Catheter Assisted Management of Massive Pulmonary Embolism

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Abstract

Pulmonary thromboembolism is common and missed by clinicians. We report a case of massive pulmonary embolism which was life threatening treated by the catheter assisted technique. Anticoagulation is the mainstay of therapy for most patients, with thrombolytic therapy reserved for some patients. Recent studies have suggested a role for systemic or catheter-directed thrombolytic therapy in selected patients. We present a case of a patient who presented with an PE, was successfully treated with catheter-directed thrombolysis.

Case Report

35 years female with no previous illness was admitted to our hospital with history of sudden onset NYHA class 4 dyspnoea and chest pain. She was afebrile with heart rate of 120 beats per minute and blood pressure of 90/60 mmHg. She was having central cyanosis. Her oxygen saturation was 60% on room air. She was placed on 15L/min of oxygen by a mask. ECG showed classic s1q3t3 pattern suggestive of pulmonary embolism. Her troponin and BNP were elevated at 0.20 ng/mL and 400 pg/mL, respectively. Echocardiogram was suggestive of dilated right ventricle with moderate pulmonary hypertension and a mobile echo density at right and left pulmonary artery. CT angiogram was done and confirmed extensive bilateral pulmonary emboli with evidence of right ventricular strain. Therefore, with the clinical picture and the investigations a diagnosis of massive unprovoked pulmonary embolism was made.

The patient was taken to the catheterization laboratory, where a pulmonary angiogram revealed significant clot burden at right and left pulmonary arteries (Figures 1, 2). Right-heart catheterization revealed moderate pulmonary hypertension. The Judkins right catheter was placed into the pulmonary arteries and RVOT. She was given local injection streptokinase bilaterally in pulmonary arteries. She was treated with intravenous heparin. A repeat echocardiogram showed reduced pulmonary pressures and improved RV function and resolution of the thrombus.

Discussion

Patients undergoing invasive pulmonary catheter intervention require continuous hemodynamic monitoring. Amount of contrast agent should be kept as low as possible. To minimize the complications of the procedure, the main and lower lobe pulmonary arteries should be considered for treatment, and segmental branches with a diameter of <6 mm should not be approached.

References


Fig. 1: Thrombus (arrow head) with narrowing of pulmonary artery

Fig. 2: Thrombus obstructing the pulmonary artery with dilatation of pre-thrombus pulmonary artery

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