

Introduction

Nocardia is a genus of aerobic, variably acid-fast, gram-positive actinomycetes found in soil and water worldwide. Nocardiosis can affect the lungs, the CNS and the skin, and its incidence has been rising given the increasing number of immunocompromised hosts. Here, we present the first documented case of human infection by *N. caishijiensis* in the literature.

Case Report

Chief complaint:

A fifty-two-year-old male presented to the emergency department with a four-day history of productive cough of grapefruit-colored sputum, pleuritic chest discomfort, and a three-week history of unintentional twenty-pound weight loss. Three weeks prior to admission he had been started on dexamethasone due to cervical myelopathy secondary to intervertebral disc herniation.

Previous Medical History:

- HIV Infection;
- Type 2 Diabetes Mellitus;
- COPD;

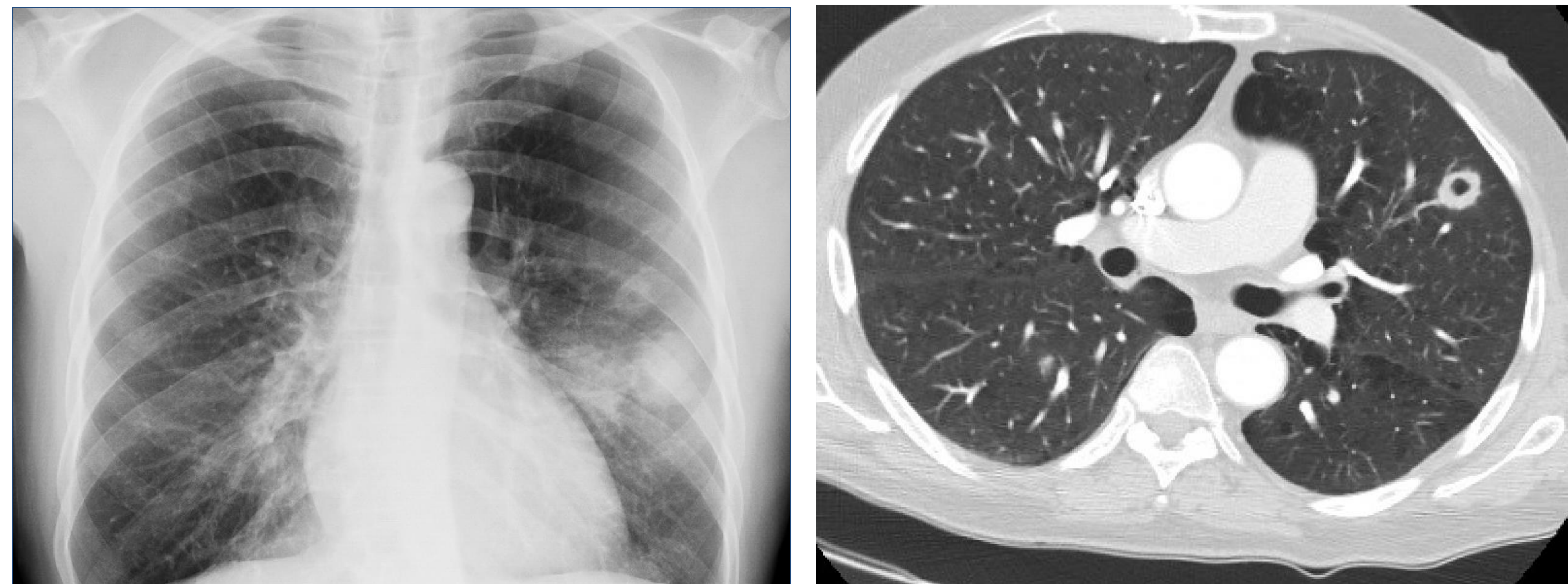
Physical examination:

Afebrile, with normal vital signs, and decreased breath sounds bilaterally with ronchi.

Complementary examination

Laboratory tests: His admission studies revealed a WBC count of $10.2 \times 1000/\mu\text{L}$ with a left shift, a mildly elevated lactate dehydrogenase, and a normal procalcitonin.

Imaging: His chest radiograph showed two opacities in the left middle zone with surrounding areas of consolidation. A subsequent CT chest found cavitory lesions on the lingula, left upper and lower lobes, and right upper lobe.



Empiric therapy with ceftriaxone and azithromycin was started.

Microbiology: Sputum Gram stain showed gram-positive beaded bacilli. Sputum cultures grew heaped, irregular, white waxy colonies with molar tooth like morphology on blood agar. Blood cultures and serial AFB stains were negative.



The final speciation of the sputum culture via 16S rRNA gene sequencing analysis revealed infection with *Nocardia caishijiensis*.

Discussion

Nocardiosis is an infrequent disorder with a reported incidence of 500 to 1000 cases per year in the US. Given the rarity of nocardiosis, a great degree of suspicion by the clinician is required to isolate the bacteria, as special media could be required, since some transport and growth media may selectively inhibit the bacterial yield. Management of pulmonary nocardiosis requires combination therapy using TMP-SMX and an additional agent to cover for resistance. Amikacin has a synergistic effect with TMP-SMX but the adverse reaction profile is suboptimal and requires close monitoring. Among other options are imipenem, third generation cephalosporins, minocycline and linezolid. Antibiotic sensitivity testing is difficult due to the lack of standardized techniques but it should always be pursued with specialized actinomycete labs, as this will be of utmost importance, given that these patients usually require a prolonged course of antibiotics, from 6 to 12 months.

References

