A Video Airway Library; Airway Management, Educational and Research Opportunities (The AMERO Effort)

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Background

- Timely and correctly performed endotracheal intubation is a life saving procedure. It can be stressful especially among beginners and requires significant expertise.
- Simulation and practicing in mannequins are the mainstay of current training for airway management . Although these techniques help orient a novice user, they are siloed from the actual experience.
- Studies suggest that endotracheal intubation success rates are below 50% for the first 10 intubations that increase to 90% after a mean of 57 attempts among trainees.

Goals

The primary goal is to accelerate the learning curve of trainees to assess and secure airway by increasing efficiency (determined by reduced intubation time) and safety (determined by successful first pass rates).

Methodology

- To address this gap, we developed an online library consisting of real-life clinical videos of airway and endotracheal intubations of normal and difficult airways to supplement current training techniques.
- The effectiveness of this tool will be determined by a randomized prospective crossover study conducted in incoming anesthesiology residents.
- Following the 5-day intensive course, all participants will be tested via a post hoc review of intubation videos for identification of airway structures and technical skill.
- If AMERO proves effective, it will be extended to other departments for airway management training.

Future scope

We will collaborate with the Visible Heart Laboratory, Department of Otolaryngology and School of Dentistry to develop and test an interactive platform using high-fidelity airway models integrated with mixed reality to enhance the learning experience of novice operators.