A 65-year-old man was admitted to his local hospital with troponin-positive acute coronary syndrome. The patient developed signs of acute heart failure and was immediately transferred to our center.

Echocardiography demonstrated a pericardial mass (8×5 cm) with compression of the right atrium (Figure 1 and online-only Data Supplement Movie I) and a reduced contractility of the posterior left ventricular wall. Magnetic resonance imaging demonstrated a pericardial hematoma that was incompressible, not vascularized, and impinging on the right atrium (Figure 2 and online-only Data Supplement Movie II).

Coronary angiography revealed 2-vessel coronary disease with 70% stenosis of the ramus circumflexus and subtotal stenosis of the right coronary artery. Surprisingly, the contrast agent squirted out of a ventricular side branch of the right coronary artery, indicating a spontaneous coronary artery rupture with consecutive pericardial contrast depot (Figures 3 and 4 and online-only Data Supplement Movies III and IV).

Hemodynamic evaluation showed a mean right atrial pressure of 11 mm Hg.

On the basis of these findings, a cardiac operation was performed with evacuation of the pericardial hematoma and bypass grafting. The pericardium was opened and found to be obliterated with coagulated blood, but no continuous bleeding was found around the right coronary artery.

Spontaneous coronary artery rupture without any known underlying condition (eg, Kawasaki’s disease, trauma, or coronary artery dissection) is a very rare disorder and might be underreported because acute bleeding in the pericardium is often lethal and thus not recognized.1,2

If coronary angiography is performed and the bleeding source can be identified, the coronary vessel might be treated with a coated stent.3 However, pericardial drainage or surgical intervention must be performed in acute hemopericardium with cardiac tamponade.4

In patients presenting with acute coronary syndrome and cardiac tamponade, acute spontaneous coronary artery rupture is a possible diagnosis.

Disclosures

None.

References


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The online-only Data Supplement, consisting of Movies 1 through IV, can be found with this article at http://circ.ahajournals.org/cgi/content/full/116/16/e383/DC1.

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Figure 1. Echocardiographic 4-chamber view with pericardial mass (arrow) compressing the right atrium (RA) (see online-only Data Supplement Movie I). LV indicates left ventricle; RV, right ventricle; and LA, left atrium.

Figure 2. Magnetic resonance imaging (1.5 T; transversal 4-chamber view; dark blood technique) demonstrated a pericardial hematoma that was incompressible, not vascularized, and compressing the right atrium (RA; see online-only Data Supplement Movie II). RA indicates right atrium; RV, right ventricle; LV, left ventricle; and LA, left atrium.

Figure 3. Coronary angiography showing a subtotal stenosis of the right coronary artery. The contrast agent squirted out of a right ventricular side branch (arrow) of the right coronary artery as a sign of a spontaneous coronary artery rupture (see online-only Data Supplement Movie III).

Figure 4. Coronary artery rupture and consecutive pericardial contrast agent depot (see online-only Data Supplement Movie IV).
Pericardial Effusion With Beginning Cardiac Tamponade Caused by a Spontaneous Coronary Artery Rupture

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