



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT OF CARDIOPULMONARY PERFUSION CARE
TECHNOLOGY

COURSE NAME: GENERAL PATHOLOGY
I YEAR

UNIT IV : INFECTIOUS DISEASES

TOPIC : FUNGAL INFECTION

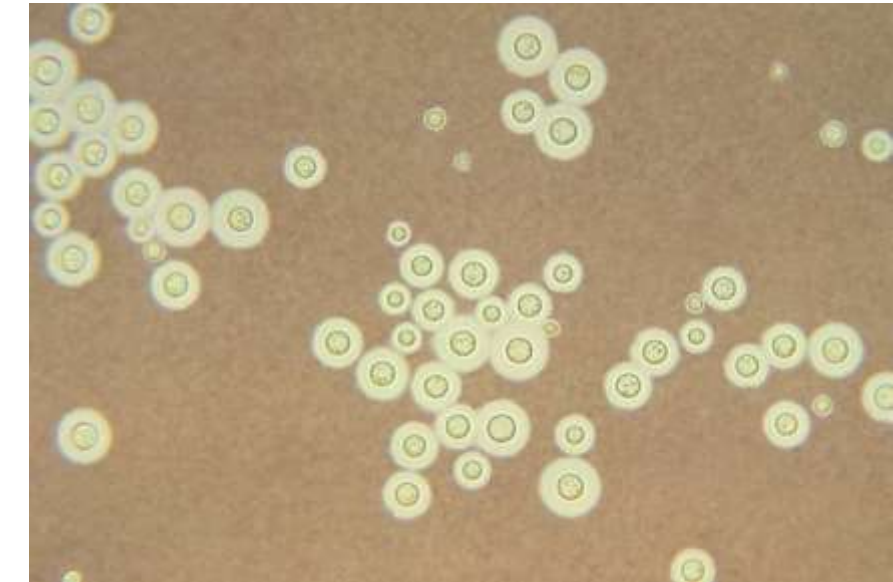
SUB TOPIC 3: CRYPTOCOCCOSIS



Cryptococcosis



- The name Cryptococcus was created from the Greek kryptus meaning **'hidden'**
- Cryptococcosis is a chronic, subacute to acute pulmonary, systemic or meningitis disease
- Produces potentially fatal meningoencephalitis in HIV patients.



Causative agents

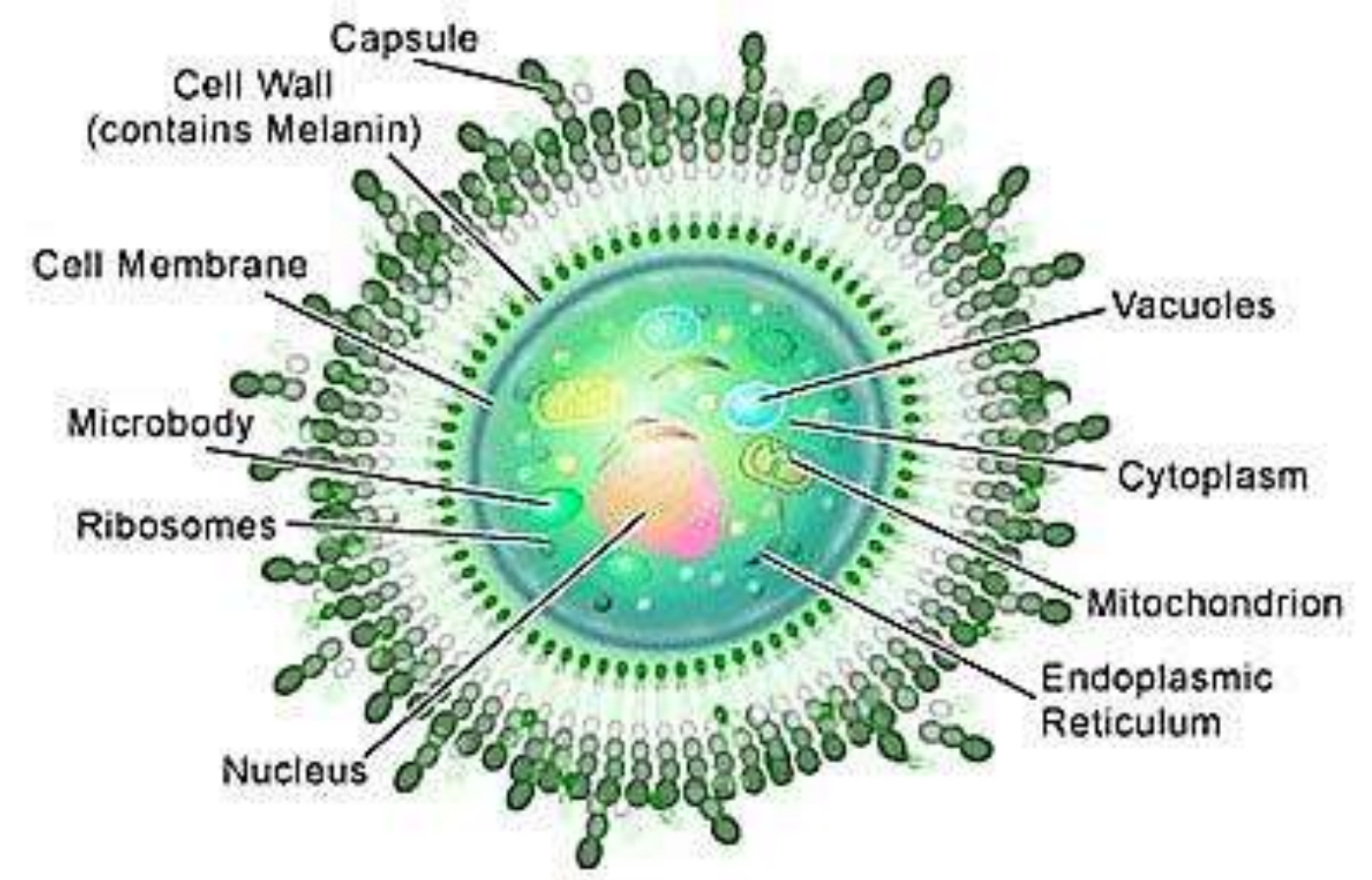
- Two species: *C. neoformans* and *C. gattii*.



Structure



- It is a **round or ovoid budding cell**
- Size: 4-20 μm in diameter.
- It's a **true yeast**
- The electron microscopy of Cryptococcus cell reveals the presence of a **capsule**
- The nucleus has disintegrated chromatin material instead of a definite nucleolus.
- Mitochondria are consistent in size and shape

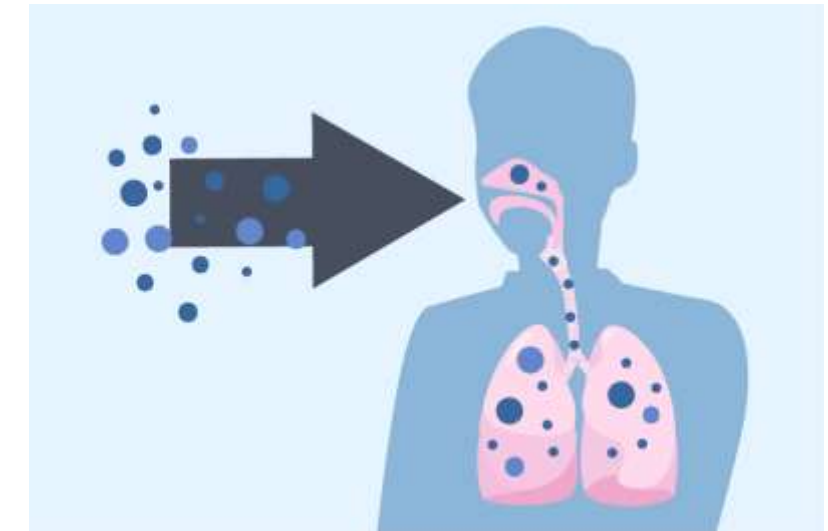




Pathogenesis



- **Source:** birds' excretions.
- **Route:** Infection is acquired by inhalation of aerosol forms of *Cryptococcus* through lungs.
- **Leads to pulmonary infection.**
- **Other way:** through skin or mucosa.
- Both yeast cells are infectious.

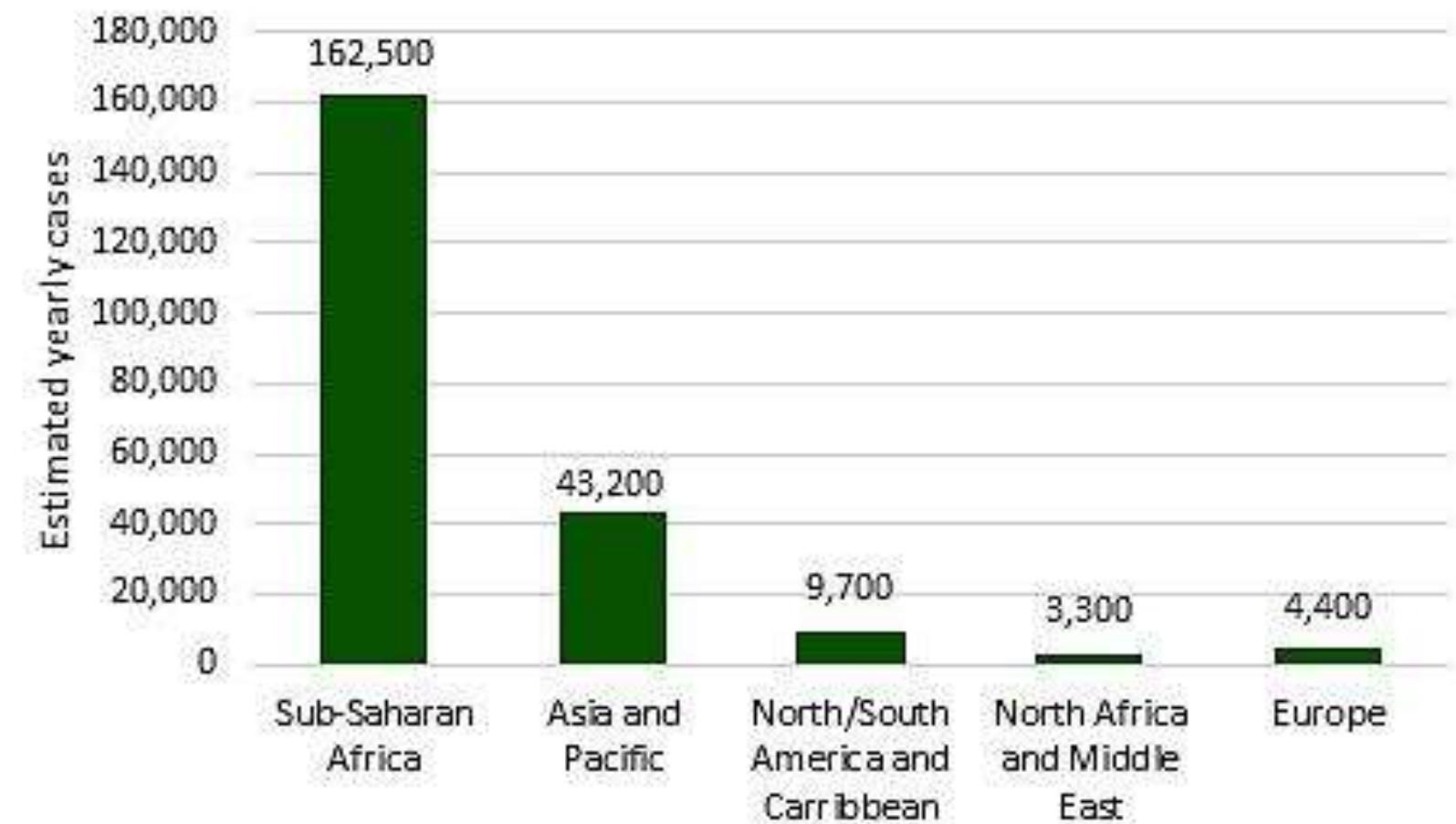




Epidemiology



- **Emmons (1952)** was the first one who isolated *C. neoformans* from the **pigeon droppings** after an outbreak occurred in New York squares.
- **Incubation period is unknown.**
- Person-to-person transmission has not been documented other than through transplanted organs.

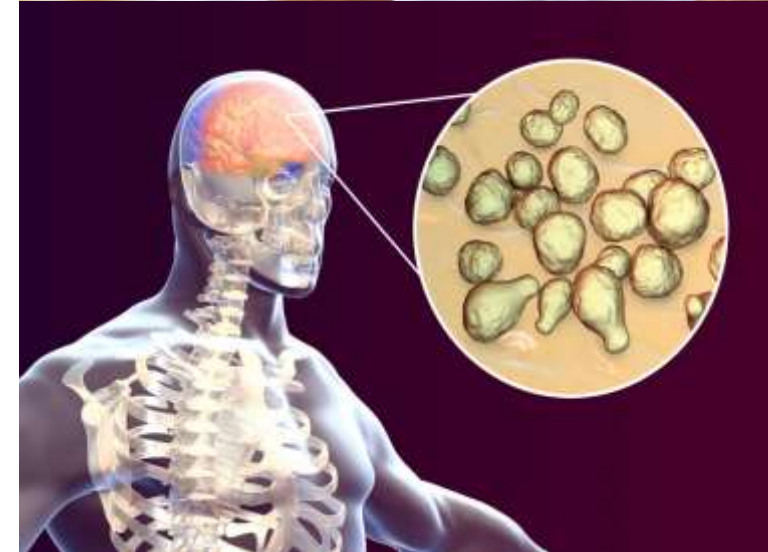




Clinical features



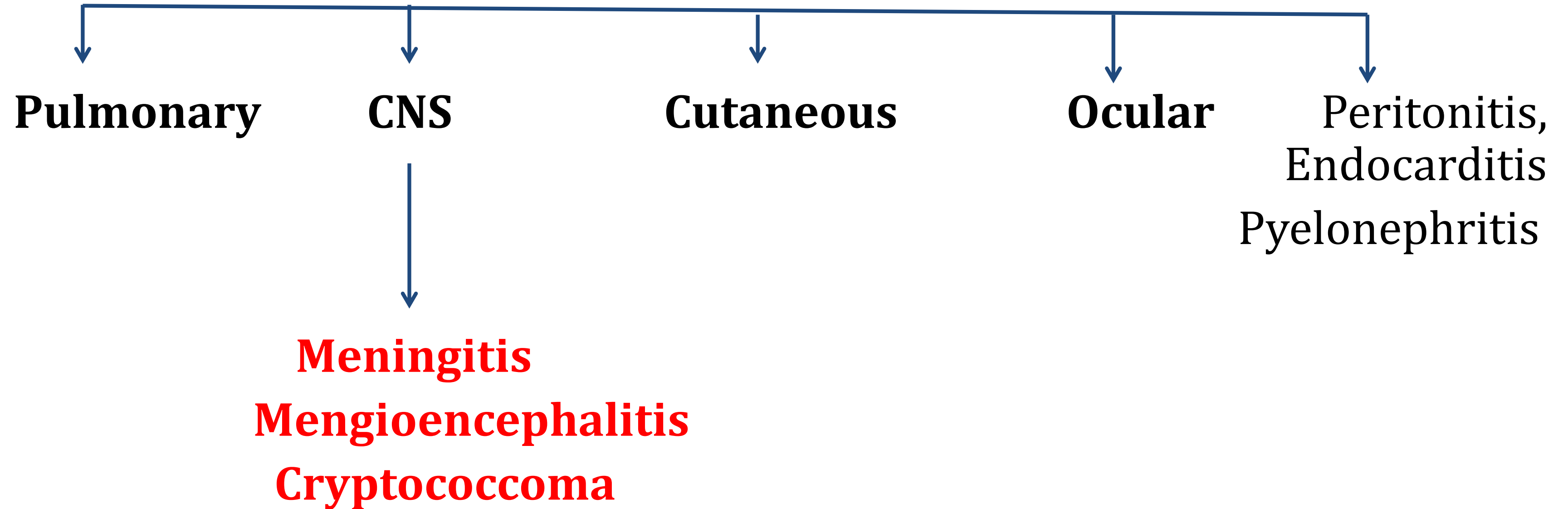
- **Sub acute meningitis** – meningoencephalitis / Cryptococcal meningitis
- Prolong evolution of several months
- headache, vomiting, neck stiffness, mental status
- cough , dyspnea - abnormal CXR





Affects of Cryptococcosis

Cryptococcosis





Cryptococcosis



Pulmonary Cryptococcosis

- Pulmonary nodules are seen
- 10 mm in diameter
- Seen in X ray and CT

CNS

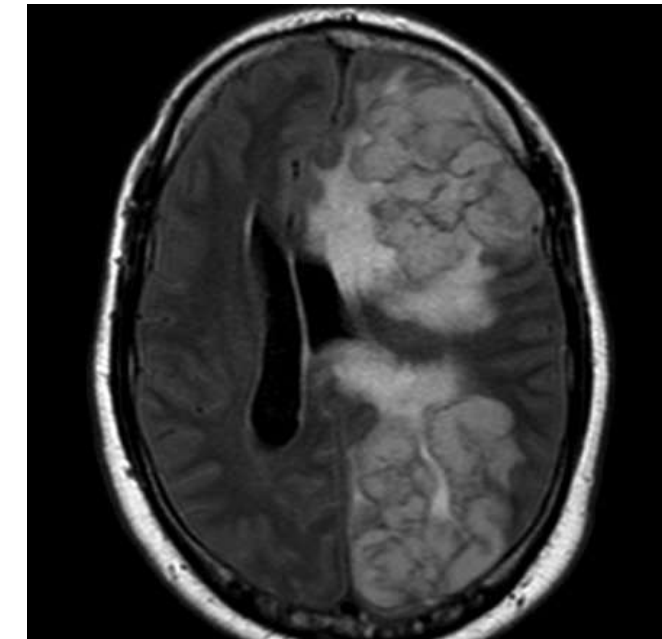
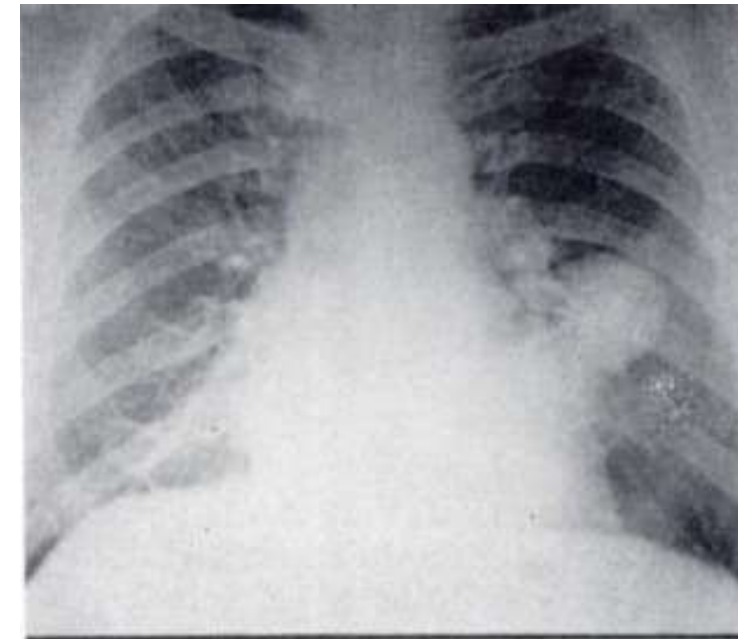
Meningitis – occurs in 85% of cases

Meningoencephalitis – brain stem & cerebral cortex affected

Cryptococcoma – tumor like mass on cerebral hemispheres

Ocular Cryptococcosis

- Retinal lesions on immunosuppressed patients
- Loss of vision





Cryptococcosis



Cutaneous cryptococcosis:

- In patients with AIDS, skin manifestations will be seen
- The areas are, head and neck
- The appearance will be like plaques, nodules, abscesses, ulcers etc.,



Visceral Cryptococcosis:

Cryptococcal Peritonitis – chronic liver failure & renal disease

Cryptococcal Pyelonephritis – occurs in urinary tract

Cryptococcal Endocarditis – occurs in heart



Diagnosis



- **Cutaneous lesions:** biopsy with fungal stains and cultures
- **Blood:** fungal culture, cryptococcal serology, cryptococcal antigen testing
- Cerebrospinal fluid: India ink smear, cryptococcal antigen testing and molecular biological assays .
- **Urine and sputum:** cultures
- **Cryptococcal pneumonia:** culture of bronchoalveolar lavage washings.





Management



- **Treatment:** Give appropriate antifungal therapy .
- **Immunization:** No immunization is currently available
- **Prophylaxis:** HIV patients may receive antifungal therapy such as fluconazole when no symptoms of infections are present





Reference:

- https://www.medicinenet.com/facial_symptoms_of_disease/article.htm
- <https://medlineplus.gov/skinconditions.html>

THANK YOU