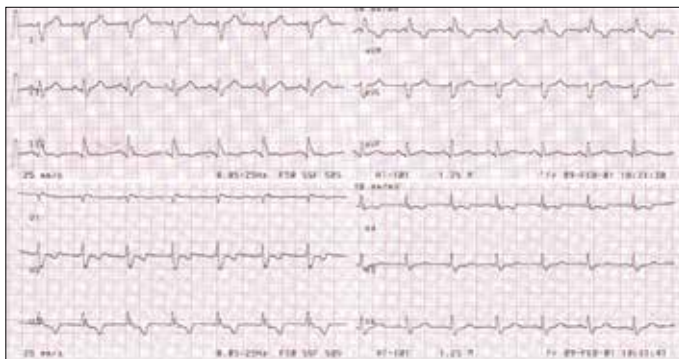
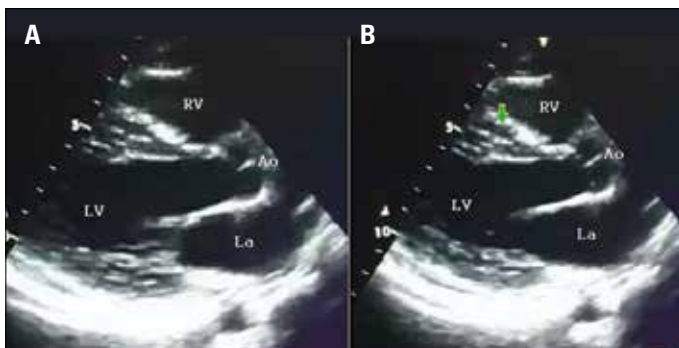


## An intramyocardial ‘cyst-like’ mass: Complementary role of multimodality imaging

A 28-year-old female who had been diagnosed with Kawasaki disease at the age of 5, presented to our clinic with the complaint of shortness of breath on exertion. The ECG showed 0.5 mm ST depression and negative T waves in V2-V4 derivations (Fig. 1). Two-dimensional transthoracic echocardiography revealed normal left ventricle dimensions with an ejection fraction of 60%. There was a unilocular, cystic, hypo-intense, sharply marginated mass measuring 23x15 mm in the interventricular septum (Fig. 2). A cardiac MRI demonstrated a cystic massive structure of approximately 27x17 mm in dimensions with no contrast uptake (Fig. 3). The patient underwent open heart surgery, which showed a large diameter circumflex artery merging with an aneurysmatic vascular structure penetrating into the myocardium along the left anterior descendant (LAD) artery trace of the anterior cardiac surface through apex. An arteriotomy was performed in a small area of the aneurysmatic vascular structure, and the arterial wall was resected about 4x4 mm for pathological analysis. Microscopic examination showed fibrosis, reactive proliferative and infiltrative changes in the vascular section, and advanced coronary vasculitis (Fig. 4). Coronary angiography could not be performed because of patient refusal. In order to identify the coronary anatomy, a multidetector-row computed tomography. Volume rendering images showed that the distal segment of LAD took course inside the interventricular septum, the circumflex artery ran down towards the apex on the anterolateral wall of the left



**Figure 1.** Electrocardiogram showing ST depression and negative T waves in V2-V4 leads



**Figure 2.** Two dimensional transthoracic echocardiogram (A and B) Parasternal long-axis views. Note the unilocular, cystic, hypo-intense, sharply marginated mass (yellow arrow) in the area of middle interventricular septum

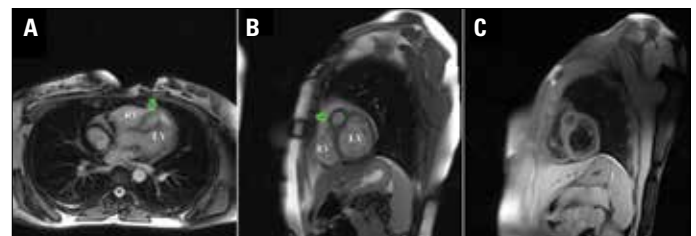
Ao - aorta; LA - left atrium; LV - left ventricle; RA - right atrium; RV - right ventricle

ventricle after leaving the left main coronary artery, and following bifurcation at the apex united again after a short course; later dividing into two branches. One ran down to the interventricular groove, and the other penetrated into the interventricular septum; resulting in an intraseptal thrombosed aneurysmatic segment of 22 x 33 x 46 mm. There were also small branches reaching this aneurysmatic segment from the intraseptal portion of the LAD (Fig. 5). The patient was started on an anti-ischemic treatment protocol upon discharge.

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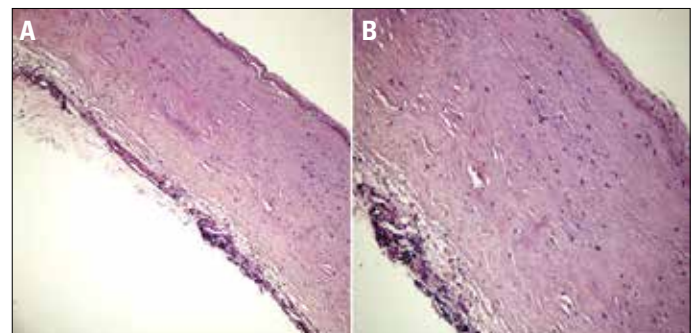
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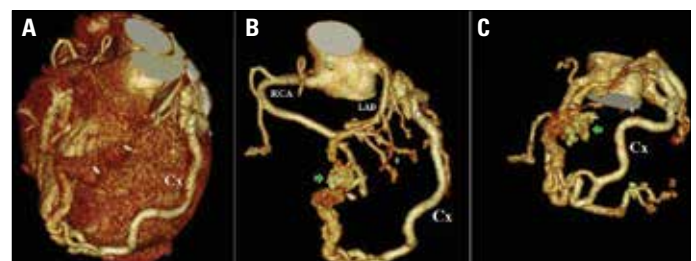


**Figure 3.** Cardiac MR images of a cyst-like mass (yellow arrows) in the interventricular septum. (A) Axial view. (B and C) Sagittal views

LV - left ventricle; RV - right ventricle

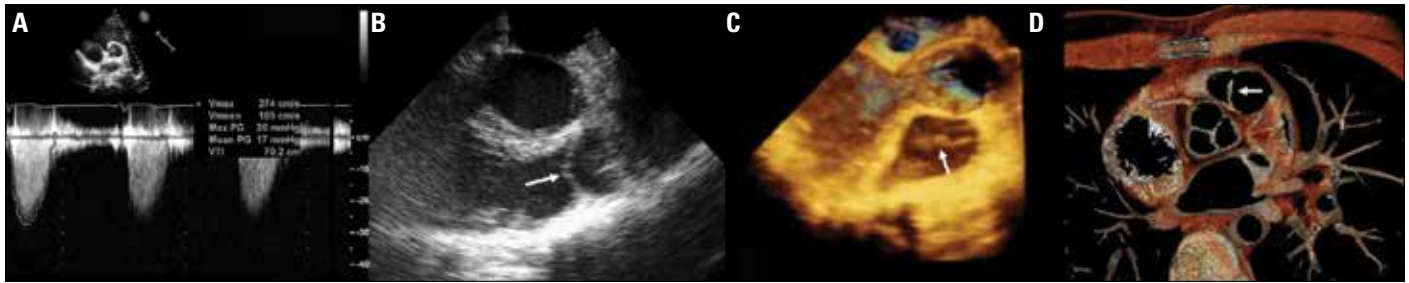


**Figure 4.** Histopathologic examination of the sample showed: (A) evidence of fibroplasia which destroys smooth muscle cells and elastic fibers in the arterial wall to a great extent, and coronary arteritis characterized with inflammatory infiltration around vasa vasorum in the adventitia (H&Ex100); (B) significant fibrotic change consistent with evidence of advanced vasculitis which destroys normal medial structure in the arterial wall, myxomatous degeneration in the connective tissue matrix, and lymphocytic infiltration, very rarely in the intima and medial, and in small groups around the vasa vasorum in the adventitia (H&E x200)



**Figure 5.** MDCT images (A-C) of thrombosed giant aneurysmatic segment of the circumflex artery (yellow arrows)

Cx - circumflex artery; LAD - left anterior descending artery; RCA - right coronary artery



**Figure 1. A-D. 2D TTE short-axis view revealed a peak pressure gradient over the right ventricular outflow tract of 30 mm Hg (Fig. 1A). 2D TEE short-axis view demonstrated bicuspid pulmonary valve (Fig. 1B and Video 1A, arrow). 3D TEE full-volume acquisition also showed bicuspid pulmonary valve (Fig. 1C and Video 1B, arrow). Transverse view of colored 3D volume-rendered CT angiography also demonstrated bicuspid pulmonary valve (Fig. 1D, arrow)**

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## Multimodality imaging of isolated bicuspid pulmonary valve leading to pulmonary stenosis 🎥

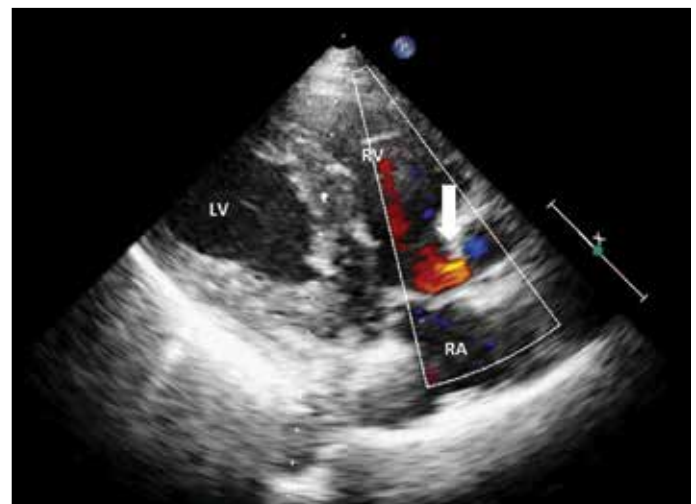
Isolated bicuspid pulmonary valve is a rare arterial valve anomaly with very few reports in the literature. It is usually in association with other congenital cardiac lesions. However, the true incidence of bicuspid pulmonary valve could be underestimated because of the difficulty in imaging pulmonary valve morphology with conventional two-dimensional transthoracic echocardiography.

A 21-year-old man was admitted to our outpatient clinic for routine evaluation. Pansystolic murmur was heard on the left second intercostal space. The electrocardiogram showed normal sinus rhythm. The two-dimensional transthoracic echocardiography short-axis view revealed a peak pressure gradient over the right ventricular outflow tract of 30 mm Hg (Fig. 1A). The two-dimensional transesophageal echocardiography short-axis view demonstrated a bicuspid pulmonary valve (Fig. 1B and Video 1A, arrow). Three-dimensional transesophageal echocardiography full-volume acquisition also showed a bicuspid pulmonary valve (Fig. 1C and Video 1B, arrow). To clarify this pathology, we performed computed tomography (CT). The transverse view of colored three-dimensional volume-rendered CT angiography images also demonstrated a bicuspid pulmonary valve (Fig. 1D, arrow). We report here a case of isolated bicuspid pulmonary valve leading to pulmonary stenosis. There is difficulty in imaging pulmonary valve morphology. For this reason, the full spectrum of non-invasive cardiac imaging modalities should be performed in the diagnosis of bicuspid pulmonary valve. Multimodality imaging can help to diagnose this condition better.

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## Coronary-cameral fistula in an asymptomatic adult patient

The average frequency of coronary-cameral communication (CCC) is 0.09% in the population who undergoes coronary angiography. In addition, coronary-cameral fistula (CCF) constitutes 10% of all CCCs. CCF is probably very rare in adult patients, because the majority of them is detected and treated during childhood. Hereby, we present an asymptomatic adult patient with CCF who was diagnosed incidentally during a pre-operative cardiovascular examination for non-cardiac surgery. A 45-year-old female patient was referred to our outpatient clinic for a cardiovascular examination before an elective abdominal surgery. In her medical history, she had no cardiovascular symptoms. Physical examination revealed 1-2/6 apical systolic murmur.



**Figure 1. Color flow Doppler jet of fistula at RV entrance**