The Brazilian Journal of
INFECTIOUS DISEASES
www.elsevier.com/locate/bjid

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 ceftazidime, 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 16S 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.[3] and Wensing et al.[5] 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

1. Schmid H, Schubert S, Weber C, Bogner JR. Isolation of a *Pantoea dispersa*-like strain from a 71-year-old woman with acute myeloid leukemia and multiple myeloma. Infection. 2003;31:66–7.
2. Mehar V, Yadav D, Sanghvi J, Gupta N, Singh K. *Pantoea dispersa*: an unusual cause of neonatal sepsis. Braz J Infect Dis. 2013;17:726–8.
3. Richter SS, Sercia L, Branda JA, et al. Identification of Enterobacteriaceae by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry using the VITEK MS system. Eur J Clin Microbiol Infect Dis. 2013;32:1571–8.

4. Cheng A, Liu CY, Tsai HY, et al. Bacteremia caused by *Pantoea agglomerans* at a medical center in Taiwan, 2000–2010. J Microbiol Immunol Infect. 2013;46:187–94.
5. Wensing A, Zimmermann S, Geider K. Identification of the corn pathogen *Pantoea stewartii* by mass spectrometry of whole-cell extracts and its detection with novel PCR primers. Appl Environ Microbiol. 2010;76:6248–56.

Hideharu Hagiya*, Fumio Otsuka

Department of General Medicine, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama, Japan

* *Corresponding author at*: Department of General Medicine, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, 2-5-1 Shikata-cho, Kitaku, Okayama 700-8558, Japan.
E-mail address: e_dai_for_all@hotmail.com (H. Hagiya).

Received 9 June 2014
Accepted 13 June 2014
Available online 29 August 2014
http://dx.doi.org/10.1016/j.bjid.2014.06.006
1413-8670/