



# Pseudoaneurysm of the Aortic Root in the Presence of Aortic Valve Infective Endocarditis



Tahereh Davarpassand<sup>1</sup>, Ali Hosseinsabet<sup>1\*</sup>, Kyomars Abbasi<sup>2</sup>, Shapoor Shirani<sup>3</sup>

1. Department of Cardiology, Tehran Heart Center, Tehran University of Medical Sciences, Tehran, Iran.

2. Department of Cardiac Surgery, Tehran Heart Center, Tehran University of Medical Sciences, Tehran, Iran.

3. Department of Radiology, Tehran Heart Center, Tehran University of Medical Sciences, Tehran, Iran.



**Citation** Davarpassand T, Hosseinsabet A, Abbasi K, Shirani S. Pseudoaneurysm of the Aortic Root in the Presence of Aortic Valve Infective Endocarditis. Case Reports in Clinical Practice. 2022; 7(4): 172-173.

**Running Title** Pseudoaneurysm and Endocarditis



## Article info:

Received: June 06, 2022

Revised: June 16, 2022

Accepted: July 11, 2022

## Keywords:

Pseudoaneurysm; aortic root; echocardiography; endocarditis

## ABSTRACT

Herein, we present a case with clinical and laboratory manifestations of infectious endocarditis but in echocardiography, the ventricular septal defect and bicuspid aortic valve were detected without any vegetation. However, an aortic root pseudoaneurysm was first suspected in transesophageal echocardiography and then confirmed in computed tomography angiography of the aorta that points to importance of searching infectious endocarditis complications even in absence of vegetation.

**A** 55-year-old man referred to our hospital with a complaint of shaking and fever, fatigue, malaise and weight loss of 4 months' duration. His past medical history was not notable. Physical examination revealed tachycardia, fever and a harsh holosystolic murmur at the lower left sternal border. Sinus tachycardia with no significant ST-T change was visible in electrocardiography. Laboratory findings included leukocytosis, microcytic hypochromic anemia, an increased erythrocyte sedimentation rate and an elevated C-reactive protein level. Three peripheral blood sample cultures were positive with the growth of viridans streptococci.

Initial transthoracic and subsequent transesophageal echocardiography depicted normal left and right

ventricular size and systolic function. The most important echocardiographic findings were an anteriorly/posteriorly directed bicuspid aortic valve with severe aortic stenosis and mild to moderate aortic regurgitation, associated with a large non-pulsatile echo-free space (19×12 mm) on the medial side of the aortic root (Fig. 1), and a small perimembranous ventricular septal defect (VSD) (about 4 mm in size) with a left-to-right shunt (Video 1). No vegetation was detected. These findings were suggestive of the infective endocarditis of the aortic valve with a pseudoaneurysm of the aortic root verified by multislice computed tomography angiography (Fig. 1). Moreover, the coronary arteries exhibited no significant stenosis.

Although vegetation was not detected in

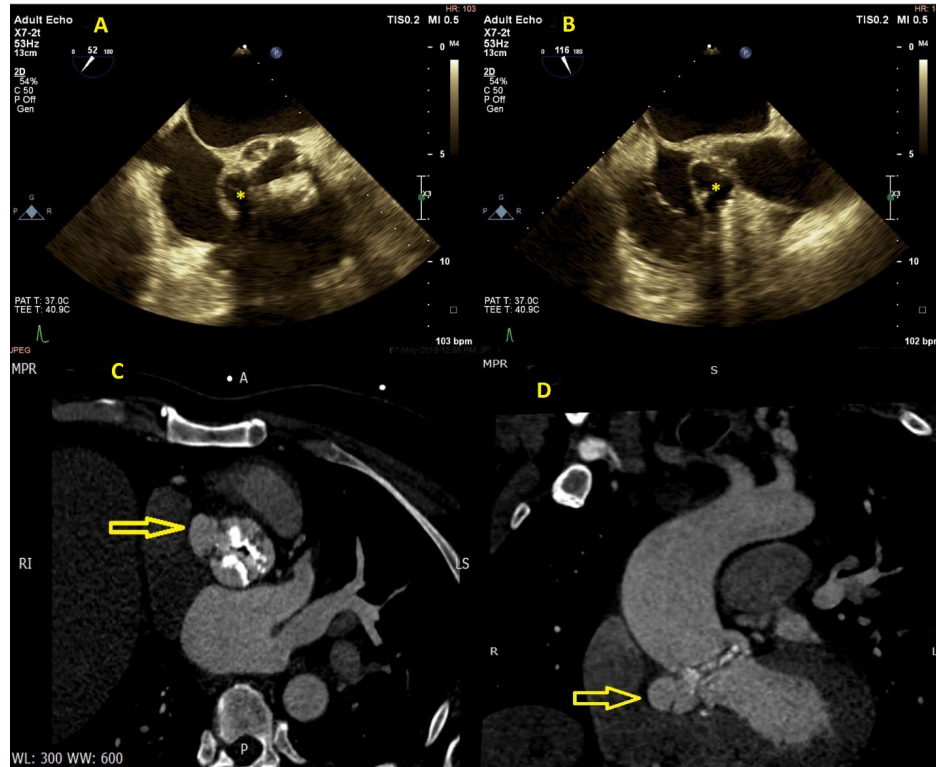
\* Corresponding Author:

Ali Hosseinsabet

Address: Department of Cardiology, Tehran Heart Center, Tehran University of Medical Sciences, Tehran, Iran.

E-mail: [ali\\_hosseinsabet@yahoo.com](mailto:ali_hosseinsabet@yahoo.com)





**Fig. 1.** (a) The echo-free space (\*) on the medial side of the aortic root in the aortic valve short-axis view in transesophageal echocardiography, (b) the echo-free space (\*) at the aortic root in the modified long axis of aortic valve view in transesophageal echocardiography and in (c) the transverse axis, (d) the sagittal axis reconstructed computed tomography angiography (arrow)

transesophageal echocardiography, given the patient's signs and symptoms, positive blood cultures and predisposing congenital valvular disease, the most probable diagnosis was infective endocarditis. He was, therefore, treated with antibiotics and referred for cardiac surgery. Aortic valve replacement, aortic root pseudoaneurysm debridement and VSD closure with a pericardial patch were performed by an expert cardiac surgeon. After surgery, the patient developed iatrogenic complete heart block, for which a permanent pacemaker with an epicardial lead was implanted. Ultimately, the patient was discharged healthy, with no residual VSD or obvious infective lesion in his follow-up transthoracic echocardiography (Video 2).

This case was affected by an unusual complex large aortic root pseudoaneurysm associated with the infective endocarditis of a bicuspid aortic valve, which could be fatal if was left undiagnosed. Accordingly, in the imaging evaluation of aortic valve infective endocarditis, the probable presence

of any complication and albeit rare (e.g., aortic root pseudoaneurysm) should be considered and a full evaluation is required.

## Ethical Considerations

### Compliance with ethical guidelines

There were no ethical considerations to be considered in this article.

### Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or nonprofit sectors.

### Conflict of Interests

The authors have no conflict of interest to declare.