

Short Report*Open Access, Volume 2***Woman with dyspnea and history of systemic lupus erythematosus****Nicolas Kahl^{1*}; Sukhdeep Singh¹; Jessica Oswald^{1,2}**¹Department of Emergency Medicine, University of California San Diego, USA.²Center for Pain Medicine, University of California San Diego, USA.***Corresponding Authors: Nicolas Kahl**

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Introduction

32-year-old woman with history of pleurisy and systemic lupus erythematosus presented to the emergency department with shortness of breath and pleuritic chest pain, acutely worse over one day after a six hour flight three days prior. She became dyspneic walking from her hotel bed to the bathroom. She endorsed 3 weeks of right lower leg cramping. She denied history of blood clots. She appeared tachypneic and speaking in short phrases upon arrival. A bedside ultrasound was performed, see Figures. Vitals: T: 98.3 F, HR: 130, BP: 142/88, RR: 24, oxygen saturation 97% on room air.

Diagnosis

Submassive Pulmonary Embolism. Apical 4 chamber view of the heart on ultrasound demonstrates right ventricular dilation with bowing of the interventricular septum into the left ventricle. Parasternal short view of the heart illustrates "D sign" with right ventricular dilation and flattening of the septum indicating decreased left ventricular systolic function. Both views suggest

right heart strain in the setting of likely Pulmonary Embolism (PE). The right lower extremity showed a noncompressible right femoral vein, indicating Deep Vein Thrombosis (DVT) as the likely source. CT chest angiogram confirmed diagnosis of PE extending into all 5 lobes and 3.2 cm dilation of the pulmonary artery. The patient was admitted to the ICU, and half dose TPA was given.

Point-of-care transthoracic cardiac ultrasound in the emergency department is an effective tool to promptly diagnose acute pulmonary embolism with right heart strain, and rapidly guide management [4,5]. Identification of right ventricular dilation on point-of-care echocardiography for the diagnosis of PE is highly specific [1]. When cardiac and lower extremity ultrasound are combined, the sensitivity and specificity are above 90% [3]. Patients who present normotensive but have signs of cardiac dysfunction secondary to a PE are classified as submassive, and thrombolytic therapy should be considered to reduce long term risk of pulmonary hypertension [2,6].

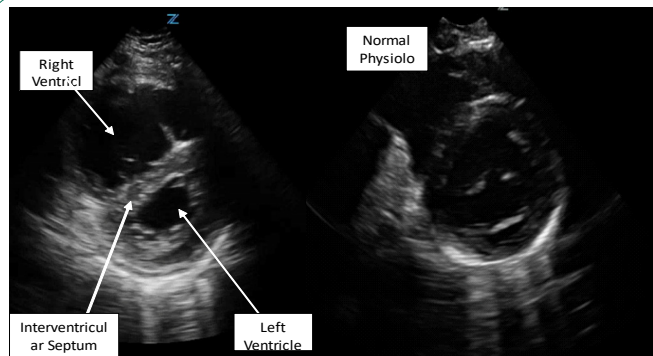


Figure 1: Parasternal short view of the heart illustrates “D sign” with right ventricular dilation and flattening of the septum indicating decreased left ventricular systolic function. Compared with normal physiology on the right.

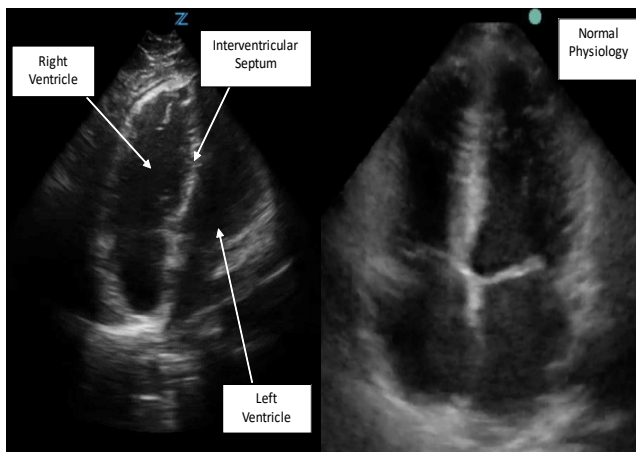


Figure 2: Apical 4 chamber of the heart demonstrates right ventricular dilation with bowing of the interventricular septum into the left ventricle. Compared with normal physiology on the right.

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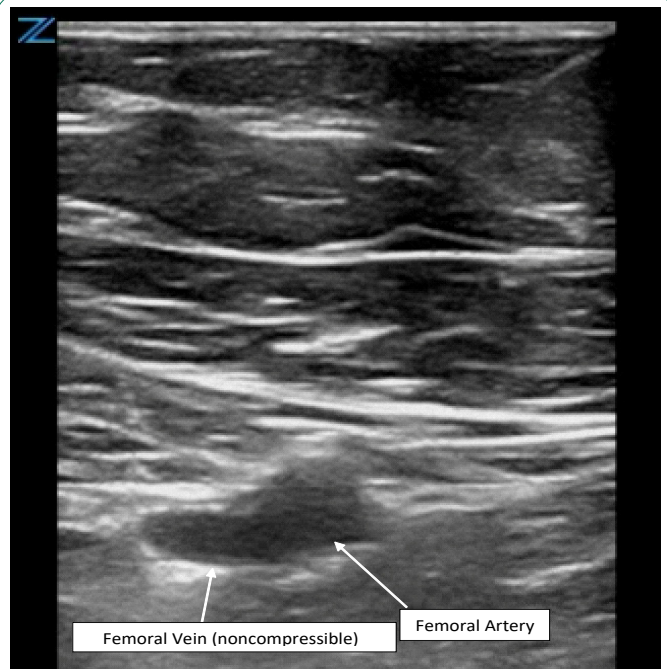


Figure 3: The right lower extremity showed a noncompressible right femoral vein, indicating DVT as the likely source of PE.

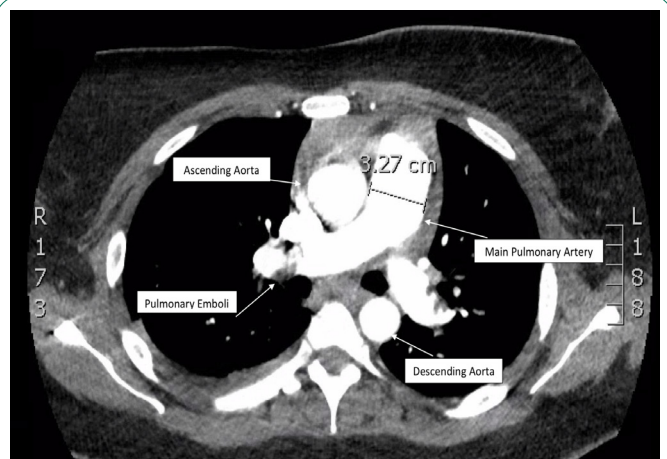


Figure 4: CT chest angiogram confirmed diagnosis of PE extending into all 5 lobes and 3.2 cm dilation of the pulmonary artery.