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Dramatical Response to "Low Dose Ultra-Slow Infusion" of Alteplase for Massive Mitral Mechanical Valve Thrombosis

A 65-year-old male patient who has a high cardiovascular risk (prior coronary artery bypass graft plus mitral valve replacement operation and pre-existing ICD with heart failure) was hospitalized due to massive thrombosis in the mitral mechanical valve position. He was hemodynamically stable. Thrombus measured 18 × 10 mm diameter by transthoracic echocardiography (TTE) and caused mechanical valve dysfunction (with 30 mm Hg peak and 18 mm Hg gradients and restricted valve opening). Transesophageal echocardiography was performed and revealed semi-mobile massive thrombus formations in the mitral valve position—28 × 18 mm in the anterior leaflet and 14 × 10 mm in the posterior leaflet (Figure 1) (Videos 1, 2). After the heart team meeting, it was decided that "ultra-slow low-dose" fibrinolytic infusion is the most suitable treatment option for the patient. After initiation of fibrinolytic infusion, at the 13th hour, a temporary ischemic cerebrovascular event occurred. Control TTE did not differ significantly from the baseline. Fibrinolytic infusion was continued. At the end of the infusion at the 25th hour, the control TTE revealed 9/5 mm Hg gradients from the mitral valve without any thrombus formation. Immediately afterward, it was observed that the thrombus formations were dissolved entirely in control TEE (Figure 2) (Videos 3, 4). The neurological symptoms also had completely disappeared.

Prosthetic valve thrombosis is a mortal situation. In this report, we demonstrate the success of "ultra-slow, low-dose" fibrinolytic therapy, especially in patients with high surgical risk. This regimen can be lifesaving in some situations and should be kept in mind as an alternative treatment option.[1]

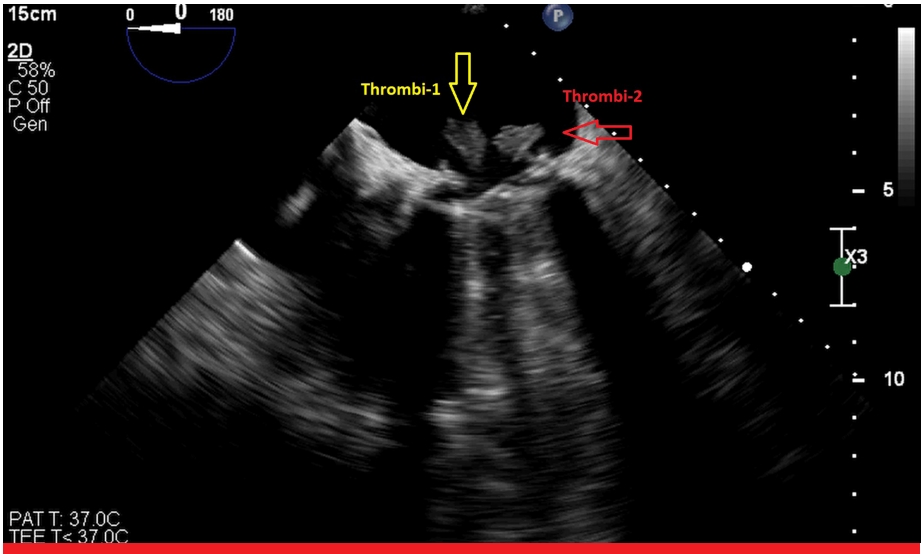

Figure 1. Views of thrombus formations in mechanical mitral valve position by transesophageal echocardiography.

E-PAGE ORIGINAL IMAGE

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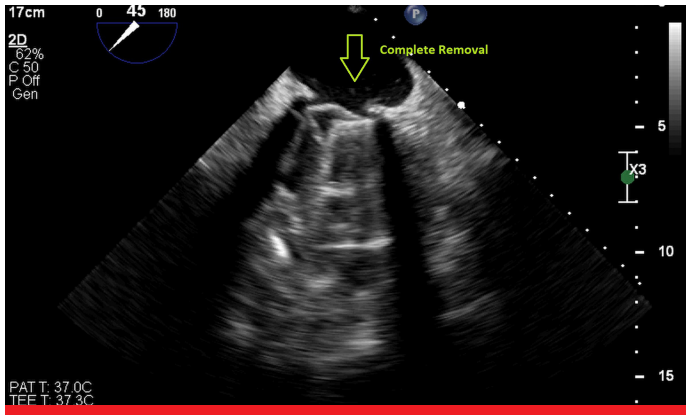

Figure 2. Views of complete removal of thrombus formations in mechanical mitral valve position by transesophageal echocardiography.

Informed Consent: Written informed consent to publication was obtained from the patient.

Videos 1, 2: Thrombus formation in mechanical mitral valve position.

Videos 3, 4: Complete resolution of thrombus formations in mechanical mitral valve position after ultra-slow low-dose alteplase infusion.

REFERENCE

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