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Venous Thromboembolism and Massive Hemoptysis: Management Dilemmas

Manoj Bardhan*
Resident Doctor, Department of Pulmonary Medicine, Indira Gandhi Medical College, Shimla, India

***Abstract*: Venous thromboembolism (VTE) and massive hemoptysis are the two very severe pulmonary emergencies and require completely different treatments. This is a case-report of an elderly female admitted in our hospital with massive hemoptysis, ultimately diagnosed with pulmonary embolism (PE) and deep venous thrombosis (DVT). The patient was managed successfully with anticoagulation therapy, once hemoptysis was alleviated.**

***Keywords*: Blood-in-sputum, Haemoptysis, Heparin, LMWH, Thrombosis.**

1. Introduction

The hemoptysis which is life threatening due to airway obstruction or blood loss is regarded as massive hemoptysis. Studies have quoted volumes ranging from 100 ml to 1000 ml per day (1). Although a few patients expectorate massive volumes, unpredictable course of hemoptysis warrants prompt evaluation and management. Here is a case of massive hemoptysis, which was later diagnosed to be due to VTE.

2. Case -Study

An eighty-two years old female patient presented with three episodes of massive hemoptysis in the preceding two days, expectorating approximately 500 ml of frank blood per episode. She did not complain of any other symptom, including fever, dyspnea or chest pain. She was hypertensive with no other significant history. On physical examination, she was apparently healthy female with SpO2 90%, pulse 98/min and BP 130/80 mmHg. On auscultation, there were minimal basal crackles. Routine blood tests were normal and sputum for AFB was negative. Patient was started on tranexamic acid. The following day, she underwent CT thorax which revealed a thrombus in right pulmonary artery, measuring about 16.5 mm, causing dilatation of right pulmonary artery (31 mm), extending into right upper and lower lobe branch and left lower lobe (Fig. 1). It also revealed PAH, pericardial effusion, para-septal emphysema with ground glass haze in bilateral lower lobes. A duplex ultrasonography was performed, which revealed echogenic contents in the Right distal femoral vein with canalization of the lumen, suggestive of chronic DVT (Fig. 2). As surgical management was not present at our center, patient was managed medically (they didn't want referral). Tranexamic acid was discontinued, and patient was started on anticoagulants with close institutional monitoring for development of any frank hemoptysis, and backup plan for embolization. No massive hemoptysis occurred during hospital stay.

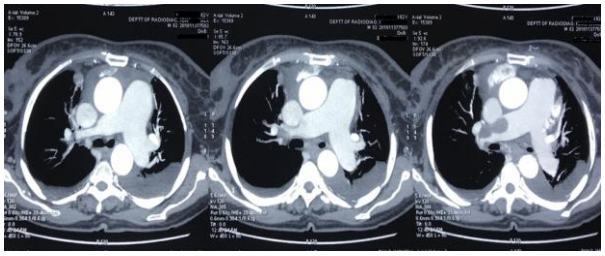

Fig. 1. CT showing thrombus in Right pulmonary artery

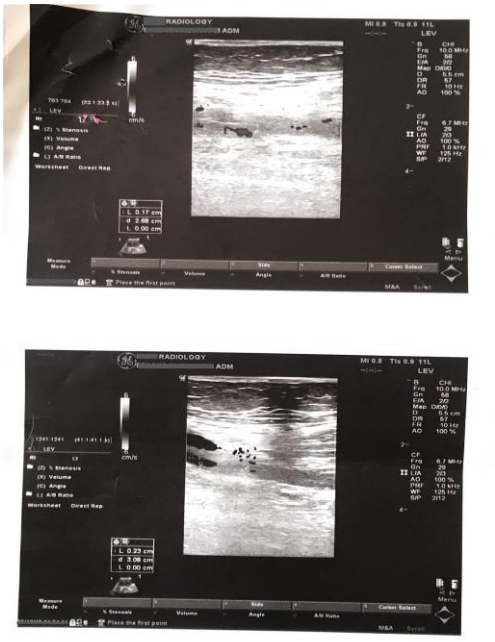

Fig. 2. Duplex ultrasonography suggestive of chronic DVT

3. Discussion and Conclusion

Pulmonary emboli presents with hemoptysis because of ischemic pulmonary parenchymal necrosis (2). Also, pulmonary hemorrhage in pulmonary embolism can occur due

*Corresponding author: dr.manoj@yahoo.com

to influx of bronchial artery blood at systemic pressure to the communicating pulmonary artery distal to occlusion.(3) Broncho pulmonary collaterals with increased blood flow in patients with pulmonary embolism with or without pulmonary hypertension can also be the source of massive hemoptysis.(4)

Our patient admitted to the hospital with massive hemoptysis and later diagnosed to have PE and DVT, treatment for which is anticoagulation. However, anticoagulation in severe hemoptysis may lead to fatal hemorrhage in the airways. Embolization and retrievable IVC filters can be attempted if patient is inoperable. In conclusion, the development of massive hemoptysis and PE together is a highly challenging clinical condition and further studies are required to get more clarity in managing these scenarios.

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