

CORRESPONDENCE

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In Reply:—Noel points out that the catheters used in our study¹ retrieved less than half of the venous air embolus and that a continuous column of frothy blood extending from the superior vena cava into the pulmonary vasculature was noted on necropsy. He indicates that, if the catheters were positioned in the pulmonary artery, a larger portion of the air embolus may have been extracted, and more animals would have survived. The rationale for positioning multiorifice catheters at the superior vena cava-right atrial (SVC-RA) junction was based on previous *in vitro* studies that concluded that an air lock occurs in the right atrium. Those evaluations documented that more than 80% of an air embolus can be removed by a multiorifice catheter located at the SVC-RA junction.^{2,3} The *in vivo* animal studies have confirmed that the majority of the air can be removed by a catheter located at the SVC-RA junction.⁴⁻⁷ However, the design of those studies may have contributed to those findings. Those studies injected air into the internal jugular or other large central vein. This may cause streaming of the air and a right heart air lock. Our study design attempted to mimic a venous air embolism occurring from a dural sinus during a seated procedure.

Because of the results of our investigation, we postulate that there may be a fundamental difference in the blood fluid interface presented to the catheters when air is injected into a major vessel as opposed to a dural sinus. The air injected into the dural sinus may undergo considerable fractionation, as opposed to air injected into the central circulation. Is the frothy mixture less capable of creating a right heart air lock and thus less capable of aspiration? If so, it would explain the relatively low percentage of air aspirated compared to the other animal study designs. Based on the low volume of aspiration and the necropsy findings, should we reevaluate the location of the catheter for air aspiration? Would a high-volume aspiration catheter in the pulmonary vasculature be more effective than one at the SVC-RA border? Questions remain to be answered in future investigations.

Regarding the design of the catheter, Noel is correct that the electrocardiogram electrode design of the JX-318 catheter (Arrow International, Reading, PA) is probably better. The design of the JX-318

catheter for aspiration of air, however, appears to be inferior and has never been evaluated in any study of air aspiration.

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Difficulty Using a Laryngeal Mask Airway in a Patient with Lingual Tonsil Hyperplasia

To the Editor:—The successful use of a laryngeal mask airway (LMA) in three patients with undiagnosed lingual tonsil hyperplasia has been described by Biro and Shahinian.¹ The LMA was used without apparent difficulty to treat a "cannot intubate, cannot ventilate" sit-

uation occurring unexpectedly at the time of induction.¹ We cared for a patient who was found to have lingual tonsil hyperplasia at the time of induction but in whom the lungs could be ventilated with only marginal success *via* an LMA.