Nocardia nova in the Setting of Metastatic Disease: A Case Report

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Learning Objectives

1) Describe the differential diagnosis for cavitating pulmonary lesions.

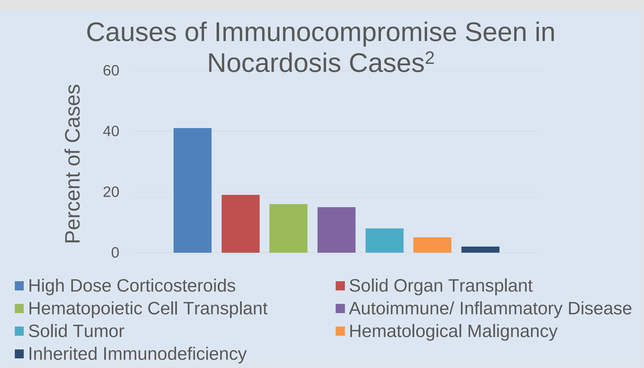
2)Focus on the importance of considering *Nocardia sp.* as the cause of cavitating lesions in the setting of pre-existing lung parenchymal disruption.

3)Highlight the importance of bronchoalveolar lavage as a key diagnostic tool in the evaluation of cavitary lesions.

4)Describe the side effects associated with high dose trimethoprim/sulfamethoxazole necessary to treat *Nocardia sp.*

Background

- Nocardia is a gram-positive, partially acid-fast bacteria found ubiquitously in the environment
- Opportunist pathogen, 64% of cases seen are among immunocompromised individuals[1]
- Most commonly affects lungs, though can present with systemic infections[2]
- Insidious onset, difficult to diagnose without clinical suspicion

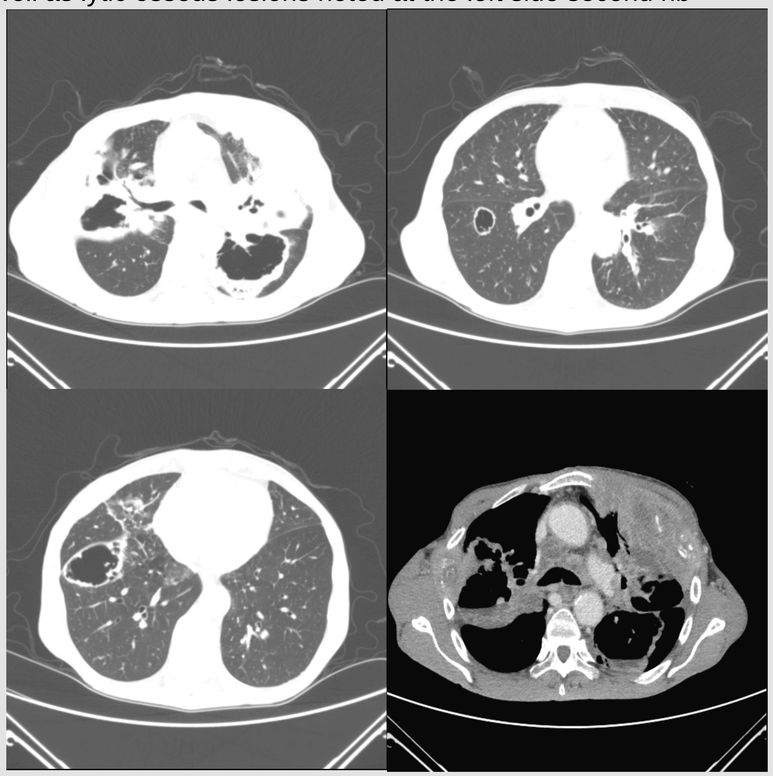


Clinical Case

Presentation/ Hospital Course:

A 66-year-old man with a history of COPD, cirrhosis secondary to hepatitis C and urothelial cancer status post curative cystectomy presented to the ED with shoulder pain described as traumatic in nature.

- Pain did not resolve with over-the-counter analgesics
- Chest X ray ordered to rule out fracture revealed large cavitary lesions
- CT was ordered, which demonstrated multiple large cavitating lesions as well as lytic osseus lesions noted at the left side second rib

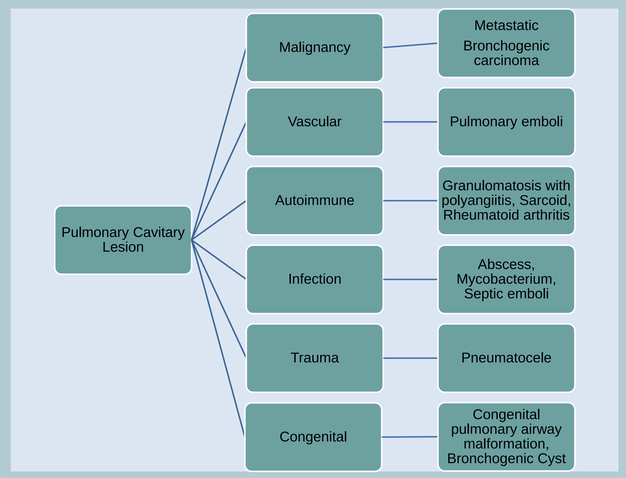


- Started on amoxicillin/clavulanic acid and prednisone
- Bronchoalveolar lavage showed combined metastatic cancer and *Nocardia nova*
- Started on high dose trimethoprim/sulfamethoxazole therapy with plan to follow up outpatient to discuss malignancy treatment

Re-Presentation:

- Patient re-presented with suppressed appetite and hyperkalemia
- Improved with discontinuation trimethoprim/sulfamethoxazole

Differential Diagnosis



Discussion

- *Nocardia sp.* is difficult to diagnose as it is relatively uncommon and has an insidious onset of symptoms
- Bronchoalveolar lavage is a key diagnostic tool in the diagnosis of cavitary lesions. In this case, CT was highly suggestive of cancer. Although cancer was present, the large cavitary lesions are likely due to nocardia based on the timeline of the patient's last cancer surveillance screening and cytology
- Nocardia tends to cause cavitary lesions especially in disrupted lung parenchyma due to other reasons[4].
- Side effects of trimethoprim/sulfamethoxazole including nausea, vomiting, bone marrow suppression and hyperkalemia. These necessitate close follow up to ensure adherence without adverse side effects.

References

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