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CASE IMAGE IN CARDIOVASCULAR ULTRASOUND

Dramatic changes before and after anticoagulation for giant thrombus in the left ventricle complicated by nonischemic cardiomyopathy

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A 53-year-old man diagnosed before as idiopathic dilated cardiomyopathy without significant stenosis on coronary angiography was hospitalized for congestive heart failure with nocturnal paroxysmal dyspnea. Transthoracic echocardiography (TTE) on admission showed an enlarged left ventricle and diffusely reduced wall motion with left ventricular (LV) ejection fraction of 18%. In addition, a huge, immobile, massive mural thrombus with long diameter of 52 mm and thickness of 9 mm was observed from the middle of the LV anterior septum to the apex of the heart (Panel A-1 and -2, blue arrows). The patient had no congenital coagulopathy, no history of atrial fibrillation, and was always in sinus rhythm. In TTE 8 days after initiation of anticoagulation with intravenous heparin, only a portion of the thrombus adhered to LV apex and the most of it was floating in the left ventricle (Panel B-1 and -2, yellow arrows). Concerned about severe arterial embolism, an emergent cardiac surgical thrombectomy was scheduled, which surprisingly vanished at TTE just before the planned surgery. The movie clip (Electronic supplementary material) shows dramatic changes in thrombus before and after anticoagulant therapy and just before the surgery. Fortunately, the patient was asymptomatic, but multiple cerebral embolisms were observed on brain MRI (Panel C-1 and -2, white circles).

LV thrombi occur predominantly after ischemic events and are caused by hypercoagulable conditions including stagnation of blood flow, intimal damage, inflammatory. Thrombosis also occurs in patients with nonischemic cardiomyopathy due to abnormal coagulation factors, stasis of blood flow for congestive heart failure, and endothelial damage caused by hypoxia [1]. A recent article summarizing LV thrombus reported that approximately 15% of patients with LV thrombus have nonischemic cardiomyopathy, that most thrombi occur at the apex, and that approximately 35% are mobile [2]. The treatment of LV thrombus is immediate initiation of anticoagulation, with a minimum of 3–6 months of continued warfarin therapy recommended, although the optimal duration of anticoagulation is not clearly defined. However, in cases of extreme mobility or resistance to anticoagulation, surgical removal should be considered [3]. In general, patients whose thrombus has resolved have a better prognosis than those whose thrombus remains, but as in this case, there may be hidden cases in which the thrombus has actually simply detached from the left ventricle that appears to have dissolved Fig. 1.

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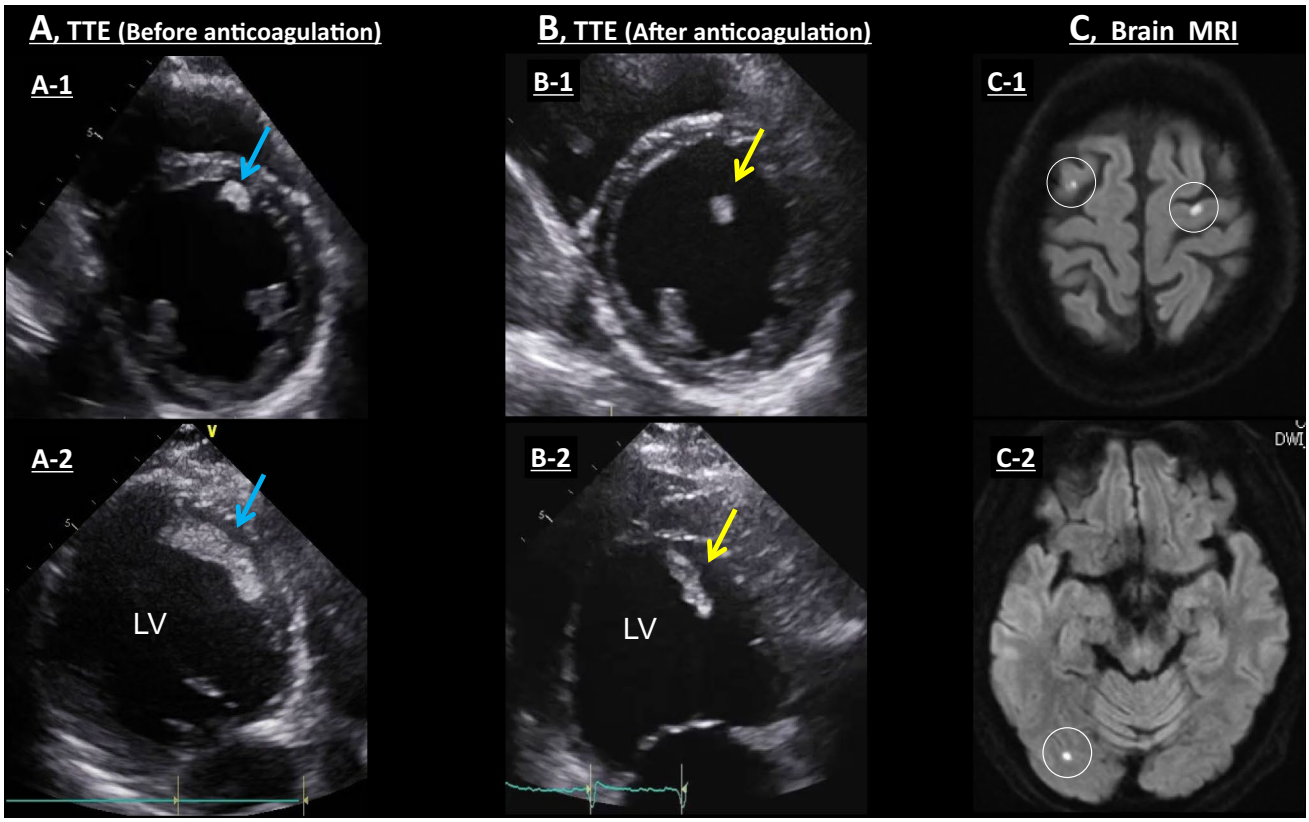

Fig. 1 Panel A-C: Transthoracic echocardiographic changes and brain MRI findings

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s12574-023-00610-2.

Data availability Anyone can access and use the all data about this case at any time.

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