

Mycobacterium avium-intracellulare infections, not as opportunistic as we thought!

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Introduction

Mycobacterium avium-intracellulare (MAI) complex, a nontuberculous mycobacterium, is an opportunistic infection historically associated with immunocompromised patients. However, there is also a known association, and increasing incidence, within both the geriatric patient population¹ and patients with underlying lung disease, such as pulmonary tuberculosis, bronchiectasis, and chronic obstructive pulmonary disease (COPD).²

Clinical Case

- 63-year-old man with a 45-pack year smoking history, COPD and recurring pneumonias (refractory to treatment), presented to the ED due to a new pulmonary cavitary lesion.
- The initial presentation was in December 2022, he presented to the ED with chest pain and tachycardia. A CT scan demonstrated a RLL nodule, concerning for pneumonia. He underwent a six-day course of antibiotics and was discharged home.
- Upon follow-up with his pulmonologist, he underwent repeat CT imaging, again concerning for infection, prompting a 2nd course of antibiotics.
- Due to his persistent symptoms, another CT scan was obtained in July 2023, which showed a new thick-walled cavitary lesion (12.1 x 6.7 x 6.3 cm), in the right upper lobe. He was instructed to return to the hospital.

Clinical Case (continued)

- On re-presentation to the hospital, he was hemodynamically stable and denied acute worsening of his symptoms; instead, he reported progressive worsening since the onset of his original pneumonia.
- Admission labs were not able for mild leukocytosis & elevated inflammatory markers.
- Three AFB smears were obtained to rule out Tuberculosis; all were negative. HIV testing, and serum blood cultures were also negative.
- As per Infectious Disease, the underlying causative agent was thought to be a Nontuberculous mycobacteria or fungal infection.
- Pulmonology was consulted and performed a diagnostic bronchoscopy (with BAL), which showed purulent mucus plugging coming from the right upper lobe.

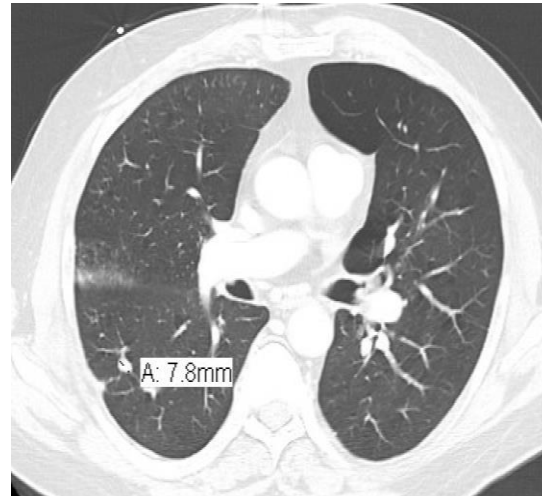


Image (a) Axial CT – Imaging of chest demonstrating focal cavitary lesion.

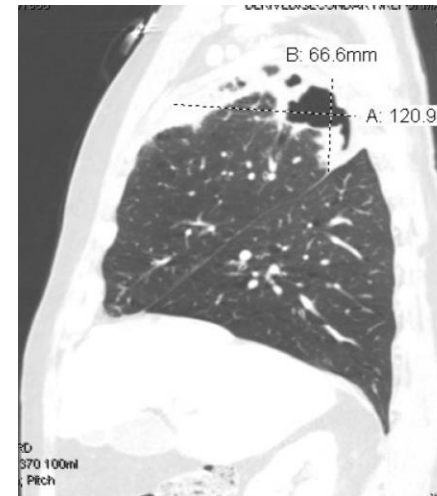


Image (b) Sagittal CT – Imaging of chest demonstrating focal cavitary lesion.

Clinical Case (continued)

- The patient was discharged home on a four-week course of amoxicillin/clavulanic acid.
- The lavage microbiology report later returned positive for MAI in two samples.
- The patient was notified of these results, instructed to stop his antibiotics, and to follow-up with Infectious Disease

Conclusion

While MAI is known to be an opportunistic infection, it is commonly associated with immunocompromised patients.³ However, it is known to also target geriatric patients¹ and those with underlying lung disease/damage³, and given the increasing incidence of MAI within these communities, it is important to emphasize these at-risk populations to the medical community for proper consideration. We demonstrate this case with the goal of raising this awareness.

References

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