

CASE IMAGE

Right ventricular papillary muscle mimicking an aortic root abscess

Aort kökü apsesini taklit eden sağ ventriküler papiller kas

✉ Giovanni Masoero¹

✉ Konstantinos C. Theodoropoulos²

¹Cardio-Thoraco-Vascular
Department, Ospedale Policlinico
San Martino IRCCS, Genova, Italy

²Second Cardiology Department,
Hippokraton Hospital, Thessaloniki,
Greece

We present the case of a woman aged 75 years with a 1-month history of redo aortic valve replacement (AVR) due to infective endocarditis (IE) of a bioprosthetic aortic

valve. This procedure was conducted in another hospital. She was then transferred to a cardiac rehabilitation unit owing to postoperative prolonged stay in the intensive care unit. She developed a fever, and her inflammatory markers increased significantly; therefore, a central line to the right internal jugular vein (inserted 10 days ago) was replaced with a new one in a different site. The patient was then transferred to our hospital, and a transthoracic echocardiogram (TTE) was performed. This showed, in both parasternal long- and short-axis views, the presence of a nonechogenic space/cavity surrounding the bioprosthetic aortic valve adjacent to the right ventricle (Figs. 1 and 2). Color Doppler showed a

flow through this space/cavity (Video S1*). Considering the recent redo AVR, an aortic root abscess was suspected. However, further assessment using 2-dimensional zoom and X-Plane (3-dimensional [3D]) imaging modalities showed a small papillary muscle of the right ventricle, originating from the

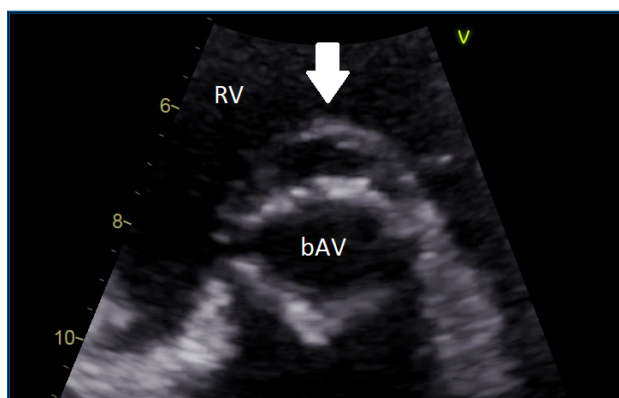


Figure 2. Transthoracic echocardiogram. Zoom on parasternal short-axis view showing a suspected aortic root abscess. bAV: bioprosthetic aortic valve; RV: right ventricle.

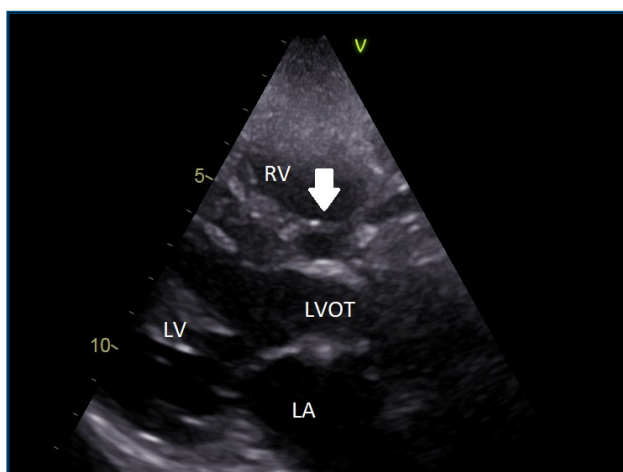


Figure 1. Transthoracic echocardiogram. Parasternal long-axis view showing (white arrow) a suspected aortic root abscess. LA: left atrium; LV: left ventricle; LVOT: left ventricle outflow tract; RV: right ventricle.

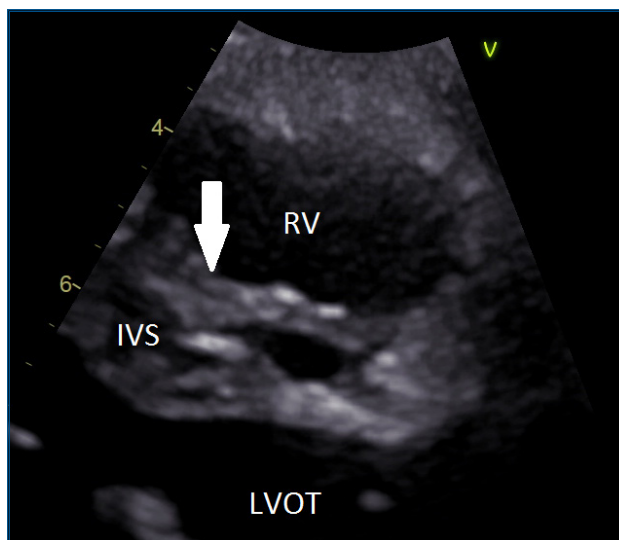


Figure 3. Transthoracic echocardiogram. Parasternal long-axis view (2D zoom mode) showing the origin (white arrow) of the right ventricle papillary muscle from the interventricular septum. 2D: 2-dimensional; IVS: interventricular septum; LVOT: left ventricle outflow tract; RV: right ventricle.

*Supplementary video files associated with this presentation can be found in the online version of the journal.

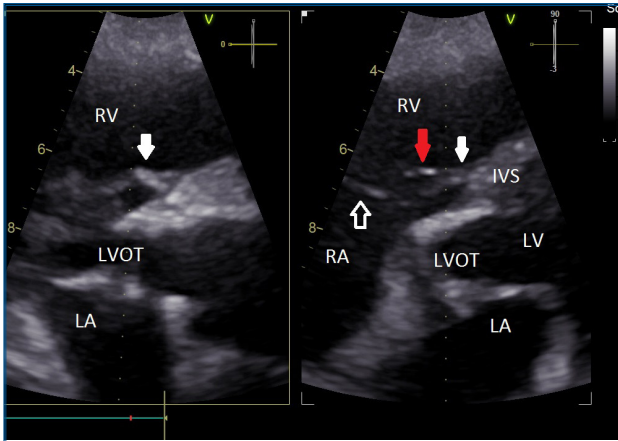


Figure 4. Transthoracic echocardiogram. X-Plane (3D) analysis across the suspected aortic root abscess, revealing a septal right ventricular papillary muscle (white arrows) originating from the interventricular septum and distally attached to the tricuspid valve (outlined white arrow) with a chord (red arrow). 3D: 3-dimensional; IVS: interventricular septum; LA: left atrium; LV: left ventricle; LVOT: left ventricle outflow tract; RA: right atrium; RV: right ventricle.

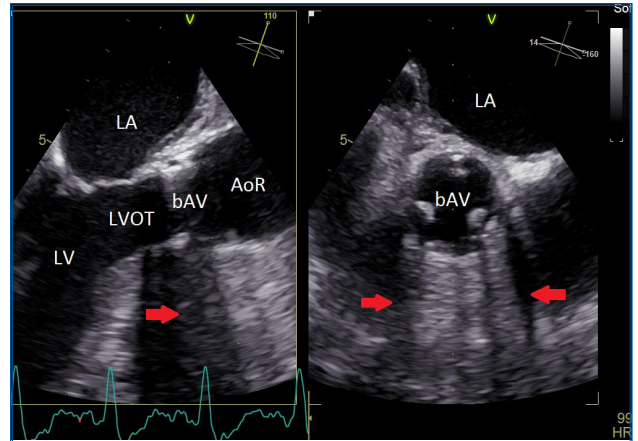


Figure 5. Transoesophageal echocardiogram. X-Plane (3D) mode across the bioprosthetic aortic valve, showing an acoustic shadow (red arrows) generated by the prosthetic valve that obscures the suspected cardiac area seen on TTE, making TOE analysis inconclusive. AoR: aortic root; bAV: bioprosthetic aortic valve; LA: left atrium; LV: left ventricle; LVOT: left ventricle outflow tract; RV: right ventricle.

interventricular septum (Fig. 3) and attached distally to the subvalvular apparatus of the tricuspid valve (Fig. 4 and Video S2*). This gave the impression of a nonechogenic space surrounding the bioprosthetic aortic valve. A transoesophageal echocardiogram (TOE) with 3D analysis was performed as well, showing a well seated bioprosthetic aortic valve with no evidence of a paravalvular leak or other signs of IE (Video S3*). Interestingly, TOE could not show the suspected finding observed in TTE owing to an acoustic shadow generated by the bioprosthetic valve, which was obscuring the suspected area (Fig. 5). The patient showed rapid clinical improvement

after initiation of empirical antibiotic treatment, and the diagnosis of a central line infection was assumed. Because blood cultures were negative and considering the patient's improvement, we did not proceed to a computed tomography scan to investigate for other sources of infection. A thorough assessment with the use of multiple imaging modalities is paramount when IE and/or abscess is clinically suspected. Interestingly, in our case, a suspected periaortic abscess was ruled out with transthoracic rather than transoesophageal echocardiography.

