

Case Report: a unique course of severe Community-Acquired Methicillin-Resistant Staphylococcus Aureus (CA-MRSA) Cavitory Pneumonia with skipped phenomenon

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Community-acquired Methicillin-resistant Staphylococcus aureus (CA-MRSA) is a less common but increasingly recognized cause of severe pneumonia, particularly necrotizing pneumonia, in otherwise healthy individuals. The antibiotic resistance associated with CA-MRSA often leads to prolonged hospital stays and increased mortality. A unique feature of this pathogen, the "skipped phenomenon," is characterized by intermittent negative blood cultures and is linked to poor prognosis, complicating treatment decisions. We report the case of a 60-year-old male with a history of chronic obstructive pulmonary disease (COPD) and a significant smoking history, who presented with severe CA-MRSA cavitory pneumonia. Initially, the patient exhibited mild respiratory symptoms that rapidly progressed to severe pneumonia, confirmed by imaging studies showing cavitory lesions. Despite initial treatment with vancomycin, the patient experienced persistent MRSA bacteremia for more than 14 days, leading to the addition of ceftaroline to the therapeutic regimen. The patient's course was further complicated by the skipped phenomenon, with intermittent negative blood cultures followed by positive results, even as clinical symptoms began to improve. The skipped phenomenon, though rare, is a critical diagnostic challenge in the management of CA-MRSA infections, necessitating careful monitoring and repeated blood cultures to confirm bacterial clearance, as delayed or incomplete treatment can lead to severe complications. Our patient's presentation underscores the importance of considering CA-MRSA in cases of cavitory pneumonia, even in the absence of traditional risk factors, and highlights the potential

benefits of combination antibiotic therapy in managing persistent bacteremia. This case emphasizes the need for high clinical suspicion for CA-MRSA pneumonia in patients with cavitory lung lesions, particularly in those with severe presentations. The presence of the skipped phenomenon requires vigilant monitoring to ensure complete bacterial eradication and successful patient outcomes. Early and aggressive treatment, guided by repeated cultures, is crucial in managing this life-threatening infection.

Keywords: Sepsis, CA-MRSA, Community Acquired Pneumonia, Bacteremia
