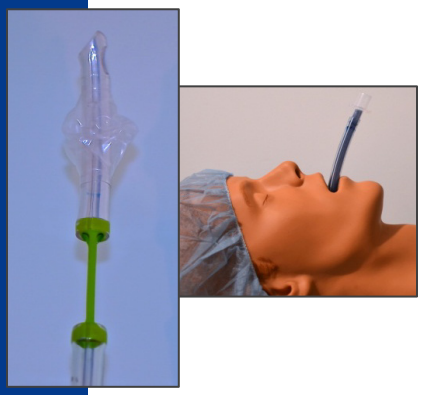
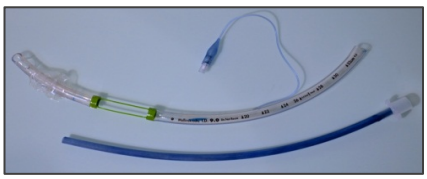
Improved Endotracheal Tube to Prevent Intubation Related Complications Related to Airway Edema (Swelling)



The improved endotracheal tube (ET Tube) helps diagnose airway edema, preventing premature extubation and emergency re-intubation. Re-intubation can cause significant tissue damage in up to 30% of patients. The improved ET Tube also helps reduce ventilator duration by confirming airway readiness for extubation. The ET Tube has a blue hollow stent inside the ET Tube that can be removed to reveal an open section held by two green struts that are compressed when edema is present (see Figure). This ET Tube is simple and easy to use, with a short learning curve. Moreover, this ET Tube can help reduce hospital expenses, patient costs and physician lawsuits.



COMMERCIAL OPPORTUNITY

- 25 million intubations are performed in the US per year, and 50 million worldwide with a projected annual growth rate of 5%.
- Medical literature shows a complication rate of 4-30% in intubated patients with either a prolonged intubation or a premature extubation which is often followed by an emergency re-intubation. Re-intubation causes a 4-fold increase in mortality, prolonged ICU course and high costs ($8-10K per day). Failed re-intubation is associated with permanent brain injury or death from hypoxia resulting in physician and hospital lawsuits.
- Only one improved ET Tube is needed until the patient is safely extubated. Additional airway devices including laryngoscopes, a new ET Tube, airway exchange catheters, additional medications, etc. are unnecessary. The improved ET Tube also requires minimal training, ensuring a quick adaptability of the new technology.
- A unique advantage: Patients can speak while intubated (not possible with the common ET Tubes). This feature can accurately diagnose vocal cord nerve injury while patient is still in the O.R after a neck surgery. In addition and as opposed to using gestures, a clearly interacting patient will have less anxiety, lowering the need for medications. .
- Regulatory analysis suggests the device falls under the FDA Class II 510(K) exempt device category (clinical trials and pre-market testing not required), indicating a low regulatory barrier to market entry.

TECHNOLOGY

A simple design with a hollow stent inside the ET Tube that morphs into a thin, minimal profile bridge across the vocal cords—the area most prone to intubation related changes. A “trial-extubation” is performed without actually removing the ET Tube from the airway. If the patient continues to breathe comfortably, a full extubation can safely be performed. Patients showing signs of respiratory distress continue on the mechanical ventilation. A working prototype ET Tube has been developed.

PUBLICATION/PATENT

U.S. patent application filed on 9/13/16 and European patent application filed on 10/13/2016 for Dr.Chaudhry

CONTACT

Haskell Adler PhD MBA
Senior Licensing Manager
Haskell.Adler@Moffitt.org
(813) 745-6596

LICENSING OPPORTUNITY

MOFFITT CANCER CENTER