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## Extirpation of Endotracheal Tube Secretions with a Fogarty® Arterial Embolectomy Catheter

*To the Editor:*—Secretions that accumulate in the tracheobronchial tree and endotracheal tube traditionally are removed by suctioning. This maneuver can be ineffective in certain patients and is also associated with complications. A catheter with too small a diameter may not reliably remove viscid secretions,<sup>1</sup> and one too wide may push secretions from the endotracheal tube down into the lung. Mucosal damage, including hemorrhage and erosion, has been reported to consistently occur with tracheal suction, in spite of meticulous technique.<sup>2</sup> Furthermore, withdrawal of the catheter when applying suction may strip the tracheal mucosa.<sup>1</sup> Hypoxemia is another important complication of airway suctioning. When a vacuum is applied to a catheter in the airway, oxygen-enriched air is replaced with entrained ambient air, a process that can result in severe hypoxemia<sup>3</sup> and hypoxemia-induced cardiac arrhythmias.<sup>4</sup> When a large catheter is inserted into a small endotracheal tube, there is insufficient space for air to entrain around the catheter, and the lung may collapse.<sup>5</sup> In addition, the beneficial effects of PEEP may be negated.

We were prompted to assess the value of a Fogarty® arterial embolectomy catheter as a means of extirpating secretions from an endotracheal tube. This catheter was chosen because it possesses the desirable properties of being fairly rigid, passing easily down an endotracheal tube, and also having a tapered balloon that acts as an excellent squeegee.

Used endotracheal tubes containing secretions served as the experimental model. A 6F Fogarty® catheter was passed down the tube and the balloon inflated. The catheter then was withdrawn such that the inflated balloon with the secretions were removed from the tube. The final result of this action is a clean endotracheal tube.

Early clinical trials have demonstrated the effectiveness of Fogarty® catheter secretion removal in the operating room. We feel that this approach to removal of tracheal tube secretions is worthy of further investigation, because, in addition to reliably removing secretions, it will not result in hypoxemia from air entrainment or pulmonary collapse. While the method is limited by the cost of such catheters, continued favorable results may promote the development of shorter, cheaper catheters.

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## Sympathetic Blockade Cannot Explain Bronchospasm Following Interscalene Brachial Plexus Block

*To the Editor:*—This letter is in regard to the recent clinical report in *ANESTHESIOLOGY* concerning two cases of bronchospasm after interscalene brachial plexus block.<sup>1</sup> The authors attributed bronchospasm to a neurohumoral imbalance with parasympathetic nervous system predominance because of interruption of the sym-

pathetic nerve supply to the lung by the interscalene block.

This would be a reasonable explanation if the human lung had abundant sympathetic innervation. However, sympathetic innervation to the lungs is sparse or even nonexistent.<sup>2-4</sup> The sympathetic nervous system exerts

its influence via circulating catecholamines,<sup>5</sup> but the importance of this mechanism in nonasthmatic people is difficult to imagine. Massive doses of beta-adrenergic blocking drugs and high spinal anesthesia fail to provoke bronchospasm in normal individuals.<sup>6</sup> Moreover, on the basis of the existing hypothesis, unilateral sympathetic block should have produced unilateral rather than bilateral bronchospasm.

There must be a better explanation for bilateral expiratory wheezing following interscalene brachial plexus block.

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### ECG Wires Need Not Be Replaced on a Regular Schedule

*To the Editor:*—As a manufacturer, we appreciate Dr. Mantia's favorable comments about our shielded ECG cables and leadwires.<sup>1</sup> That Dr. Mantia, and his colleagues, have enjoyed "years of service" from a cable and wire set is tribute to the obvious care with which they handle their electrical equipment.

As a rule, ECG cables far outlast leadwires, and the unseen normal wear-and-tear on leadwires can cause annoying and potentially misleading artifacts. But while a "regular replacement schedule" would be immensely profitable for NDM, it is not necessary to discard wires simply because they have provided long service. NDM offers an inexpensive continuity tester designed to evaluate a wire's internal condition. This simple, battery-powered device will quickly show if a wire ought to be replaced—or can remain in service.

We have offered this wire tester (Catalog Number 09-1590) for more than 10 years. In these days of cost

containment, it offers the anesthesiologist a way to reduce wire replacement costs *without* compromising ECG trace quality.

Our apologies to Dr. Mantia for not having made him aware of this product's availability.

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### An Inadvertent Insertion of a Swan-Ganz® Catheter into the Intrathecal Space

*To the Editor:*—There have been an unbelievable number of complications associated with the Swan-Ganz® catheter. We recently experienced a case in which the catheter was inserted inadvertently into the intrathe-

cal space. A 45-year-old, 45-kg woman underwent a total gastrectomy for advanced gastric cancer. Continuous thoracic epidural anesthesia combined with inhalation of nitrous oxide in oxygen was selected for the case.