Instructors

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*Oral pathology office*
PH15W-1562 (PH building, 15th floor)
x 5-4599

Reference texts


Objective

- To learn about common lesions and diseases of the oral cavity, with emphasis on clinical and radiographic correlations

Evaluation

- **Attendance**: 15%
  - Minimum of 11 of 15 classes to obtain full 15% attendance component
  - Sign-in sheet
- **CPC online sessions (2)**: 40%
  - 5-10 cases with clinical histories (Courseworks)
  - Differential diagnosis for each case
- **Final examination**: 45%
  - Multiple choice and short answer-type questions
- **Overall grade of at least 70%**
  - reported as Honors (H), Pass (P), Fail (F)

https://courseworks.columbia.edu/
I. Infections of the oral cavity

II. How to perform and submit a cytology smear

Overview

Infections
- Candida
- Herpes simplex

Cytology smears
- Smear technique
- How to submit

Candidiasis
- **Etiology**: *Candida* (mostly *C. albicans*)
  - fungal organism
  - can be part of normal oral flora, with no evidence of infection
  - infection depends on:
    1. Immune status of host
       - high immune status, low risk of infection
    2. Oral environment
       - xerostomia, high risk of infection
- Candidiasis most common oral fungal infection

Candidiasis
- **Age**: Elderly
  Immunocompromised patients (HIV, AIDS, transplant pt, cancer pt)

- **Clinical features**:
  Variety of clinical presentations
  1. Pseudomembranous candidiasis (“thrush”)
  2. Erythematous candidiasis
  3. Chronic hyperplastic candidiasis
  4. Mucocutaneous candidiasis

Candidiasis
- **Age**: Elderly
  Immunocompromised patients (HIV, AIDS, transplant pt, cancer pt)

- **Clinical features (cont’d)**:
  1. **Pseudomembranous candidiasis (“thrush”)**
     - adherent white plaques
     - can be wiped off
     - underlying mucosa mostly erythematous
     - mild burning
Candidiasis

Clinical features (cont’d):

2. Erythematous candidiasis
   - mucosal erythema; “bald” appearance of tissue
   - no white plaques
   a) Acute atrophic candidiasis
      - pt on antibiotics
      - burning sensations

   b) Central papillary atrophy (median rhomboid glossitis)
      - well-defined, bald area of mid-dorsal tongue
      - mostly asymptomatic
**Candidiasis**

- Clinical features (cont’d):

  2. **Erythematous candidiasis**
     
     c) **Angular cheilitis**
     
     - erythema, fissuring, scaling of corners of lips
     - pt with reduced vertical dimension
     - *Candida* and *Staphylococcus aureus*

     d) **Denture stomatitis**
     
     - erythema corresponding to area of denture placement
Differential diagnosis

White lesions
1) Leukoplakia
2) Frictional hyperkeratosis

Red lesions
1) Erythroplakia

Mixed white-red lesions
1) Chemical injury
2) Contact reactions (e.g. cinnamon)
3) Traumatic ulcer
4) Lichen planus

Candidiasis

- Histology:
  - hyphae (elongated structures) in superficial parakeratin layer
  - epithelial acanthosis
  - elongation of rete ridges
  - neutrophils in epithelium
  - chronic inflammation in connective tissues

- Diagnosis:
  1. Fungal culture
     - 2 weeks for results
  2. Cytology smear
  3. Tissue biopsy
**Candidiasis**

- **Treatment**:
  - **Pseudomembranous candidiasis**
  - **Acute atrophic candidiasis (Ab use)**
  
  **Topical or oral antifungals**
  - Rx: clotrimazole (Mycelex) troches
    - Let 1 tab dissolve in mouth TID-QID x 14d
  - Rx: Nystatin suspension
    - Rinse and spit/swallow 1 tsp QID x 14d
  - Rx: fluconazole (Diflucan)
    - Take 1 tab PO once daily x 14d
  
  * Drug interactions with Dilantin, warfarin, and sulfonylureas *

**Herpes simplex virus infections**

- **Etiology**: Herpes simplex virus
  - DNA virus
  - part of human herpesvirus (HHV) family
  - 2 types: 1) Type 1 (HSV-1, HHV-1)
    - Generally affects skin above waist
  - 2) Type 2 (HSV-2, HHV-2)
    - Generally affects skin below waist

- **Infection occurs in primary and secondary forms**
  - After 1st infection => virus taken up by ganglia, remains latent until reactivated => 2nd infection

- Reactivation triggered by UV light exposure, associated with stress, pregnancy, trauma, etc.
Herpes simplex virus infections
• Primary infection
  1. Primary herpetic gingivostomatitis
     Age: 6 mo-5 y; can occur in older pt
     General features:
        Most cases asymptomatic
        Chills, fever, anorexia, irritability
        Swollen cervical lymph nodes
     Oral features:
        Vesicles ≈ punctate ulcers on K and NK mucosa
        ** Linear gingival erythema with punched-out ulcers
     Clinical course: Resolves in 5 d - 2 w

Herpes simplex virus infections
• Secondary infection
  1. Herpes labialis
     Trigger: UV light exposure, trauma
     Age: Young adults; throughout life
     Site: Vermilion border, adjacent skin
     Clinical features:
        Prodrome – pain, burning, itching, tingling
        – 6-24 hours before eruption
        Clusters of vesicles ≈ crusts
        Heals in 7-10 days
        During vesicular stage ≈ active, can spread

Herpes simplex virus infections
• Primary infection (cont’d)
  2. Pharyngotonsillitis
     Age: Adults
     General features:
        Sore throat, fever, malaise, headache
     Oral features:
        Vesicles ≈ punctate, shallow ulcers
        Tonsils and posterior pharynx
     ** Symptoms can mimic strep throat, infectious mononucleosis
Herpes simplex virus infections

- Secondary infection

2. **Intraoral recurrent herpes**
   - **Age:** Young adults, adults; throughout life
   - **Site:** Keratinized mucosa
   - **Clinical features:**
     - Vesicles ➞ red macules ➞ ulcerations
     - Heals in 7-10 days

A 39 YOM with a recent dental school appointment with 3 tries for a crown impression
Differential diagnosis

**Primary herpetic gingivostomatitis**
1) Erythema multiforme
   - hemorrhagic crusting of lips
   - no linear gingival erythema

**Intraoral recurrent herpes**
1) Aphthous ulcers
   - on non-keratinized mucosa
2) Chemical injury
3) Immune-mediated vesiculobullous diseases
   - e.g. erosive lichen planus, pemphigus vulgaris

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Herpes simplex virus infections

• **Histology:**
  - intraepithelial vesicle formation
  - 3 M’s of herpes-infected cells:
    1. Multinucleation
    2. Nuclear margination
    3. Nuclear molding
    Nuclear enlargement
    = “Ballooning degeneration”

** These features can also be seen with varicella zoster, herpes zoster infections

• **Diagnosis:**
  1. Viral culture
     - need intact vesicles
     - 2 weeks for results
  2. Serologic tests
  3. Cytology smear
  4. Tissue biopsy
Herpes simplex virus infections

**Treatment:**

*Primary herpetic gingivostomatitis*
- resolves on its own
- if detected earlier, can rx oral antivirals or acyclovir suspension
- analgesics, antipyretics
- chlorhexidine rinses
- frequent hydration
- avoid contact with eyes

**Oral antivirals**

*Rx: acyclovir (Zovirax), 200mg*
- 5 times/day x 10 d

*Rx: acyclovir suspension*
- Swish and swallow 1tsp x 10d

*Rx: valacyclovir (Valtrex), 500mg*
- TID x 7d

*Rx: famcyclovir (Famvir), 500mg*
- TID x 7d

**Herpes labialis**

- oral or topical antivirals = variable success

**Topical antivirals**

*Rx: penciclovir (Denavir), 1%*
- Apply to affected area q2h x 4d

**Cytology smears**

**Rationale:**
- Rule in/rule out *candida* infection
- Rule in/rule out *herpes* infection
- Rule in/rule out *dysplasia*

**Materials:**
- Where? Oral path office
- What? Smear kit
  - glass slide
  - brush
  - alcohol packet
- Requisition slip

**How to submit a smear**

**Requisition slip**

- Patient info
- Submitting Dr.
- DOB
- Location
- Clinical dx
  - candida
  - herpes
  - dysplasia
- Clinical description
How to submit a smear

**How:**
1) Brush lesion firmly, smear on slide
2) Pour on alcohol
3) Let dry

* Please be sure to indicate that the smear is to rule out *candida OR herpes OR dysplasia* *

**Submit to:** Oral path office (PH 1562, 15th floor)