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CORRESPONDENCE

Update to "Anesthesia advanced circulatory life support"

Gary Simon, MD

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To the Editor,

The review, "Anesthesia advanced circulatory life support", by Vivek K. Moitra *et al.*[1] in the June 2012 issue of the *Journal* is an excellent summary. In a section of their review regarding the treatment of gas embolism, the following paragraph requires comment: "Promptly place patient in Trendelenburg (head down) position and rotate toward the left lateral decubitus position. This maneuver helps trap air in the apex of the ventricle, prevents its ejection into the pulmonary arterial system, and maintains right ventricular output." This approach was proposed by Durant[2] in 1947; however, it is not supported by more current literature.

The authors quote an article by Mirski[3] which identifies the animal studies by Geissler[4] and Mehlhorn[5] that clearly refute the benefit of positioning change.

Mehlhorn *et al*. inserted femoral artery, left ventricle, and pulmonary artery catheters into twenty-two dogs. Air was injected into the pulmonary artery catheter, and the position of the dogs was then changed. They found little difference between the measured variables regardless of position. The most acute changes occurred in the first five to fifteen minutes with significant recovery by one hour – again independent of position. They concluded that positioning changes offered no benefit compared with the supine position.

Geissler *et al*. not only instrumented 18 dogs, but they also used transesophageal echocardiography probes for a more comprehensive assessment of the distribution of the embolus in the heart. Their hemodynamic findings are similar to those of Mehlhorn. Positioning changes did result in air being relocated to nondependent parts of the right heart; however, no hemodynamic benefit was identified. Their findings refute the theory of air causing a right ventricular outflow tract obstruction.

The left lateral decubitus position could render cardiac compressions ineffective. A patient suffering a large air embolus is likely to become hemodynamically compromised, and avoidance of ineffective interventions may be crucial for a successful outcome.

Competing interests None declared.

References

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Reply

Dr. Simon has succinctly and accurately summarized the conflicting literature regarding the management of gas embolism. The literature, such as it is, provides considerably more information for the management of this problem in dogs than it provides for its management in humans. The

G. Simon, MD (✉)
London Health Sciences Centre, London, ON, Canada
e-mail: gsimon@uwo.ca

recommendation to rotate the patient toward the left recognizes that the patient may require chest compressions, and, as Dr. Simon points out, such positioning may not be possible in many or most instances. Efforts to position the patient should not take precedence over preventing further embolism, managing the patient's circulation, or providing high-quality chest compressions.

Michael F. O'Connor, MD
University of Chicago, Chicago, IL, USA
E-mail: moc5@dacc.uchicago.edu
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