Mitral valve endocarditis secondary to *Paenibacillus provencensis*

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We report the first case of infective endocarditis caused by *Paenibacillus provencensis*, a very rare gram-positive spore-forming rod. A mitral valve vegetation was incidentally discovered by intra-operative transoesophageal echocardiography in a 70-year old lady undergoing aortic valve replacement. Empirical antibiotic treatment for infective endocarditis with gentamicin and teicoplanin was started. The precise identification of the causative agent relied on genotypic characterisation with 16S rDNA gene sequencing. Microbiologic culture was subsequently performed to obtain the antimicrobial susceptibility profile and adjusted the antibiotic regimen accordingly. The patient was treated with a four weeks course of vancomycin and meropenem, followed by a further two weeks of daptomycin due to the identification of vancomycin-resistant enterococci in a rectal swab. After a long in-hospital stay, the patient eventually recovered clinically and biochemically and transthoracic echocardiogram demonstrated a well-functioning mitral valve without residual lesions from the endocarditis. This is, to the best of our knowledge, the first report showing that *Paenibacillus provencensis* can be a pathogen in humans and that a member of the genus *Paenibacillus* may be involved in native valve endocarditis. This case also emphasises the importance of 16S rDNA gene sequencing by real-time polymerase chain reaction, as a rapid and accurate method to identify microorganisms, like *Paenibacillus*, which can be missed by conventional microbiology investigations.

Biography

Ana-Catarina Pinho-Gomes has completed two MSc degrees in Medicine and Cardiovascular Pathophysiology from the University of Porto, Portugal. She is currently a Cardiothoracic Surgery trainee in Manchester. She has already won over 25 academic prizes and published eight papers in reputed journals. She is a Member of the leading committees of the Association of Surgeons in Training and the Cardiothoracic Trainees Research Collaborative. Besides translational and clinical research in Cardiovascular Medicine, she is keen on teaching and pursuing a MSc degree in Medical Education at the University of Liverpool.

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