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Beyond Colonization: Diagnostic and Therapeutic Challenges of *Mycobacterium simiae* and *Kodamaea ohmeri* Coinfection in Structural Lung Disease

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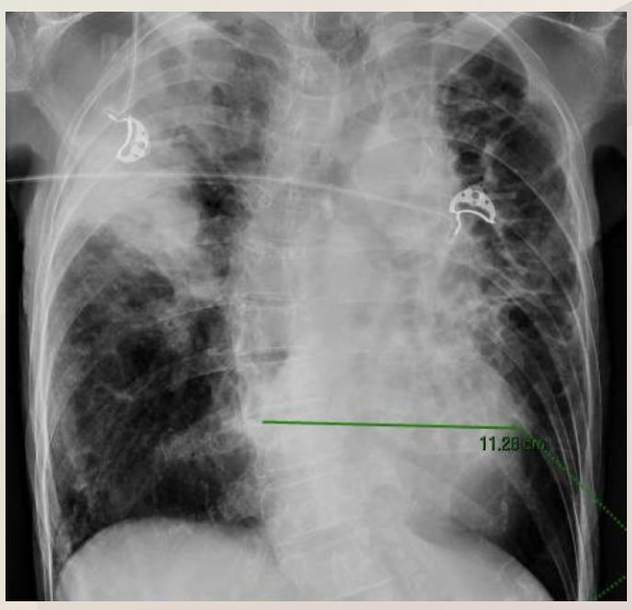
Introduction

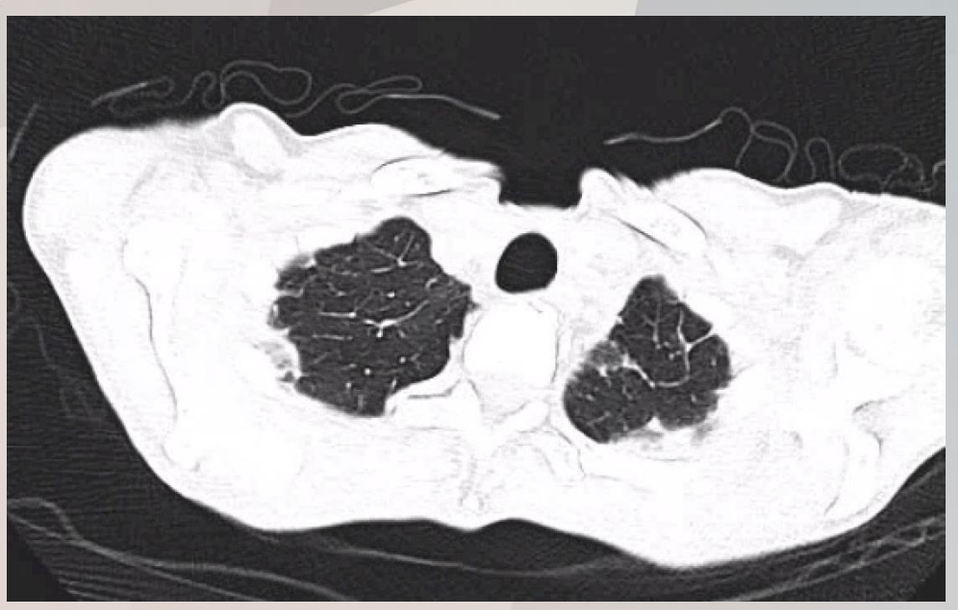
Mycobacterium simiae is a slow-growing, photochromogenic nontuberculous mycobacterium (NTM) that causes pulmonary disease primarily in individuals with structural lung abnormalities or compromised immunity. Although fungal coinfections are rare, their presence can significantly worsen outcomes. *Kodamaea ohmeri* is an opportunistic yeast usually associated with bloodstream infections; its isolation from respiratory specimens is exceptionally uncommon, making dual infection with *M. simiae* particularly challenging.

Case Presentation

We present a case of a 67-year-old woman with a history of treated pulmonary tuberculosis and bronchiectasis who was admitted for worsening productive cough, dyspnea, weight loss, and hypoxemia. Chest imaging revealed multifocal bronchiectasis, nodular opacities, consolidation, and ground-glass infiltrates. Initial tests for *Mycobacterium tuberculosis* were negative, but sputum cultures later grew *M. simiae*, susceptible to clarithromycin, moxifloxacin, and trimethoprim-sulfamethoxazole, prompting targeted therapy.

During hospitalization, patient's condition deteriorated with persistent fever, hypotension, and neurological changes, requiring mechanical ventilation and central venous catheter insertion. Blood and sputum cultures both grew *K. ohmeri*, confirming the rare coexistence of fungemia and pulmonary fungal infection. Antifungal therapy with fluconazole, later escalated to voriconazole, was initiated alongside ongoing antimycobacterial treatment. With combined antimicrobial therapy, intensive supportive care, and close monitoring, the patient gradually improved, and blood cultures became sterile.





MTB CS RESULT:
Mycobacterium simiae

SEN – AMK, SXT, CLR, LNZ, CIP, MOX
RES – STR, RIF, INH, EMB

CXR [left]: Bilateral lung densities, may relate to an infectious/ inflammatory process. Underlying mass lesion in the right upper lobe cannot be excluded**.** Biapical pleural thickening, fibrosis and **bronchiectatic changes.**

Chest CT scan [right]: Areas of consolidation with adjacent ground glass densities and air bronchogram in the right upper, middle, and lower lobes as well as **centrilobular densities with adjacent bronchial thickening** and **bronchiectasis is noted in the right lower lobe**, may reflect pneumonia and/or secondary pulmonary tuberculosis**.** Non-calcified **nodules in the right lung**. Bullous **emphysematous changes** in the left upper lobe

Conclusion

This case illustrates a rare and complex coinfection caused by *M. simiae* and *K. ohmeri* involving both bloodstream and respiratory tract. Shared mechanisms, including impaired mucociliary clearance, biofilm formation, and immune dysfunction, likely facilitated this dual infection. Early recognition, accurate microbial identification, and coordinated therapy are crucial to improving outcomes in such high-risk patients.

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