm not sure I'm actually dealing with 'run of the mill' lichen planus and would like you to take a look. I've attached a few pictures from September.



### 2 WEEKS LOTRISONE TREATMENT





### EB Virus Positive B-cell Lymphoproliferative Disorder (E-LPD)

- E-LPD spectrum of lymphoid expansion entities caused by immunosuppression or immunosenescence and associated with Epstein-Barr virus.
- Immunosenescence seen in 65+ y/o
- Immunosuppression can be post transplant or with any use of immunosuppressive drugs
- First sign is lymphadenopathy then destructive lesions( recalcitrant oral ulcers), ranging up to florid neoplasia with aggressive behavior

### POST TRANSPLANT LYMPHOPROLIFERATIVE DISEASE

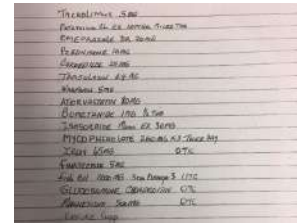
- Can be self limited with decreased immunosuppression or go on to be full blown monoclonal lymphoma.
- Therefore early diagnosis is critical
- 1/3 involve the H & N
- Oral cavity is often the first place lesions appear.

### POST TRANSPLANT LYMPHOPROLIFERATIVE DISEASE

- E-LPD second most common form of neoplasia in solid organ transplant patients
- Important early cause of cancer related death and graft loss.
- Distinct clinicopathologic entity first described in the oral cavity as recalcitrant destructive EBV+ oral ulcers in 2010

### CASE STUDY

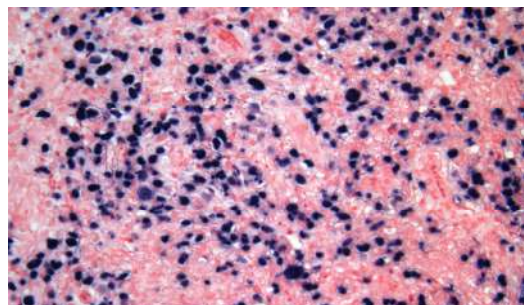
70y/o male painful gingival ulcer. Present 3 months and is not healing despite root planning and excision. History of kidney transplant in 2104



### PTLD

- 1/3 of cases in H & N
- Second most common form of neoplasia in solid organ transplant patients
- Early cause of cancer related death and graft loss
- First sign lymphadenopathy then destructive lesions

### Epstein-Barr virus encoded small RNA (EBER)



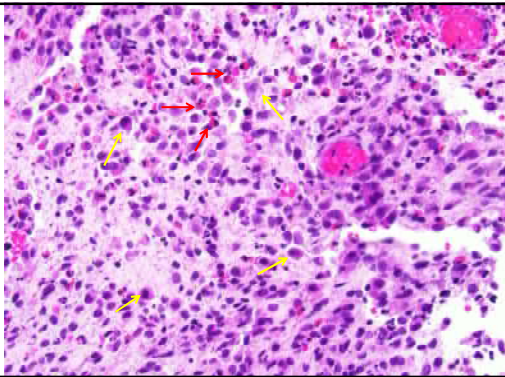
### CASE STUDY

20's y/o male C.C. pain and drainage lower jaw. Seen in several emergency departments for jaw swelling and drainage. Treated 10 years ago with both chemo and radiation therapy for bilateral cancer of his hips



### RADIOGRAPHIC FINDINGS

Extensive osteolytic expansile lesion left mandibular body and left maxilla



### LANGERHANS CELL DISEASE (Histiocytosis X; Eosinophilic Granuloma

- Histiocytosis X: spectrum of clinicopathologic disorders characterized by **proliferation of histiocyte-like cells** and eosinophils.
- Now considered clonal neoplastic process involving myeloid dendritic histiocytic cells
- This disorder is characterized by single or multiple osteolytic bone lesions

### CLINICO-PATHOLOGIC SPECTRUM

- **Eosinophilic granuloma of bone**- one or more lesions w/o visceral involvement
- **Hand-Schüller-Christian disease**- chronic disseminated bone, skin, viscera
- **Letterer-Siwe disease**- acute disseminated with prominent cutaneous, visceral, and bone involvement, in infants

### LANGERHANS CELL DISEASE

- Wide age range with patients being reported even in the 6th and 7th decades.
- 50%+ seen under age 10.
- 55% single system disorder with bone lesions solitary or multiple, most common clinical presentation.

### LANGERHANS CELL DISEASE

- Skull, ribs, vertebrae, mandible most frequent sites.
- Jaws affected in 30% skull 21% of adults.
- Most common lesions in oral cavity are teeth floating in air, gingivitis/periodontitis, unexplained mass or mucosal ulcers

### RESEMBLES AGGRESSIVE PERIODONTAL DISEASE



### LANGERHANS CELL DISEASE

- Clinical course quite varied depending on age and stage of the disease
- Pts with multi-focal disease respond initially to treatment but often recur same or distant site
- The bilateral cancer in this patient's hips was actually LCH which has recurred 10 years after initial remission

### TREATMENT LANGERHANS CELL DISEASE

- Single agent treatment such as prednisone intralesional and or systemic, prednisone combined with vinblastine and/ or curettage of readily accessible bone lesions.
- Low dose radiation for less accessible lesions.

### CASE STUDY

60 y/o FM 1 yr. hx. progressive tongue enlargement  
 Progressively worsening posterior open bite  
 Possibly related to tongue enlargement but hard for me to attribute all this to the tongue  
 Recurrent, episodic, purple lesions and sores on the tongue



## MY ASSESSMENT

- Judging from wear pattern in teeth something opened up vertical.
- Assume condyles are normal and her thyroid function.
- I think acquired macroglossia from vascular malformation/hemorrhagic diathesis, amyloid accumulation or clotting disorder
- If tall evaluate for Beckwith-Weidman syndrome.
- Other signs of bruising or clotting problems on the skin??

## AMYLOIDOSIS

- Heterogeneous group of conditions characterized by deposition of extracellular material called **amyloid**.
- Amyloid associated with: **multiple myeloma, rheumatoid arthritis or chronic infections** including tuberculosis.

## SYSTEMIC AMYLOIDOSIS

- Occurs in several forms:
  - primary
  - myeloma-associated
  - secondary
  - hemodialysis-associated
  - heredofamilial

## Primary & Myeloma-Associated Amyloidosis

- Affect older adults (av. 65)
- **Mucocutaneous lesions** and **macroglossia** from amyloid deposits
- **Macroglossia** 12-40%, diffuse or nodular enlargement of tongue.

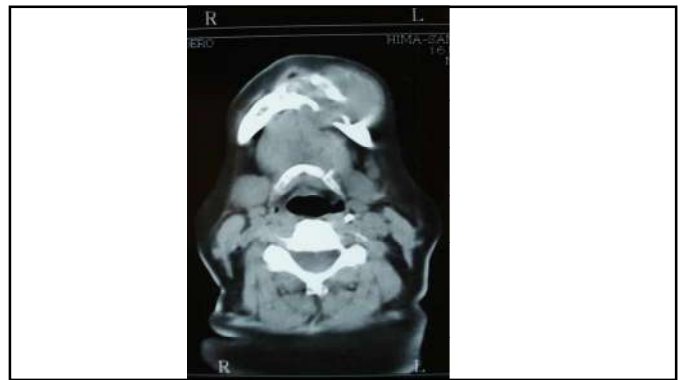
## MYELOMA TREATMENT

- Multiple drugs
  - Dexamethasone
  - I.V. Bisphosphonates
  - Proteases inhibitors(Velcade)
  - Monoclonal antibodies(attack CD-38)
  - Melphalan-nitrogen mustard alkylating agent
  - Immune modulating drugs
    - Lenalidomide(revlimid)

## TREATMENT SIDE EFFECTS

- 81% infections
- Blood clots
- Thrombocytopenia
- MRONJ
- Low blood counts
- Mouth sores

Patient with history of myeloma now with soft tissue mass



CASE STUDY

HARD PALATE

- 57 y/o Cauc male 5 cm x 3 cm spongy mass hard palate. Lesion first noted by hygienist.
- Patient reluctant to have biopsy because asymptomatic and had multiple similar "lipomas" on his back.
- Lesion did not blanch with pressure. Swelling did not communicate with teeth



DIAGNOSIS: MANTLE CELL LYMPHOMA

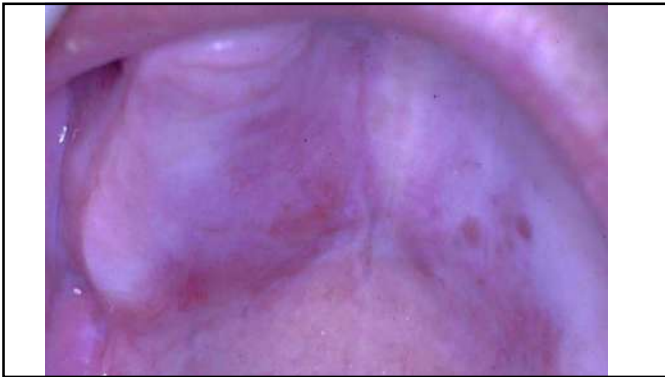
- One of four types of small B-cell lymphomas
- Distinct subtype due to short survival and aggressive course
- Predilection for elderly males, hard palate
- Treatment: chemotherapy(RCHOP), radiation and possible BMT

## NON-HODGKIN'S LYMPHOMA

- Occurs primarily in adults
- Makes up 5% of oral malignancies
- Second most common malignancy of oral cavity
- Nontender slowly enlarging mass involves cervical, axillary or inguinal nodes

## ORAL NON-HODGKIN'S LYMPHOMA

- Nontender, diffuse soft tissue swellings of buccal vestibule, gingiva, or posterior hard palate.
- Appear erythematous or purplish and have "boggy" consistency.



## CASE HISTORY

- This 30's female lump in palate for 2 yrs. Asked her DDS about it . He referred her to ENT specialist who diagnosed normal anatomy. Developed headaches and given therapy for TMD. Recently returned to her dentist who noticed the lump and referred her to me for a second opinion.



## POLYMORPHOUS ADENOCARCINOMA

- Recently recognized -1983
- Almost exclusively in the minor SG
- 60% hard or soft palate, 16% BM, 12% upper lip
- 2/3rds in females

## MINOR SALIVARY GLAND TUMORS

- Almost 50% malignant
- "*Smaller the gland, the greater the chances of malignancy*"
- Palate - most frequent site (42 to 54%)
- Posterior lateral hard or soft palate
- Lips- second most common

## POLYMORPHOUS ADENOCARCINOMA

- Tumor cells have uniform appearance
- Different growth patterns hence, "polymorphous"
- Perineural invasion common
- Wide surgical excision
- Overall prognosis relatively good, 80% cure rate

## CASE STUDY

33 y/o male pain in area of tooth #18 and paresthesia lower lip 4 weeks duration. Root canal therapy and antibiotic did not relieve pain/paresthesia. Referred to a periodontist who did RP & S. Then referred to Dr Cohen for consult. Dr Cohen recommended oral surgeon do a biopsy. Diagnosis???



## CASE STUDY

CBCT obtained  
Pt. placed on  
Augmentin 875mg for  
10 days  
11/13/14  
Referral to  
Oral Surgeon



## CASE STUDY

Tooth #18 area

Retro-molar pad area



## LOW GRADE CHONDROBLASTIC OSTEOSARCOMA

- Important early radiographic change **symmetric widening of periodontal ligament space.**
- When combined with pain/discomfort and other radiographic changes important in early diagnosis
- Lip paresthesia is key diagnostic feature
- See paresthesia only with malignancy and osteomyelitis
- Radical surgery preceded by chemo and radiation most common Tx.

## OSTEOSARCOMA (Osteogenic Sarcoma)

- Most common primary malignant tumor of bone.
- **Distal femur** and **proximal tibia** are most frequent sites
- Only 7% occur in jaws.
- Mean age for jaw 33, (10-15 years older than for long bones)

## OSTEOSARCOMA

- Swelling(100%) and pain(5%) most common symptoms.
- Peripheral border ill defined and indistinct.
- Spiking resorption of roots of teeth
- "Classic" **sunburst or sun-ray** 25% of jaw osteosarcomas

## OSTEOSARCOMA

- Local uncontrolled disease cause of death>> than distant metastases.
- Jaw osteosarcomas lesser tendency to metastasize
- Metastases most often involve lungs and brain.
- 80% survival rate for jaw lesions with radical surgery alone(3cm margins).
- Long bone lesions chemo, radiation and surgery

## CASE STUDY

Middle aged female 3-4 week history of swollen gums. DDS sent her to 2 MDs who Rx antibiotics w/o improvement. She is very tired all the time. DDS sent her to a periodontist who does biopsy



## ACUTE MYELOGENOUS LEUKEMIA

- Begins with malignant transformation of stem cell, proliferates in bone marrow and eventually overflows into peripheral blood
- Leukemic cells "crowd out" normal defense cells and erythrocyte precursors.

## LEUKEMIA

- Classified according to their **histogenesis** and **clinical behavior**
- **Myeloid(granulocyte/monocytes)** or **lymphocytic (histogenetic origin)**
- Broad category would be **acute** or **chronic (clinical course)**

## LEUKEMIA

- Acute leukemias- untreated, aggressive course and result in death within a few months (survival is < six months).
- Chronic leukemias more indolent course, but end result is same (chronic - survival over one year).



## LEUKEMIA

- Certain types of leukemia show specific chromosomal abnormalities
- **Chronic myeloid leukemia (CML)**- genetic alteration, **Philadelphia chromosome**, translocation of chromosomal material between long arms of chromosomes 22 and 9.

## LEUKEMIA

- Environmental agents increased risk- benzene, ionizing radiation & HTLV-1
- Myeloid leukemias affect adults
- **Acute myeloid leukemia (AML)** broader age range including children.
- **Chronic myeloid leukemia (CML)** third and fourth decades.

## LEUKEMIA

- **Chronic lymphocytic leukemia (CLL)** most common type in adults, affects elderly adults median age 60.
  - 24% of all leukemias
- **Acute lymphoblastic leukemia (ALL)** occurs in children(2-3), most common childhood malignancy.

## LEUKEMIA

- Acute leukemia-abrupt onset
- Clinical signs and symptoms- accumulation of neoplastic cells in marrow causes marked reduction in normal white and red cells
- Causes infections and anemia respectively

## LEUKEMIA

- Complain of easy bruising and bleeding.
- Petechial hemorrhages posterior hard and soft palate due to thrombocytopenia

## LEUKEMIA

- Spontaneous gingival hemorrhage, result of decreased platelet counts, <10-20,000mm<sup>3</sup> (**thrombocytopenia**).
- Fever associated with infection may be initial sign



### LEUKEMIA

- Oral ulcers often present- due to impaired ability to combat normal flora.
- Gingival tissues most severely affected because of abundant plaque around teeth.

### LEUKEMIA

- Leukemic cells infiltrate soft tissues- most frequent with myelo-monocytic types
- Results in **diffuse gingival enlargement**.



### LEUKEMIA

- Diagnosis is established by finding poorly differentiated leukemic cells in peripheral blood and bone marrow.
- Treatment consists of various forms of chemotherapy.

### LEUKEMIA PROGNOSIS

- Depends on type and age of patient.
- In children with **ALL**- 95% complete remission, 75-85% cured
- Adults similar 80% response rate but much lower cure rate(35-40%)

**CASE STUDY**

26 y/o female with sore throat and swollen glands

**PRIMARY HERPES**

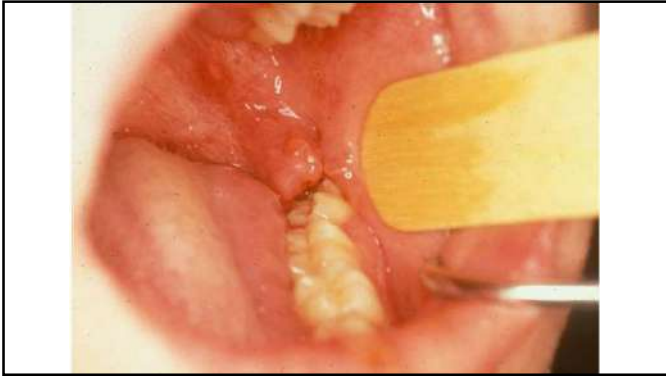
- In adults can present with primarily pharyngeal involvement
- Clusters of vesicles form and coalesce into irregular shallow ulcers, Herpes=creep
- Coated tongue is constant for all primary HSV patients

**PRIMARY HERPES**

- Vesicles occur on **all** mucosal surfaces and sometimes skin
- **Always** (almost) ulcerates marginal gingiva
- Fever, lymphadenopathy & swallowing difficulties

**PRIMARY HERPES**

- Usually affects young children
- Lesions heal completely if not traumatized
- Initial lesions prefer inflamed tissues i.e. erupting thirds and palatal of max. centrals
- Often cause gingival hypertrophy (opposite of ANUG) and lip ulcers



### TREATMENT PRIMARY HERPES CHILDREN

- Acyclovir elixir 200mg/5cc (banana flavored)
- 1tsp rinse 30 seconds and swallow 5x/day for 7 days

### TREATMENT PRIMARY HERPES ADULTS

- Valcyclovir 1 Gram BID for 10 days
- Significantly reduces incidence of recurrences

### CASE HISTORY

This female had a cleaning used Arrestin (Doxycycline) in pockets in her mouth. Now she has these weird white bumps. No meds Allergic to penicillin and nickel. Allergic reaction?



### RECURRENT HERPETIC STOMATITIS



### PURPLE TORI



### Enrolling as Ordering/Referring Providers in Medicare Part B

Dentists,

- (a) historically, have not participated in Medicare from inception,
- (b) and have been falsely led to believe that by not participating in Medicare, they have Opted-Out,
- (c) also, dentists have been incorrectly informed by the ADA that the Part D exclusion in October 2017 amendment of ACA for prescribing would include ordering and referring.

### Affordable Care Act, Section 6405 (March 2010)

However, the enactment of the Affordable Care Act, Section 6405 (March 2010) stated that, "Physicians Who Order Items or Services are required to be Medicare Enrolled Physicians or Eligible Professionals," requires physicians or other eligible professionals to be enrolled in the Medicare Program (CMS-4159) to order or refer items or services for Medicare beneficiaries.

Only physicians and certain types of non-physician practitioners are eligible to order or refer items or services for Medicare beneficiaries.

- |                                       |  |
|---------------------------------------|--|
| (1)Physicians-                        | (2)Non-physicians practitioners  |
| (a) doctor of medicine or osteopathy, | (a) doctor of optometry- (optometrists may only order and refer DMEPOS products/services |
| <b>(b) doctor of dental medicine,</b> | (b) laboratory tests   |
| <b>(c) doctor of dental surgery,</b>  | (c) X-Ray services   |
| (d) doctor of podiatric medicine      |  |

### CMS will be fully implementing CMS-4159 (effective date of January 2019)

Over the last 4 years several implementation dates for CMS-4159 have been changed- but now has a final date of **January 2019**

CMS-4159- makes it mandatory for **all dentists to enroll as ordering/referring providers by validating with their personal NPI.**

**(note: the NPI of an office practice cannot be used to validate as an ordering and referring provider)**

### CMS emphasizes that Medicare will only reimburse

- (a) for specific items or services** when those items or services are ordered or referred by providers **authorized by Medicare statute and regulation**
- (b) claims** that a billing provider submits in which the ordering/referring provider is **not authorized** by statute and regulation **will be denied as a non-covered service.**
- (c) The denial will be based on the fact that neither statute nor regulation allows coverage of certain services when ordered or referred by the identified supplier or provider specialty

### CMS, further emphasizes that

- (a) the Medicare beneficiary **cannot be Balanced Billed** (ie..patient cannot be billed for any balances) when the claim is denied,
- (b) the patient **cannot sign an ABN(Advance Beneficiary Notice)** in anticipation of the denied claim in order to recover the liability,
- (c) Dentists who enroll as ordering and referring providers or have opted out **will not be participating in Medicare-(they will not be able to bill claims on behalf on their Medicare patients)**

### Loss of Revenue to Pathology

In the last 4 years several dentists who refer biopsies have not validated or have chosen not to validate. This has resulted in

- (a) gross revenue losses in excess of \$600,000 in denied Medicare claims for biopsies
- (b) Combined with an additional \$150,000 in lost revenue from secondary insurances and copays on these denied biopsies

### Three ways to Enroll in Medicare

- (1) **Medicare Participating Provider**- Dentists (usually an oral surgeon) enrolls and participates fully by filing **medical claims** on behalf of Medicare beneficiaries,
- (2) **Ordering and Referring Provider**- this enrollment is for dentists who refer and order services such as biopsies on behalf of their Medicare patients-(these dentists do not file medical claims on behalf of their patients-since patients pay for services out of pocket)
- (3) **Opted-Out Provider**- these are providers who are exempted from Medicare by submitting a signed affidavit the Medicare Administrative Contractor (MAC) for Florida

### How to Enroll as Participating Medicare Provider

There are two ways to become a participating provider with Medicare.

- (1) Enroll online through the PECOS portal-  
<https://nppes.cms.hhs.gov/IAWeb/warning.do?fdurl=/>
- (2) Fill out a **CMS-855i** form and send it to First Coast Service Options Inc, who is the Medicare Administrative Contractor (MAC) for Florida.  
**Address: First Coast Service Options INC**  
**Medicare Provider Enrollment**  
**P.O. Box 44021**  
**Jacksonville, FL 32231**

### How to Enroll as an Ordering and Referring Provider

There are two ways to become an **Ordering and Referring provider with Medicare**.

- (1) Enroll online through the **Part D Prescribers Eligible for Easy Enrollment**  
<https://data.cms.gov/8550EasyEnroll>
- (2) Fill out a **CMS-8550** form and send it to First Coast Service Options Inc, who is the Medicare Administrative Contractor (MAC) for Florida.  
**Address: First Coast Service Options INC**  
**Medicare Provider Enrollment**  
**P.O. Box 44021**  
**Jacksonville, FL 32231**

### How to Opt-Out of Medicare

When Opting Out of Medicare :

- (1) Complete and submit a **Medicare Opt-Out Affidavit to:**  
**Medicare Provider Enrollment**  
**P.O. Box 3409**  
**Mechanicsburg, PA 17055-1849**
- (2) Have a **Private Contract** between Provider and Medicare Part B beneficiary **signed and attached to each patient new file** before medical services are performed
- (3) **Give each Medicare beneficiary a signed copy** of the Private Contract

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