

IMAGES IN EMERGENCY MEDICINE

Imaging

Woman with shortness of breath and confusion

Evan Shapiro MD¹ | Kevin Hu MD² | Patrick Maher MD²¹ Department of Emergency Medicine, Mount Sinai Hospital, New York, New York, USA² Department of Emergency Medicine, Mount Sinai Beth Israel, New York, New York, USA**Correspondence**

Evan Shapiro, MD, Mount Sinai Hospital, 1468 Madison Ave, New York, NY 10029, USA.

Email: evanmshap@gmail.com

1 | CASE PRESENTATION

A 64-year-old woman with a history of multiple myeloma was brought to the emergency department by her son who noticed she was confused and short of breath. She was in respiratory distress and had poor peripheral perfusion. She was intubated for airway protection and taken for computed tomography (CT) imaging before returning for central line placement.

2 | DIAGNOSIS

2.1 | Pneumothorax and systemic air embolism

The CT chest image revealed a right-sided pneumothorax. Point-of-care ultrasound was used in an attempt to guide cannulation of the left femoral vein when the sonographer observed what was later termed the “venous curtain sign,” showing intermittent air artifact within the lumen of the vessel with ventilations (Figures 1 and 2). This is the first published use of this term to describe the sonographic appearance of venous air embolism. CT of the abdomen/pelvis confirmed this finding of air within the left femoral vein (Figure 3).

Barotrauma is a known complication of endotracheal intubation and mechanical ventilation, estimated to occur in 0.5%–38% of patients who are critically ill.^{1,2} There may be a higher incidence of venous air emboli associated with barotrauma than previously thought as most remain clinically inconsequential and likely go unnoticed.³ Rapidly formed or large air emboli lead to high morbidity and mortality.⁴ The recognition of the “venous curtain sign” as a sonographic finding of venous air emboli may lead to rapid diagnosis and management.

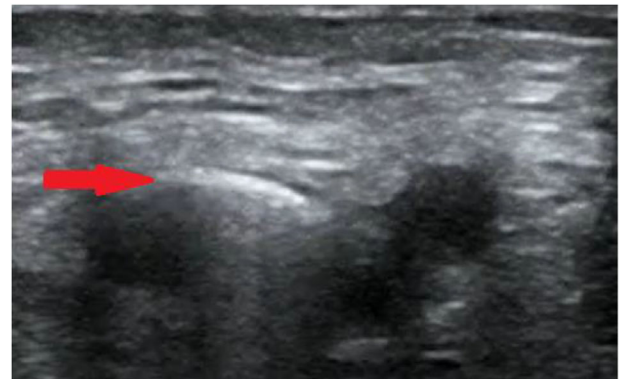


FIGURE 1 Ultrasound of the left femoral vein in the transverse orientation showing hyperechoic air at the anterior border of the lumen (red arrow) with reverberation artifact obscuring the vein deep to the air-fluid interface



FIGURE 2 Ultrasound of the left femoral vein in the longitudinal orientation showing the terminal point (red arrow) of hyperechoic air with reverberation artifact obscuring the vein on the left beside a segment of normal vein on the right

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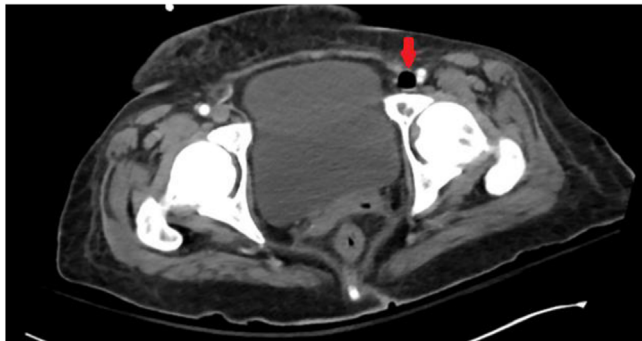


FIGURE 3 CT abdomen/pelvis demonstrating air in the left femoral vein (red arrow)

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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