MYCOTIC INFECTIONS OF THE ORAL CAVITY

Prof. Shaleen Chandra
Candidiasis

Candidosis
Moniliasis
Thrush

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• Caused by Candida albicans
  – Yeast like fungus
  – Normal inhabitant of oral cavity
  – Opportunistic infection

• Predisposing factors
  – Acute and chronic diseases
    • TB, diabetes mellitus, anemia
  – Hormonal disturbances
    • Myxedema, Hyperparathyroidism, Addison’s disease
  – Immunodeficiency
    • AIDS
  – Prolonged use of antibiotics, corticosteroids, anticancer drugs
  – Radiation therapy
  – Old age, infancy, pregnancy

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Clinical features

• Clinical classification
  – Acute
    • Acute pseudomembranous candidiasis (thrush)
    • Acute atrophic candidiasis
  – Chronic
    • Chronic hyperplastic candidiasis
    • Chronic mucocutaneous candidiasis
      – Chronic familial mucocutaneous candidiasis
      – Chronic localized mucocutaneous candidiasis
      – Chronic diffuse mucocutaneous candidiasis
      – Candidiasis endocrinopathy syndrome
    • Chronic hyperplastic candidiasis

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Acute pseudomembranous candidiasis

–One of the most common forms

–Buccal mucosa, tongue (most common sites)

–Soft, white, slightly elevated plaques ("curdy white" appearance)

–Can be wiped away leaving a normal or slightly erythematous area

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• Acute atrophic/erythematous candidiasis
  – Appears red or erythematous
  – Also includes

Central papillary atrophy of tongue

Cheliocandidiasis

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• Chronic hyperplastic candidiasis/candidal leukoplakia
  – Firm, white, persistent plaques
  – Usually on lips, tongue, cheeks
  – May persist for years
  – Association with leukoplakia/oral cancer → still debatable
• Chronic atrophic candidiasis
  – Denture sore mouth
  – Denture stomatitis
Diagnosis

• Smear preparations
  – Potassium hydroxide mount
  – PAS stain

• Culture
  – Sabouraud’s media
  – Cornmeal agar

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• Histopathological findings
  – Hyperparakeratosis
  – Elongation of rete ridges
  – Collection of neutrophils (micro abscesses) in the superficial and upper spinous layers
  – Chronic inflammatory cell infiltrate in connective tissue

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• Candidal hyphae in the parakeratin layer

![Microscopic image of fungal hyphae and spores.]

• Stains used to visualize fungal hyphae and spores
  – PAS
  – Methenamine silver

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Blastomycosis

North American blastomycosis
Gilchrist’s disease

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• Caused by *Blastomyces dermatitidis*

• Two types
  – Cutaneous
  – Systemic
    • Bones
    • Liver
    • Lungs
    • Subcutaneous tissue

• Source of infection in humans is unknown

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Clinical features

- More common in males
- Middle age
- Small red papules that slowly increase in size
- Ulcerate to discharge pus
- Spreads through subcutaneous tissue and disseminates through blood

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• Oral manifestations
  – Seen in 25% of cases
  – Resemble actinomycosis
  – Tiny ulcers
  – May sometimes resemble oral cancer

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Histopathological features

- Granulomatous inflammation
  - Giant cells
  - Macrophages

- Microabcess within the epithelium

- Organism
  - Round in shape
  - Budding is often seen
  - Doubly refractile capsule
Paracoccidioidomycosis

South American blastomycosis

Lutz’s disease

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• Caused by *Paracoccidioides brasiliensis*

• Systemic lesions similar to those of blastomycosis

• Oral manifestations
  – Sever lymphadenopathy
  – Papillary lesions
  – Ulcers
Histopathological features

- Granulomatous inflammation
  - Epithelioid macrophages
  - Giant cells

- Scattered yeast like organisms with multiple buddings (“pilot wheel” or “mickey mouse” appearance)

- Stains
  - PAS
  - Methenamine silver

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Histoplasmosis

Darling’s disease

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• Caused by *Histoplasma capsulatum*

• Acquired by inhalation of dust containing spores of fungus
Clinical features

- Chronic low grade fever
- Productive cough
- Hepatospleenomegaly
- Lymphadenopathy
- Subcutaneous nodules
- Histoplasmin skin reaction
• Oral manifestations
  – Nodular, ulcerative, or vegetative lesions
    – Usually covered by nonspecific gray membrane
    – Indurated
Histopathological features

• Granulomatous inflammation

• Organisms are found in large numbers in phagocytic cells

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Mucormycosis
Phycomycosis
Zygomycosis

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• Opportunistic infection caused by organisms of class Zygomycetes
  – *Mucor*
  – *Rhizomucor*
  – *Rhizopus*
  – *Absidia*

• Present in oral and nasal cavity of normal individuals

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Clinical features

- 2 types
  - Superficial
    - External ear
    - Finger nails
    - Skin
  - Visceral
    - Pulmonary
    - Gastrointestinal
    - Rhinocerebral

- May cause extensive necrosis and sloughing

- May resemble carcinoma
Histopathological features

• Extensive necrosis of the involved tissue

• Organisms are large, non septate hyphae, branching at obtuse angle