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Case Report

Large right atrial clot presenting as acute pulmonary thromboembolism in a case of rheumatic mitral stenosis after PTMC



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ABSTRACT

Acute pulmonary embolism is a potentially fatal disease associated with a number of cardiac and non-cardiac predisposing factors. The association of rheumatic mitral valvular with right atrial thrombus in the absence of right ventricle dysfunction is extremely rare but is a possibility and a crucial differential diagnosis which needs to be kept in mind in a patient presenting with acute worsening of dyspnoea. Here we are presenting a case of a 37 year old female with severe rheumatic mitral stenosis in atrial fibrillation who presented to us with acute pulmonary thromboembolism with a large right atrial clot a month after she underwent a PTMC procedure. The patient had been on oral anticoagulation after the procedure and the INR was found to be therapeutic at the time of admission. The presence of a large right atrial clot was an unexpected finding in this case in the absence of right ventricular dysfunction and any other obvious pro-thrombotic predisposing factor except for atrial fibrillation. The occurrence of delayed right atrial thrombus may be related to instrumentation for septal puncture during PTMC for which the interventionists should be vigilant about in the immediate post-procedure period.

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1. Introduction

Rheumatic valvular heart diseases are still prevalent in undeveloped and developing countries. The most common arrhythmia in mitral valve disease is chronic atrial fibrillation; associated with increased frequency of embolic events. Most often there is systemic thromboembolism due to clot

formation in the left atrium. Rarely these patients can have an associated pulmonary thromboembolism but most often these cases are predisposed by right ventricular dysfunction or other systemic pro-thrombotic risk factors. Here we are reporting a case of Rheumatic mitral stenosis with permanent AF status post percutaneous trans-septal mitral commissurotomy (PTMC) performed a month ago presenting in emergency OPD as acute PTE and a large right atrial clot. The

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unique aspects of this case which make it unusual and merit further discussion are the fact that it occurred in a patient who had been on a therapeutic dose on anti-coagulation and had no evidence of deep venous thrombosis and had no other obvious pro-thrombotic risk factors and right ventricular dysfunction except for the presence of atrial fibrillation. Presence of a large right atrial thrombus is a rare entity which is seldom demonstrated before embolism or in some case after partial embolization, as was seen in this case.

2. Case report

A 37 year old young female underwent one month previously PTMC for rheumatic severe mitral stenosis with permanent AF presented to emergency department with complaints of sudden onset breathlessness (NYHA III) since two days. Her disproportionate breathlessness was not explainable by the presence of the residual mild mitral stenosis after the successful PTMC. Patient had been on ventricular rate controlling drugs and oral anticoagulation with INR in lower limit of the therapeutic range (2.2). On clinical examination the patient was found to be in atrial fibrillation with a ventricular rate of 110 beats per min at rest. Blood pressure was 110/70 mm of Hg. On cardiac examination the first heart sound was variable, the second heart sound was loud and a short mid-diastolic murmur was heard at the apex.

Biochemical tests showed a total white blood count of 11,000/dl, with 70% polymorphs, 27% lymphocytes, 2% monocytes and 1% basophils. Serum creatinine was 1.0 mg/dl. Transthoracic 2-D echocardiography showed mild mitral stenosis. Right atrium (RA) and ventricle was dilated and a large thrombus of size 8 cm × 4 cm (Figs. 1–3, Video 1–3) was noted in right atrium attached to roof of the RA. Trans-oesophageal echocardiography confirmed the presence of RA clot, while it also demonstrated that the left atrium and appendage were clean. In further workup computed tomographic (CT) pulmonary angio revealed thrombus in segmental right and left pulmonary artery. Deep venous thrombosis (DVT) was excluded with Doppler ultrasonography. The work up for pro thrombotic conditions in the form of APLA, protein C and S,

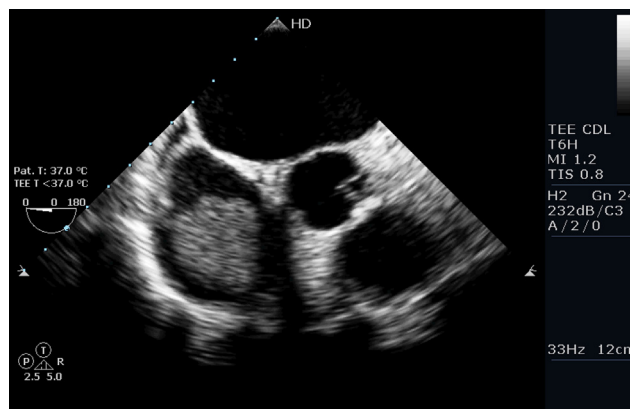


Fig. 2 – TEE images confirming the Right atrial clot at 0° view attached to roof.

homocysteine, connective tissue disorders and the presence of any malignancy was negative.

Supplementary video related to this article can be found at <http://dx.doi.org/10.1016/j.jicc.2014.11.002>.

The decision to not to thrombolyse for the RA clot was taken because lysis in such cases is controversial and can lead to acute clot embolization to the pulmonary arteries which can amount to sudden haemodynamic compromise and can be fatal. The patient was treated with low molecular weight heparin which was overlapped with oral warfarin as the previously present embolism had not caused haemodynamic compromise and there was no evidence of any RV dysfunction. The patient was kept in the hospital with a view that the patient could be taken for emergent surgical clot extraction as soon as haemodynamic compromise occurred or there were any other signs of clot embolization. The patient was kept in the hospital until it was demonstrated that there were signs of clot dissolution with anticoagulant therapy and there was no haemodynamic compromise. Patient responded well to treatment and was subsequently discharged on the eighth day. The patient was continued on oral anticoagulation

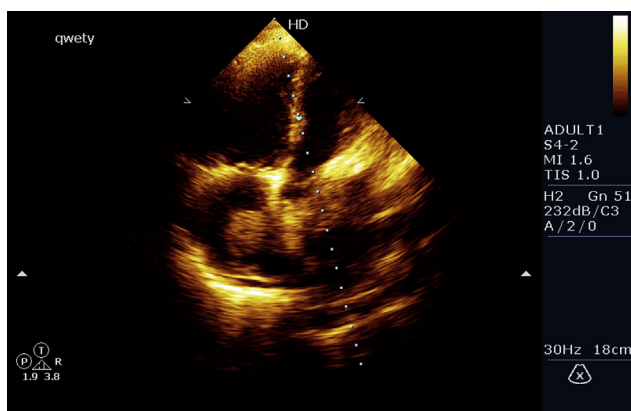


Fig. 1 – TTE Five chamber view showing a large mobile clot attached to right atrial roof.

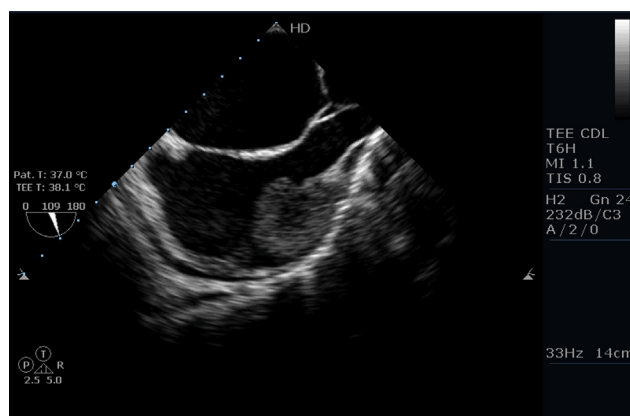


Fig. 3 – TEE image in bi-caval view demonstrating the presence of clot.

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