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# Controlling Airway Secretions to Reduce Spread of Infections: A case of Mucormycosis

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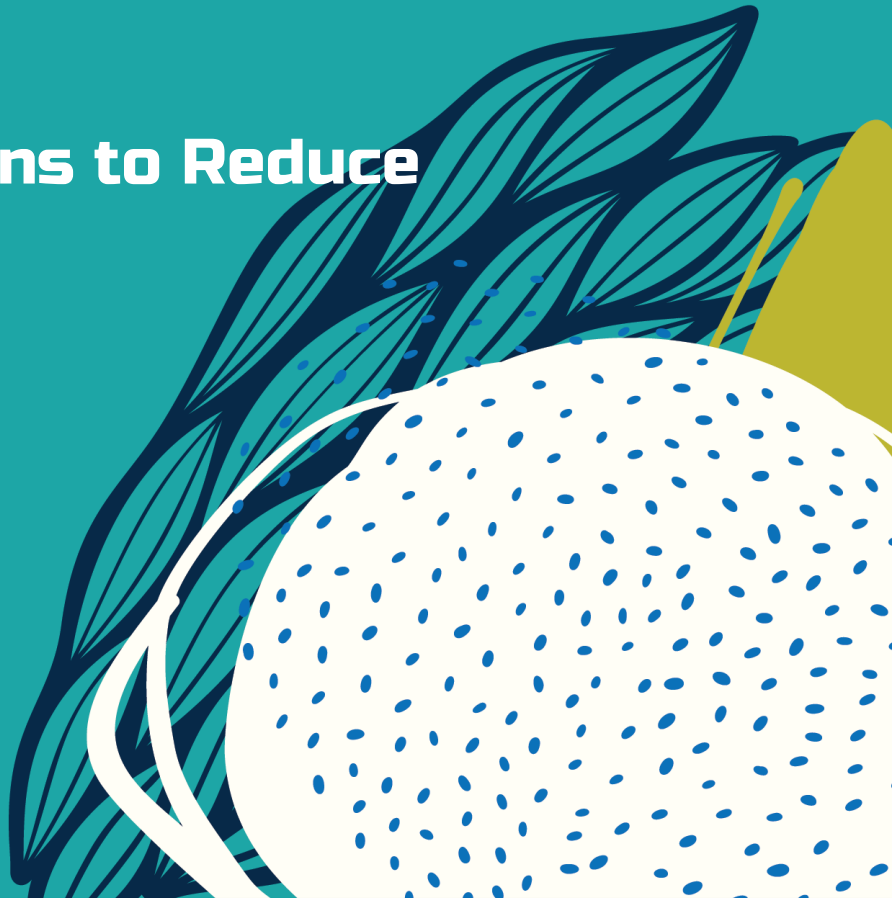

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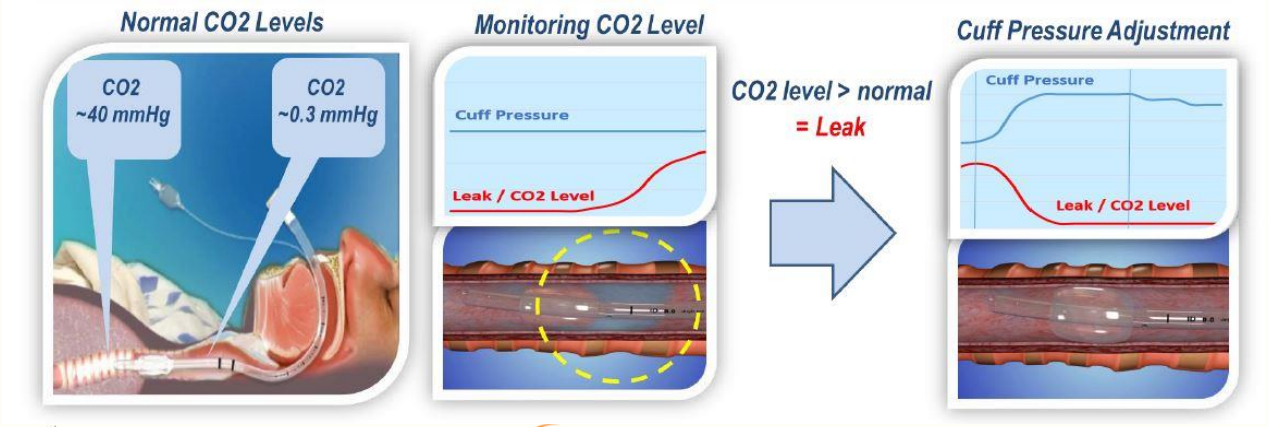
# Case Report

- 71 year old Caucasian male admitted to Mayo Clinic FL with AML status post allogeneic hematopoietic stem cell transplant.
- On day +18 post-transplantation: prolonged engraftment, pancytopenia, and upper lip Mucormycosis.
- Admitted to ICU following upper lip excision and debridement.
- Hospital course complicated by disseminated mucormycosis and multiple organ failure, which required endotracheal intubation and mechanical ventilatory support.
- Maintaining an adequate ETT position and controlling the volume of secretions was challenging due to the wide upper lip resection.
- These difficulties led to the patient being placed on the AnapnoGuard system

# The AnapnoGuard System

## Cuff Pressure Control & Optimization

- **Automatic leak detection around the cuff, based on the CO2 level in the subglottic space.**
- **Automatic feedback loop to ensure effective sealing with minimal ETT cuff pressure.**

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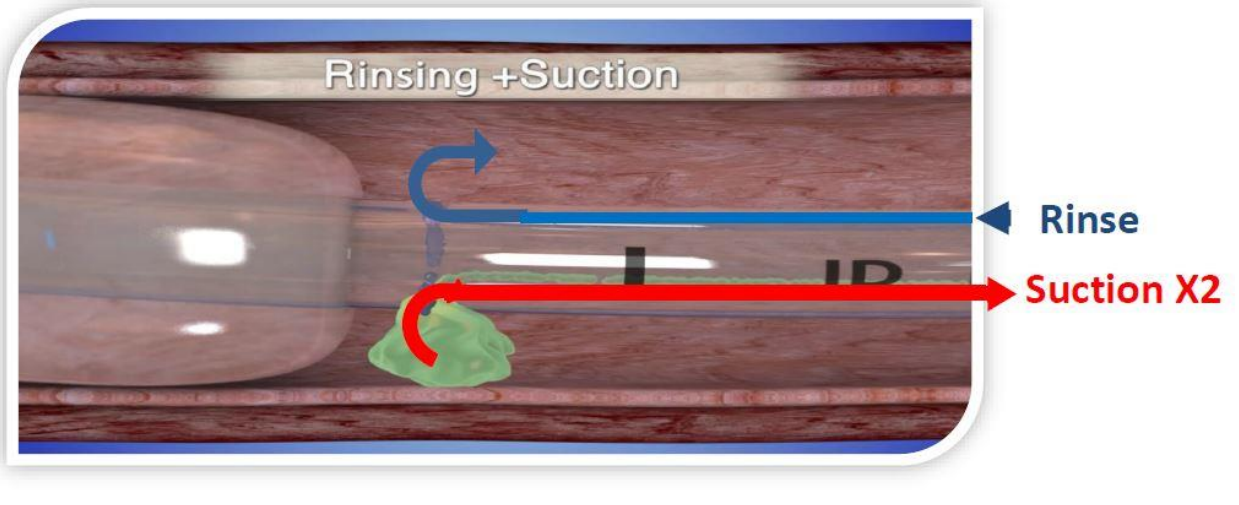
# The AnapnoGuard System

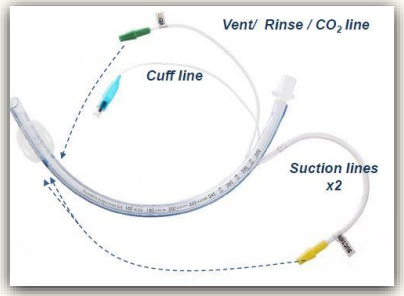
## Effective Evacuation of Secretions

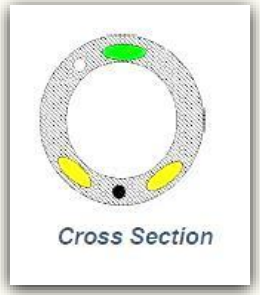
- **Automatically performs programmable subglottic suction of secretions by synchronized, simultaneous rinsing with saline and suction.**

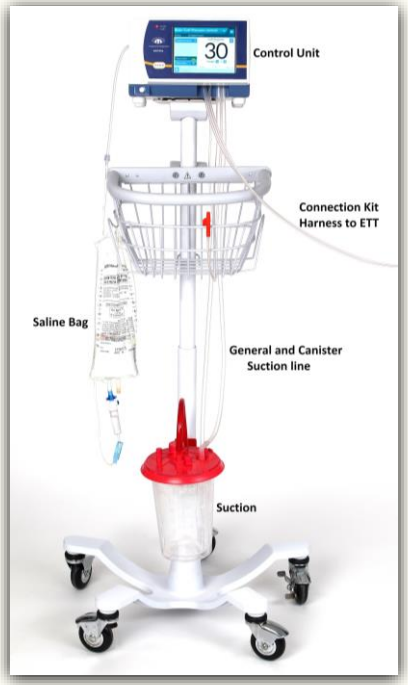


# The AnapnoGuard System: Components

- **PVC ETT with thin wall PU cuff.**
- **Two suction lines and an extra CO2/venting line.**
- **Connection kit.**
- **Control unit (AG100s).**

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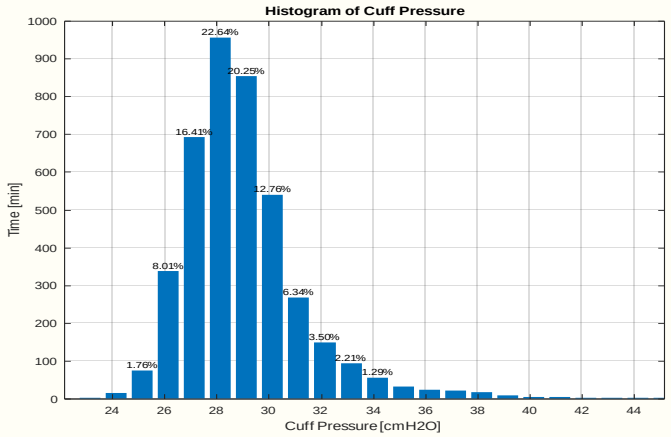
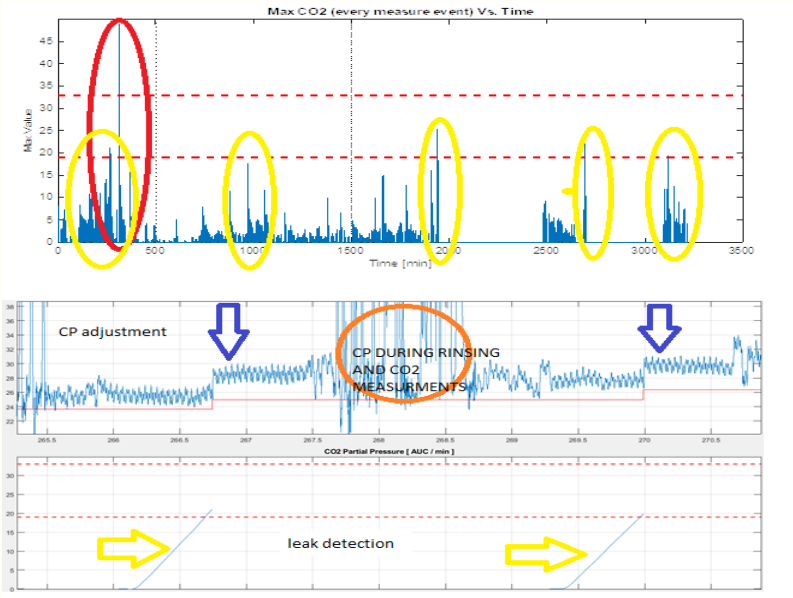
# $CO_2$ readings during patient's connection




- **Automatic CP limit: 20-35 cmH2O;**
- **Calculated required CP value: 26-28 cmH2O.**
- **CP above 35 cmH2O represents instances where system is intentionally raising cuff pressure during rinsing.**




**5 events with CO2 leaks were detected and cuff pressure was automatically adjusted by the device.**

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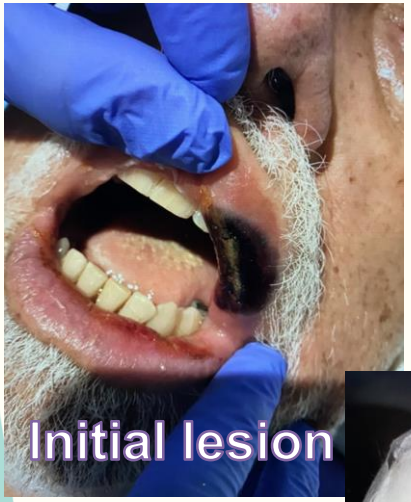




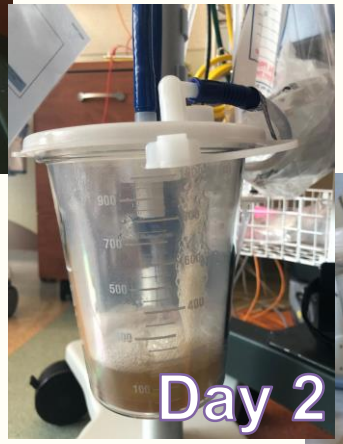


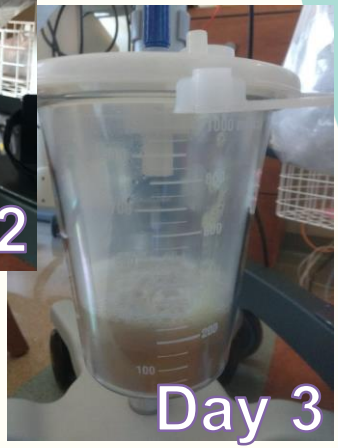


***Net Secretions***
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# Conclusions

- **The AnapnoGuardTM system is an effective, innovative device capable of:**
  - **Detecting leaks around the cuff and making real time automatic pressure adjustments according with patient's anatomical requirements, avoiding airway injury.**
  - **Protecting the lower airway from significant aspiration of upper airway secretions which are potentially dangerous in high-risk infections like Mucormycosis.**