Thrombectomy for Left Ventricular Protruding Thrombi in a Patient with Dilated Cardiomyopathy

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SUMMARY
Left ventricular thrombus is one source of cardiogenic embolism. The protruding, mobile type is the highest risk subgroup but is rarely encountered. Thrombectomy is one choice of therapy, and variously recommended based primarily on the experience with myocardial infarction. We report a rare case of successful left ventricular thrombectomy for two protruding, mobile thrombi in a patient with idiopathic dilated cardiomyopathy in order to prevent repeat embolization. (Jpn Heart J 1997; 38: 531-534)

Key words: Idiopathic dilated cardiomyopathy, Left ventricular thrombus, Thrombectomy

THROMBI occur most commonly in the left ventricle following an acute anterior transmural myocardial infarction; in association with a discrete aneurysm; and in patients with dilated cardiomyopathy. Pedunculated thrombi that are mobile within the ventricular cavity are comparatively rare. Optimal therapeutic strategies remain undefined even in patients at high risk for embolization. We report a successful left ventricular thrombectomy in a patient with idiopathic dilated cardiomyopathy and systemic embolization.

CASE REPORT

A 42-year-old male complained of exertional dyspnea, general malaise, abdominal fullness and nocturnal cough intermittently for 2 years. He developed left hemiplegia the day before admission. On arrival he was in sinus rhythm. His heart sounds were normal. No murmurs were heard. Two-dimensional
Echocardiography demonstrated a dilated left ventricle with impaired contractility (ejection fraction 38%) but without regional wall motion anomaly. Two pedunculated, mobile, irregular thrombi were found, one at the left ventricular apex and the other at the lateral wall (Figure). Surgery was advised given that the mobile thrombi posed a high risk for recurrent systemic emboli. At surgery, two thrombi measuring $3 \times 3 \times 2$ cm and $2 \times 2 \times 1$ cm were found. The postoperative course was uneventful and the patient was discharged on warfarin therapy. He has remained free of recurrence of emboli or reappearance of left ventricular thrombi over a series of follow up echocardiographic examinations.
DISCUSSION

Left ventricular thrombus is not uncommon in patients with myocardial infarction, ventricular aneurysm or dilated cardiomyopathy. The presence of left ventricular thrombi is associated with an increased risk of systemic embolization, thereby increasing morbidity and mortality. The therapeutic options for such emboli included antithrombosis, anticoagulation, thrombolysis, or surgical removal of the thrombus.¹) Protruding, mobile left ventricular thrombi are the highest risk subgroup for embolization.²) Partial detachment of a poorly organized mural thrombus is the likely mechanism, with layering of the thrombus over a small area an alternate possibility.³,⁴) Protruding thrombi are associated with embolization in 56% of patients, whereas flat thrombi in only 13%.²) Thrombus mobility increases the risk of systemic embolism to 83%.⁵)

Optimum therapy remains to be clarified and is previously based on limited experience in patients with myocardial infarction, not with dilated cardiomyopathy. Antithrombotic therapy is indicated in all patients with idiopathic dilated cardiomyopathy regardless of the presence or absence of left ventricular mural thrombi.⁵) Conventional anticoagulation with heparin and warfarin have been shown to reduce the progression of left ventricular thrombi and may have a similar effect on the pedunculated variety.¹,⁵,⁶) Thrombolytic therapy is a valid option for patients in whom a recent cardiac event (less than four weeks) was responsible for the thrombosis, but it may increase the likelihood of embolization.⁷,⁸)

Thrombectomy following acute myocardial infarction complicated by thrombosis is a well recognized approach,²-⁴,⁹) but to the best of our knowledge, there have been few case reports⁹,¹⁰) addressing the role of thrombectomy to prevent embolization in patients with idiopathic dilated cardiomyopathy.¹⁰) The outcome of conservative treatment for patients with recurrent emboli and mobile, pedunculated thrombi is generally very poor compared to that of surgical treatment. Recurrence of thrombosis and embolism following surgical thrombectomy and subsequent anticoagulation therapy is rare after myocardial infarction, having been reported in only one patient.⁹) The risk of surgical thrombectomy includes a rate of 1% mortality, but that is largely dependent on the severity of the associated coronary disease and the extent of left ventricular dysfunction with acute myocardial infarction.⁹) The decision to treat our patient by thrombectomy was made because of his recent stroke, the presence of two large protruding mobile thrombi, and the patient’s relatively young age. The postoperative course was uneventful and he has done well on maintenance warfarin therapy.

Based on our results, we believe that early thrombectomy should be considered for protruding and mobile left ventricular thrombi in idiopathic dilated
cardiomyopathy with episodes of embolism despite limited previous reports.\textsuperscript{10,11)

REFERENCES