

Images in cardiovascular medicine

Three-dimensional reconstruction of pulmonary valve endocarditis

Rodolfo Citro, Alessandro Salustri*, Giovanni Gregorio

Cardiology Department, Hospital San Luca, Vallo della Lucania (SA), *Echocardiography Laboratory, Hospital Sandro Pertini, Rome, Italy

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Address:

Dr. Rodolfo Citro

Laboratorio di
Ecocardiografia
Dipartimento di
Cardiologia
Ospedale San Luca
Via F. Cammarota
84078 Vallo della Lucania (SA)
E-mail: citro63@libero.it

An 84-year-old man, who underwent arthrocentesis of the right knee 2 months before, was admitted to our hospital because of a fever of uncertain origin lasting 6 weeks. Blood cultures identified the presence of *Staphylococcus epidermidis*. Transthoracic two-dimensional echocardiography from the subcostal window, revealed a large vegetation on the pulmonary valve (Fig. 1). The other cardiac structures were normal.

Fan-like scanning of the valve for three-dimensional reconstruction was performed with the free-hand technique under ECG and respiratory gating¹.

Off-line three-dimensional reconstruction was performed using the TomTec Cardiac Freehand Scan (Munich, Germany) which allowed accurate evaluation of the shape, size, surface and motion of the veg-

etation (Fig. 2). In particular, dynamic rendering allowed immediate insight into the relationship of the vegetation with the right ventricular outflow tract.

Isolated infective endocarditis in the native pulmonary valve is extremely rare, especially in the absence of usual predisposing factors such as congenital heart diseases (interventricular septal defect, tetralogy of Fallot, anomalous pulmonary valve), right heart catheterization, intravenous drug abuse, alcohol abuse, cancer, and immunodeficiency^{2,3}.

Three-dimensional echocardiography is an imaging modality potentially useful for the comprehension and detailed assessment of valvular vegetations⁴. To the best of our knowledge, this is the first report of a three-dimensional reconstruction of a pulmonary valve vegetation.



Figure 1. Two-dimensional echocardiogram from the subcostal window with the short-axis plane at basal level. A large mobile vegetation is attached to the arterial side of the left posterior pulmonary cusp in systole (arrow). AV = aortic valve; PA = pulmonary artery; RA = right atrium; RVOT = right ventricular outflow tract; TV = tricuspid valve.

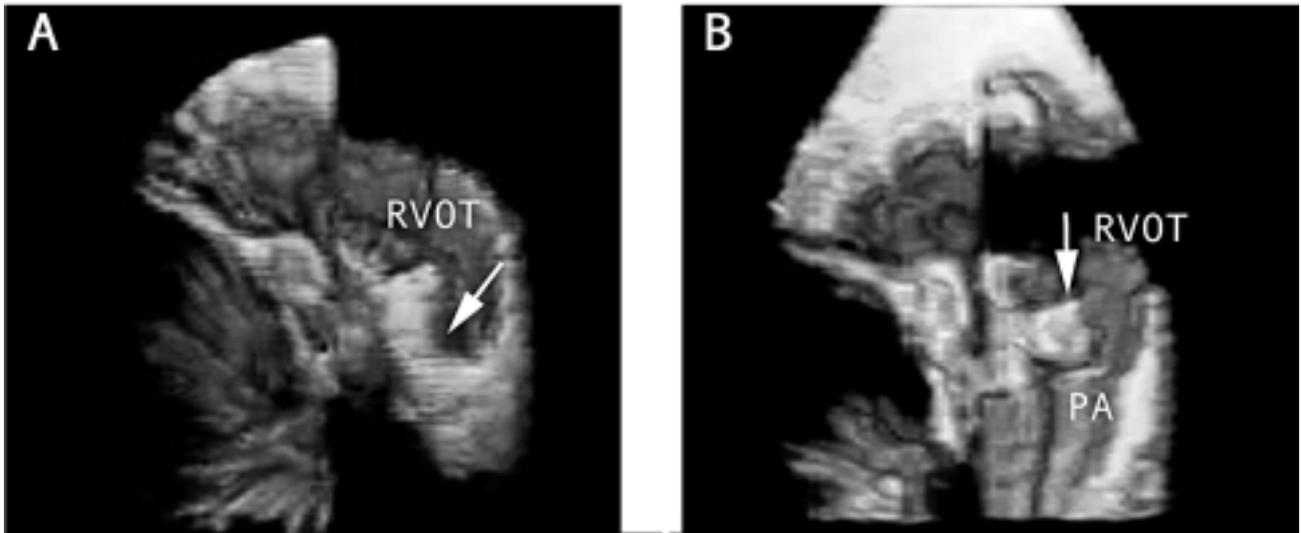


Figure 2. Three-dimensional reconstruction of the pulmonary valve vegetation (arrow) in systole (A), prolapsing into the right ventricle during diastole (B). The site of attachment, the polypoid shape and the smooth surface of the vegetation can be appreciated. Abbreviations as in figure 1.

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