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Case Report

Therapeutic dilemma – Acute coronary syndrome in the presence of severe mitral stenosis



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ABSTRACT

Coronary artery embolism is an uncommon cause of myocardial infarction. Here we present a case of myocardial infarction in a patient with severe mitral stenosis who was in sinus rhythm at presentation. The patient had complete occlusion of right coronary artery. During percutaneous coronary intervention, because of large thrombus burden the patient developed distal embolism and guide catheter occlusion by the thrombotic material, which was managed successfully.

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1. Introduction

One of the rare causes for myocardial infarction is coronary embolism. Rheumatic mitral stenosis is one of the causes for coronary embolism and it can occur even in the absence of atrial fibrillation. We present a case of myocardial infarction due to coronary embolism in a patient with severe mitral stenosis who was in sinus rhythm at presentation. Various treatment options were tried in the past in the absence of definite guidelines. Our patient developed distal embolism and guide catheter occlusion by thrombotic material during percutaneous intervention, which was managed successfully.

2. Case report

A 48-year-old lady, with no conventional cardiac risk factors, presented with chest tightness. Clinical examination revealed normal jugular venous pressure, opening snap, loud first heart sound and grade 3/6 mid diastolic murmur. Electrocardiogram showed normal sinus rhythm, no left atrial enlargement or right ventricular hypertrophy with dynamic T wave changes in the inferolateral leads. Chest X-ray showed mild cardiomegaly with prominent left atrial appendage and no evidence of pulmonary venous hypertension. High sensitive Troponin T was elevated to 680 µg/L (<14 µg/L). A diagnosis of

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Learning points

Coronary artery embolism can occur in mitral stenosis with normal sinus rhythm. Paroxysmal atrial arrhythmia might be a mechanism for formation of thrombus in left atrium. There is no guideline available at present on the treatment for embolic coronary occlusion or highly thrombotic lesions; hence treatment is to be decided on individual case basis. The possibility of occlusion of the guide catheter with thrombus during thrombosuction while handling the lesions with large thrombus burden should be kept in mind. Patients with rheumatic mitral stenosis who are apparently in sinus rhythm need to be risk stratified for thromboembolic complications in view of common occurrence of paroxysmal atrial arrhythmias during longer term ECG monitoring.

non-ST elevation myocardial infarction (NSTEMI) with severe mitral stenosis was made.

Echocardiography demonstrated normal left ventricle dimensions, no regional wall motion abnormality and severe mitral stenosis (MS). The left atrium was mildly dilated with spontaneous echo contrast visible without any demonstrable thrombus or vegetations. Coronary angiogram revealed normal left coronary artery (LCA) (Fig. 1) and right coronary artery (RCA) was totally occluded distally (Fig. 2). Right posterior descending artery (PDA) and posterior left ventricular branch (PLVB) were collateralized from LCA. Options of percutaneous coronary intervention (PCI) versus medical management with heparin with Gp IIb/IIIa blockers were considered. In view of the totally occluded vessel, PCI was planned.

The right coronary lesion was crossed with 0.014 Fielder wire (ASAHI INTECC). Thrombus aspiration was done with



Fig. 1 – Left coronary angiogram showing normal Left anterior descending and circumflex arteries.



Fig. 2 – Right coronary angiogram shows totally occluded right coronary artery.

Thrombuster aspiration catheter (BIO EXCEL). Post-aspiration showed no significant residual lesion in the distal RCA. There was distal embolisation of thrombus into the PDA and PLVB (Fig. 3). Post-aspiration, the arterial pressure waveform could not be recorded through the guide catheter. Wedging against the wall of the RCA was suspected and the guide catheter was pulled in to the aorta, which did not improve the pressure waveform.

In view of large thrombus burden, thrombotic occlusion of the guide catheter was considered. Aspiration through the guide catheter revealed a large thrombus (Fig. 4). She was started in GP IIb IIIa blocker infusion and LMWH. She had mild angina after the procedure and ECG showed 0.5 mm ST

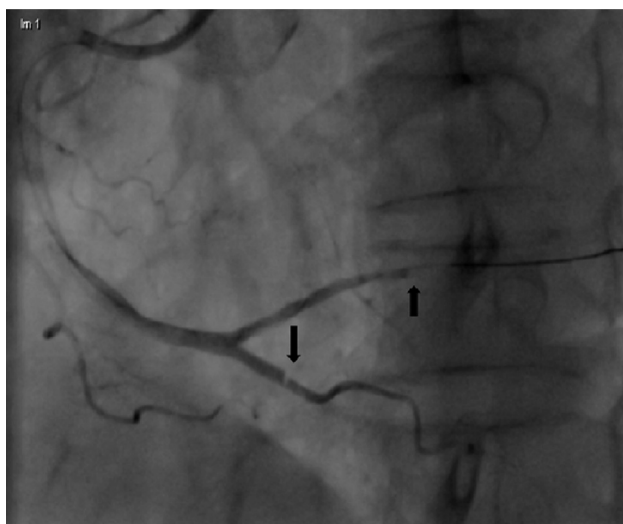


Fig. 3 – Right coronary angiogram after thrombosuction shows the distal embolism in to the Posterior descending artery and Posterior Left ventricular branch (upward facing arrows).

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