

Innovative Airway Device Allowing Staged Intubation and Extubation

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The AZ Airway concept allows easy interchangeability between supraglottic airway (SGA) and endotracheal tube (ETT) ventilation. This device also allows true staged extubation with uninterrupted ventilation, allowing conversion of ETT to SGA prior to removal.

A number of techniques have been described converting SGA ventilation to ETT intubation. All are complicated and disrupt ventilation. No method has been described allowing direct ETT to SGA conversion.

Clinical use scenarios include:

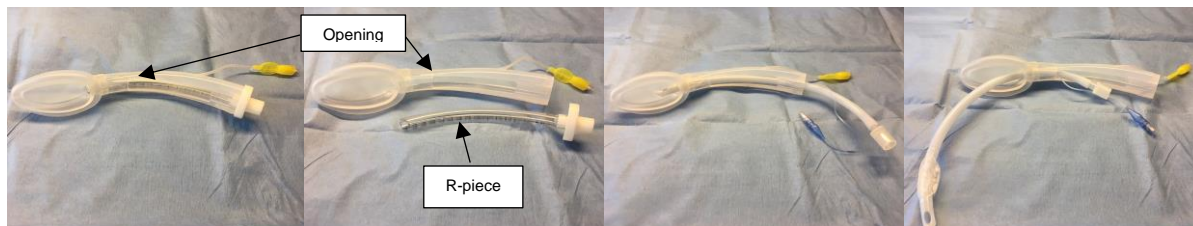
- Airway rescue device allowing easy intubation after establishing SG ventilation
- Smooth intra-procedural conversion from SGA to ETT and reverse,
- True staged extubation before removal of ETT
- Tracheal rest in prolonged intubation
- Safety device for tracheostomy procedures
- Safety device facilitating retrograde intubations

The innovation consists of two pieces: a SGA with a channel cut into the airway tube and a removable coaxial tube (R-Adapter) which fits inside the airway tube. When assembled, the device acts as any SGA. Removing the R-Adapter exposes the channel allowing easy passage of an ETT in either direction. When one does a fiberoptic intubation through the airway the SGA is easy to remove as the channel allows you to stabilize the ETT distally. Conversely one can slide the SGA over an in situ ETT as the channel allows easy access to the proximal end of the ETT. The ETT is then used as a guide for the placement of the SGA. Following placement the ETT can be “backed up” into the SGA – thus converting from endotracheal to supraglottic ventilation.

The AZ Airway concept was tested successfully by altering a number of commercially available SGA platforms.² Cleveland Clinic is collaborating with a manufacturer through a joint development agreement to finalize a design and complete the regulatory requirements to allow clinical trials. At this time of submission, the prototype is being tested on cadavers. Cleveland Clinic is seeking a distribution partner to commercialize the final product.

References

- 1) Avitsian R, Zura A, AZ Airway: a novel interchangeable supraglottic and tracheal device. *Br J Anaesth* 2017;119, e43
- 2) Avitsian R, Zura A, Proof-of-concept trial for ‘AZ modification’ of supraglottic airways. *Br J Anaesth* 2018; 121: e5



Pic.1 AZ airway **A-** original form; **B-** showing R-piece, front opening and channel **C-** ETT in SG position **D-** ETT in endotracheal position