Letter to the Editor

Pantoea dispersa bacteremia caused by central line-associated bloodstream infection

Dear Editor,

Genus Pantoea is a rare pathogen in clinical settings. Among seven species of the rare organism, Pantoea agglomerans is the most prominent species in humans and clinical cases of Pantoea dispersa infection have scarcely been described. First case was reported in Germany in a 71-year-old woman with respiratory infection,\(^1\) and recently, Mehar et al. described two neonatal cases in India.\(^2\) We herein report another clinical case of P. dispersa infection from Japan.

A 64-year-old man with dilated cardiomyopathy, sick sinus syndrome and diabetes mellitus was admitted to our hospital for control of chronic heart failure. A central venous catheter (CVC) was inserted and a permanent pacemaker was embedded 10 days after admission. Approximately two months later, he suddenly had high fever with shivering. Blood cultures were obtained and the CVC was removed, suspecting central line-associated bloodstream infection. A Gram-negative rod was detected from both blood and catheter tip cultures, and the organism was identified as belonging to the genus Pantoea by the Vitek2 system (bioMérieux, France) and rapid ID 32 system (bioMérieux, France). Finally, matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) analysis identified the isolate as P. dispersa with a score value of 2.344. The pathogen was sensitive to cefazidine, cefepime, imipenem, gentamycin, and levofloxacin, and administration of cefepime was initiated. A follow-up blood culture became positive again, and the pacemaker was removed with suspicion of pacemaker infection. The persistent bacteremia then disappeared. A total of four weeks of antibiotic therapy was completed without recurrence of infection.

Epidemiology and clinical features of P. dispersa infection are still unknown due to its rarity and difficulty in accurate identification. For a more comprehensive understanding, bacterial identification should be accurately performed. However, due to the similarity in bacterial properties of species of the genus Pantoea, biochemical identification alone would not be appropriate and may even be misleading. For example, more than 10% of clinical isolates of P. agglomerans were misidentified as species of the genus Enterobacter by the VITEK MS system (bioMérieux, Marcy l’Etoile, France).\(^3\) In those two previous cases of P. dispersa infection,\(^1,2\) API 50 CHE system and Vitek2 system were used, and thus, accuracy of the identification was not known. Usually, 16S rRNA gene sequencing is used for the reference of bacterial identification; however, nucleotide sequences of P. dispersa have not been deposited in gene databases. Even if the sequence are known, results of analysis may not be correct; according to a recent report, only half of the clinical isolates of P. agglomerans (9/18 cases) were identified correctly by 165 rRNA analysis.\(^4\)

We identified the pathogen by means of MALDI-TOF MS analysis. Although the clinical utility of MALDI-TOF MS analysis for accurate identification of genus Pantoea is still unestablished, Richter et al.\(^5\) and Wensing et al.\(^6\) have reported its potential as a reliable method for the identification of the genus Pantoea. Misidentification based on biochemical properties of the organism might be a reason for the small number of clinical reports on P. dispersa infection. As a new methodology, MALDI-TOF MS analysis is gradually prevailing and more clinical cases of P. dispersa infection may be reported in the future.

Conflicts of interest

The authors declare no conflicts of interest.

REFERENCES


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Received 9 June 2014
Accepted 13 June 2014
Available online 29 August 2014
http://dx.doi.org/10.1016/j.bjid.2014.06.006
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