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Case Report
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Surgical Treatment of Left Ventricular Thrombus Without Cardiac Disease

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Abstract

Intracardiac thrombus has high risk of embolic complications and is a life-threatening disease. Here in we reported a surgical removal of the left ventricular thrombus of a 57-year-old male without previous heart disease.

Keywords: Embolisation; Left ventricular thrombus; Thrombectomy

Introduction

Thromboembolic events (mostly cerebrovascular accidents) are the most dangerous complication of Left Ventricular (LV) thrombus formation. Mobile and protruding (projecting predominantly into the LV cavity) thrombi has higher rate of embolisation [1].

Virchow's triad, (blood stasis, endothelial injury and hypercoagulability) is necessary for in vivo thrombus formation which is formed of fibrin, red blood cells, and platelets. Surgical thrombectomy is a treatment option in patients with severe LV dysfunction and mobile and protruding LV thrombi. We describe a surgical removal of the LV thrombus of a 57-year-old male with chronic lymphocyctic leukemia.

Case Report

A 57-year-old male with chronic lymphocyctic leukemia,was admitted to cardiology clinic for the investigation of the cause of stroke. Transthoracic echocardiography demonstrated a LV apical thrombus (4 × 4 cm) and an ejection fraction of 55%. There was no history of a previous heart disease. He has chronic lymphocyctic leukemia, He underwent cardiac catheterization immediately after admission. Coronary angiogram showed no significant stenosis in the coronary arteries.

A contrast-enhanced tomography also revealed a hypodense soft tissue density of 4 cm in the left ventricle without contrast enhancement (Figure 1).

Surgical removal of the thrombus was performed because of its mobile formation (Figure 2-3). Surgery and the postoperative course were uneventful and he was discharged on postoperative day 6. Oral anticoagulation was initiated post-operatively (INR 2–3) for preventing new thrombotic events.

Discussion

LV thrombus may occur after myocardial infarction, and may be with wall motion abnormalities

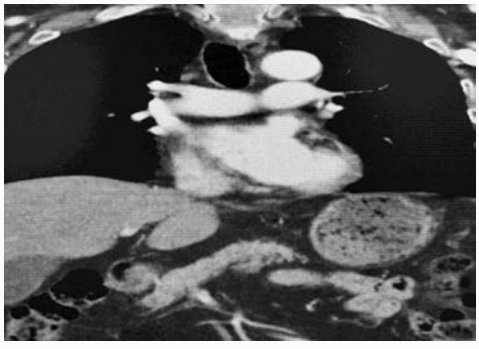

Figure 1: A CT tomography showing a hypodense soft tissue.

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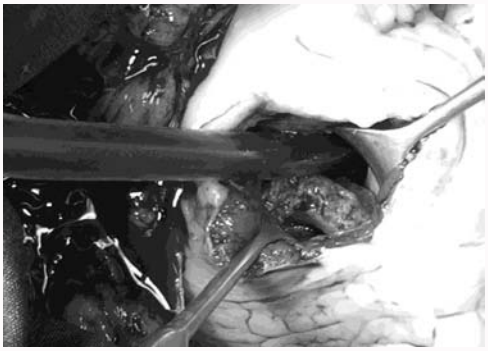

Figure 2: An open view of thrombus in left ventricle.

Figure 3: Thrombus.

like dilated cardiomyopathy, myocarditis and takotsubo cardiomyopathy, protein S and C deficiency and antiphospholipid syndrome, muscular dystrophies, Behcet's disease, Loeffler's endocardial fibrosis and blunt chest trauma [2].

LV thrombus carries a high risk of peripheral embolisation. Embolisation risk is higher in cases with mobile and protruding thrombi, (annual risk of 1.4% to 12%) [1].

Severe congestive heart failure, diffuse LV dilatation and systolic dysfunction, previous embolisation atrial fibrillation, and advanced patient age are the other conditions which increase systemic embolisation risk [3].

Contrast-enhanced magnetic resonance imaging, transthoracic echocardiography and transoesophageal echocardiography are the detection methods.

Thrombus location is approximately 11% occurs at the septal wall and 3% at the inferoposterior wall and generally apically [4]. In our patient it was placed apically too.

There is no standardized treatment for the treatment of LV thrombi. Surgical thrombectomy, treatment with low molecular weight or Unfractionated Heparin (UFH), argatroban, oral anticoagulation therapy and thrombolysis are the choises [2]. We choosed surgery because of the mobile form of thrombi and the history of the stroke.

Meurin et al reported that 73 % of thrombi dissolved with low molecular weight heparin [5]. Niedeggen et al reported complete resolution with argatroban [6]. In 57.1% patients successful lysis was described by Sari et al [7].

There are reported systemic embolic and high hemorrhagic events after treatment with fibrinolytics [8].

Nili et al. [9] reported no embolization after surgical treatment in 4 patients. Lee et al. [10] reported the difference between outcomes after anticoagulation, surgical removal, and antiplatelet agents. They could not found a statistically significant difference in event-free survival rate.

Conclusion

Embolisation and bleeding risk must be taken into account when a thrombus detected. So in patients with mobile and protruding thrombi surgical thrombectomy , a pharmacological treatment in patients with non-protruding and immobile thrombi can be thought Surgery could be done without delay because of the high risk of systemic embolism.

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