

Providence St. Joseph Health

Providence St. Joseph Health Digital Commons

Providence St. Vincent Internal Medicine

Oregon Academic Achievement

4-29-2020

Pulmonary Nocardiosis in an Immunocompetent Host

Leah Grant

Providence St. Vincent, Internal Medicine Residency, Portland, Oregon

Laura Loertscher

Providence St. Vincent, Portland, Oregon, LAURA.LOERTSCHER@providence.org

Jennifer Marfori

Providence St. Vincent, Portland, Oregon, Jennifer.Marfori@providence.org

Follow this and additional works at: https://digitalcommons.psjhealth.org/psv_internal



Part of the [Internal Medicine Commons](#)

Recommended Citation

Grant, Leah; Loertscher, Laura; and Marfori, Jennifer, "Pulmonary Nocardiosis in an Immunocompetent Host" (2020). *Providence St. Vincent Internal Medicine*. 7. https://digitalcommons.psjhealth.org/psv_internal/7

This Poster is brought to you for free and open access by the Oregon Academic Achievement at Providence St. Joseph Health Digital Commons. It has been accepted for inclusion in Providence St. Vincent Internal Medicine by an authorized administrator of Providence St. Joseph Health Digital Commons. For more information, please contact digitalcommons@providence.org.

Pulmonary Nocardiosis in an Immunocompetent Host

Leah Grant MD, Laura Loertscher MD, Jennifer Marfori MD

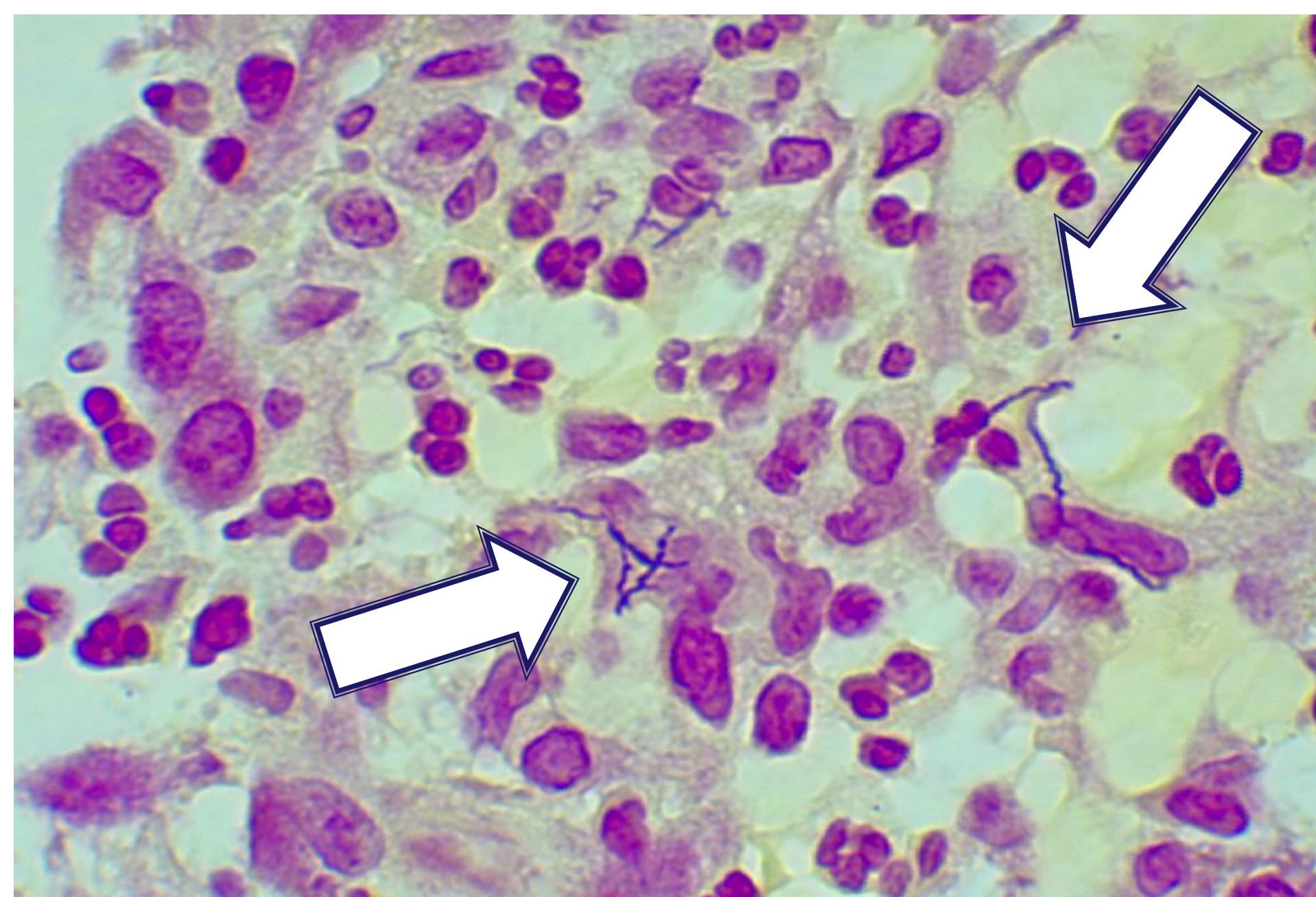


Introduction

- Nocardia is known to cause severe pulmonary or disseminated infection in immunocompromised patients, but can cause infection in immunocompetent patients. Providers should consider Nocardiosis in immunocompetent patients with prolonged and unexplained respiratory failure.
- The preferred therapy for pulmonary Nocardiosis is a sulfa antibiotic for 3-6 months. Toxicity from prolonged use of alternative agents presents a therapeutic challenge in those with sulfa allergy.

Case Report

- An 85 year-old woman with a history of paroxysmal atrial fibrillation and heart failure with preserved EF presented to her primary care provider with 1 week of cough and progressive dyspnea. Chest x-ray (CXR) was normal, and echocardiogram demonstrated known HFpEF without new abnormalities.
- Two months later, she presented to the hospital with progressive dyspnea, chest tightness, and was found to be hypoxic. CXR on admission showed bilateral consolidations as well as mediastinal and hilar adenopathy. She was treated with ceftriaxone & azithromycin for presumed community-acquired pneumonia (CAP).
- Due to treatment failure, a CT Chest was obtained and showed a mass-like consolidation in the right middle lobe; she was discharged with a several-week prednisone taper for treatment of presumed cryptogenic organizing pneumonia.
- Two weeks later, she returned for worsening dyspnea, chest pressure, malaise, and hypoxia. She was again treated for CAP and discharged.
- One month later, she was admitted for similar symptoms, and a CT-guided lung biopsy showed several small clusters of long Gram-positive bacteria consistent with Nocardia spp. Tissue culture was positive for *Nocardia cyriacigeorgica* complex.
- The patient was offered a challenge of her sulfa allergy (reported as a rash), but refused. She was started on linezolid in anticipation of a 6 month course of therapy.
- Her hospitalization was complicated by cardiac & renal dysfunction. Due to severely impaired quality of life, the patient elected for hospice care and died approximately 2 weeks after discharge.



Figures: Chest x-ray on admission with bilateral consolidations (top). CT Chest on second admission with RML consolidation (right). Pathology slide showing Gram-positive branching rods consistent with Nocardia (bottom left).

Discussion

- Nocardiosis most commonly presents as a pulmonary infection as inhalation is the primary route of exposure.
- More than half of all reported Nocardiosis cases are associated with preexisting immunocompromise such as organ transplantation, AIDS, diabetes, chronic granulomatous disease and alcoholism. More recently published case reports depict Nocardia infections in immunocompetent patients with a prior history of lung disease, such as chronic obstructive pulmonary disease, allergic bronchopulmonary aspergillosis, and bronchiectasis.
- Our patient was neither immunocompromised, nor had a prior history of lung disease, though was an elderly person. Immunosenescence is associated with decline in innate as well as T-cell immunity, which may have imparted risk to our patient.
- The mainstay for treatment of Nocardia infections is trimethoprim-sulfamethoxazole (TMP-SMX). Alternative oral agents include minocycline, amoxicillin-clavulanate, and linezolid.
- Had our patient not chosen the route of hospice care, close monitoring for linezolid toxicity would have been necessary with possible TMP-SMX re-challenge for long term therapy.