A case of constrictive pericarditis due to angiosarcoma mimicking acute ST elevation myocardial infarction

Constrictive pericarditis (CP) is a very rare condition, and its etiology is most commonly idiopathic. Cardiac angiosarcoma (AS) is an exceptional tumor of heart but is the most common primary cardiac malignant tumor in adults.

A 38-year-old male was referred to our clinic for substernal chest pain and dyspnea for the last 3 months. He had developed these symptoms after a severe upper respiratory tract infection. Physical examination revealed jugular venous distention, pericardial knock, hepatomegaly, and +1 pitting pretibial edema. His ECG showed newly developed ST segment elevation on V1-6 (Fig. 1) consistent with anterior myocardial infarction. Subsequent coronary angiography was normal (Fig. 2). Echocardiography showed thickened pericardium (Fig. 3), septal bounce (Video1, 2), and ≥25% increase in mitral E velocity during expiration (Fig. 4).

Figure 1. ECG showed acute anterior myocardial infarction

Figure 2. (a) RAO caudal view showed normal LAD and Cx. (b) LAO view showed normal RCA

Figure 3. Parasternal long axis view showed thickened pericardium

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Figure 4. Doppler echocardiography revealed ≥25% increase in mitral E velocity during expiration (arrow showed expirium, spike showed inspirium)

Figure 5. Tissue Doppler examination revealed annulusus paradoxus (arrow showed E’ velocity of the lateral mitral annulus, spike showed E’ velocity of the septal mitral annulus)

Figure 6. Cardiac MRI demonstrate thickened pericardium
Tissue Doppler examination revealed the presence of anulusus paradoxus (Fig. 5). Cardiac MRI demonstrated thickened pericardium and septal bounce (Fig. 6). Cardiac catheterization revealed a preserved x descent, a prominent y descent (Fig. 7), and an exaggerated ventricular interaction (Fig. 8).

Pericardiectomy was performed, and screening procedures for tuberculosis, viral-bacterial or fungal infections, vasculitis, and connective tissue disease revealed negative results. Pathological examination of pericardiectomy preparates showed spindle-shaped cells, which was consistent with angiosarcoma (Fig. 9). PET-CT showed increased metabolic activity on pericardial surface (Fig. 10).

CP is a rare disease and is the end stage of an inflammatory process involving the pericardium. Primary cardiac AS is exceptional tumor. Pericardium involvement may be seen in cardiac AS; however, there is no literature regarding CP. To our knowledge, this case is the first presentation of CP due to cardiac AS.

**Video 1.** Parasternal short-axis view showed septal bounce.
**Video 2.** Apical four-chamber view showed septal bounce.

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