

Advancing Emergency Pulmonary Embolism Care: Ultrasound Utility, Medication of Choice & PERT Implementation

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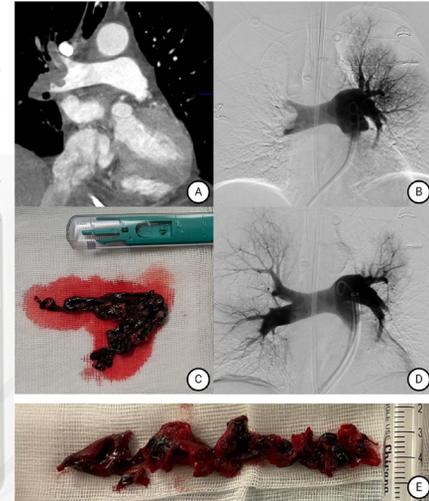
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INTRODUCTION

Pulmonary embolism (PE) is a life-threatening condition that necessitates prompt diagnosis and intervention. This discussion highlights the importance of Pulmonary Embolism Response Teams (PERT) in enhancing patient outcomes through a multidisciplinary, protocol-driven approach following rapid identification using ultrasound in the emergency department (ED).

CASE DESCRIPTION

A 57-year-old woman presented with sudden-onset breathlessness and a history of one month of immobilization due to trauma. On initial assessment, she was hypotensive and tachycardic (HR 120/min), with an oxygen saturation of 90% on room air and a respiratory rate of 30 breaths per minute. Her Well's score was high and bedside Point-of-care ultrasound (POCUS) revealed a dilated right ventricle, a D-shaped left ventricle, and a positive McConnell sign. A straddling thrombus was identified in the main pulmonary artery. Incompressible left femoral and popliteal vein, consistent with deep vein thrombosis (DVT) were found. She underwent urgent open pulmonary embolectomy. She was subsequently discharged in stable condition with warfarin therapy.



DISCUSSION

1. Open thrombectomy offers distinct advantages over pharmacological thrombolysis, including **immediate clot removal**, **effectiveness for large thrombi**, and **suitability for patients with contraindications to thrombolytics**, such as recent trauma or surgery. In this case, the presence of a large straddling pulmonary embolism and a trauma history one month prior make open thrombectomy a safer and more effective option.
2. For high-probability PE without hemodynamic compromise, **low molecular weight heparin (LMWH) should be initiated promptly**, and **CT pulmonary angiography (CTPA)** performed within 24 hours for confirmation. Point-of-care ultrasound (POCUS) is increasingly utilized in detecting PE through **direct or indirect signs**, particularly in patients with lower limb DVT. Among anticoagulants, **fondaparinux is preferred** due to its lower bleeding risk, while enoxaparin remains a practical alternative with a shorter half-life.
3. With over 100 Pulmonary Embolism Response Team (PERT) are now in the US, it provides rapid, multidisciplinary PE management, supports **risk stratification**, and **reduces time to consultation**. Its implementation in tertiary centers significantly lowers 6-month mortality by 43% and improves hospital stays (9.1-6.5 days).

CONCLUSION

This case underscores the importance of Prompt anticoagulation, imaging, and PERT involvement which improve outcomes, reduce mortality, and ensure timely, individualized management for high-risk pulmonary embolism patients.

KEYWORD : Pulmonary Embolism, Ultrasound, Medication

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