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CORRESPONDENCE

Extensive community-acquired pneumonia with hemophagocytic syndrome caused by *Aeromonas veronii* in an immunocompetent patient



KEYWORDS

Aeromonas veronii;
community-acquired
pneumonia;
hemophagocytosis

Dear Editor,

Community-acquired pneumonia caused by *Aeromonas* species is uncommon, and *Aeromonas veronii* is rarely reported as a causative agent.¹ We herein report the case of hemophagocytic syndrome in a fulminant course of community-acquired pneumonia with multiorgan failure that was caused by *A. veronii*.

A 77-year-old previously healthy man presented with a fever (temperature 38.6°C), chills, cough, and sore throat for 1 day prior to his admission to the emergency care unit. The patient had no documented contributory travel or contact history, and no history of either drinking or smoking. Upon arriving, physical examination revealed a temperature of 39.6°C, a heart rate of 97 beats/min, and a respiratory rate of 20 breaths/min. His blood pressure dropped to 81/38 mmHg.

Laboratory data revealed the following measurements: white blood cell count, 500/μL with band 0%, segment 1%, lymphocyte 90%; hemoglobin level, 11.8 g/dL; hematocrit, 34.6%; platelet count, 65,000/μL; blood urine nitrogen, 18 mg/dL; creatinine, 1.97 mg/dL; serum sodium, 125.2 mEq/L; serum potassium, 3.46 mEq/L; blood sugar, 99 mg/dL; serum aspartate aminotransferase, 43 IU/L; alanine aminotransferase, 18 IU/L; C-reactive protein, 119.0 mg/L; and lactate level, 4.1 mmol/L. The arterial blood gas analysis revealed a metabolic acidosis with pH

7.230 and base excess (−6.2 mmol/L). A chest radiography film showed an ill-defined patchy consolidation in the left mid-upper lung field (Figure 1). The patient was admitted to the intensive care unit in an unstable hemodynamic status.

Antimicrobial therapy with piperacillin/tazobactam (2.25 g) every 6 hours and minocycline (100 mg) every 12 hours were administered empirically. However, pneumonia progressed rapidly to extensive left lung consolidation the following day and the patient developed acute respiratory failure as well as renal failure. Mechanical ventilation support was initiated, and continuous veno-venous hemofiltration was used as renal function replacement therapy. Antimicrobial agents were changed to meropenem (1 g for every 8 hours) and levofloxacin (750 mg for every 24 hours). Nasopharyngeal influenza A and B rapid antigen tests, urine pneumococcal antigen test, and urine *Legionella* antigen test results were all negative. The blood and sputum cultures yielded *A. veronii*, for which the rpoB sequences had 98% identity to *A. veronii* biovar *veronii* strain American Type Culture Collection 35624, which was confirmed by molecular methods using primers PasrpoB-L (5'-GCAGTGAAGARTTCTTTGGTTC-3') and RpoB-R (5'-GTTGCATGTTNGNACCCAT-3')² and analyzing the amplified sequences online at the Basic Local Alignment Search Tool (<http://www.ncbi.nlm.nih.gov/BLAST/>) Web site. Bone marrow biopsy was performed for pancytopenia, and hemophagocytic lymphohistiocytosis was diagnosed. The consolidation of the left lung resolved gradually after antibiotics use (meropenem × 1 week and levofloxacin × 3 weeks). The white blood cell and platelet counts gradually returned to normal levels. However, the patient experienced a sudden fatal event of acute brain hemorrhage in the 3rd week, and died the following (4th) week.

The annual incidence of *Aeromonas* bacteremia is reported to be 76 cases/million inhabitants in Tainan City, Taiwan, which is higher than the rate reported in Western

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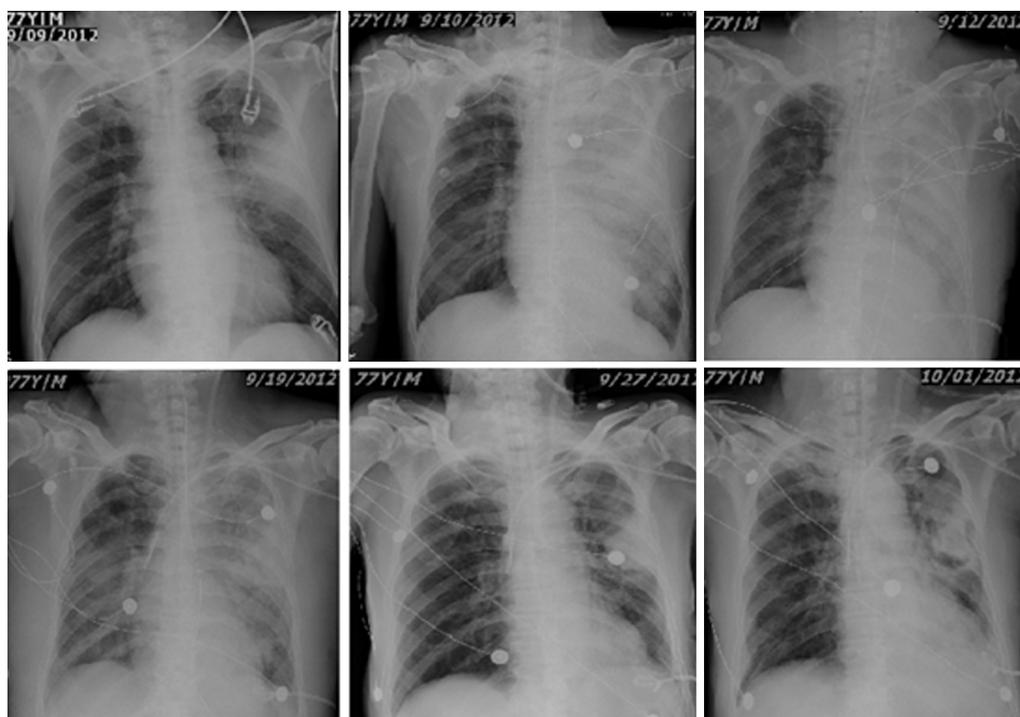


Figure 1. Series of chest X-rays (left to right, then up to down) showing rapid progress of the left lung extensive consolidation and slow resolution after antibiotic therapy in our patient with acute *Aeromonas veronii* pneumonia.

countries.³ In most instances, *Aeromonas* pneumonia is reported to be near-drowning- or health care-associated cases, but community-acquired *Aeromonas* pneumonia cases are rare.^{1,3,4} High morbidity and mortality rates (>25%) were reported in elderly and immunocompromised patients.^{1,4} Therefore, a third- or fourth-generation cephalosporin or a quinolone could be administered earlier.^{1,5}

In conclusion, *A. veronii* pneumonia with hemophagocytic syndrome was rare. Treatment with a combination of meropenem and levofloxacin achieved a good therapeutic response.

Conflicts of interest

We declare no conflicts of interests.

Ethical approval

This study was granted exemption from review by the Institutional Review Board of Chi-Mei Medical Center (Application No. 10402-E07).

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Yee-Huang Ku

Department of Internal Medicine, Chi Mei Medical Center,
Liouying, Tainan City, Taiwan

Wen-Liang Yu*

Department of Intensive Care Medicine, Chi Mei Medical
Center, Yongkang, Tainan City, Taiwan

Department of Medicine, Taipei Medical University, Xinyi,
Taipei City, Taiwan

*Corresponding author. Department of Medical Research,
Chi Mei Medical Center, Number 901, Zhonghua Road,
Yongkang District, 710 Tainan City, Taiwan.
E-mail address: yuleon_md@yahoo.com.tw (W.-L. Yu)

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