Urgent surgical removal of a large mobile left ventricular thrombus following systemic embolism in a patient refusing blood transfusion

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A 65-year-old man with known ischemic cardiomyopathy (previous myocardial infarction 8 years earlier) was referred to our hospital for cardiologic evaluation after the embolic occlusion of the right common iliac artery treated with thrombectomy. Resting electrocardiogram showed left ventricular hypertrophy and conduction abnormalities, namely, left anterior hemiblock. Transthoracic echocardiography showed severe left ventricular dysfunction (ejection fraction, 26%) of a mildly dilated left ventricle (LV) (LV end-diastolic volume index, 58 ml/m²; LV end-systolic volume index, 42 ml/m²) with extensive wall motion abnormalities, including akinetic aneurysm of the apical part of the LV. Additionally, transthoracic echocardiography revealed a large, highly mobile mass inside the LV cavity, most likely a thrombus, measuring 53 mm × 27 mm × 25 mm (FIGURE 1A and 1B). As confirmed by 3-dimensional transthoracic high-definition live imaging (FIGURE 1C), the mass was suspended on a 5-mm-long thread-like stalk (FIGURE 1D) attached to the aneurysmatic LV apex. Considering the size, mobility, and location of the mass as well as recent embolic complications,
FIGURE 1
As confirmed by 3-dimensional transthoracic high-definition live imaging (C), the mass (arrows) was suspended on a 5-mm-long thread-like stalk (D) attached to the aneurysmatic left ventricular apex; E – surgical mass removal; F, G – control echocardiogram at discharge showing a slight improvement of left ventricular function with an ejection fraction of 32%, and no residual masses inside the left ventricle.
Abbreviations: LA, left atrium; LV, left ventricle.
an initial 5-day treatment with heparin infusion was attempted, as the patient refused blood transfusion due to religious beliefs. The mass was resistant to anticoagulation without apparent size reduction. As the mass was suspended on a thread-like stalk and was highly mobile, we considered prolonged anticoagulant treatment to be very risky and likely ineffective. Therefore, considering life-threatening embolic potential, surgical mass removal was accepted by the patient, notwithstanding his continued denial of blood product transfusion. As religious objection to transfusion is strictly respected in our center and worldwide, no specific strategy (except for volume replacement) was developed in case severe bleeding would occur, and together with a surgical team we considered it as an unmodifiable factor challenging our skills.

Under cardiopulmonary bypass, an incision was made on the aneurysmatic LV apex. The mass was carefully detached and completely removed (Figure 1E), and moreover, the LV wall was closed by the Dor procedure to treat the LV aneurysm. Because of religious beliefs, no blood or blood products were transfused to the patient. The patient’s postoperative course was uneventful with rapid recovery. The removed mass presentation was fully consistent with transthoracic 2- and 3-dimensional findings, and histopathology confirmed a thrombus. A control echocardiogram at discharge 6 days later revealed a slight improvement of LV function with LV ejection fraction of 32%, and no residual masses inside the LV were seen (Figure 1F and 1G). Our case illustrates uncommon surgical strategy for treatment of LV thrombus that was successful despite procedural limitations resulting from religious objection to transfusion.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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