Large vegetation in a 60-year-old man with *Enterococcus faecalis* cardiac implantable electronic device infection

Sandrine Loron,¹ Arnaud Dulac,^{2,3} Olivier Jegaden,^{2,4} Tristan Ferry^{1,2,5}

¹Service de Maladies Infectieuses et Tropicales, Hôpital de la Croix-Rousse, Hospices Civils de Lyon, Lyon, France

²Université Claude Bernard Lyon 1, Lyon, France

³Service de Cardiologie, Unité 50, Hôpital Louis Pradel, Hospices Civils de Lyon, Lyon, France

⁴Service de Chirurgie Cardiaque, Hôpital Louis Pradel, Hospices Civils de Lyon, Lyon, France

⁵Centre International de Recherche en Infectiologie (CIRI), Inserm U1111, CNRS UMR5308, ENS de Lyon, UCBL1, Lyon, France

Correspondence to

Dr Tristan Ferry,
tristan.ferry@univ-lyon1.fr

Accepted 23 September 2014

DESCRIPTION

A 60-year-old man with a history of hypertension, diabetes and atrial dysfunction requiring implantation of a dual-chamber pacemaker in 1998 (generator changed in 2010), was admitted after 6 months of intermittent shivering and sweating. The patient was afebrile and had a normal physical examination. Transoesophageal echocardiography revealed a hyperechogenic mass (38×27 cm) on the right atrial lead compatible with a vegetation (figure 1). Blood cultures were performed before starting empirical treatment with vancomycin, gentamicin and rifampicin. At day 10, blood cultures remained negative and pacemaker leads were totally removed using video-assisted thoracoscopy. The presence of a large vegetation attached to the ventricular lead was confirmed (figure 1). Blood cultures were negative and cultures of the atrial lead isolated *Enterococcus faecalis*, with high-level resistance to gentamicin. The patient developed postoperative acute kidney injury with creatinine clearance of about 30–40 mL/min. A combination of amoxicillin (1 g/4 h) and daptomycin (700 mg/2 days) was initiated with a goal of 6 weeks of therapy. No adverse event occurred and 7 months later the patient had no clinical signs of relapse.

Sources of positive bacterial culture in patients with cardiac implantable electronic device infection are mainly the lead tip, followed by blood cultures.¹ Here, our patient had negative blood cultures before the introduction of antimicrobials, and the culture of the lead tip found *E. faecalis*, probably embedded in biofilm, despite 10 days of intravenous active antimicrobial therapy. Daptomycin is an emerging alternative for the

Learning points

- ▶ Cardiac implantable electronic device infection could be associated with large vegetation requiring surgical extraction.
- ▶ Even if blood cultures are performed before starting antimicrobial therapy, they could be negative in enterococcal cardiac implantable electronic device infection.
- ▶ Daptomycin is an emerging option, in combination with amoxicillin, for the treatment of enterococcal endocarditis.

Figure 1 Hyperechogenic mass (38×27 cm) on the right atrial lead of a pacemaker (transoesophageal echocardiography, (A) and (B)) and macroscopic aspect of a vegetation shown during video-assisted thoracoscopy in a patient with enterococcal pacemaker infection.

To cite: Loron S, Dulac A, Jegaden O, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2014-206907

treatment of enterococcal cardiac implantable device infections, especially in combination with amoxicillin.^{2 3}

Contributors SL performed the literature review. SL and TF wrote the article. AD and OJ performed the figure caption and improved the manuscript.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Tarakji KG, Chan EJ, Cantillon DJ, *et al.* Cardiac implantable electronic device infections: presentation, management, and patient outcomes. *Heart Rhythm* 2010;7:1043–7.
- 2 Carugati M, Bayer A, Miro J, *et al.* High-dose daptomycin therapy for left-sided infective endocarditis: a prospective study from the international collaboration on endocarditis. *Antimicrob Agents Chemother* 2013;57:6213–22.
- 3 Sierra-Hoffman M, Iznaola O, Goodwin M, *et al.* Combination therapy with ampicillin and daptomycin for the treatment of enterococcus faecalis endocarditis. *Antimicrob Agents Chemother* 2012;56:6064.

Copyright 2014 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- Submit as many cases as you like
- Enjoy fast sympathetic peer review and rapid publication of accepted articles
- Access all the published articles
- Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow