Acute *PULMONARY EMBOLISM* in a patient of 46 year male with history of left lower limb tendoachilis tear 22 days ago.

Abstract:

Pulmonary embolism (PE) is a serious medical condition characterized by the obstruction of pulmonary arteries by emboli, commonly originating from deep vein thrombosis (DVT). We report a case of PE in a 46-year-old male patient with a recent history of tendoachilis tear (left lower limb) 22 days ago and prolonged bed rest since then. The patient presented with sudden onset breathlessness from 5-6 hours . Clinical evaluation and imaging studies confirmed the diagnosis of PE. This case underscores the importance of recognizing the increased risk of thromboembolic events in patients immobilized due to musculoskeletal injuries and highlights the need for vigilant monitoring and prophylactic measures to prevent potentially life-threatening complications like PE.

INTRODUCTION

Herein, we present the case of a 46-year-old male patient who, following a tendoachilis tear necessitating prolonged bed rest, presented with sudden-onset breathlessness and was subsequently diagnosed with PE upon undergoing CT cardio angiography. This case underscores the importance of recognizing the heightened thromboembolic risk associated with immobilization due to musculoskeletal injuries and highlights the critical role of prompt diagnosis and intervention in mitigating the potentially life-threatening consequences of PE.

CASE PRESENTATION:

Patient Information:

- Age: 46 years
- Gender: Male
- Chief Complaint: Sudden onset of breathlessness from 5/6 hours
- DOA – 2/04/2024

History of Present Illness: The patient, a 46-year-old male, presented to the emergency department o f Narayana Superspeciality Hospital Amingaon, Guwahati, Assam with a chief complaint of sudden onset breathlessness. He reported a recent

history of tendoachilis tear in his left foot 22 days ago , which had rendered him bedridden for the past 22 days. During this period of immobility, he had not experienced any significant respiratory symptoms until the sudden onset of breathlessness prompted his visit to the hospital.
Clinical Examination: On examination, the patient appeared distressed and was in respiratory distress. Vital signs revealed tachypnea and tachycardia. Oxygen saturation was decreased (84% in room air), and he required supplemental oxygen to maintain adequate saturation. Cardiovascular examination revealed a dilated right atrium (RA) and right ventricle (RV) , with evidence of RV dysfunction. No murmurs were appreciated. Examination of the lower limbs revealed no signs of swelling and mild pain in left LL. Patient was admitted in ICU for further management.

INVESTIGATIONS::

1. MRI of Left Ankle with Leg (Plain):
   Findings: Thickened Achilles tendon in its lower half with a partial thickness interstitial tear extending for a length of 10 cm up to the insertion site.
2. 2D Echocardiography (2D ECHO):
   Findings: Dilated RA and RV, no regional wall motion abnormalities (RWMA), RV dysfunction, left ventricular ejection fraction (LVEF) 50-55%.
3. Doppler Study of Left Lower Limb:
   Findings: Thrombus in the popliteal vein extending into the femoral vein.
4. CT Angiography:
   Findings: Acute pulmonary embolism (PE) with evidence of right ventricular strain (clot load of 50-60%).

Diagnosis: Based on the clinical presentation and investigative findings, the patient was diagnosed with:

- Pulmonary embolism secondary to deep vein thrombosis (DVT) in the left lower limb.
- Tendoachilis tear with associated findings of thickening and partial thickness interstitial tear on MRI.

MANAGEMENT:

The patient was immediately started on therapeutic anticoagulation with intravenous heparin (UFH) to prevent further propagation of the thrombus and to

stabilize the pulmonary embolism. Oxygen therapy was continued to maintain adequate oxygenation. Close monitoring of vital signs, oxygen saturation, and cardiac function was initiated.

FOLLOW-UP AND PROGNOSIS:

The patient was admitted to the intensive care unit for close monitoring and management of his condition. The prognosis would depend on the response to anticoagulation therapy, resolution of the pulmonary embolism, and prevention of further thromboembolic events. Long-term management would involve anticoagulation therapy, rehabilitation for the tendoachilis tear, and monitoring for potential complications such as recurrent PE or post-thrombotic syndrome.

DISCUSSION:

Pulmonary embolism is a potentially life-threatening condition that requires prompt diagnosis and management to prevent adverse outcomes. While PE is commonly associated with older individuals and comorbidities such as malignancy, obesity, and immobility, it can also occur in young, otherwise healthy individuals, as demonstrated in this case.

The diagnosis of PE in young patients can be challenging due to the nonspecific nature of symptoms and the low pretest probability. However, a high index of suspicion is warranted, particularly in individuals with acute onset dyspnea and chest pain, as delay in diagnosis and treatment can lead to significant morbidity and mortality.

In this case, the diagnosis of PE was confirmed by CTPA, which is considered the gold standard imaging modality for the evaluation of PE. Treatment involves anticoagulation to prevent further thrombus propagation and embolization. Close monitoring for complications such as bleeding is essential, particularly in young patients who may be at lower risk for bleeding complications compared to older individuals.

CONCLUSION:

This case highlights the importance of considering pulmonary embolism in patients with a history of immobilization due to musculoskeletal injuries, even in the absence of typical risk factors. Prompt diagnosis and management are essential to prevent

adverse outcomes associated with pulmonary embolism and deep vein thrombosis. Collaboration between specialties such as cardiology, radiology, and vascular medicine is crucial for the comprehensive management of such complex cases.

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