

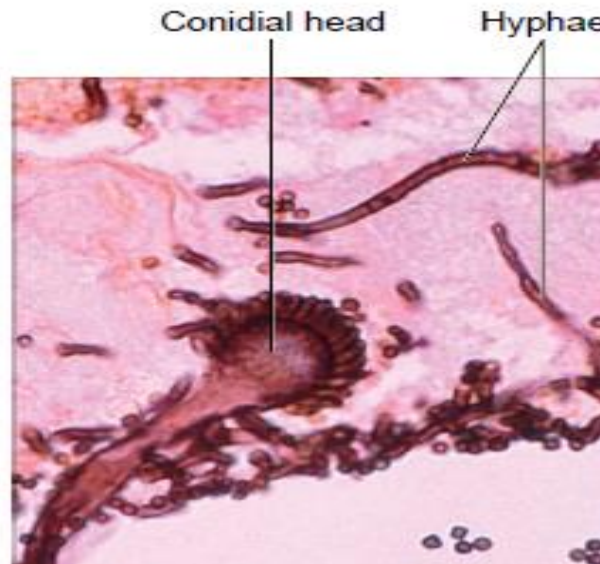
• opportunistic Pathogens

- *Cryptococcus neoformans*
- *Candida albicans*
- *Aspergillus* species
- *Pneumocystis carinii*

Aspergillosis: Diseases of the Genus *Aspergillus*

- Very common airborne soil fungus
- 600 species, 8 involved in human disease; *A. fumigatus* most common
- Serious opportunistic threat to AIDS, leukemia, and transplant patients

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Aspergillosis: Diseases of the Genus *Aspergillus*

- Infection usually occurs in lungs – spores germinate in lungs and form fungal balls; can colonize sinuses, ear canals, eyelids, and conjunctiva
- Invasive aspergillosis can produce necrotic pneumonia, and infection of brain, heart, and other organs
- Amphotericin B and nystatin

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Pneumocystis carinii

- A small, unicellular fungus that causes **pneumonia** (PCP), the most prominent opportunistic infection in AIDS patients
- This pneumonia forms secretions in the lungs that block breathing & can be rapidly fatal if not controlled with medication
- Symptoms include cough, fever, shallow breathing, and cyanosis
- PCP is diagnosed by symptoms and by examination of lung secretions
- Pentamidine and cotrimoxazole

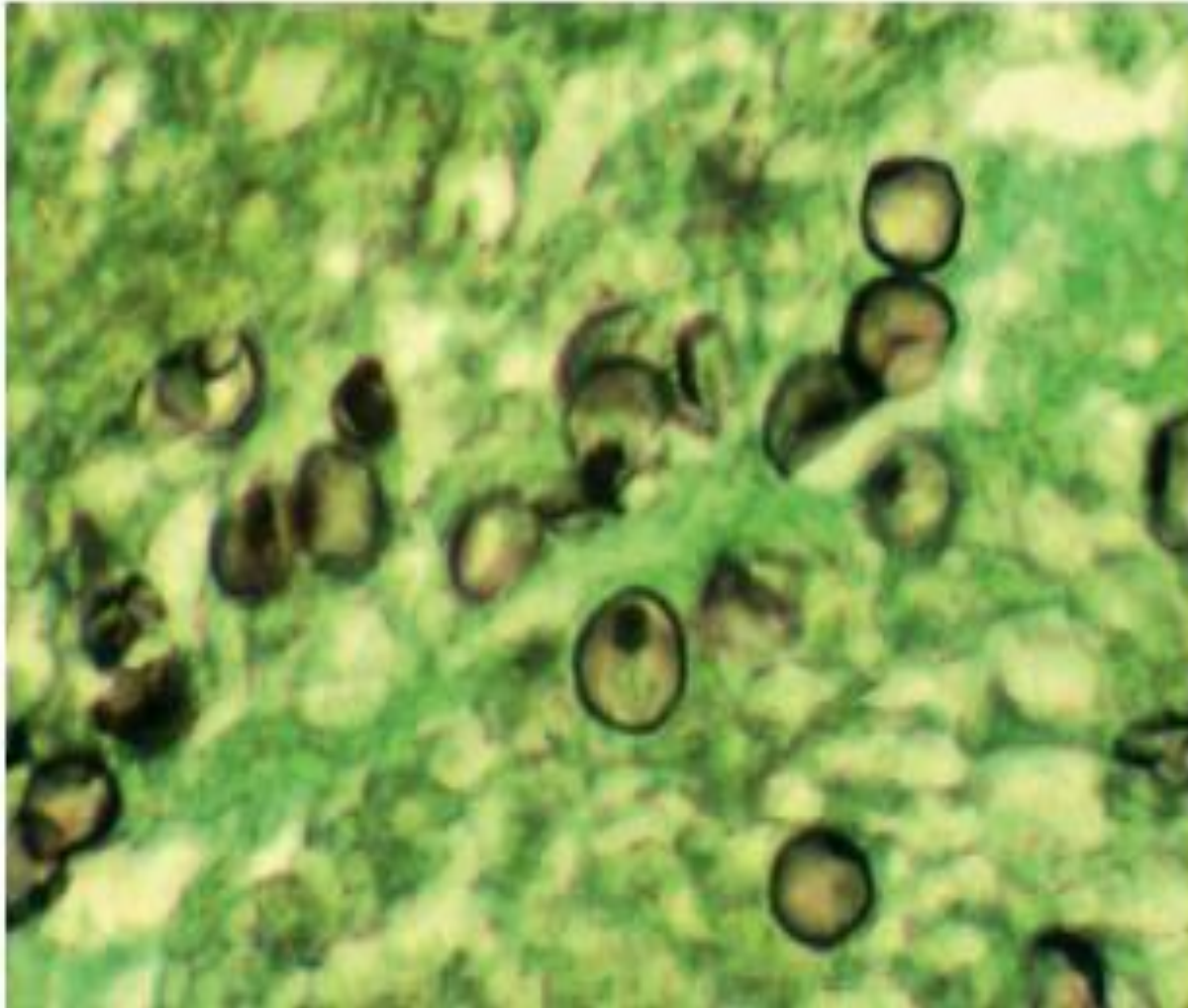


Figure 22.25 in lung tissue

– Specimen collection

- Choose an active lesion
- Use sterile, appropriately labeled containers



– Specimen transport and storage

- Examine microscopically as soon as possible
- Transport immediately using pertinent transport media if required
- Do not freeze specimens
- Do not desiccate

– Culture:

- Media - various media have been developed, some quite traditional, and have been very successful in helping identify etiological agents

- Incubation conditions:

– Optimal temperature: 30°C (range 25-30°C)

– Need a humid environment

– specimens submitted for fungal culture are generally incubated for 2 weeks

-To assess form transitions, dimorphic fungi cultured at 35-37°C

– Direct microscopic examination

- Requires recovery and identification of fungus from cultures or examination of infected tissue

- Types of observations

- 1– Wet mounts (unstained)
- 2– Stained preparations

– Methods of identification and diagnosis

- Morphology
- Histopathology
- Nucleic acid probes
- Serology
- Radiological surveys