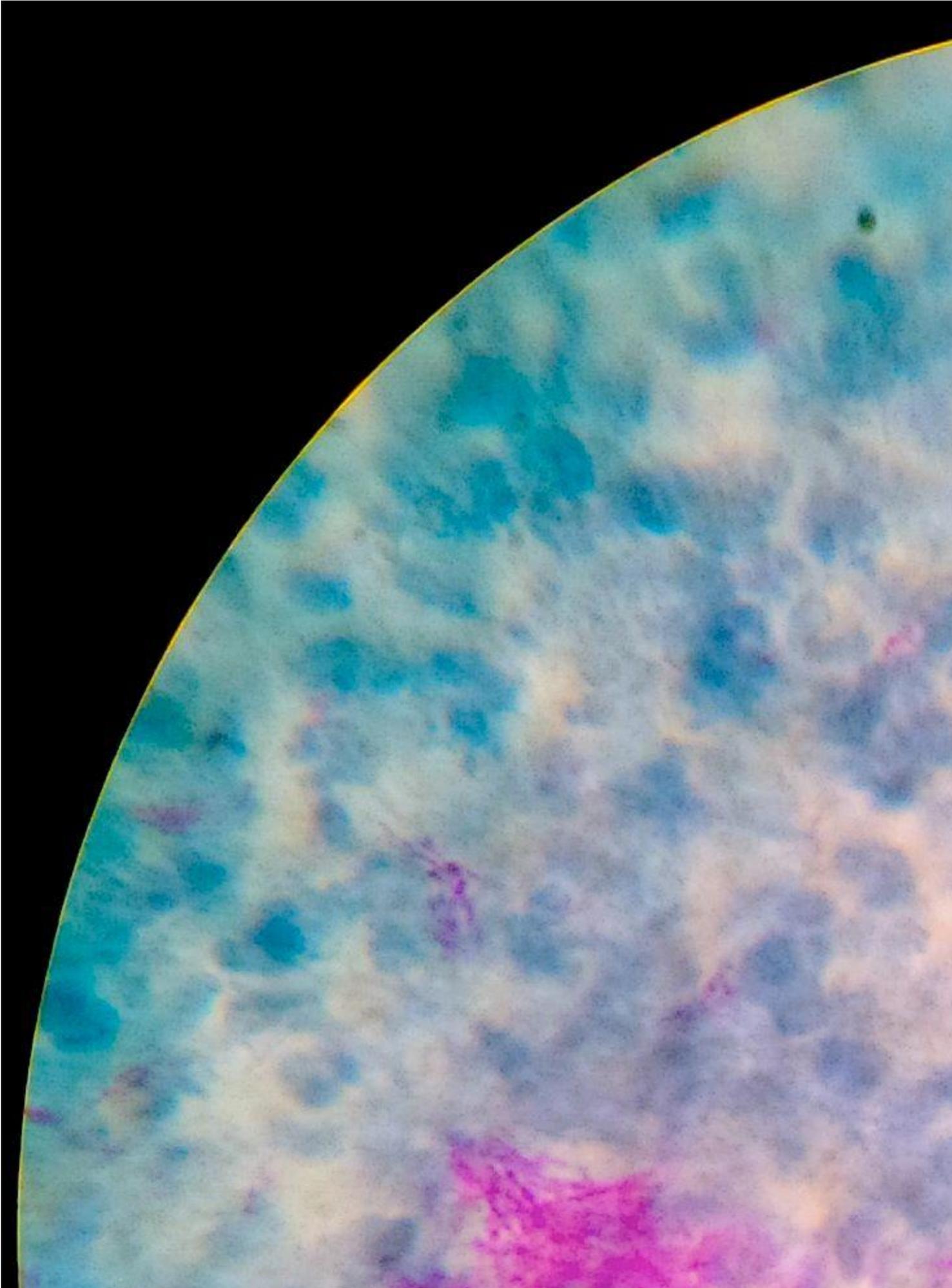


Mycobacterium kansasii Infection

Detailed Notes on *Mycobacterium kansasii* Infection

Definition and General Description



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Definition

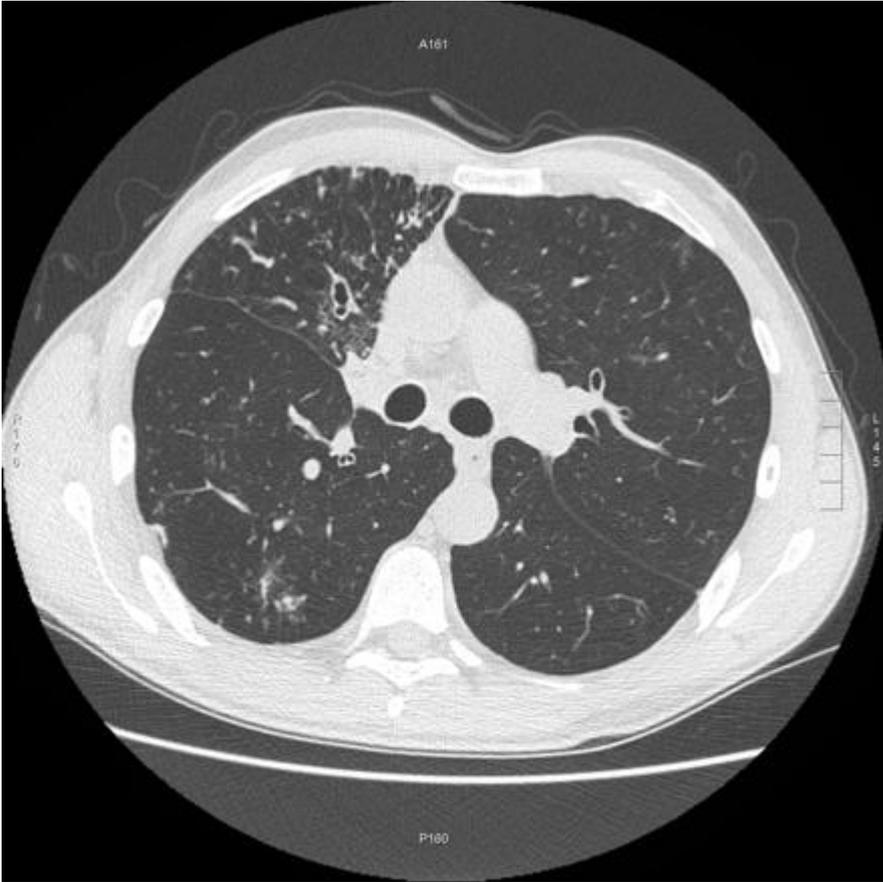
Definition: A slow-growing, **photochromogenic bacterium of Runyon Group I** that causes both **pulmonary and cutaneous infections**.

Characteristics

- Most common in **urban and industrial areas**, particularly **southern/central USA, southeast England, and northern France**.
- **Tap water serves as the primary reservoir**, with **no evidence of person-to-person transmission**.
- **Subtype 1**, identified via **PCR-RFLP of the hsp65 gene**, is most commonly associated with clinical disease.

Epidemiology

Image



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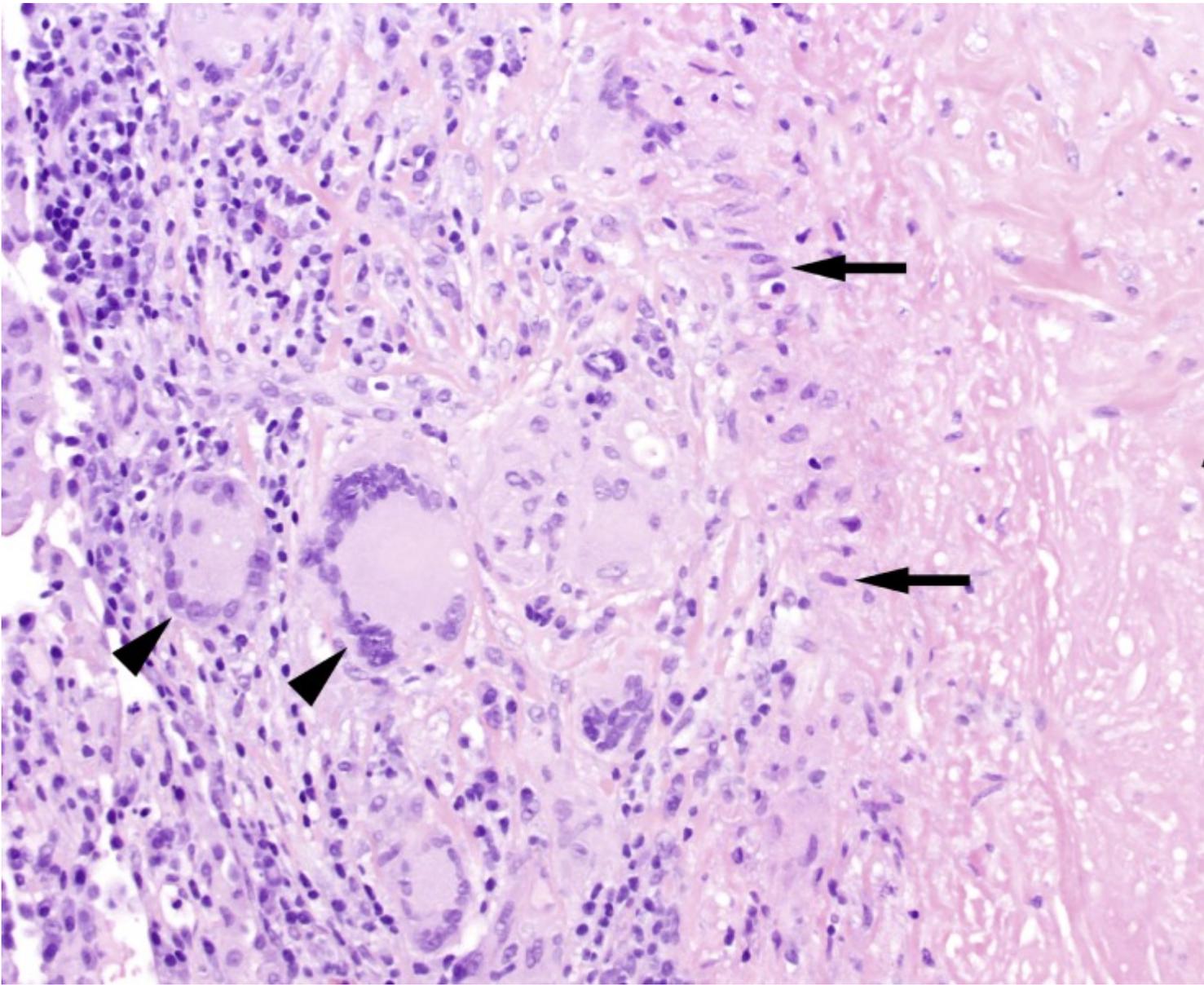
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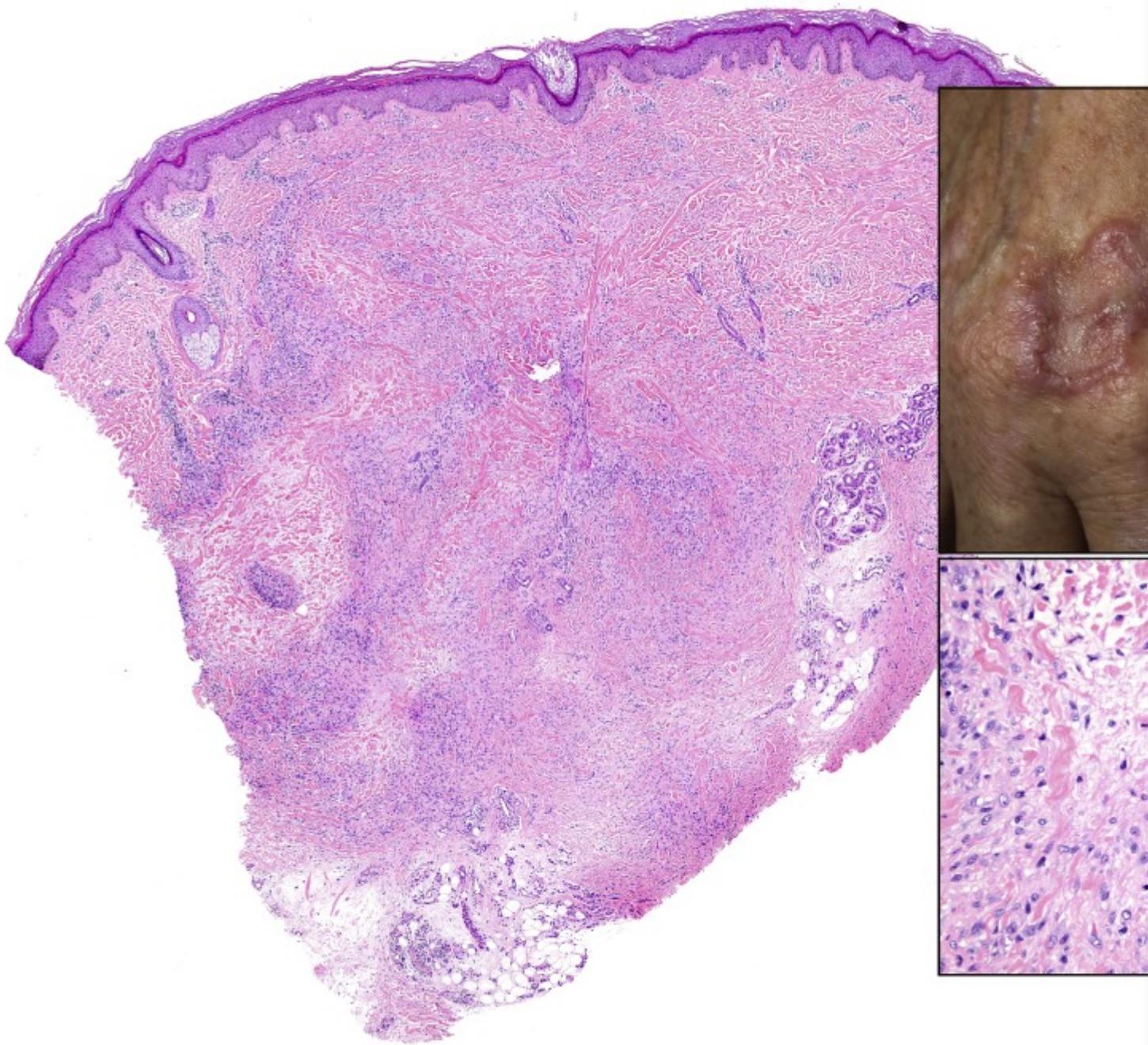
- **Incidence:** A common NTM species isolated from clinical specimens, but cutaneous cases are rare.
- **Demographics:**
Primarily affects **middle-aged white men** but can occur in **adults of any age, sex, or race**.
- **Risk Factors:**
Associated with **impaired immunity** (e.g., **HIV, malignancies, corticosteroid use**) or **occupational exposure to dust** in **miners, welders, and painters**.

Pathophysiology

Image

Image





Predisposing Factors

- Chronic pulmonary conditions like **COPD** and **cystic fibrosis**.
- **Immunosuppression** due to **HIV** or **medications**.

Pathology

- Histologically, **granulomatous inflammation resembling tuberculosis**.
- **Mixed inflammatory infiltrates with acid-fast bacilli**; can present with **necrosis, abscess formation, or cellulitis**.

Clinical Features

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Presentation

Cutaneous lesions:

- **Papules**
- **Nodules**
- **Verrucous plaques**
- **Abscesses**
- **Cellulitis**
- **Sporotrichoid patterns reported**

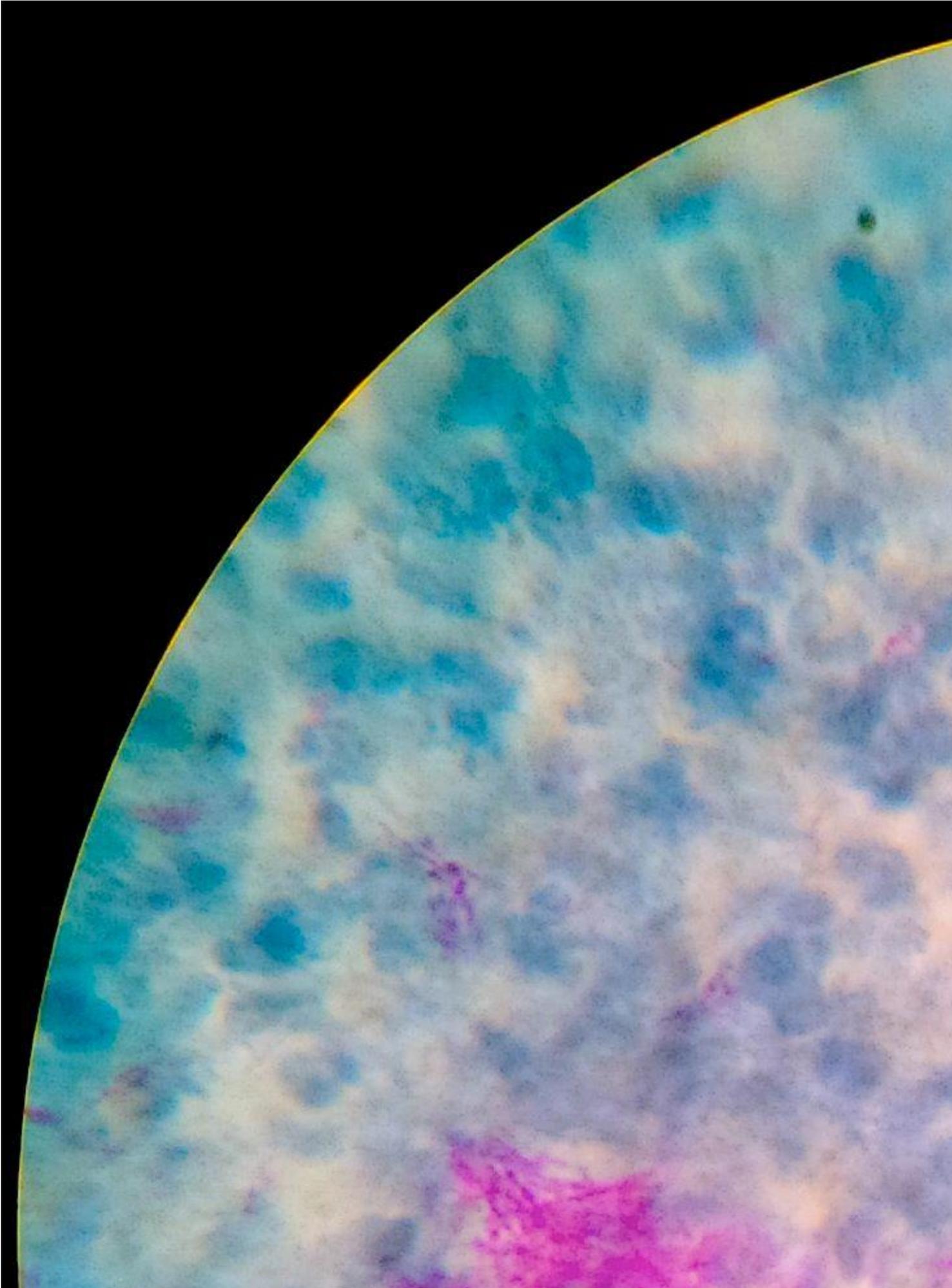
Systemic involvement:

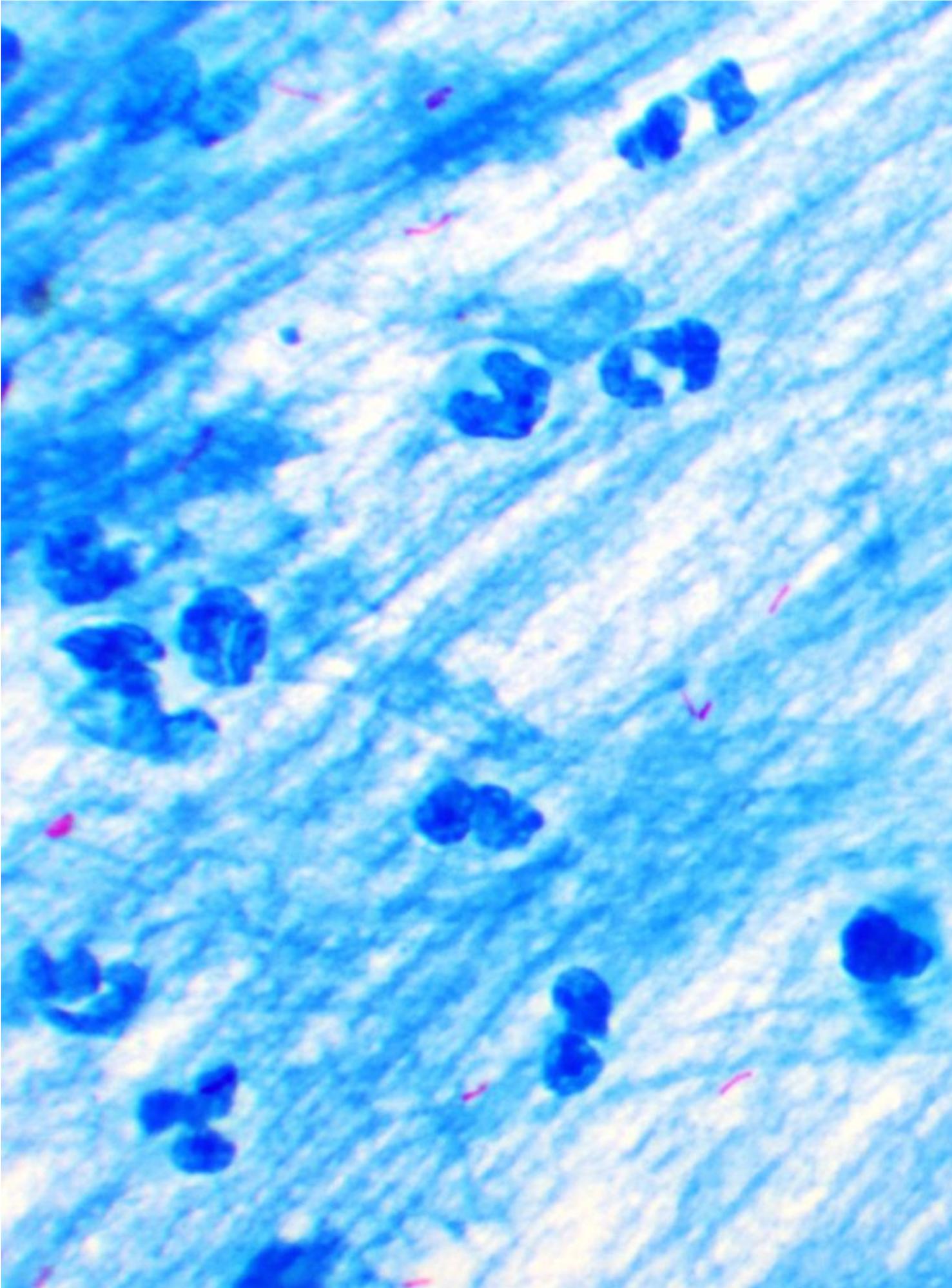
- **Disseminated disease** seen in **HIV or hematological malignancy cases**, often **life-threatening**.

Complications

- **Disseminated disease has a poor prognosis**, with a **60% mortality rate**.

Investigations







Image

Culture and Staining

- Biopsy specimens stained for acid-fast bacilli.
- Cultured under conditions optimized for **slow-growing mycobacteria**.

PCR

- Useful in **overcoming culture difficulties**.

Management







First-Line Therapy

- Combination therapy with isoniazid, rifampicin, and ethambutol for 18 months

- **Sensitivity testing advised** to optimize therapy.

Second-Line Options

- Addition of **streptomycin or amikacin** in severe cases for the **first 3 months**.

Third-Line Therapy

For resistant cases:

- **Clarithromycin**
- **Levofloxacin**
- **Moxifloxacin**
- **Linezolid**

Prognosis



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Image



Localized Disease

- **Indolent progression** with good response to treatment.

Disseminated Disease

- **High mortality rate**, underscoring the importance of **early diagnosis and aggressive management**.

These detailed notes capture the **essential clinical, diagnostic, and therapeutic aspects of *Mycobacterium kansasii* infection.**