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Case report

Unusually extensive and diverse case of infective endocarditis



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ABSTRACT

We present the case of a 74-year-old man originally scheduled for planned surgical aortic valve replacement due to suspected infective endocarditis on a severely stenotic valve. Blood cultures revealed *Enterococcus faecalis* and *Klebsiella pneumoniae* (ESBL+). Logistic Euroscore was 9.11% and STS for isolated AV replacement (AVR) showed mortality risk 2.539% and 21.784% morbidity or mortality risk, respectively. AVR procedure was performed with mini-thoracotomy approach, ESP 100-21 mm SJM prosthesis was implanted. On the 10th day following the procedure fever spikes with CRP and WBC elevation reoccurred and further course of the disease with all its capabilities was rather unfortunate and ended up fatally.

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Introduction

We present the case of a 74-year-old man originally scheduled for planned surgical aortic valve replacement due to suspected infective endocarditis on a severely stenotic valve.

Infective endocarditis remains a challenge both to diagnose and to treat. Positive results depend on a rapid diagnosis, accurate stratification of the risk and a meticulous follow-up.

Our patient was originally a rather typical case of infective endocarditis planned for treatment with valve replacement as recommended in the European Society of Cardiology 2009 Guidelines. Unfortunately further course of the disease with all its capabilities was rather unfortunate and ended up fatally.

Case report

A 74-year-old white male (with history of hypertension and previously diagnosed severe aortic stenosis) scheduled for planned surgical valve replacement was admitted to the Department of Noninvasive Cardiology and Hypertension due to suspected infective endocarditis. Patient presented with fever (maximum of 38.5 °C), general fatigue, weight loss of 3 kg (in 3 weeks), lack of appetite, increasing dyspnea (New York Heart Association Class III), signs of upper respiratory tract infection. During physical examination at admission additionally apart from fever (38 °C), tachycardia (112 heart beats per minute), signs of increased adrenergic activity, i.e.,

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sweatness and dyspnea at rest were revealed. Elective coronary angiography performed a month before admission showed no signs of coronary artery disease. Transesophageal echocardiography (TEE) revealed vegetation on left and right aortic cusps (left ventricle ejection fraction (LVEF) 60%, peak/mean gradient 94/45 mmHg, aortic valve area (AVA) 0.97 cm², no aortic regurgitation (AI)). Laboratory data at admission revealed: white blood count (WBC) 16.69 thousands/ μ L (norm 4.5–10.0 thousands/ μ L), neutrophils (NEU) 14.07 thousands/ μ L (norm 1.90–7.00 thousands/ μ L), % of neutrophils 84.3% (norm 40.0–68.00%), fibrinogen 196 mg/dl (norm 200–393 mg/dl), C-reactive protein (CRP) was not performed. Blood cultures revealed *Enterococcus faecalis* and *Klebsiella pneumoniae* (ESBL+). First 6 bottles after incubation detailed analysis showed: bottle (1) – *Enterococcus faecalis* ESBL (–), HLAR (–), VRE (–) (ampicillin-sensitive (S), gentamicin-resistant (R), streptomycin-R, vancomycin-S, teicoplanin-S), bottles (2)–(4) – were exact same as bottle (1), bottles (5) and (6) were negative. Second 6 bottles after incubation detailed analysis showed: bottles (1) and (2) exact as results mentioned above with *Enterococcus faecalis*, bottles (3) and (4) were negative and bottles (5) and (6) – *Klebsiella pneumoniae* ESBL(+), sensitive only for imipenem, meropenem and ertapenem. Previously implemented empiric antibiotics (cefazoline 1 g bid) were modified (after detailed analysis with Head of the Microbiology Department ciprofloxacin 200 mg bid with ampicillin 1 g bid were

introduced for 7 days) with no significant medical improvement. Again after detailed analysis with Head of the Microbiology Department ciprofloxacin was stopped, ampicillin 1 g bid was continued and amoxicillin with clavulonic acid 1.2 g tid and metronidazol 500 mg bid were added, this regimen was continued for 15 days. During following days patient stabilized, inflammatory parameters dropped (including WBC, CRP and NEU). Logistic Euroscore was 9.11% and STS for isolated AV replacement (AVR) showed mortality risk 2.539% and 21.784% morbidity or mortality risk, respectively. AVR procedure was performed with mini-thoracotomy approach, ESP 100-21 mm SJM prosthesis was implanted. On the 10th day following the procedure fever spikes with CRP and WBC elevation reoccurred. Blood culture revealed the same bacterial species (*Enterococcus faecalis* and *Klebsiella pneumoniae* ESBL(+)). Subsequent modification of pharmacotherapy was applied, again after detailed analysis with Head of the Microbiology Department ampicillin 1 g bid and metronidazol 500 mg bid were stopped, amoxicillin with clavulonic acid 1.2 g tid was continued and vancomycin 1 g bid was added – for 4 days without significant influence on the disease. After 4 days another change was made, vancomycin 1 g bid was continued and meropenem 2 g bid. Following transthoracic echocardiographs (TTE) and TEE showed progressive signs of infective endocarditis on the replaced valve with extensive vegetations (Fig. 1A), abscesses (Fig. 1B), with dysfunction of prosthesis

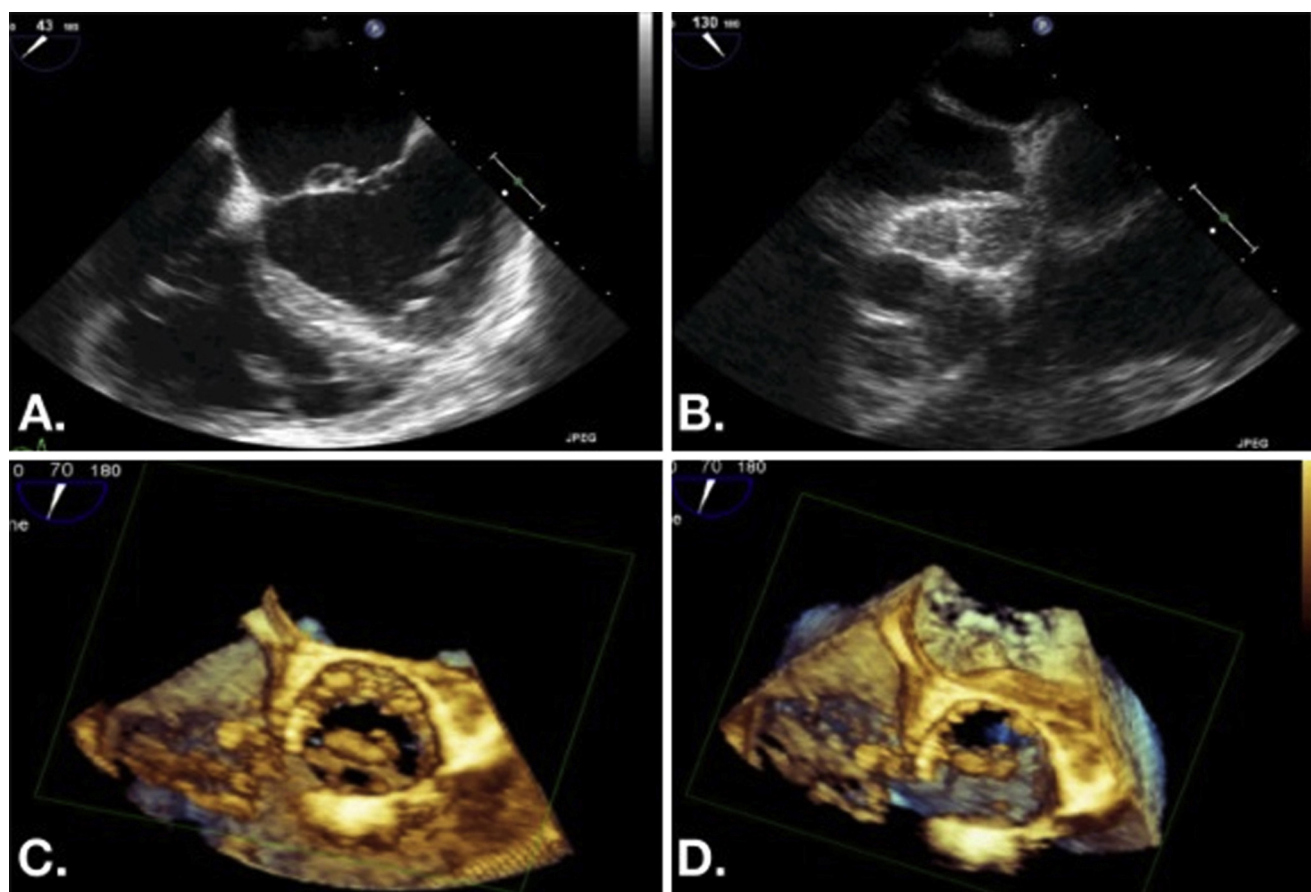


Fig. 1 – (A) Vegetation attached to the mitral valve leaflet (TEE), (B) possible periannular multiple abscesses (TTE), (C) aortic annulus disembowelment (TEE, 3D reconstruction), (D) multiple infective endocarditis complications in one patient (TEE, 3D reconstruction).

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