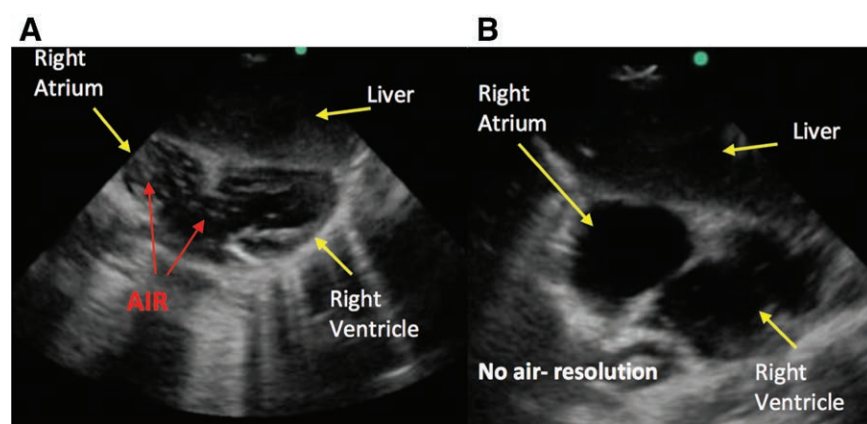


Images in Anesthesiology: Air Embolism during Cardiac Catheterization and the Role for Anesthesia Use of Bedside Ultrasound

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VENOUS air embolism (VAE) *via* power injection is a rare complication of cardiac catheterization. A massive VAE was diagnosed using bedside transthoracic imaging in the subcostal 4 chamber view. This technique may be used by the anesthesia provider adept in bedside ultrasound use as was performed here during routine catheterization in which there was sudden hemodynamic decompensation immediately following contrast power injection. Air enters

most commonly *via* indwelling lines, failed aspiration of catheters, and balloon ruptures.¹ The diagnosis requires exclusion of more common catheterization-related issues including cardiac tamponade and pneumothoracies, which in this instance were excluded using fluoroscopy. The diagnosis requires a high index of suspicion, and rapid identification may be aided by the use of echocardiography or bedside ultrasound, which is exquisitely sensitive to small amounts of air. Classically, 5 ml/kg of air in children and 200 ml/kg in adults may result in a VAE. Although it may be visualized on fluoroscopy, the most sensitive test for VAE is echocardiography, especially with small volumes of air.² Although the focus should always remain on immediate hemodynamic stabilization with diagnosis secondary, in this situation, ultrasound was performed after pharmacologic resuscitation was initiated and with the aid of a second anesthesia provider.

All providers must remain vigilant for the presence of air within the injector and especially in the care of children where a small volume may have devastating consequences. Perioperative bedside ultrasound, often with even a single view, may provide substantial real-time diagnostic information on major and clinically significant pathologies and should be a part of the anesthesiologist's clinical practice.³

Competing Interests

The author declares no competing interests.

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