An unusual case of SADDLE Pulmonary Thrombo Embolism

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Abstract:

Pulmonary thromboembolism is a serious health problem with significant morbidity and mortality. It is the result of migration of clots from systemic veins to the pulmonary circulation. The true incidence of venous thromboembolism is difficult to estimate because of the often silent nature of the condition.

In the Western World, the incidence is one case of Deep Vein Thrombosis (DVT) and 0.5 case of Pulmonary Embolism per 1000 population/year. Most pulmonary emboli arise from deep veins in the legs. Pulmonary emboli can also arise from pelvic veins in Women. Venous thromboembolism along with stroke and myocardial infarction rank as three big cardiovascular killers in India.

They are increasingly being diagnosed and treated in tertiary care hospitals in India and world over due to increased awareness and availability of advanced diagnostic modalities.

Saddle thromboembolus is a large thromboembolus lodged at the bifurcation of pulmonary trunk. It is an uncommon manifestation of massive Pulmonary Thrombo Embolism (PTE) as it has been reported to be detected in 1% of cases after death and in 1.6% of cases through Contrast Enhanced Computed Tomography (CECT) scans. Hence antemortem diagnosis of saddle pulmonary thromboembolism is very difficult, as these patients either die or too ill for any diagnostic imaging. Saddle PTE previously was mostly diagnosed at necropsy.
Therefore it was regarded as one of the most severe forms of Pulmonary Embolism. CECT plays an important role in the identification of saddle thromboembolus as a filling defect within the column of contrast material at the bifurcation of pulmonary artery. Here in this case report we present a saddle PTE in a 50 year old smoker presented with DVT of his right lower limb venous system and all investigations for hypercoagulable states were negative. This patient had a large saddle thromboembolus with pulmonary infarction and he was successfully managed with anticoagulants without the need for surgical intervention.

INTRODUCTION

Saddle Pulmonary Thrombo Embolism is an uncommon manifestation of Venous Thrombo Embolism and Deep Vein Thrombosis. This usually indicates a near submassive Thrombo Embolism with increased risk of pulmonary infarction and mortality. Antemortem diagnosis of saddle PTE is very difficult as these patients are mostly haemodynamically unstable and die earlier. We hereby report the successful outcome in a 50 year old smoker with saddle Pulmonary Thrombus and Deep Vein Thrombosis, treated with anticoagulants and recovered well. CECT of the chest done at an earlier stage helped us to identify the saddle PTE and also aided us in successful anticoagulation.

CASE REPORT

A 50 years old man, from the outskirts of Chennai working as a Plumber since 20 years of age presented to us with insidious onset dyspnea and right sided chest pain. He was chronic smoker with a significant 10 pack years history. He used to smoke filter tipped cigarettes for the past 20 years. He was an occasional alcoholic.

He had no other comorbidities like Diabetes Mellitus, hypertension, bronchial asthma or hypothyroidism. He also had no similar kind of episodes in his past.

The dyspnoea was Grade-IV at presentation. The chest pain was pleuritic in character and was located at the right lower hemithorax. There was no history of sweating, syncope or palpitations. He also had no expectoration or hemoptysis. The patient also reported a dull aching pain in his right lower limb. There was no history of trauma, recent hospitalization, surgeries or prolonged immobilization.

Initial investigations revealed a Total count of 9600 with normal differentials. Sugar, electrolyte, liver and Renal function tests were in the normal range. The ECG was consistent with Sinus Tachycardia, Right Axis Deviation and does not revealed S1 Q3 T3 pattern significant of PTE.
The chest X-ray showed a prominent right descending pulmonary artery, a wedge shaped opacity in the right lower zone with its base towards the periphery and apex towards the hilum consistent with the sign of pulmonary infarction (i.e. Hampton’s Hump) and also obscuration of right costophrenic angle indicating the development of right pleural effusion.

His coagulation profile was normal with no deficiencies of protein C, S and anti thrombin-III. His workup for polycythemia Vera and Connective Tissue Disorders was negative. His echocardiogram revealed hypokinesia of right ventricular free wall with normal motion of apex indicating positive Mcconnell’s sign. A CECT of the chest was done subsequently which showed the characteristic filling defect within the lumen of the main pulmonary artery at its bifurcation in the form of a saddle. There was also partial occlusion of right descending pulmonary artery- the proximal portion. A wedge shaped opacity in the lateral basal segment of right lower lobe was noted consistent with Hampton’s Hump and there was evidence of right sided pleural effusion.

All the findings of CECT chest were consistent with the diagnosis of saddle pulmonary thromboembolism with pulmonary infarction and right pleural effusion. There was no evidence of bronchogenic carcinoma or pleural malignancy in the CECT Chest. Subsequently a Doppler study of the lower limb venous system was done which revealed DVT of the right lower limb veins. An Ultrasound abdomen was done to rule out any mass lesion or IVT thrombosis but they were negative.

The patient was admitted in the Intensive Care Unit (ICU) and supplemental oxygen was given. His vitals were supported the patient was started on low molecular weight heparin-Enoxaparin 1mg/kg subcutaneous twice daily. He also received warfarin overlapped on the 3rd day with nutritional and supportive care too. He had significant improvement and hemodynamic stability. There was no incidence of nosocomial infections.

He had an uneventful hospital stay with his prothrombin time and INR were maintained in the range of 2-3. A repeat bedside echocardiogram revealed marked improvement in the regional hypokinesia. He was discharged after a period of 3 weeks and patient went home comfortably. A follow up of the patient for 12 months did not show any clinical evidence of recurrent pulmonary thromboembolism.
DISCUSSION

Pulmonary Thrombo Embolism (PTE) is a major concern in health care with significant morbidity and mortality. Both Deep Vein Thrombosis and Pulmonary Embolism are associated with long term effects such as venous ulcers, varicose veins, pulmonary hypertension and recurrent Venous Thrombo Embolism. Saddle Pulmonary Thrombo Embolism is a rare manifestation of PE with reported incidence of <1% of cases of reported cases of PE. Antemortem diagnosis of Saddle PTE is very difficult. Successful treatment and survival of the patient are only very rarely reported. In our patient, earlier diagnosis by CECT chest located the saddle thrombus and the patient was successfully managed with anticoagulants.

There were reported cases in literature relating that saddle PTE needed a percutaneous pigtail rotation catheter aided retrieval of the thrombus. But in our case surgical intervention was not needed and the patient was successfully managed with conservative measures by prompt initiation of Enoxaparin and Warfarin.

In conclusion, we have presented a very rare case of Saddle Pulmonary Thrombo Embolism with Pulmonary Infarction, diagnosed at the earliest and successfully managed with anticoagulant therapy.

With less than 100 cases of saddle pulmonary thromboembolism being reported in literature till date, our case can be considered as a unique presentation.

References:
