

CASE REPORT

ACUTE MASSIVE PULMONARY EMBOLISM TREATED BY ALTEPLASE

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ABSTRACT:

BACKGROUND:

Pulmonary embolism is a common and some time fatal disease that continues to persist despite advancement in diagnosis and management.¹ Pulmonary embolism (PE) is caused by emboli, which have originated from venous thrombi, travelling to and occluding the arteries of the lung. PE is the most dangerous form of venous thromboembolism, and undiagnosed or untreated PE can be fatal. Acute PE is associated with right ventricular dysfunction, which can lead to arrhythmia, haemodynamic collapse and shock. Furthermore, individuals who survive PE can develop post-PE syndrome, which is characterized by chronic thrombotic remains in the pulmonary arteries, persistent right ventricular dysfunction, decreased quality of life and/or chronic functional limitations.² In patients younger than 55 years, the incidence of pulmonary is higher in females. Once deep venous thrombosis develops, clots may dislodge and travel through the venous system and the right side of the heart to lodge in the pulmonary arteries, where they partially or completely occlude one or more vessels.³

CASE PRESENTATION:

A 65 year old hypertensive male resident of Lahore was in usual state of health when he developed shortness of breath which was sudden in onset and gradually worsening. It was not associated

with chest pain, swelling of legs, edema. Previously he was only hypertensive. He has no family history of such illness. On presentation his vitals show hypotension, tachycardia and tachypnea with drop in saturation. Investigations of the patient

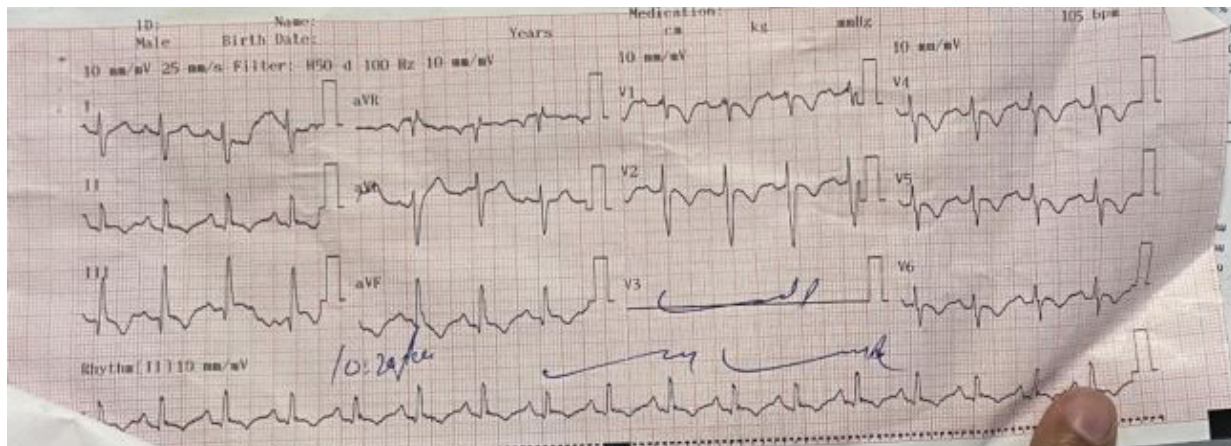


Fig 1. ECG showing sinus tachycardia and S wave in lead 1, Q wave in lead III and inverted T wave in lead III.

carried out, blood investigation showed increase TLC.

D-dimer raised, trop positive, PT, aptt normal, Hb, PLT count were also normal. ECG OF THE Patient showed sinus tachycardia with large S wave in lead 1, Q wave in lead 3 and inverted T wave

in lead 3.(Fig-1) Echocardiography of this patient showed dilated RV with intact LV systolic function. (Fig-2) X-RAY of the patient shows Hampton hump sign (wedge shape peripheral air disease). (Fig-3) CT pulmonary angiogram done which shows bilateral extensive pulmonary



Fig 2. Echocardiography showing dilated RV with intact LV systolic function.

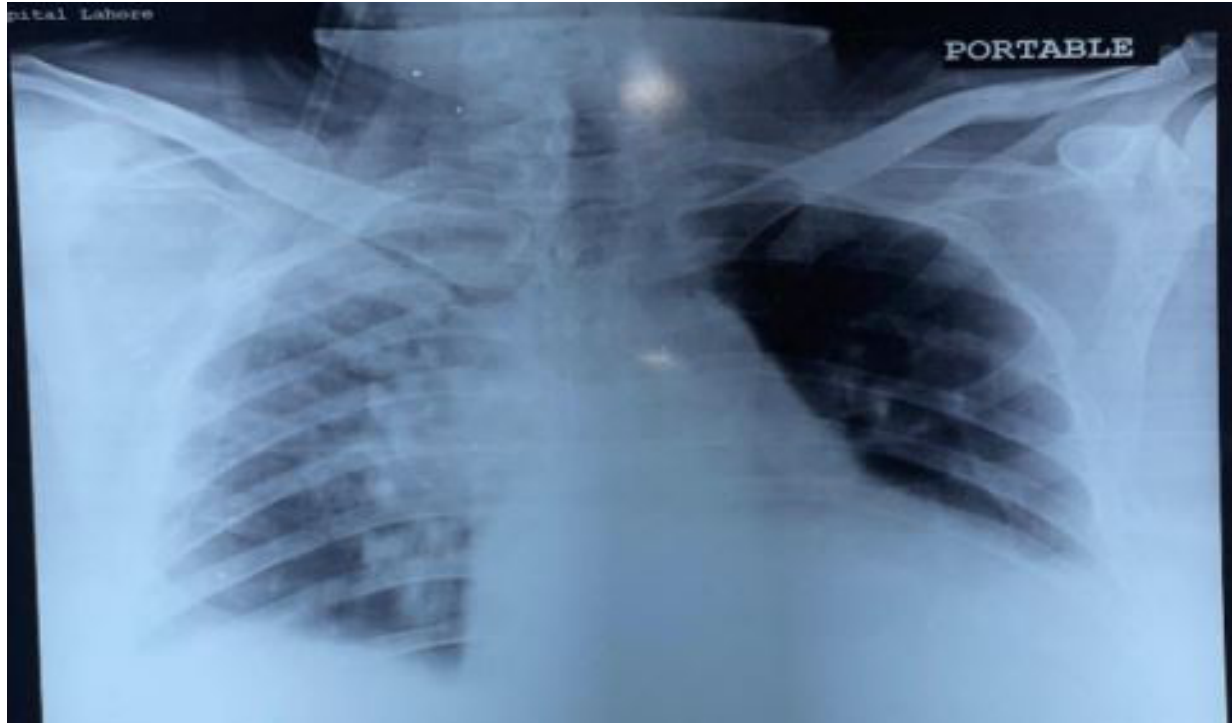


Fig 3. X RAY showing hampton hump sign (wedge shape peripheral disease).

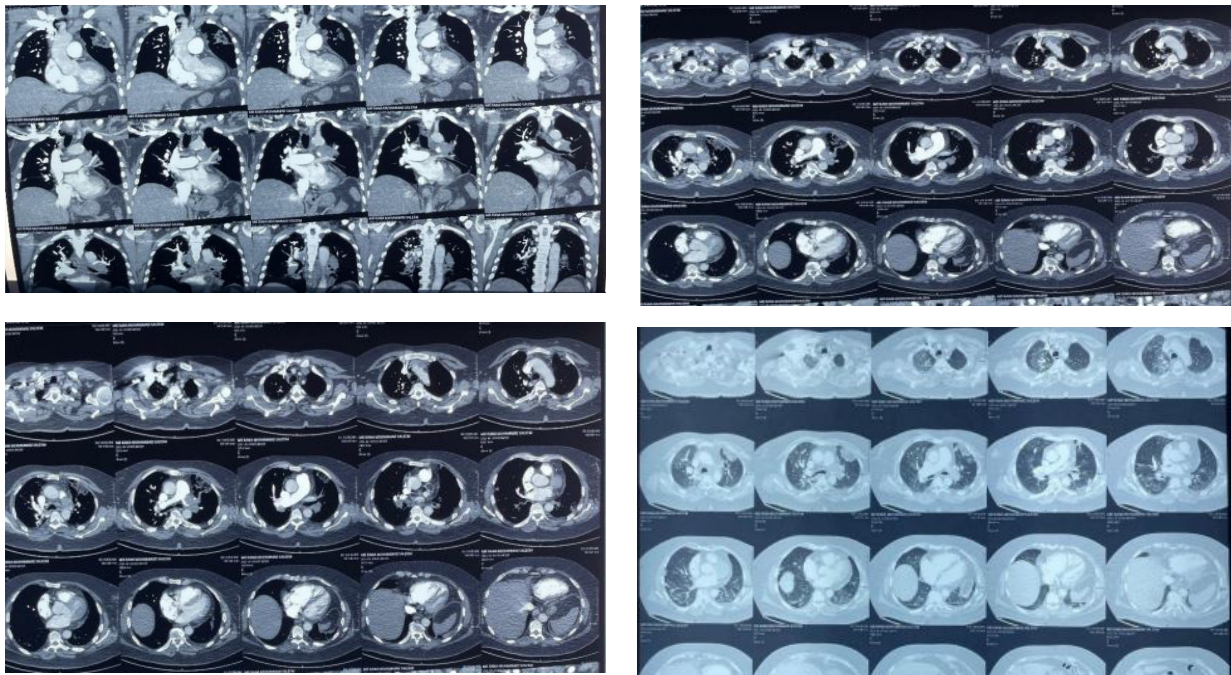


Fig 4. CT pulomnary angiogram which showing bilateral extensive pulmonary embolism involving almost entire left main pulmonary artery with extention into distal right pulmonary artery.

embolism involving almost entire left main pulmonary artery with extension into distal right pulmonary artery. (Fig-4) there was poor opacification of bilateral lower limb

deep veins for which Doppler bilateral lower limb planned. On above these finding patient was treated on the lines of pulmonary embolism with injection TPA in

infusion. Patient symptom improved and was discharged on oral anticoagulant with follow up care advise.

DISCUSSION:

We report an interesting case of PE. Although cases of DVT have been associated with this syndrome in the past, only a few cases have presented with acute bilateral pulmonary emboli. This vascular variant should be considered with high suspicion in left lower extremity DVT in young patients with no other etiology to justify thrombosis.⁴ Prolonged anticoagulation, thrombectomy or stent placement for the relief of mechanical obstruction have been used in various clinical settings.⁵

A multidisciplinary team input from specialists is the key to provide primary care fundamentally in poorly defined management strategies. Identification of the triggers of thromboembolism is crucial to prevent disease progression and recurrence. In pulmonary embolism with or without infarction in haemodynamically stable patients, anticoagulation should be considered as first-line therapy to yield optimum outcomes.⁶

CONCLUSION:

Pulmonary embolism is a life threatening condition. Timely diagnosis and treatment is key to success. Alteplase (TPA) has excellent results in terms of resolution of clot.

References:

1. S.C. Berggard, J. Mandel, Pulmonary Embolism, Editor(s): Ramachandran S. Vasan, Douglas B. Sawyer, Encyclopedia of Cardiovascular Research and Medicine, Elsevier, 2018, Pages 195-203, ISBN 9780128051542, <https://doi.org/10.1016/B978-0-12-809657-4.99701-1>. (<https://www.sciencedirect.com/science/article/pii/B9780128096574997011>)
2. Huisman MV, Barco S, Cannegieter SC, Le Gal G, Konstantinides SV, Reitsma PH, Rodger M, Vonk Noordegraaf A, Klok FA. Pulmonary embolism. *Nat Rev Dis Primers*. 2018 May 17;4:18028. doi: 10.1038/nrdp.2018.28. PMID: 29770793.
3. Silverstein MD, Heit JA, Mohr DN, Peterson TM, O'Fallon WM, Melton LJ 3rd. Trends in the incidence of deep vein thrombosis and pulmonary embolism: a 25-year population-based study. *Arch Intern Med*. 1998 Mar 23. 158(6):585-93. [QxMD MEDLINE Link]
4. Bhadra R, Somasundaram M, Iltchev DV, Ravakhah K. Acute bilateral pulmonary embolism in a 21-year-old: is May-Thurner syndrome in our differential? *BMJ Case Rep*. 2019 Apr 1;12(4):e227046. doi: 10.1136/bcr-2018-227046. PMID: 30940666; PMCID: PMC6453395.
5. Pulmonary Embolism as the First Presentation Rather Than Deep Vein Thrombosis. *Cureus*. 2016 Feb 24;8(2):e509. doi: 10.7759/cureus.509. PMID: 27026834; PMCID: PMC4807916.
6. Fasanya AA, LaCapra G. May-Thurner Syndrome With Zafar H, Anderson L, Cox AT, Bastiaenen R. Pulmonary embolism and infarction with a paradoxical thrombus visualised in both atria. *BMJ Case Rep*. 2018 May 30;2018:bcr2018225195. doi: 10.1136/bcr-2018-225195. PMID: 29848540; PMCID: PMC5976082.