

Mucormycosis



Definition:

➤ Zygomycosis

Agents:

- Worldwide, airborne
- Bread, fruits, decaying vegetations, soil, animal dung
- 1-Rhizopus
- 2-Rhizomucor

➤ *Rhizopus oryzae* (arrhizus) × × ×

➤ *Rhizopus rhizopodiformis* ×

✓ *Rhizomucor pusillus* ×

■ *Absidia corymbifera* × ×

Mucor sp.





➤ Predisposing factors

Pathogenesis:

- Abraded skin
- Diabetes mellitus
- Corticosteroids

Pathogenesis:

❖ In AIDS:

- Importance of the neutrophils

❖ Special affinity for blood vessels:

- Thrombosis and tissue necrosis

Clinical manifestations:

1-Rhinocerebral mucormycosis

2-Pulmonary mucormycosis

3-Cutaneous mucormycosis

4-Gastrointestinal mucormycosis

5-CNS mucormycosis

Rhinocerebral mucormycosis

❖ Predisposing factors:

- Diabetes mellitus(keton)
- Leukemia
- Broad-spectrum antibacterial drugs
- Bone marrow transplantation

Mucormycosis



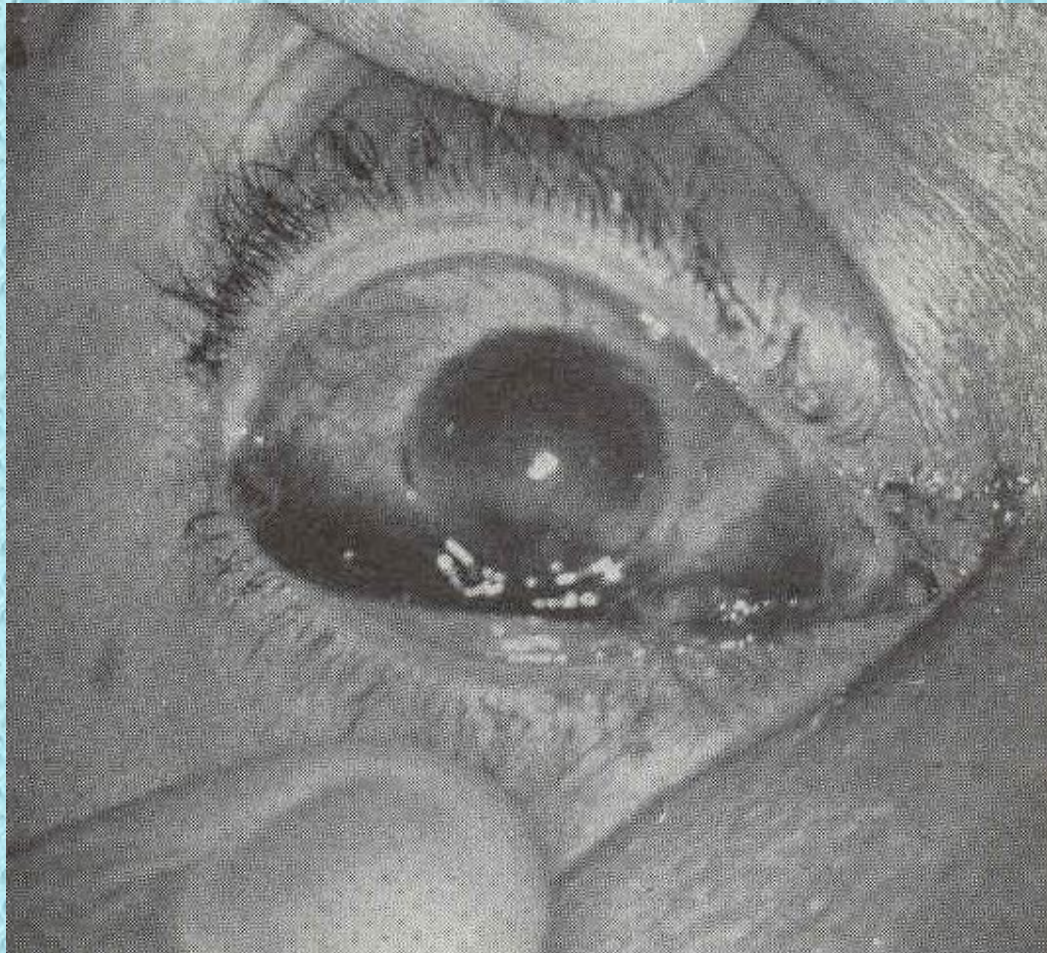
Mucormycosis-Diabetes mellitus



Mucormycosis of the nasal sinuses in a diabetic



Rhinocerebral mucormycosis;
ophthalmoplegia, fixation of pupil, and
haziness in the anterior chamber



Rhinocerebral mucormycosis; sloughing of nasal area



Pulmonary mucormycosis

❖ Predisposing factors

Pulmonary mucormycosis

➤ Clinical manifestations:

➤ Fever

➤ Cough

➤ Dyspnea

➤ Hemoptysis



Cutaneous mucormycosis

❖ Primary cutaneous mucormycosis

Gastrointestinal mucormycosis:

Predisposing factor:

- Protein-calorie malnutrition
- Kidney transplant recipients

Gastrointestinal mucormycosis

➤ Stomach

➤ Ileum

➤ Colon



Initial manifestations:

- Abdominal pain
- Nausea and vomiting
- Fever
- Hematochezia
- ❖ Intra-abdominal abscess

CNS mucormycosis:

- Rare

- Severely debilitated patients

- Mode of entry: nose or paranasal sinuses

- Decreasing consciousness

CNS mucormycosis:

- Open head trauma
- After intravenous injection of illicit drugs
- ❖ Black discharge from the wound:
 - Necrosis of the underlying dura and brain

Diferencial diagnosis:

- Aspergillus infection
- Aggressive orbital tumors
- Cavernous sinus thrombosis (Staphylococcus)

Epidemiology:

- Ubiquitous
- Prolific spore-forming capacity
- Bandage.needle
- excavation. duct

Epidemiology:

- Severe immunocompromised patients
- Diabetes mellitus
- Trauma

Laboratory Diagnosis:

1-Collection of samples

2-Direct examination

3-Culture

4-Serology

Collection of samples:

- Sputum
- BAL
- Aspirates and secretions of nose
- Skin scrapings
- Paranasal sinus biopsy
- Gastric washings
- Minced samples
- Touch slides prepared from the biopsy specimens

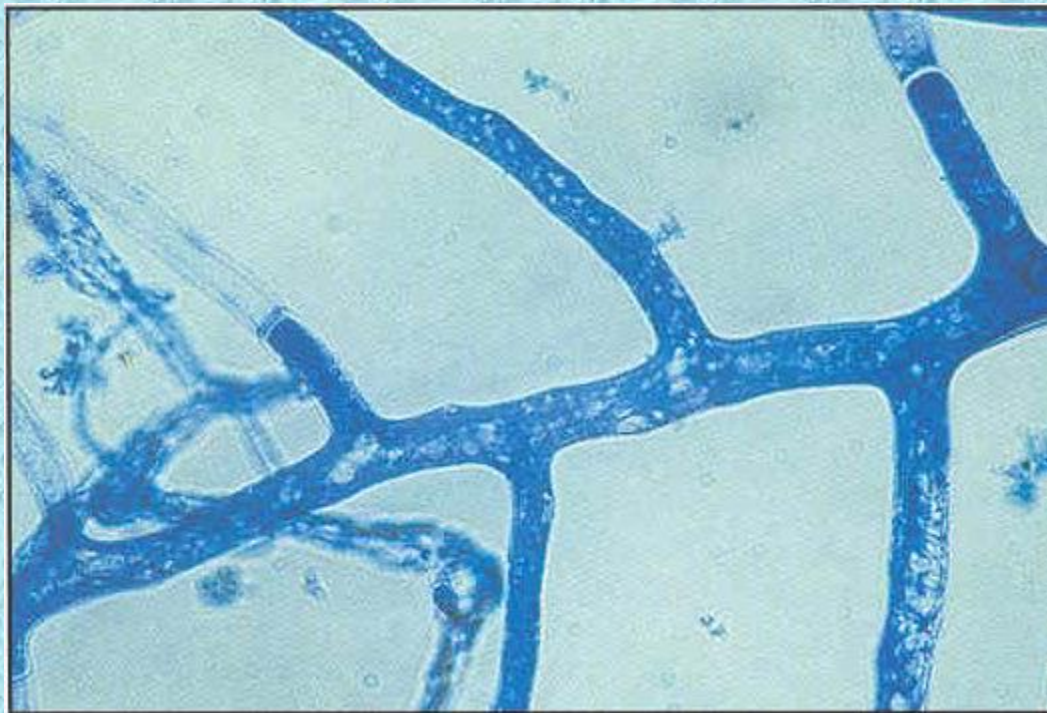
Direct examination:

- KOH for touch slides
- H & E
- GMS
- PAS

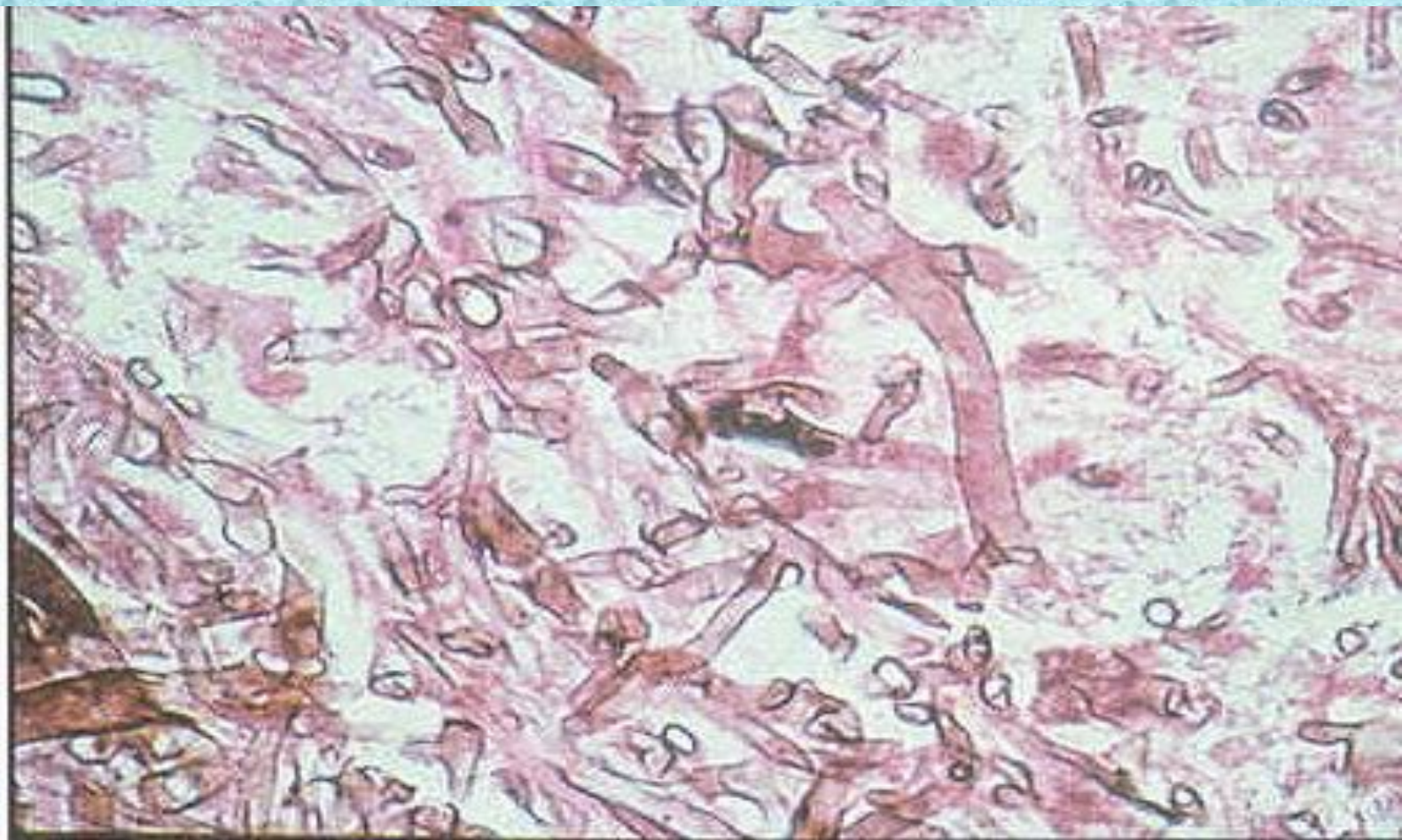
Direct examination:

- Broad, nonseptate hyphae
- 10 to 20 μm in diameter
- At right angle
- Ribbon-like hyphae
- Aspergillus, Fusarium, Pseudoallescheria spp.

LCB: 10-15 μm



H & E



Culture:

Media:

- SDA + C (SC)
- Sterile bread

Temperature:

- 25° - 37° C

Serology:

- Remains investigational

Prevention:

- ❖ No methods

- ❖ In patients with severe neutropenia
(bone marrow transplant or leukemia):

- HEPA (High-Efficiency Particulate Air filters)

Treatment:

- ❖ Treat of underlying disease

- ❖ Doses of immunosuppressive drugs:

 - Decreased

 - Stopped

Treatment:

❖ Standard therapy for invasive mucormycosis:

➤ Aggressive surgical debridement of necrotic tissue

➤ Amphotericin B

✓ Posaconazole

Treatment:

Two factors:

1-Early diagnosis

2-Resolution of predisposing problems

Overall mortality rate: 50%

Higher survival rates: Up to 85%

