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CORRESPONDENCE

Moraxella osloensis bacteremia complicating with severe pneumonia in a patient with lung cancer



Dear Editor,

Moraxella osloensis is an aerobic, Gram-negative coccobacillus (formerly classified as *Moraxella nonliquefaciens*). The clinical significance and appropriate therapy for patients with *M. osloensis* bacteremia are not well studied. Here, we report a case of a male patient with lung cancer who presented with *M. osloensis* bacteremia complicating with pneumonia. The species was initially identified as *Comamonas testosteroni* using a commercially automated system, and was reidentified as *M. osloensis* using Bruker Biotyper matrix-assisted laser desorption/ionization—at the time of flight mass spectrometry (MALDI-TOF MS; Bruker Daltonics, GmbH, Bremen, Germany) and partial 16S ribosomal DNA gene sequencing analysis.

The patient received a diagnosis of lung cancer of the right upper lobe 4 years ago. He suffered from fever and cough for 2 days before admission, and a chest radiograph showed infiltrations of the right lower lobe of the lung (Figure 1). He used a bilateral positive airway pressure ventilator for pneumonia with acute respiratory failure. The laboratory data revealed the results of white blood cells 9070 cells/mL with 83% neutrophils, hemoglobin 11.9 mg/dL, platelets 242,000 cells/mL, serum glucose 254 mg/dL, creatinine 2.34 mg/dL, blood urea nitrogen 18 mg/dL, and C-reactive protein 19.8 mg/dL. The patient received empirical therapy with intravenous cefoperazone/sulbactam 2 g/2 g every 12 hours initially. Four days later, the results of blood culture were identified as *C. testosteroni* using the Phoenix 100 ID/AST system (Becton Dickinson, Sparks, MD, USA). The isolate was presumptively identified as *M. osloensis* (score value 1.848) using Bruker Biotyper MALDI-TOF (Bruker Daltonics). The result of Gram stain of the colonies showed coccobacilli. Sequencing analysis of partial 16S ribosomal DNA gene of the isolate was performed with two primers: 8FPL (5'-AGAGTTTGATCCTGGCTCAG-3') and 1492 (5'-GGTTACCTG

TTACGACTT-3'). The sequences obtained were compared with published sequences in the GenBank database, using the BLASTN algorithm (<http://www.ncbi.nlm.nih.gov/blast>). The isolate was identified as *M. osloensis* (accession number KC456542.1) with maximal identity of 100% (858/858 bp).

The antimicrobial susceptibility test showed that the isolate was resistant to cefazolin, cephalexin, penicillin, ampicillin, and amoxicillin/clavulanate, but susceptible to levofloxacin, ciprofloxacin, ceftazidime, cefepime, cefoperazone/sulbactam, amikacin, gentamicin, and carbapenems (doripenem, imipenem, and meropenem) using the Phoenix 100 ID/AST system (Becton Dickinson). The patient was discharged on hospital Day 21 to complete a 14-day course of cefoperazone/sulbactam therapy.

Among the *Moraxella* species, *M. catarrhalis* is the most common isolate of the respiratory tract. *M. osloensis* has been isolated from the respiratory tract, blood, cerebrospinal fluid, and urine.^{1,3} Clinical reports of infections caused by *M. osloensis* are rare.¹ *M. osloensis* has been implicated in community-acquired pharyngitis, septic arthritis, meningitis, ophthalmitis, and otitis media.^{1–5} Hospital-acquired central venous catheter infections in an elderly woman receiving chronic parenteral nutrition have also been reported.^{1,6} Our patient with *M. osloensis* bacteremia complicating with pneumonia is different from previous case reports. *M. osloensis* is often misidentified as *C. testosterone*,² and molecular methods may be required to confirm the species identification. The appropriate treatment of bacteremia due to *M. osloensis* has not been well studied. In past decades, *M. osloensis* has been found to be sensitive to penicillin, first-generation cephalosporins, and aminoglycosides.⁵ Although, our patient had been resistant to penicillin, amoxicillin/clavulanate, and cefazolin. However, the prognosis for patients with *M. osloensis* infections is generally good.^{1–5} Further studies are still

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Figure 1. Chest radiograph revealing the infiltration patch of the right lower lobe of the lung.

required to evaluate the clinical manifestations, diagnosis, and antibiotic resistance of infections due to *M. osloensis*.

Conflicts of interest

All contributing authors declare no conflicts of interest.

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