

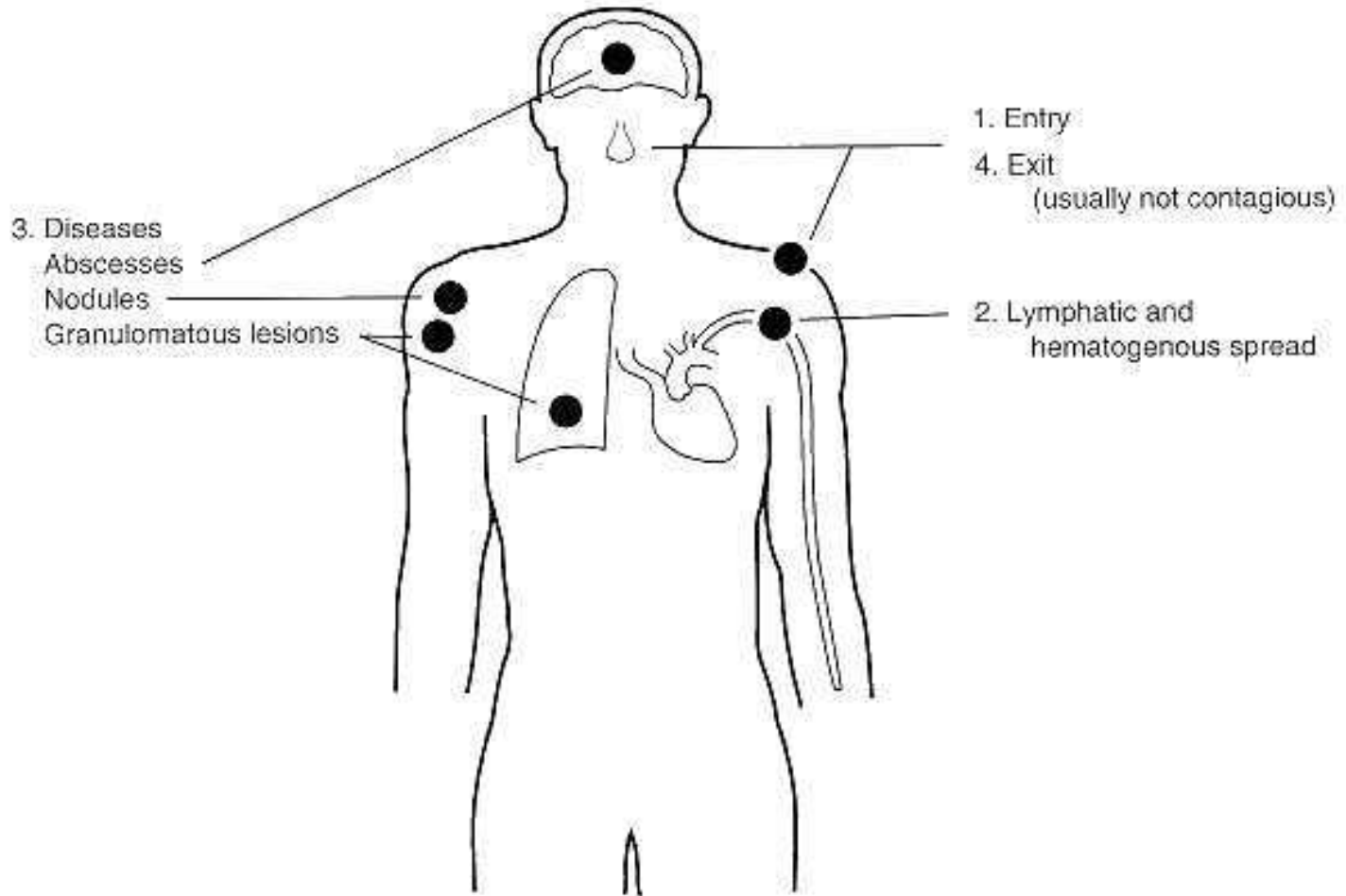
Nocardia

PAT2322

Nocardia infection

- Previously considered rare
- Tends to affect the lungs, brain, or skin.
- It occurs primarily in individuals with weakened immune systems

Nocardia



Nocardia sp.

Causes, incidence, and risk factors

- Chronic
- Usually originates in the lungs, then spreads
- Nocardia is found in soil
- Main risk factors:
 - Immunodepression
 - Chronic lung disease

Identification, Control

- Presumptively
 - by Gram and acid-fast stains
- Definitively
 - by culture from appropriate clinical specimens
- Control
 - Antimicrobial therapy

Symptoms

- Symptoms vary and depend on the organs involved.
- Pulmonary (lung involvement):
 - fevers
 - night sweats
 - weight loss
 - coughing blood
 - chest pain upon breathing (may occur suddenly or slowly)

Signs and tests

- Infections are most likely to affect the lungs, brain, and skin
- Definitively diagnosed by identification of the bacteria in culture

Complications

- Varied
- Depend on the site involved.
 - chronic shortness of breath;
 - disfigurement;
 - loss of neurological function.

Description

- Colonies are slow growing,
- Aerobic,
- Gram-positive,
- Acid-fast to partially acid-fast,
- heaped and folded, and white, pink, red, orange, or tan in colour.
- Filaments are branched, fragmenting into rod and coccoid forms.
- Aerial filaments usually present.
- Medically important species of *Nocardia* are lysozyme resistant

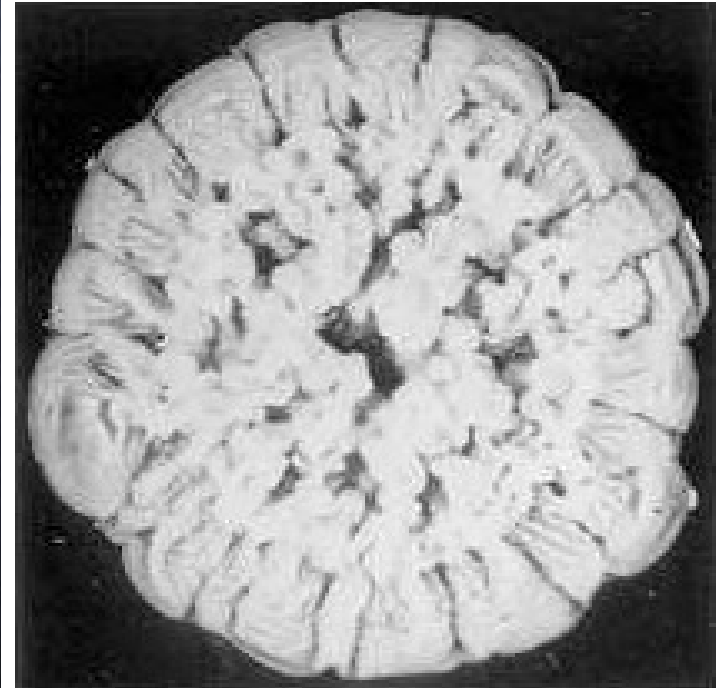
Clinical Manifestations

- Rarely cause disease except in immunocompromised patients
- 90% pulmonary
- 20% cutaneous
- 50% have associated diseases



N asteroides

Nocardia sp.



**Colony of *N asteroides*
after 3 weeks of growth
at 37° C
on brain heart infusion
agar (X11)**

Pathophysiology

- Aerobic
- Saprophytes in soil,
- At least 12 species of the genus *Nocardia* have been identified.
- *Nocardia asteroides* is the most frequent cause of human disease.
- Human disease also has been caused by *Nocardia brasiliensis*, *Nocardia farcinica*, *Nocardia nova*, *Nocardia transvalensis*, and *Nocardia otitidis calvarium*.
- *Nocardia* species also cause infections in animals, including bovine mastitis and sporotrichoid nocardiosis in horses.

Mortality/Morbidity

- Prognosis in nocardiosis depends on:
 - the site of infection,
 - extent of infection, and
 - underlying host factors.
- Cure rates with appropriate therapy are approximately
 - 100% in skin and soft-tissue infections.
 - 90% in pleuropulmonary infections,
 - 63%. with disseminated infection,
 - Only 50%. brain abscess are
- **Race:** No racial predilection is evident for nocardiosis.
- **Sex:** Nocardiosis occurs in males more frequently than in females, in a ratio of 3:1.
- **Age:** All ages are susceptible.
 - The mean age at diagnosis is in the fourth decade of life.