PRIMARY CARE & DENTAL ISSUES

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DENTAL CARIES

- 2 major causes:
  - Bacterial Plaque
  - Diet
- Demineralization caused by acidic environment.
- Saliva acts as natural buffer
- Clinical features:
  - Color change
  - Loss of hard tissue
- Clinical symptoms:
  - Sensitivity to hot/cold/sweet
  - Asymptomatic

DENTAL CARIES

Xerostomia
- Sjogren’s syndrome
- Radiation therapy
- Medication induced
- Antihistamines
- Tricyclic antidepressants
- Anti-hypertensives
- Illicit drugs

DENTAL CARIES

Management
- Discussion of good oral hygiene
- Dietary counseling
- Medication management

Referral
- Signs of decay
- Major risk factors
- Prior to radiation/chemo/transplant
- Encourage routine care with dentist

PERIODONTITIS

- Chronic inflammatory condition of the periodontium (gums, bone, ligaments, teeth)
- Proceeded by gingivitis
- Switch to anaerobic gram (-) bacteria
- Increased prevalence in patients with:
  - Advanced age
  - Smokers
  - Diabetes
  - HIV
  - Osteoporosis
  - Low SE status

PERIODONTITIS

- Diagnosed and categorized by attachment loss
  - Mild (1-2 mm)
  - Moderate (3-4 mm)
  - Severe (5+ mm)
- Aggressive periodontitis
  - Young healthy patients
  - Less related to poor oral hygiene/bacteria
  - Genetic condition
  - Localized
SYSTEMIC DISEASES LINKED TO PERIODONTITIS

- Coronary artery disease
- Low birth weight
- Stroke
- Pre-term labor
- Diabetes
- Alzheimer's
- Respiratory disease

PERIODONTITIS

Management
- Oral hygiene counseling
- Systemic disease evaluation/counseling
- 0.12% chlorhexidine rinses

Referral
- Signs of periodontitis
- Patients with risk factors
- Encourage routine dental care

DRUG INDUCED GINGIVAL OVERGROWTH

- Abnormal gingival growth related to systemic medications
  - Cyclosporine (25% of pts)
  - Phenytin (50% of pts)
  - Nifedipine (25% of pts)
- Severity related to:
  - Pt susceptibility
  - Oral hygiene
  - Facial surfaces of Anterior teeth

DRUG INDUCED GINGIVAL OVERGROWTH

Management
- Switching to another drug
- Reinforce good oral hygiene
- Systemic & topical folic acid
- Metronidazole, azithromycin, roxithromycin

Referral
- Encourage routine dental care
- Gingival debridement

ABSCESS

- Resultant from non-vital tooth
  - Caries
  - Periodontitis
  - Trauma
  - Purulent material accumulates in alveolar bone
  - Initial symptoms:
    - Tenderness to palpation of bone
    - Tenderness to percussion of tooth
    - Thermal sensitivity
    - Spontaneous/ nocturnal pain
    - Extrusion of tooth
    - Swelling

ABSCESS

- Spread through path of least resistance
  - Parulis (intraoral sinus tract)
  - Cutaneous sinus (extranoral sinus tract)
  - Cellulitis

Infections can spread systemically
- Fever
- Malaise
- Lymphadenopathy
ABSCESS - PARULIS
- Other terms:
  - Gum boil (children)
  - fistula
  - Buccal perforation - thinnest portion of cortical plate
  - Soft, single red papule at border of mucogingival junction
  - Expresses purulent exudate with palpation
  - Blockage of sinus tract results in acute swelling and cellulitis
  - Pt usually asymptomatic - chronic absces;

ABSCESS - CELLULITIS
- Unable to establish drainage
- Swelling spreads through facial planes - sessile swelling
- More prevalent in medically compromised patients
- Affects area most closely related to non-vital tooth
  - Buccal space
  - maxillaric space
  - Canine space

ABSCESS
Management
- Drainage (I&D)
- NSAIDS - pain management
- Antibiotics
  - Penicillin based - first line
    - No response in 24-72 hrs switch to Clindamycin, cephalaxin, dicloxacillin or add metronidazole
  - Clindamycin - Pen. Allergic
    - No response in 48-72 hrs switch to Azithromycin
  - 1gm IM Rocephin (loading dose)
  - Amoxicillin 500mg TID
  - Augmentin 500/125mg TID
  - Cephalexin 500mg TID
  - Metronidazole 500mg QID
  - Clindamycin 300mg TID
  - Augmentin 500/125mg QID
  - Metronidazole 500mg QID
  - Dicloxacillin 500mg QID
  - Azithromycin 500 mg QID
  - Referral - always

LUDWIG’S ANGINA
- 70% of cases involve mandibular molars
- Aggressive and spreads rapidly
- Involves
  - Submandibular space
  - Submental space
  - Sublingual space
- Starts unilaterally and spreads to opposite side
- Symptoms:
  - Pain/swelling in floor of the mouth
  - Restricted neck movement
  - dysphagia - drooling
  - Sore throat
  - Stridor
  - Dyspnea - tachypnea
  - Systemic symptoms (fever, chills, etc)
- Management
  - Maintain airway
  - Resolve infection (IV antibiotics)
    - Penicillin (2,000,000-24,000,000 units Q4)
    - Clindamycin (600mg Q8)
  - Referral - always once stabilized

CAVERNOUS SINUS THROMBOSIS
- Usually resultant of a non-vital tooth in the maxillary anterior segment
- Ophthalmic veins lack valves and infection and spread retrograde to the brain
- Dental infections account for about 10% of cases
- Progressed infection of the canine spaces
  - Swelling present on lateral border of the nose
  - Swelling involves the eyelids and conjunctiva
CAVERNOUS SINUS THROMBOSIS

- 90% of patients experience:
  - Proptosis
  - Chemosis
  - Photophobia
  - Lacrimation
  - Blurred vision

Management
- Surgical drainage
- Resolution of infection (IV antibiotics)
  - Penicillin G (2,000,000-24,000,000 units Q4)
  - Clindamycin (600mg Q8)

Referral
- Always after stabilization

PERICORONITIS

- Inflammation of soft tissue surrounding erupting tooth
  - Typically mand. 3rd molar
  - Bacterial infection under the operculum
  - Gingival swelling, redness, foul odor
  - Abscess develops- cellulitis extends to masseteric space- trismus
  - Severe- fever, lymphadenopathy, malaise

PERICORONITIS

Management
- Chlorhexidine/ saline flushes
- Antibiotic coverage- abscess or systemic infection
  - Refer to Abscess antibiotic coverage
  - High recurrence rate without treatment
  - Extraction- curative
  - Operculectomy

ORAL ULCERS

- Recurrent Aphthous Stomatitis
  - Major
  - Minor
  - Herpetiform
  - Herpetic
  - Traumatic
  - Chemotherapy related
  - Hand foot & mouth disease
  - Herpangina
  - Cancer

RECURRENT APHTHOUS STOMATITIS

- One of the most common oral pathologies
  - 3 clinical variations
    - Major, minor, herpetiform
  - Exclusive presence on non-keratinized mucosa
  - Multiple causative factors:
    - Allergies
    - Genetic predisposition
    - Hematologic abnormalities
    - Hormones
    - Immune factors
    - Nutritional deficiencies
    - Smoking cessation
    - Stress
    - Trauma

MINOR APHTHOUS

- Most common- 80%
  - “canker sore”
  - Yellow/white membrane encircled by a erythematous halo
  - 3-5mm in diameter
  - Healing without scarring 7-14 days
  - Usually 1-5 ulcers present in a single episode
  - Pain is unproportionate to size of ulcer
MINOR APHTHOUS

- Most commonly located on buccal/labial mucosa
- Ventral tongue
- Floor of the mouth
- Soft palate

Management
- Will heal with no treatment.
- Magic mouth wash (lidocaine, Maalox, diphenhydramine 1:1:1)
- Diffuse ulcers- dexamethasone solution (0.5mg/5mL)

MAJOR APHTHOUS

- Also called:
  - Sutton's Disease
  - Periadenitis mucosa necrotica recurrens (PMNR)
- Less common- 10%
- Deep necrotic center that extend into connective tissue layer- scarring
- 1-3cm in size
- Usually 5-10 lesions present in single episode
- Last average 2-6 weeks. More frequent recurrences than aphtous minor
- Most commonly seen on the labial mucosa, tonsillar fauces & soft palate

Management
- Are often resistant to therapy
- Triamcinolone acetonide injections
- 0.05% clobetasol propionate gel
- 0.05% halobetasol propionate gel
- Dissolve triamcinolone tabs on lesion
- Beclomethasone dipropionate spray
- Resistant cases add system prednisolone
- Consider HIV testing

HERPETIFORM APHTHOUS

- Less common - 10%
- Small pinhead ulcerations that occur in clusters of 50-100.
- Most frequent recurrences
- Affects: tip/margin of tongue, labial mucosa
- Heal 7-10 days
- Appearance is similar to HSV- no vesicular phase or viral cultures

HERPES SIMPLEX VIRUS

- Most caused by HSV-1
- More cases of HSV-2 being seen
- Spread by infected saliva and actively shedding oral/perioral lesions
- 75%-90% of adult population is infected
- Most primary infections are asymptomatic
HSV- ACUTE HERPETIC GINGIVOSTOMATITIS

- Children 6mo-5 years
- 90% HSV-1
- Symptoms:
  - Anterior cervical lymphadenopathy
  - Fever
  - Nausea
  - Generalized severe oral lesions
  - Enlarged painful gingiva
- Complication: self inoculation
- Mild cases: resolve 5-7 days; Severe cases: resolved 2 weeks

Management:
- Acyclovir suspension: rinse and swallow 5x daily for 5 days
- If given during first 3 symptomatic days

HSV- PHARYNGOTONSILLITIS

- Symptomatic primary infections in adults
- Symptoms:
  - Sore throat
  - Fever
  - Malaise
  - Headache
- Small clusters of vesicles on tonsils and posterior pharynx
- Clinical presentation resembles strep throat or mononucleosis

HSV- RECURRENT HERPES

- Occurs at or near site of primary inoculation
- Prodromal symptoms: itching, burning, tingling 6-24 hr prior
- Herpes Labialis: 15-45% of pop
- Intraoral lesions
  - Always keratinized mucosa
  - Clusters of 1-3mm vesicles
  - Rarely seen in vesicular phase

Management:
- Antiviral treatment best initiated during prodromal phase
- Labialis: Penciclovir cream
- Intraoral lesions: Chlorohexidine functions synergistically with acyclovir
- Systemic dose for recurrence:
  - Acyclovir (800mg 5x daily for 5 days- immunocompromised) (800mg TID for 5 days- immunocompetent)
  - Valacyclovir (gram) BID for 5 days (immunocompetent) (gram) BID for 5-9 days- immunocompromised
  - Famciclovir (soothing) BID on day 1 (immunocompromised) (soothing, BID on day 1- Immunocompromised)

HSV- RECURRENT HERPES

- Prophylactic:
  - Acyclovir (800mg bid)
  - Valacyclovir (1g daily)
  - Famciclovir (1g-2g bid)
- Suppression, 6-12 recurrences annually or more:
  - Penciclovir (2% cream)
  - Valacyclovir (2g once daily- immunocompetent) (2g twice daily- immunocompromised)
  - Famciclovir (1g once daily- immunocompetent) (1g twice daily- immunocompromised)

TRAUMATIC ULCERS

- Resultant from chemical, thermal or mechanical force
- Decubitus/pressure ulcer- ill fitting prosthesis
- Bednar ulcer- ulcer of soft palate from thumb sucking
- Burn ulcers- hard palate
- Riga-Fede ulcers- trauma from erupting mandibular incisors

Management:
- Look for causative factors and remove
- Palliative treatment: Magic mouth wash
- Referral
- To dentist for removal of oral/dental issues
- Referral for biopsy if long standing or does not heal with removal of cause
CHEMOTHERAPY/RADIATION INDUCED ORAL ULCERS

- Mouth is common site for manifestations
- Seen in both Head and Neck radiation causes
- Risk factors: young, female, poor oral hygiene, poor nutrition, xerostomia, tobacco & alcohol use
- Lesions develop a few days after chemo and 2 weeks after radiation
- Resolves slowly- 2-3 weeks after cessation
- Lesions in direct portal of radiation field.

CURATIVE

- Oral manifestations are most common with Chemotherapy agent:
  - Methotrexate
  - 5-FU (5-fluorouracil)
  - Etoposide
  - Irinotecan
  - Cytarabine
  - 6-Mercaptopurine
  - 6-thioguanine
  - Desmopressin
  - Dexamethasone
  - Dactinomycin
  - Bleomycin
  - Vinblastine

HAND FOOT & MOUTH DISEASE

- Coxsackie A&B
- Pinpoint ulcers localized to hands, feet and mouth
- Oral ulcers are scattered throughout
  - Tongue, hard palate, buccal mucosa
  - Up to 30 oral ulcers
- Rarely affected oropharynx
- Accompanied by flu-like symptoms
- Diagnosis: viral culture or serum antibodies

Management

- Heals within 10 days
- Minimal discomfort from oral lesions

HERPANGINA

- Coxsackie A (sometimes B) & echovirus
- Ulcers limited to posterior oropharynx & soft palate
- Symptoms: sore throat, dysphagia, erythema, fever, malaise
- Symptoms resolve in a few days and ulcers heal in 7-10 days

ULCERATIONS OF ORAL CANCER

90% Squamous cell carcinomas
- Oral cancers account 2% of all cancers
- Male to female ratio - 2.5:1
- Risk factors: smoking, alcohol, sunlight, iron-deficiency anemia, malnutrition
  - Limited genetic component
- Minimal pain from lesions- delay in seeking treatment
- Varied clinical appearance:
  - Exophytic (typically has an ulcerated component)
  - Endophytic (ulcerated)
  - Leukoplakia
  - Erythroplakia
  - Leukoplakia/erythroplakia

- Exophytic- indurated fungating, papillary or verruciform with ulcerated center
- Endophytic- depressed irregular ulcerated center with rolled borders

Vermillion border:
  - 90% of lesions
  - Crusted, oozing, non-tender, indurated ulcerations - exophytic

Intraoral:
  - Tongue (ventral & posterior lateral- most common)
  - Floor of the mouth
  - Gingiva, buccal mucosa, labial mucosa, hard palate
ULCERATIONS OF ORAL CANCER

- Oropharyngeal:
  - Soft palate, base of tongue, tonsillar pillar (70-80%), posterior pharyngeal wall
  - HPV associated carcinomas
  - Symptoms: sore throat, dysphagia, pain with swallowing.
  - Referral: any non-healing ulceration in a high risk area send for biopsy.

TEMPOROMANDIBULAR DISORDERS

- Group of neuromuscular and musculoskeletal conditions associated with the TMJ
- Most common and painful disorders are myogenous or arthrogenous in nature
- Many are multifactorial
- Most common in your and middle aged women
- Frequent complaints
  - Limited joint movement
  - Pain (preauricular area, temporal, frontal & occipital)
  - Noise within joint space

TMD- DISC DERANGEMENT

- Articular disc displaced anteriorly
  - Lack of the retrodiscal lip
  - Contraction of the superior head of lateral pterygoid
  - Capsular-inflammation of the tissue surrounding the joint
  - Disc is recaptured upon opening: disc displacement with reduction (30% of pop)
  - "Pop" during opening-lighter "pop" during closing
  - Typically painless
  - Able to achieve max opening >40mm
  - No treatment needed if asymptomatic
  - NSAID's
  - Referral to dentist: splint treatment

TMD- DISC DERANGEMENT

- Disc remains anterior during opening: disc displacement without reduction
  - Restricted max opening (<30mm)
  - Preauricular pain
  - No "pop"
  - Altered bite
  - Occurs acutely in patient with history of disc displacement with reduction
  - Analgesics (NSAIDs)
  - Referral to Dentist: splint, steroids, surgery

TMD- OSTEOARTHRITIS

- Affects patient >50
- Has inflammatory component
- Articular disc not supplied by underlying marrow blood flow
- Disc becomes desiccated more easily
- Less turn over to cartilage matrix
- Surface break down causes hole to wear through-bone on bone
- Symptoms: crepitus, pain and muscle guarding
- Management: palliative (NSAID's & analgesics)
- Referral to dentist for splint or prosthesis

TMD- MYOFASCIAL PAIN

- Caused by tension, fatigue and spasms of the masticatory muscles
- Typically a result of bruxism
- Symptoms: Trigger points, tenderness in muscles of mastication, headache, limited jaw movement.
- Management: mild analgesics & NSAIDs, muscles relaxants/anxiolytics, Physical therapy
- Referral: to dentist for splint construction
ORAL CANDIDIASIS
- Fungal disease caused by candida albicans
- Most common oral fungal infection
- Seen as normal flora in 30-50% of population
- Traditionally considered a condition only in immunocompromised, but is also frequent in health individuals
- Infection can range from subclinical to severe

ORAL CANDIDIASIS- PSEUDOMEMBRANOUS
- "thrush"
- White plaques seen diffusely
  - Hyphae, yeast, epithelial cells & debris
  - Easily removed
  - Seen in infants with underdeveloped immune system
  - Cause:
    - Broad spectrum antibiotic (acute onset)
    - Immunocompromised (slow onset)

ORAL CANDIDIASIS- ERYTHEMATOUS
- More common than pseudomembranous
- Does not show clinical plaques
  - Acute atrophic candidiasis
    - "antibiotic sore mouth"
    - Loss of filiform papilla of the tongue
    - Red bald tongue
    - Burning, scalded sensation
    - Xerostomia patients suffer from this frequently

Central Papillary Atrophy
- Median rhomboid glossitis
- Well defined symmetrical erythematous area on midline of posterior tongue
- Localized loss of filiform papilla
- Chronic
- Asymptomatic

Angular Cheilitis/Perlèche
- Erythema, fissuring & scaling at angles of mouth
- Older people with lost vertical dimension
- Saliva pools in marionette lines
- Warm, wet dark environment
- 20% C. albicans alone
- 60% combo C. albicans & S. aureus
- 20% S. Aureus alone
- chelocandidiasis

Denture Stomatitis
- Erythema and petechial hemorrhage on denture baring surfaces
- Maxilla
- Asymptomatic
- Poor hygiene and limited prosthesis removal
## ORAL CANDIDIASIS

### Management
- Clinical signs and Cytology for fungal hyphae
- Nystatin 100,000u/mL QID
- Clotrimazole troche 10mg 5x daily for 2 weeks
- Ketoconazole 200mg daily
- Fluconazole 100mg 2 tabs day 1 then 1 tab for 13 days

### Referral
- No resolution with treatment: Biopsy or immune testing
- Denture stomatitis-prosthesis adjustment

## PYOGENIC GRANULOMAS

### Management
- Tumor-like growth
- Pedunculated, smooth/lobulated mass
- Ulcerated surface
- Young lesions more red vascular appearance, older lesions more pink collagenized
- Vary from small (mm) to large (cm)
- Very rapid growth
- 75-85% of cases on gingiva

### Referral
- All excisions: biopsied
- Routine dental cleanings

## PYOGENIC GRANULOMA

- Common in children, young adults, women
- Predisposing factors
  - Poor oral hygiene
  - Trauma
  - Hormones
- Very common in pregnant women
  - Begin anywhere from 1st trimester- 7 months
  - Related to increasing estrogen and progesterone

## PYOGENIC GRANULOMAS

### Management
- Surgical excision - curative
- 3-15% recurrence rate
- Refer treatment during pregnancy
  - Unless cosmetic or functional disturbance
- Referral
  - All excisions: biopsied
  - Routine dental cleanings

## TRAUMA

### Concussion - injury to tooth without increased mobility or displacement.
- Painful to percussion
- Permanent teeth - no emergent treatment needed
  - Soft diet
  - Good OHI
  - Dental follow-up
- Primary teeth - no emergent treatment
  - Soft diet
  - Good OHI
  - Dental follow-up

### Subluxation - injury to tooth causing increased mobility without displacement
- Bleeding of the gingival sulcus noted
- Painful to percussion
- Permanent teeth - referral to dentist for splint placement
  - Soft diet
  - Good OHI & chlorhexidine
- Primary teeth - no emergent treatment needed
  - Soft diet
  - Good OHI & chlorhexidine bid x 7 days
- Referral to dentist: fistula formation, discoloration
TRAUMA

- Extrusion - partial displacement of tooth out of socket
  - Alveolar socket still intact
  - Sulcular bleeding
  - Pain to percussion
  - Permanent teeth: referral to dentist for repositioning and splint
  - Soft diet
  - Good OH & Chlorhexidine
  - Primary teeth: referral to dentist for repositioning or extraction

TRAUMA

- Intrusion - displacement of tooth into the alveolus
  - Fracture of the alveolar socket
  - Permanent teeth: referral to dentist
    - Spontaneous eruption - minor intrusions
    - Orthodontic extrusions
    - Surgical repositioning & splinting
  - Primary teeth: referral to dentist
    - Spontaneous eruption - if is not affecting permanent tooth bud (minor intrusions)
    - Extraction - if affecting permanent tooth bud (major intrusions)

TRAUMA

- Lateral luxation - displacement of tooth laterally
  - Fracture of buccal or lingual bone
  - Permanent teeth: referral to dentist
    - Reposition & Splint placement
  - Primary teeth: referral to dentist
    - Spontaneous repositioning
    - Repositioning if occlusal interference
    - Extraction - severe displacement

TRAUMA

- Alveolar fracture - displacement of one or multiple teeth along with the attached alveolar process
  - Teeth and bone will move as a unit
  - Permanent teeth: referral to dentist
    - Reduction of fracture and repositioning with splint
  - Primary teeth: referral to dentist
    - Reduction of fracture and repositioning with splint

TRAUMA

- Avulsion - tooth completely displaced out of the socket
  - Permanent teeth re-implant tooth ASAP
    - Storage in milk, Hank’s balanced solution or saliva
    - Handle only by crown
    - Rinse with cold water (if soiled)
    - Re-implant and splint
    - Tetanus shot
    - Dental follow-up
  - Primary teeth do NOT re-implant
    - Confirm full tooth loss
    - Dental follow-up
TRAUMA

- Tooth fracture: fracture of coronal tooth structure without injury to bone or root
  - Enamel fracture (Ellis class 1)
  - Enamel-dentin fracture (Ellis class 2)
  - Enamel-dentin-pulp fracture (Ellis class 3)
- Permanent teeth: Refer to dentist
  - If dentin and pulp is exposed rinse with Chlorohexidine and apply Glass ionomer coverage
- Primary teeth: Refer to dentist
  - If dentin and pulp is exposed rinse with Chlorohexidine and apply Glass ionomer coverage

TRAUMA

- Root fracture: fracture of root of tooth
  - Can resemble avulsion, lateral luxation, extrusion or subluxation
  - Need x-ray to confirm
- Permanent teeth: Referral to dentist for treatment
  - If coronal segment is avulsed - re-implant same as completely avulsed tooth
- Primary teeth: Referral to dentist for treatment

ALVEOLAR OSTEITIS/ DRY SOCKET

- All trauma carries risk of tooth necrosis and potential for abscess
- Always have patient follow-up with dentist to establish routine care

ALVEOLAR OSTEITIS/ DRY SOCKET

- Premature loss of blood clot after extraction
- Leaves bare boney socket (dry socket)
- Risk factors
  - Female (oral contraceptive use)
  - Tobacco use
  - Pre-operative infection
  - Traumatic extraction
  - Surgical technique
  - Posterior mandible
- 1-3% all extractions; 30% impacted 3rd molars

SIALOLITHIASIS

- Sialolith - calcified deposits found within lumen of the duct
- 80% within Wharton’s duct of submandibular gland
- Most common in young and middle aged adults
- Stone located near gland - episodic pain and swelling at meal time (chronic saladenitis)
- Stone located near terminal of duct - can be palpated
SIALOLITHIASIS

Management
- Small stones can be "milked" out
- Sialagogues, heat and increased fluid intake - passage stone
- ENT
- Larger stones require surgical removal
- Gland removal

Referral

BISPHOSPHONATE/MEDICATION-RELATED OSTEONECROSIS OF THE JAW (BRONJ)

- Caused by bisphosphonates, antineoplastic, anti-resorptive & antiangiogenic drugs
- Drugs cause a functional impairment of the osteoclasts
- Affects no only resorption, but deposition of new bone
- IV formations to treat cancer- 100/1000,000
- Oral use to treat osteoporosis- 2/100,000

Bisphosphonates
- Actonel, Atelvia, Boniva, Fosamax, reclast, zometa, aredia
- Antineoplastic
- xgeva
- Anti-resorptive
- prola
- Antiangiogenic
- Sutent, NexAVAR,Avastin

BISPHOSPHONATE/MEDICATION-RELATED OSTEONECROSIS OF THE JAW (BRONJ) (MRONJ)

- Additional risk factors
  - > 65 years of age
  - Smoker
  - Corticosteroid use
  - Diabetes
  - Alcohol use
  - Poor oral hygiene
  - Drug use exceeding 3 years

- Most common in mandible (increase bone remodeling along alveolar ridges)
- Typically follow a traumatic event (extraction)
- Majority of cases are painful

Management
- Prevention
  - During IV treatment- antibiotic prophylaxis 1 days prior and 3 days after treatment
  - During P.O. treatment- 3 month drug withhold if pt has been treated longer than 4 years
  - Once osteonecrosis present- minimize pain
    - Asymptomatic- chlorohexidine rinses
    - Symptomatic- antibiotics & chlorohexidine
    - IV antibiotics if P.O. fail palliative
- Referral
  - Prior to initiating medication need dental clearance
  - Removal of sequestra if present

REFERENCES