Uncommon case of prosthetic valve endocarditis and evolution of paravalvular abscess

Authors: Dimitrios Afendoulis, Maria Moutafi, Michail Ampeliotis, Stamatios Vougazianos, Dimitrios Stoupakis, Konstantinos Perreas, Matthaios Didagelos, Athanasios Kartalis

Article type: Clinical vignette

Received: March 7, 2024

Accepted: May 8, 2024

Early publication date: May 16, 2024
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Dimitrios Afendoulis¹, Maria Moutafi¹, Michail Ampeliotis¹, Stamatios Vougazianos¹, Dimitrios Stoupakis¹, Konstantinos Perreas², Matthaios Didagelos³, Athanasios Kartalis¹

¹Department of Cardiology, General Hospital of Chios “Skylitseion”, Chios, Greece
²Onassis Cardiac Surgery Center, Athens, Greece
³¹st Department of Cardiology, “AHEPA” University Hospital of Thessaloniki, Thessaloniki, Greece

Correspondence to:
Dimitrios Afendoulis, MD,
Department of Cardiology,
General Hospital of Chios,
Elenas Venizelou 2, Chios, Greece,
phone: +30 69 577 547 39
e-mail: dimitrisafendoulis@yahoo.com

A 68-year-old woman with history of diabetes mellitus underwent replacement of a heavily calcified bicuspid aortic valve with bioprothetic valve. After 3 weeks she was hospitalized in our surgical clinic due to purulence of a stich at the lower sternum’s edge. Culture was positive for multisensitive staphylococcus pseudintermedius and amoxicillin-clavulanic acid was initiated. Despite surgical cleansing of the trauma, infection expanded with creation of inflammatory tunnel (Figure 1A), elevation of fever, white blood cells and C-reactive protein and decrease in patient’s neurological state. Multiple blood cultures revealed bacteremia with staphylococcus pseudintermedius, and a transthoracic and transesophageal heart echo (TOE) depicted vegetations in ventricular and vascular side of the aortic valve with mild regurgitation and no valve stenosis (Figure 1B–C; Supplementary material, Video SI). A computed tomography depicted brain, septic and hepatic emboli and thus, diagnosis of infective endocarditis was established (Figure 1D). She was transferred to cardiology department, and medication with flucloxacillin/gentamycin/rifampicin, was initiated. The patient’s fever
persisted the first week. She completed 6 weeks of medication with clinical, biochemical improvement, and healing of sternum tunnel (Figure 1E). Follow-up TOE depicted eradication of vegetations, normal valve function and a small paravalvular abscess with thick walls (Figure 1F, blue arrow). Due to patient’s high risk for re-operation a watchful waiting approach was selected in the concept of Heart Team consultation. After 2 weeks a follow-up TOE depicted expansion of the abscess with preserved valvular function, despite the patients improved clinical condition, absence of symptoms or heart rhythm disorders, and sterilization of the blood cultures (Supplementary material, Figure S1 A–D, yellow arrows and Videos S1–S2). As a result, our patient was referred to cardiac surgeon for Bentall procedure, after a pre-operational 18F-FDG positron emission tomography PET-CT that depicted glucose uptake of the aortic valve/annulus and sternum (Supplementary material, Figure S2). During the procedure, complete healing of the inflammatory tunnel and sternum was confirmed, without signs of further aorta involvement.

In our patient, notable were the presence of *Staphylococcus pseudintermedius*, a rare cause of endocarditis [1, 2], contaminated probably from domestic dog, and uncommon vegetations in vascular side of aortic valve. Moreover, a paravalvular abscess was formed despite the appropriate antibiotic treatment and expanded, regardless the patients good clinical condition. Thus, in such challenging clinical cases the role of Heart Team becomes even more crucial for decision making, improvement of endocarditis diagnosis and management and patient outcomes [3–5].

**Supplementary material**

Supplementary material is available at https://journals.viamedica.pl/polish_heart_journal.

**Article information**

**Conflict of interest:** None declared.

**Funding:** None.

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Figure 1. A. Inflammatory tunnel formed from the stitch purulence in the sternum. B. Transesophageal echocardiogram short axis view with presence of the vegetation in the vascular side of aortic valve. C. Transesophageal heart echocardiogram long axis view with presence of the vegetation in the vascular side of aortic valve. D. Computed tomography scan depicting the presence of septic hepatic and splenic emboli. E. Healing of the sternum tunnel after antibiotic treatment. F. Transesophageal heart echo follow-up depicting the formation of paravalvular abscess-blue arrow.