

# The Mucus Slurper: A Novel Device to Keep the Endotracheal Tube (ETT) Free of All Mucus, Without Suctioning

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## Technology description

### Summary

A Mallinckrodt Hi-Lo® CASS (continuous aspiration of subglottic secretions) endotracheal tube is modified by appending to the distal-most tip of a cut-off CASS tube a molded, hollow, concentric plastic ring with 3 - 4 (or more) small (less than 1 mm in diameter) suction ports, the latter positioned in the most dependent part of the ETT (Figure 1). The CASS line was extended to the very tip of the ETT, and suction was activated for approximately 0.5 s, synchronized to the early part of expiration; and repeated once a minute, or as desired. All mucus was collected in a small in-line vial. Healthy, anesthetized and paralyzed sheep, were intubated with a modified 8 mm CASS ETT tube with attached "Mucus Slurper" ; with sheep lying prone, trachea/neck oriented below horizontal. Never suctioned. At the end of the 72 h study, sheep were electively euthanized, and autopsied.

Figure 1. Normal arterial blood gases. No traces of mucus were found along the entire length of the ETT. There were no gross abnormalities of the tracheal mucosa; Bacterial cultures of the 5 lobes of the lungs were negative. The Mucus Slurper represents a new concept that may significantly contribute to improved care of patients intubated and mechanically ventilated; with no need for suctioning/cleaning, and free of ventilator associated pneumonia.

## Application area

Prevention of ventilator associated pneumonia

Intubation

Mucus clearance

## Institution

[NIH - National Institutes of Health](#)

## 联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com