



Case report

Complete resolution of huge left ventricular thrombus with apixaban treatment



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ABSTRACT

A 70-year-old male patient was admitted to our Cardiology Department because of shortness of breath. An intravenous furosemide infusion showed that volume load had been decreased. A transthoracic echocardiography was performed after the patient was able to lie in the supine position. The ejection fraction was 25%, and there was moderate mitral regurgitation. The end diastolic diameter was 60 mm, and a 4 × 3 cm apical thrombus was detected. Surgical removal of the apical thrombus was not considered because of the high risk of the procedure. IV thrombolytic treatment was suggested, but the patient rejected this approach due to the risks associated with thrombolytic resolution of the thrombus. Warfarin treatment had not been started because the patient was unable to come to INR (international normalized ratio) follow-up. The patient was discharged from the hospital with a prescription, including apixaban 2 × 5 mg, metoprolol 1 × 50 mg, ramipril 1 × 2.5 mg and spironolactone/hydrochlorothiazide 1 × 25 mg. Complete disappearance of thrombus was observed on transthoracic echocardiography approximately one month later when the patient came in for polyclinic control. He had no active cardiac symptoms, and his functional capacity was I.

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Introduction

Left ventricular (LV) thrombus is usually observed in dilated cardiomyopathy (CMP) and LV aneurysms.¹ Anticoagulant treatment is recommended to reduce embolization risk.² New oral anticoagulants (NOACs) were found to be satisfactory compared to warfarin for preventing thromboembolic disorders with non-valvular atrial fibrillation.² Nevertheless, we have very little data about apixaban treatment to resolve LV thrombus.

Case report

A 70-year-old male patient with a history of smoking was admitted to our cardiology department due to shortness of breath. He complained about difficulty breathing for two months. His functional capacity was III. The ECG was in atrial fibrillation rhythm. In his initial evaluation, the consecutive two troponin levels were lower than the upper reference limit. There was bilateral pleural effusion in a chest X-ray, and the cardiothoracic index was elevated. An intravenous (IV) furosemide infusion showed that volume load had been decreased. Transthoracic echocardiography (ECHO) was performed after the patient was able to lie in a

supine position. In his transthoracic ECHO, we detected severe global hypokinesia with an LV ejection fraction of 25%, moderate mitral regurgitation and a 4 × 3 cm thrombus in the LV. The end diastolic diameter was 60 mm (Dilated CMP) (Fig. 1). Surgical removal of the apical thrombus was not considered because of the high risk of the procedure. IV thrombolytic treatment was suggested, but the patient rejected this offer due to the risks of thrombolytic resolution of the thrombus. Warfarin treatment had not been initiated because the patient was unable to come to an INR follow-up. The patient was discharged from the hospital with a prescription including apixaban 2 × 5 mg tablet (tb), metoprolol 1 × 50 mg tb, ramipril 1 × 2.5 mg tb and spironolactone/hydrochlorothiazide 1 × 25 mg tb. Complete disappearance of the thrombus was observed on transthoracic ECHO one month later when the patient came for polyclinic control (Fig. 2). We performed coronary angiography on the patient because of the depressed ejection fraction. He had no flow-limiting stenosis on his coronary angiogram. He had no active cardiac symptoms, and his functional capacity was I.

Discussion

We believed this apical mass was a thrombus because the patient had no anti-thrombotic therapy, his ECG was in atrial fibrillation rhythm and he had dilated CMP that created a tendency for thrombosis. In this report, we treated LV thrombus with apixaban successfully. LV thrombus resolution with warfarin therapy was demonstrated in previous studies.³ The role of NOACs in reducing thromboembolic risk in

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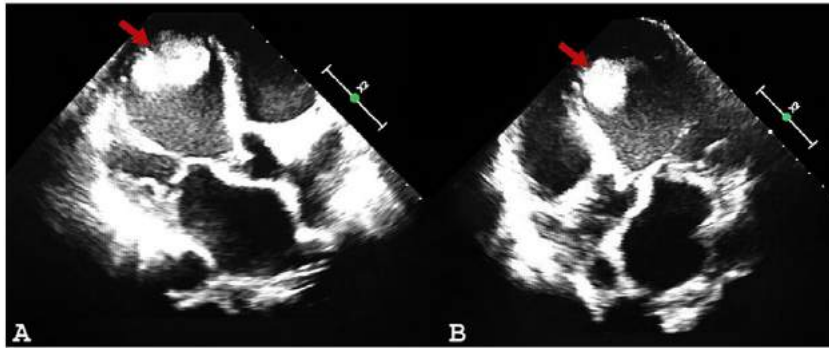


Fig. 1. Before apixaban treatment.

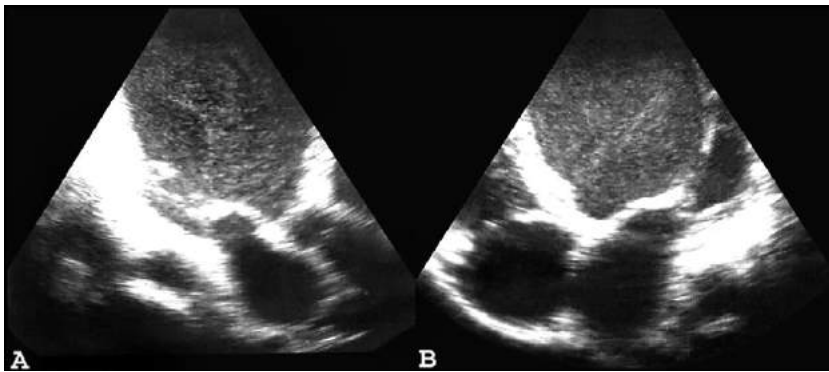


Fig. 2. After apixaban treatment.

patients with LV mural thrombus needs to be clarified. Vitamin K antagonists have many limitations, such as the slow onset of action, dietary restrictions and a need for dose adjustments.⁴ NOACs do not have these types of limitations and may also reduce the risk of hemorrhagic stroke.⁴ Apixaban has been shown to have superior efficacy for treating systemic embolism, reducing stroke and all causes of mortality compared to warfarin.⁵ We could not start warfarin with this patient because he was unable to come to an INR follow-up. Therefore, we started apixaban 5 mg 2×1 tb, and then one month later, the LV thrombus was found to be completely resolved. There are several limitations to the use of NOACs. Careful use in elderly and patients with renal impairment is recommended.⁶ The data are scant regarding the use of NOACs in pregnant women, pediatric patients and patients with valvular disease.⁶ For apixaban, the absence of approved antidotes in the case of life-threatening hemorrhage or surgery is another limitation for its use.⁷ This case report showed that LV thrombus can be completely resolved by apixaban treatment. However, randomized clinical trials are needed to elucidate and confirm the use of NOACs as an alternative to warfarin.

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