Uncommon case of prosthetic valve endocarditis and evolution of a paravalvular abscess

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A 68-year-old woman with a history of diabetes mellitus underwent replacement of a heavily calcified bicuspid aortic valve with a bioprosthetic valve. After 3 weeks she was hospitalized in our surgical center for purulence of a stitch at the lower sternum's edge. The culture was positive for multisensitive *Staphylococcus pseudintermedius,* and amoxicillin-clavulanic acid was initiated. Despite surgical cleansing of the wound, infection expanded leading to formation of an inflammatory tunnel (Figure 1A), elevation of fever, rise in white blood cell count and C-reactive protein, and impaired patient's neurological state. Multiple blood cultures revealed bacteremia with *Staphylococcus pseudintermedius*, and transthoracic and transesophageal heart echocardiography (TOE) visualized vegetation in the ventricular and vascular side of the aortic valve with mild regurgitation and no valve stenosis (Figure 1B–C; Supplementary material, *Video S1*). Computed tomography showed septic cerebral and hepatic emboli, and thus, a diagnosis of infective endocarditis was established (Figure 1D).

The patient was transferred to the cardiology department, and medication with flucloxacillin/gentamycin/rifampicin was initiated. The patient's fever persisted during the first week. She completed 6 weeks of medication with clinical and biochemical improvement, and healing of the sternum tunnel (Figure 1E). Follow-up TOE confirmed resolution of a vegetation, normal valve function, and a small paravalvular abscess with thick walls (Figure 1F, blue arrow). Due to the patient's high risk of re-operation, a watchful waiting approach was selected after the Heart Team's consultation. After 2 weeks, follow-up TOE showed expansion of the abscess with preserved valvular function, despite the patient's improved clinical condition, the absence of symptoms or heart rhythm disorders, and negative blood cultures (Supplementary material, *Figure S1 A–D*, yellow arrows and *Videos S1–S2*). As a result, our patient was referred to a cardiac surgeon for the Bentall procedure after a pre-operational ^{18}F-FDG positron emission tomography (PET-CT) that showed 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.

What was notable in our patient was the presence of *Staphylococcus pseudintermedius*, which was probably contracted from a domestic dog and is a rare cause of endocarditis [1, 2] and uncommon vegetation on the vascular side of the aortic valve. Moreover, a paravalvular abscess was formed despite the appropriate antibiotic treatment, and it expanded regardless of the patient's good clinical condition. In such challenging clinical cases, the role of the Heart Team becomes even more crucial in decision-making. In our case, the Heart Team contributed to improvements in infective endocarditis diagnosis and management, and better patient outcomes [3–5].

Supplementary material

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

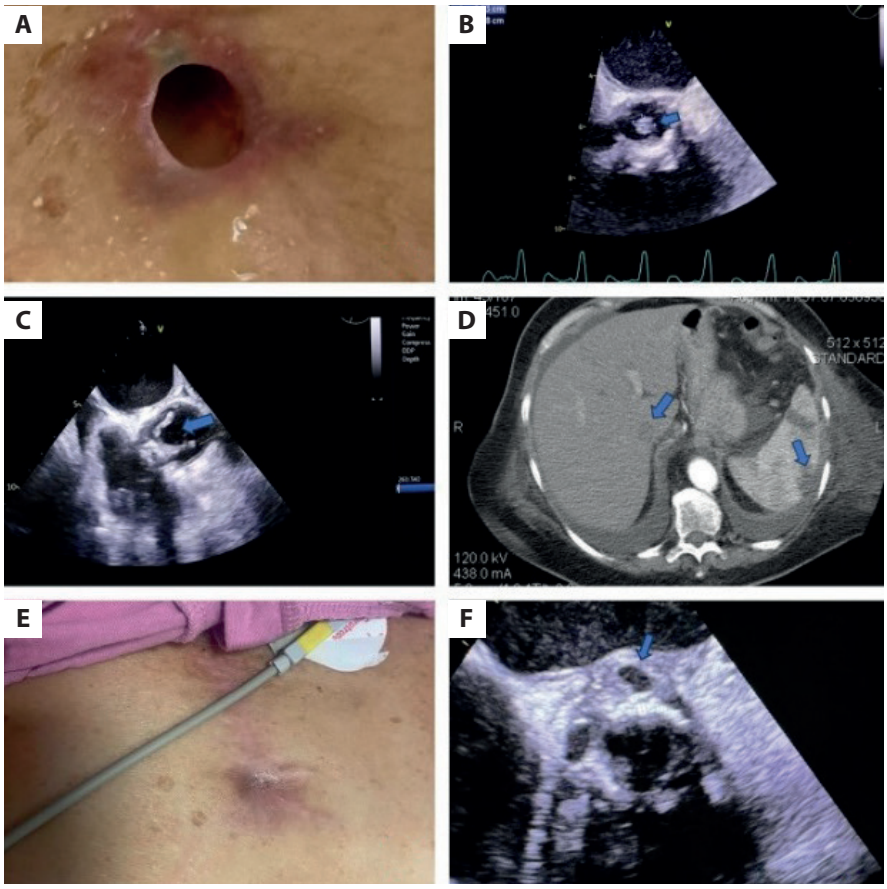

Figure 1. A. Inflammatory tunnel formed from the stitch purulence in the sternum. **B.** Transesophageal echocardiogram, short axis view, with the presence of vegetation on the vascular side of the aortic valve (blue arrow). **C.** Transesophageal heart echocardiogram, long axis view, with the presence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

Article information

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