CORRESPONDENCE

Anesthesiology
1997, 87:187
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Lippincott-Raven Publishers

In Reply.—I would like to thank Dr. McHugh for sharing his very interesting observations indicating a 10% reduction in flow resulting from the insertion of the Lever Lock cannula (LLC) and would quote his paper here: "Whether or not the magnitude of the observed flow reduction is clinically relevant can only be judged for each individual case." His findings cannot be ascribed solely to the LLC because the "Heparin lock adapter" is also inserted to allow the inclusion of the LLC directly to the hub of the cannula. This is important for multiple reasons. The addition of any component will increase resistance, as defined in the IJagen-Poiseuille's law for laminar flow. Additionally, the diameter of the tubing is altered directly at the hub of the cannula in his study configuration, predisposing to turbulent flow directly at the hub of the cannula. Turbulence introduces significant friction and can significantly impede forward flow into an orifice when induced at this point. Because his study used only gravity infusions of crystalloid, he freely recognized multiple other factors as potential variables in infusion therapy, including venous resistance downstream from the cannula, anatomic intravenous access site, tubing lengths and bores, viscosity of fluid infused, and so on.

I recommended that the LLC be used to rapidly connect directly into a Y-port for rapid infusion of warmed fluids. This inherently requires significant increases in tubing length and resistance (warmer tubing), whereas reducing viscosity of warmed fluids and decreasing venous resistance in warm versus cold peripheral veins downstream from the cannula. Because of the multiple factors introduced by using fluid warmers and because typically pressurized infusion is used, it would be inappropriate to readily extrapolate Dr. McHugh's laboratory findings to my proposed clinical application. My clinical impression is that negligible resistance is specifically and relatively incurred by the LLC, and the technique is expedient and useful in combating hypothermia and facilitating warmed infusions.

I would further agree that the benefits of any intravenous system should be critically evaluated by every physician choosing to use techniques in each clinical situation to benefit patient care.

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(Accepted for publication April 25, 1997.)

Oversize Endotracheal Tubes and Intubation via Laryngeal Mask Airway

To the Editor.—A standard endotracheal tube (ETT) often is found to be too short to be used safely in cases of fiberoptic intubation through an laryngeal mask airway (LMA). As a simple and practical alternative to using a standard ETT, Allery suggested the use of a 6.0-mm internal diameter (ID) nasal RAE tube (developed by the medical professionals Ring, Adar, and Elwyn, made by Mallinkrodt (St. Louis, MO), with a length of 54 cm. If this specialty ETT is in stock in anesthesia storerooms and is readily available for patients with difficult airway, it may facilitate mid-tracheal intubation via LMA. If such a 6.0-mm ID nasal RAE tube or another oversize 6.0-mm ID endotracheal tube is not already in stock, we would urge considering stocking anesthesia storerooms with a specialty ETT to facilitate fiberoptic intubation via LMA.

Suitable are, for example, a 6.0-mm ID microlaryngeal tube (34-cm long), a 6.0 mm ID nasal RAE tube (length 35 cm), both produced by Mallinkrodt, or another oversized 6.0 mm ID microlaryngeal tube (MLT), with a length of 40 cm (Rusch Incorporated, Duluth, GA). These tubes are narrow enough to pass through the size 3 or 4 LMA shaft and long enough to allow mid-tracheal positioning of the ETT's tip.

For several years, we have used the 40-cm long 6.0-mm ID MLT when intubation is to be performed via LMA. With respect to our data, we can recommend the use of this MLT, 40 cm in length, in patients with difficult airway. To date, in about 15 patients with unexpected difficult airway, we were able to perform safe and gentle placement of this globally available MLT via LMA, and, additionally, because of its extraordinary length, the LMA could be removed without dislodging the MLT.

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References


(Accepted for publication April 26, 1997.)