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Answer to Photo Quiz: *Weissella confusa*

(See page 759 in this issue [doi:10.1128/JCM.00941-13] for photo quiz case presentation.)

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The diagnosis of bacteremia due to *Weissella confusa* was confirmed by 16S rRNA gene sequencing. The organism, based on the production of alpha-hemolysis, the Gram stain, and the catalase-negative reaction, was preliminarily reported as "*Lactobacillus*-like, identification to follow." Repeat blood cultures were subsequently negative after removal of the peripherally inserted central catheter (PICC) and therapy switch from vancomycin to daptomycin. We believe that her bacteremia was related to the indwelling PICC, total parenteral nutrition (TPN) dependency, and the history of altered gut flora with multiple abdominal surgeries.

W. confusa is a nonmotile Gram-positive, alpha-hemolytic, catalase-negative coccobacillus that grows at 25, 35, and 42°C and is positive for esculin hydrolysis and arginine deamination (1). Originally identified as *Lactobacillus confusus*, the organism was reclassified into a novel genus in 1993 along with other lactobacilli and *Leuconostoc paramesenteroides* (2). Thus, this organism is frequently confused with *Lactobacillus*- or *Leuconostoc*-like organisms, which are inherently vancomycin resistant and often considered contaminants (3, 4). *W. confusa* has been isolated from sugar cane, carrot juice, milk, fermented cereals, and vegetables (5). Though an exceedingly rare human pathogen and usually nonfatal, *W. confusa* has been demonstrated to cause clinical disease such as abscess, bacteremia, prosthetic joint infection, and infective endocarditis (4, 6, 7, 8).

Immunocompromised states, prior exposure to vancomycin, altered gut flora, recent gastrointestinal procedures, and TPN dependency are all suspected to be risk factors for the development of *Lactobacillus* species bacteremia (4). Due to the rarity of *W. confusa*, the Clinical and Laboratory Standards Institute (CLSI) has not established breakpoints for susceptibility testing. However, based on MICs, the preferred therapy includes penicillin, clindamycin, erythromycin, aminoglycosides, and imipenem (6). Daptomycin has also been shown to have activity, as was the case with our patient's isolate, which had a daptomycin MIC of 0.38 μg/ml by Etest (3).

Though a rare entity, *W. confusa* should be considered for any patient presenting with bacteremia caused by a Gram-positive organism and underlying risk factors for infection with *Lactobacillus* species. Since vancomycin is the empirical first-line therapy for bacteremia caused by a Gram-positive organism, early consideration of this organism is important due to its inherent vancomycin resistance, which necessitates alternative therapy.

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