Focused Cardiac Ultrasound during Amniotic Fluid Embolism

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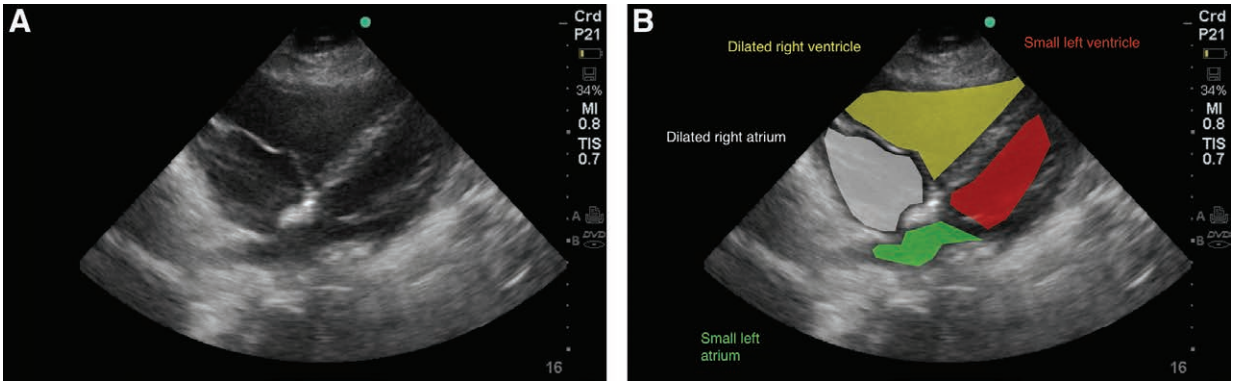

In emergency and critical care medicine, focused cardiac ultrasound is well-established to rapidly narrow the differential diagnosis of hemodynamic instability.[1] Although anesthesiologists have traditionally relied upon transesophageal echocardiography for this indication, perioperative providers are recognizing the advantages of focused cardiac ultrasound for crisis management. Compared to transesophageal echocardiography, the equipment necessary to perform focused cardiac ultrasound is more portable, simpler to disinfect between examinations, less invasive, and increasingly ubiquitous in perioperative locations.

The focused cardiac ultrasound images (images *A* and *B* above; Supplemental Digital Content 1, http://links.lww.com/ALN/B854) show a subcostal four-chamber view in a previously healthy patient (*A*) who developed sudden cardiac arrest (*B*) at the conclusion of a cesarean section. The image was obtained in the transverse plane below the xyphoid process (Supplemental Digital Content 2, http://links.lww.com/ALN/B855). The finding of right ventricular to left ventricular area ratio greater than 1 in any four-chamber view identifies right ventricular dilation (Supplemental Digital Content 3, http://links.lww.com/ALN/B856). Right ventricular dilation implicates high right ventricular afterload. In otherwise healthy parturients, this narrows the differential diagnosis of shock primarily to amniotic fluid embolism and pulmonary embolism. Point-of-care ultrasound evaluation of the lower extremity veins may help distinguish between the two: finding a noncompressible lower extremity vein increases the probability of pulmonary embolism (Supplemental Digital Content 4, http://links.lww.com/ALN/B857).[2] In contrast, concurrent disseminated intravascular coagulation argues for amniotic fluid embolism.

The pathophysiology of amniotic fluid embolism is not fully understood, but likely involves immune-mediated pulmonary vasoconstriction causing right ventricular overload.[3] A successful outcome hinges on early recognition and rapid administration of cardiopulmonary and hematologic supportive care. Focused cardiac ultrasound can facilitate this by quickly ruling out other common etiologies (*e.g.*, hemorrhage, peripartum cardiomyopathy, high spinal, anaphylaxis, and sepsis).

Competing Interests

The authors declare no competing interests.

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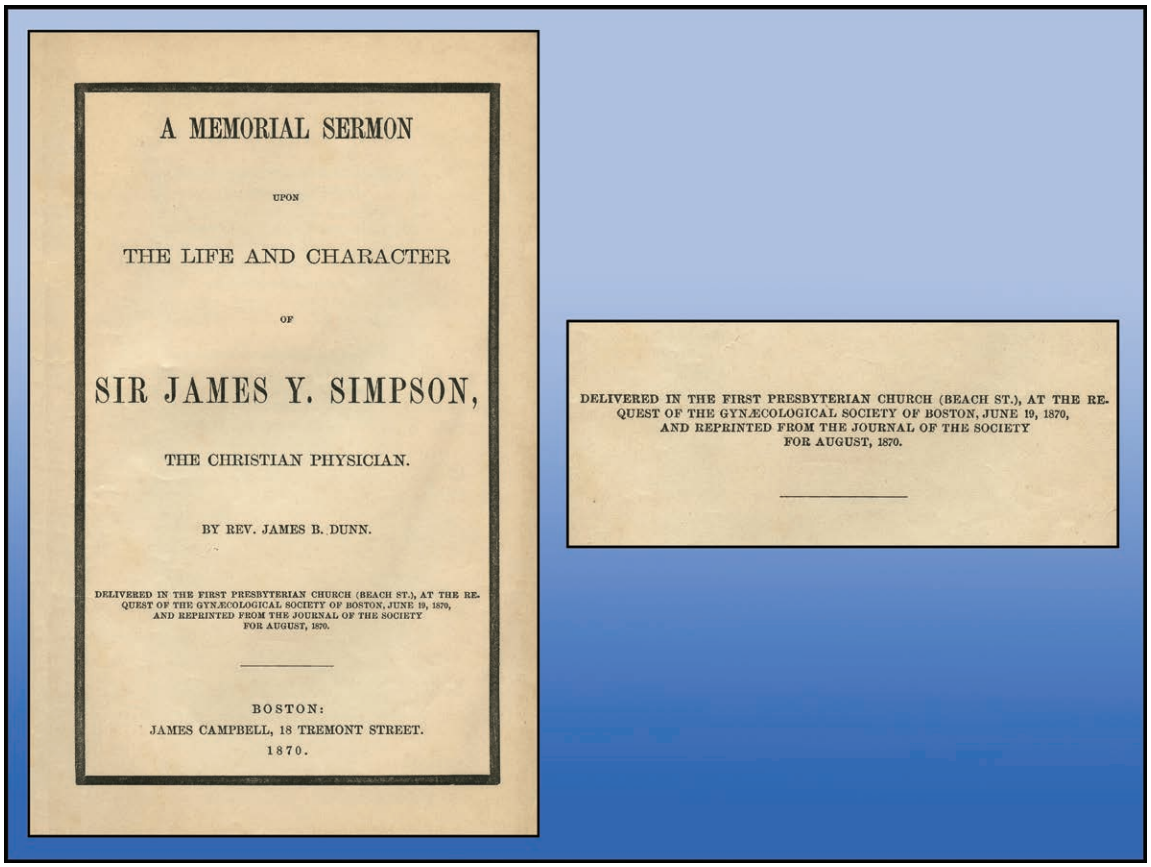
ANESTHESIOLOGY REFLECTIONS FROM THE WOOD LIBRARY-MUSEUM

Reverend James B. Dunn's Memorial Sermon for Sir James Y. Simpson: A Quarter for the Eulogy?



The professor of midwifery at the University of Edinburgh, Scotland, Sir James Young Simpson (1811 to 1870) passed away at 58 yr of age. His family was immediately extended the honor of his burial at Westminster Abbey, but they graciously declined. The day of Simpson's funeral was declared a memorial holiday in Scotland. More than 100,000 grateful citizens and visitors lined the streets of Edinburgh to witness Simpson's funeral procession and to pay respect to the man who had introduced chloroform anesthesia. In memory of Simpson, the Gynaecological Society of Boston (*right*) asked Reverend James B. Dunn to deliver "A Memorial Sermon…" at the First Presbyterian Church on Boston's Beach Street, in June of 1870. By September of that year, print versions of Dunn's eulogy for Simpson were selling for a quarter of a dollar. In 2019 the Wood Library-Museum acquired its copy (*left*) for 180 times that price. (Copyright © the American Society of Anesthesiologists' Wood Library-Museum of Anesthesiology.)

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