

We should also pay attention to the rotation of the tube position. In such cases, we sometimes found it difficult to exactly fit the ventilation slot to the orifice of the upper bronchus. However, in most cases we could maintain adequate oxygenation and ventilation beyond all expectations. Thus, exact matching of the ventilation slot to the orifice of the upper bronchus is not always required to obtain proper oxygenation and ventilation. If an exact match was required, we could not properly use the right-sided DLT in most cases.

The purposes of our modification of the bronchial tip and the cuff shape were to increase the applicability of a right-sided DLT for more patients, to increase the safety margin in positioning, and to increase usability. To archive these purposes, we proposed our new concept and devised the new tube. We believed that our design achieved our purpose.

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Infection Control Practices by the Anesthesiologist

To the Editor:—We read with interest the article by Dr. Randy W. Loftus *et al.*, entitled “Transmission of Pathogenic Bacterial Organisms in the Anesthesia Work Area.”¹ The authors reported contamination of the anesthesia workspace and the sterile stopcocks. This is an important study that highlights the risks of contamination and the potential role that the anesthesiologist may have in the spread of disease. The authors state that it is a “reasonable assumption that the aseptic practice by anesthesia providers at our institution reflects practice elsewhere.” However, I do not believe that this is a valid assumption, and would like to know what it is based on. It would have been important to describe the actual anesthesia practice, and if there is a standardized protocol of the anesthesia practitioner.

In our institution, we have been in the process of implementing a system that is practiced as a standard throughout the department, which consists of using a front “dirty” table, and a back “clean” table. The front table is the work table of the anesthesia machine. It is covered for each patient with a disposable sterile drape. Only items specifically for the current patient are placed on the drape. Additional medications that have been prepared, but are not definitely being used, are kept on the back table, which is the tabletop of the anesthesia cart.

Rather than just having the surface of the anesthesia machine tabletop wiped down as a terminal cleaning procedure as in the study reported, it is wiped down before each patient. Additional measures include wearing a gown for patients already on contact isolation, which is removed after the case. A bag is used to isolate the controlled substances which have already been used and handled, and to keep them separate from the other unused controlled drugs. We are currently evaluating stopcocks with sealed valve ports that do not require caps, which would be a closed system and may be less likely to be contaminated. We are also evaluating central line dressings impregnated with chlorhexidine to reduce the incidence of central line-related infections.

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In Reply:—We appreciate the thoughtful criticism provided by Drs. Neustein and Williams regarding our article entitled “Transmission of Pathogenic Bacterial Organisms in the Anesthesia Work Area.” They raise an interesting question regarding the likelihood of interinstitutional variability in infection control practices of anesthesia providers, a question inspired by our comment that “it is a reasonable assumption that the aseptic practice by anesthesia providers at our institution reflects practice elsewhere.”

In the 1970s, the Centers for Disease Control and Prevention initiated the National Nosocomial Infection Surveillance Study (NNIS) to continuously monitor infection control rates in hospitals across the United States. Data derived from the NNIS provided statistical evidence for the need to improve preventative measures and generated a set of guidelines for recognition and management of infection. Our statement was based on the NNIS quartile ranges of our institution, which suggest that our overall infection control practices are excellent; as good as or better than the majority. We are at the 50th percentile for new cases of Methicillin-resistant *Staphylococcus aureus* and the 25th percentile for Vancomycin-resistant *Enterococcus*. The NNIS is now known as the National Health-

care Safety Network, and it continues to serve as a reasonable comparative measure of interinstitutional infection control practices.¹

That being said, we agree that there is a possibility of both intra- and interinstitutional variability in infection control practices that would be unaccounted for by gross estimates as presented by NNIS quartile ranges. This could impact intraoperative bacterial transmission magnitude and patterns, making multiinstitutional studies evaluating intraoperative bacterial transmission an important consideration for further work in this area. We hope to address this important question with a recently funded study.

Interestingly, the infection control practices at Dartmouth-Hitchcock Medical Center largely reflect those at Mount Sinai. We too encourage designated dirty and clean areas in the anesthesia work area. The front area, the table connected to the anesthesia machine, is to remain clean (in theory), while the back of the medication cart is designated for placement of dirty health care tools into a disposable plastic bag. Like all infection control practices, there is not a 1:1 correlation with guidelines and actual practice.

The front area is decontaminated between patients with a quaternary ammonium compound, as described in our article, and similar to

Mount Sinai, only items specific to the current patients are to be placed in this area. As reported in the manuscript, this is *in addition* to terminal cleaning. We do not use a disposable sterile drape, an interesting caveat. Additional medications that have been prepared are also kept on the top of the anesthesia cart. Universal precautions, such as wearing a gown for patients in contact isolation, also apply at Dartmouth-Hitchcock Medical Center. We have various measures to control proper handling of controlled substances, an issue that is seemingly separate from infection control. All of our central lines are placed with central line dressings impregnated with chlorhexidine. Your investigation of stopcocks is interesting, timely, and in parallel with an ongoing study at our institution. In summary, based on the description which you provided of your infection control practices, the use of sterile drapes between patients serves as the only basis for variability in our infection control practices. Like use of gloves, this is unlikely to impact bacterial cross-contamination without intraoperative adherence to Centers for Disease Control and Prevention guidelines for hand

hygiene. A more useful comparison for infection control practices at our respective institutions would be a report of hand hygiene compliance of anesthesia providers; the number one preventative measure for healthcare-associated infections.²

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Increased Impedance on Nerve Stimulator Display May Actually Reflect a Decrease in Total System Impedance

To the Editor:—Tsui *et al.* in their paper “Electrical Impedance to Distinguish Intraneural from Extraneural Needle Placement in Porcine Nerves during Direct Exposure and Ultrasound Guidance” make a very interesting observation: An increase in electrical impedance on needle

entry into a nerve.¹ However, although interesting, the finding is ascribed to an electrical parameter that it likely does not represent. As such, this is an example of being misled by some of our equipment that is routinely used without questioning what is actually being shown.

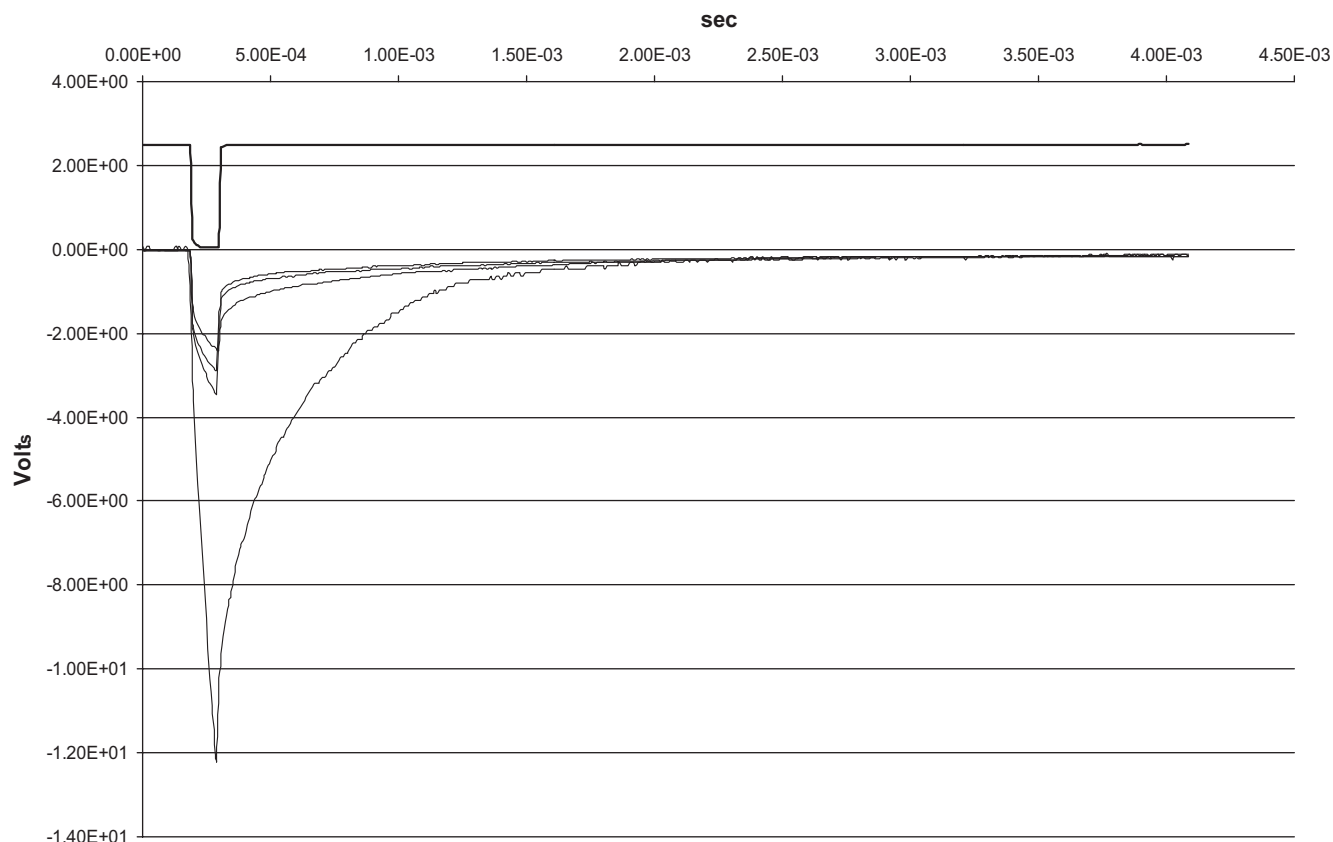


Fig. 1. Voltage responses for a 0.489 mA square waveform current pulse measured across a fixed 4.92 k Ω (displaced + 2.5 V for display purposes) and across a tissue/electrode system using a 22-gauge Stimuplex needle (D. Braun Medical, Bethlehem, PA) inserted to a depth of 5 mm with several return electrode configurations.