

CORRESPONDENCE

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You Found It Where?!?

To the Editor:—A careful reading of Mongan and Hinman's study¹ raises a question. Why did they evaluate a catheter for aspiration of venous air emboli in the right atrium-superior vena cava junction (RA-SVC)? In the RA-SVC, both the double-lumen and the Bunegin-Albin catheters allowed retrieval of less than half of the air in surviving animals and only about a quarter of the air in nonsurvivors. Where was the rest of the air (in particular, the fatal portion)? Should we be looking at removing the smaller or the larger portion of the embolus? The necropsies uniformly showed froth in the pulmonary artery (PA). Clearly, once air has passed the right atrium, a catheter at the RA-SVC junction cannot retrieve it. Only a catheter in the PA can be expected to be helpful. In one reported case,² more than 70% of the air was recovered from the PA. This amount is remarkably consistent with the authors' determination that 74–76% of an embolus was not recovered from the RA-SVC junction in the nonsurvivors. This is likewise consistent with experimental data indicating that venous air transits the right side of the heart to lodge in the PA.^{3,4} In this case, had the catheter been placed in the RA-SVC junction, the data from the current study would suggest that the patient in the report would not have survived. Would the experimental deaths likewise have been avoided with a catheter in the PA? It would seem that a more beneficial investigation would be catheter placement in the PA.

On a related issue, the authors went to considerable length to design a double-lumen catheter so that only one point on the catheter would contribute to an intravenous electrocardiogram (ECG). This approach seems counterproductive. At least one air aspiration catheter* has an ECG electrode positioned near its tip. This single point

* Product #JX-318. Arrow International, Reading, PA.

References

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lead gives clear tracings without the need for an adapter and its associated manipulations, because it has a standard ECG button at its external end. Less of the catheter's diameter is occupied by the buried internal wire than by a second lumen, leaving more of its caliber for aspiration of venous air emboli. This catheter also has a balloon tip, allowing placement in the PA.

Perhaps we should reconsider the orthodoxy that RA-SVC catheter placement is optimal. Refinements in catheter design to improve aspiration efficiency will see their greatest patient benefit when applied to the location associated with the highest risk.

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In Reply:—Noel retrieved less than half column of frothy blood from the pulmonary vasculature if the catheters were placed in the SVC. A portion of the air embolus would have survived the catheters at the SVC based on previous studies. It occurs in the right heart, not in the SVC. More than 80% of an air embolus located at the SVC is confirmed that the catheter located at the SVC may have contributed to the embolus into the internal jugular vein, streaming of the air embolus, attempted to mimic the sinus during a search.

Because of the risk, it may be a fundamental principle to the catheters with a dural sinus. The considerable fraction of circulation is the heart air lock and explain the relatively the other animal studies and the necropsy catheter for air aspiration in the pulmonary artery. RA border? Question Regarding the d-trocardiogram electrode national, Reading,

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To the Editor:—(LMA) in three patients has been described with apparent difficulty

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