

**PACCM Difficult Airway  
Scenarios:  
Chatting about Solutions**

**STEPHANIE MAXIMOUS, MD**  
**PHIL LAMBERTY, MD**

# DA Definition: ASA

**the clinical situation in which a conventionally trained anesthesiologist experiences difficulty with facemask ventilation of the upper airway, difficulty with tracheal intubation, or both.**

# GOALS

- **Recognize Potential problems**
- **Prevent Aspiration**
- **Plan for Success**
- **Low Threshold for SGA/FOI**



- **You are a bronchoscopist!**



# ASA Difficult Airway Algorithm (2013)



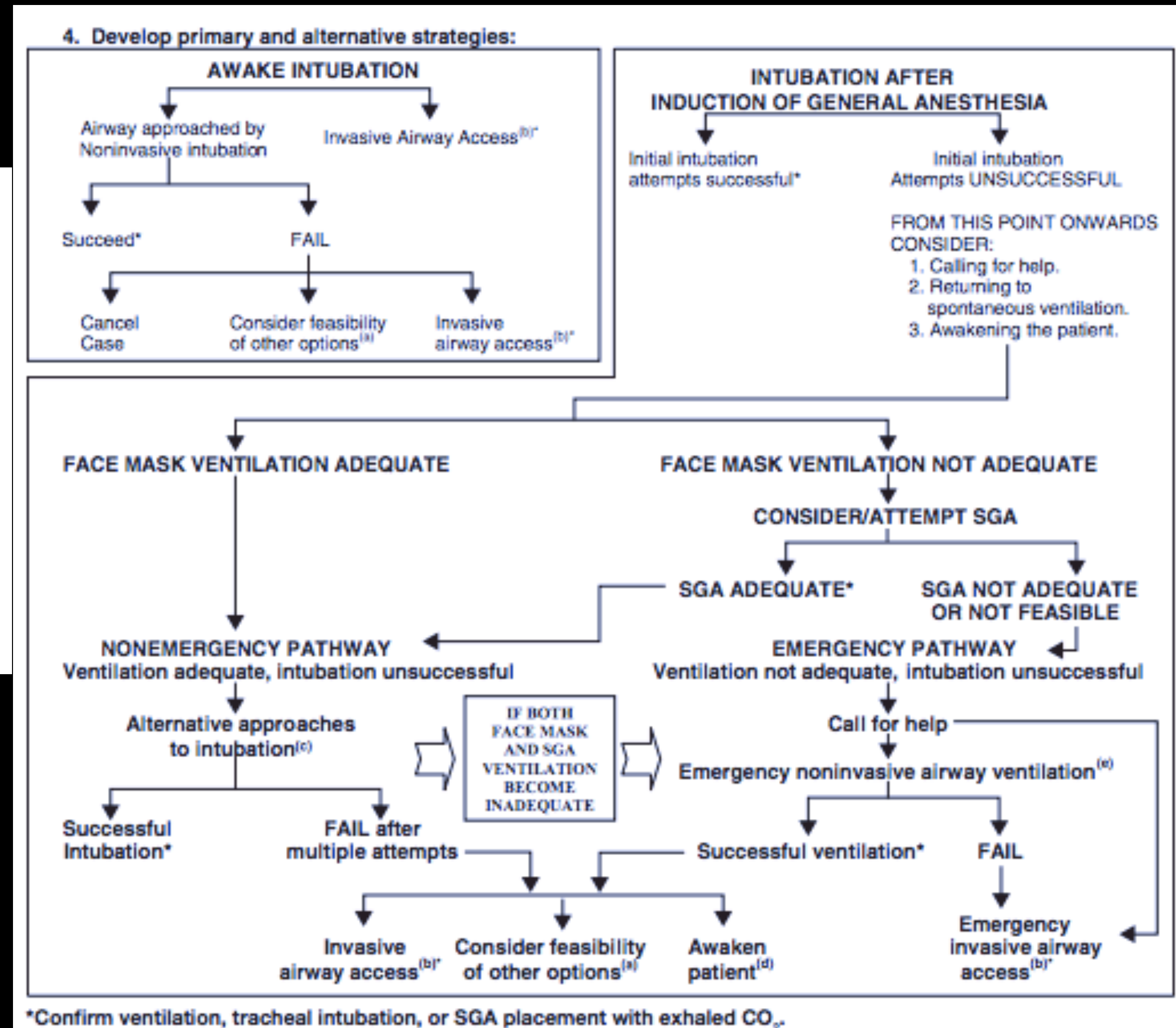
## 1. Assess the likelihood and clinical impact of basic management problems:

- Difficulty with patient cooperation or consent
- Difficult mask ventilation
- Difficult supraglottic airway placement
- Difficult laryngoscopy
- Difficult intubation
- Difficult surgical airway access

## 2. Actively pursue opportunities to deliver supplemental oxygen throughout the process of difficult airway management.

## 3. Consider the relative merits and feasibility of basic management choices:

- Awake intubation vs. intubation after induction of general anesthesia
- Non-invasive technique vs. invasive techniques for the initial approach to intubation
- Video-assisted laryngoscopy as an initial approach to intubation
- Preservation vs. ablation of spontaneous ventilation



**PLAN for Success-  
Direct Laryngoscopy  
/Video Laryngoscopy  
Fiberoptic**

**CAN'T INTUBATE**

**Attempt to BAG and  
AWAKEN**

**SGA (iGEL)**

**Can't  
Ventilate**

**Surgical Airway**

# They Are Seriously Breathing BAD

- **TIME:**

- to get resources together: personnel, meds, equipment, lines
- IO access

- **AIRWAY ANATOMY**

- ease to visualize glottis/deliver tube
- limitations on positioning
- consideration of secretions

- **SECRETIONS**

- manage secretions/ DL vs. Video

- **BAGGING/VENTILATION/OXYGENATION**

- ability to BVM
- consider Bilevel/DSI (ketamine)

- **FIND LMA**

- **BLOOD PRESSURE (SHOCK)**

- will they crash?
- pre-intubation cardiac US



**Break into Groups**

# CASE 1

- **Lower GI bleeding, probably**
- **Known fibrosis**
  - **on 50% oxygen**
- **GI wants to scope**





# USE your TASBB scheme

- **TIME**
- **Anatomy**
- **Secretions**
- **BVM, Oxyenation, Ventilation**
- **BP (SHOCK)**

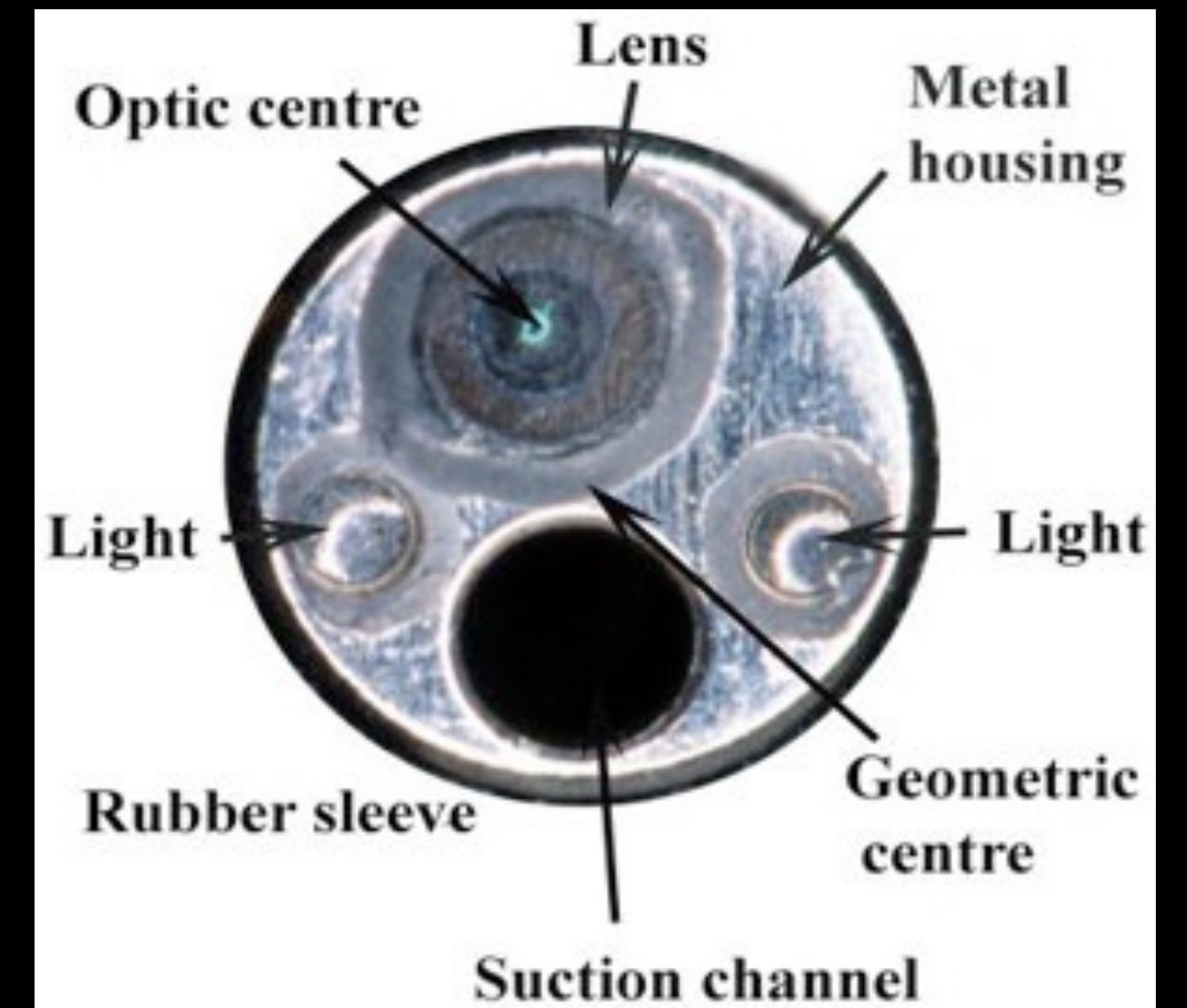
# Fiberoptics for DAM PATHWAY

- **CAN'T intubate but CAN ventilate**
  - **NOT a fast rescue device**
- **Awake intubation**
- **Nasal intubation**
- **Via Supraglottic Airway**
  - **iGel**



# Scope Sizes

- **6.0mm (OD)- bronchoscope**
- **5.2mm-- will fit inside a 6.0mm ET tube snugly**
  - **(Ambu aScope 5.0/2.2)**
- **3.6mm-- difficult to suction anything**



# Awake vs. Sedated

- **AWAKE:**

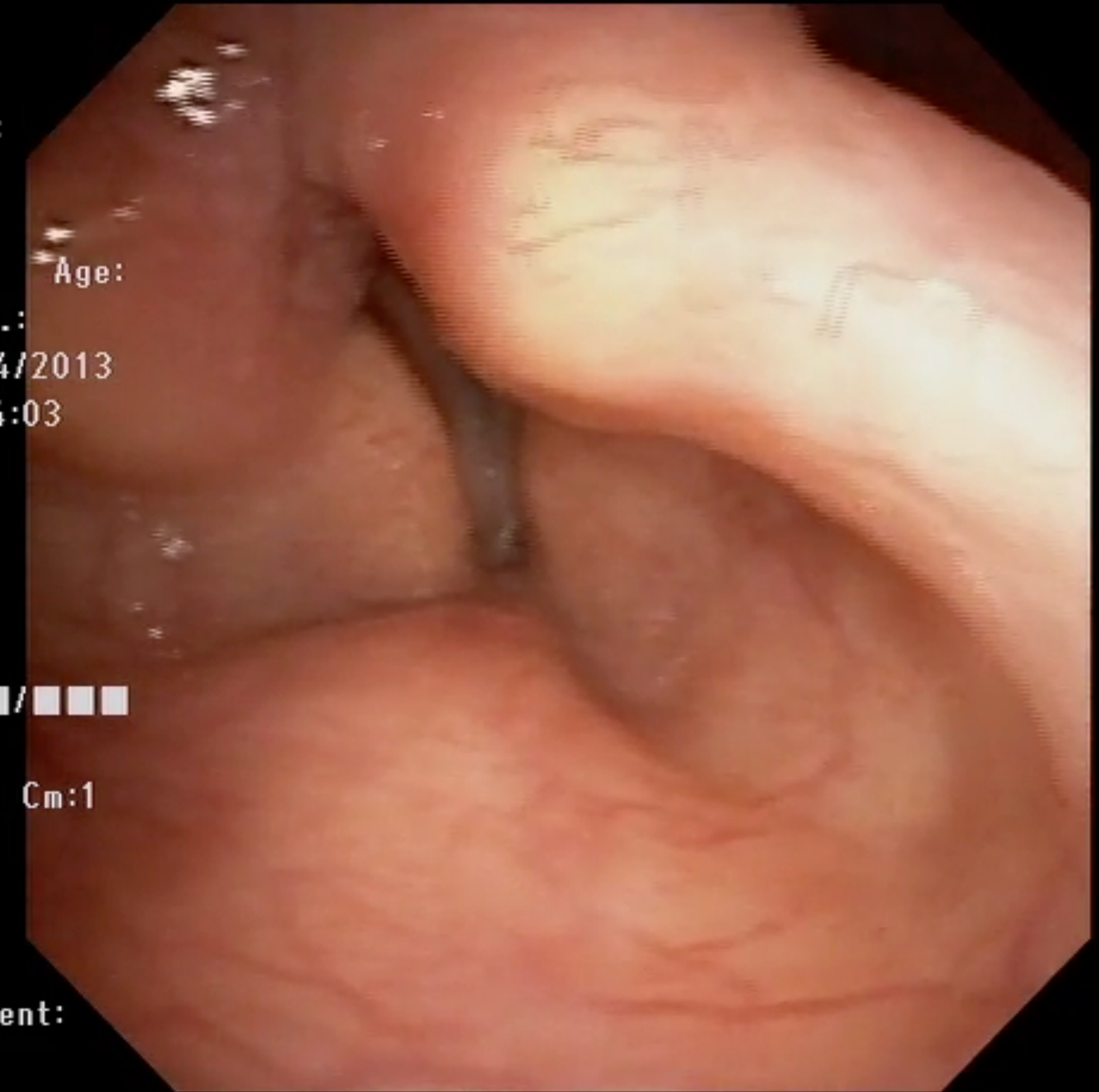
- needs topical anesthesia
- vomiting/laryngospasm
- topical Anesthesia: TIME

- **SEDATION:**

- pharyngeal tissues collapse

ID: ■  
Name:  
  
Sex:      Age:  
D.O.B.:  
12/04/2013  
09:34:03  
  
D.F:1  
■■■■/■■■■  
0/1  
Eh:A1 Cm:1

Comment:



# Seated vs. Supine

- **Seated**

- **upper airway is more patent**



- **Supine**

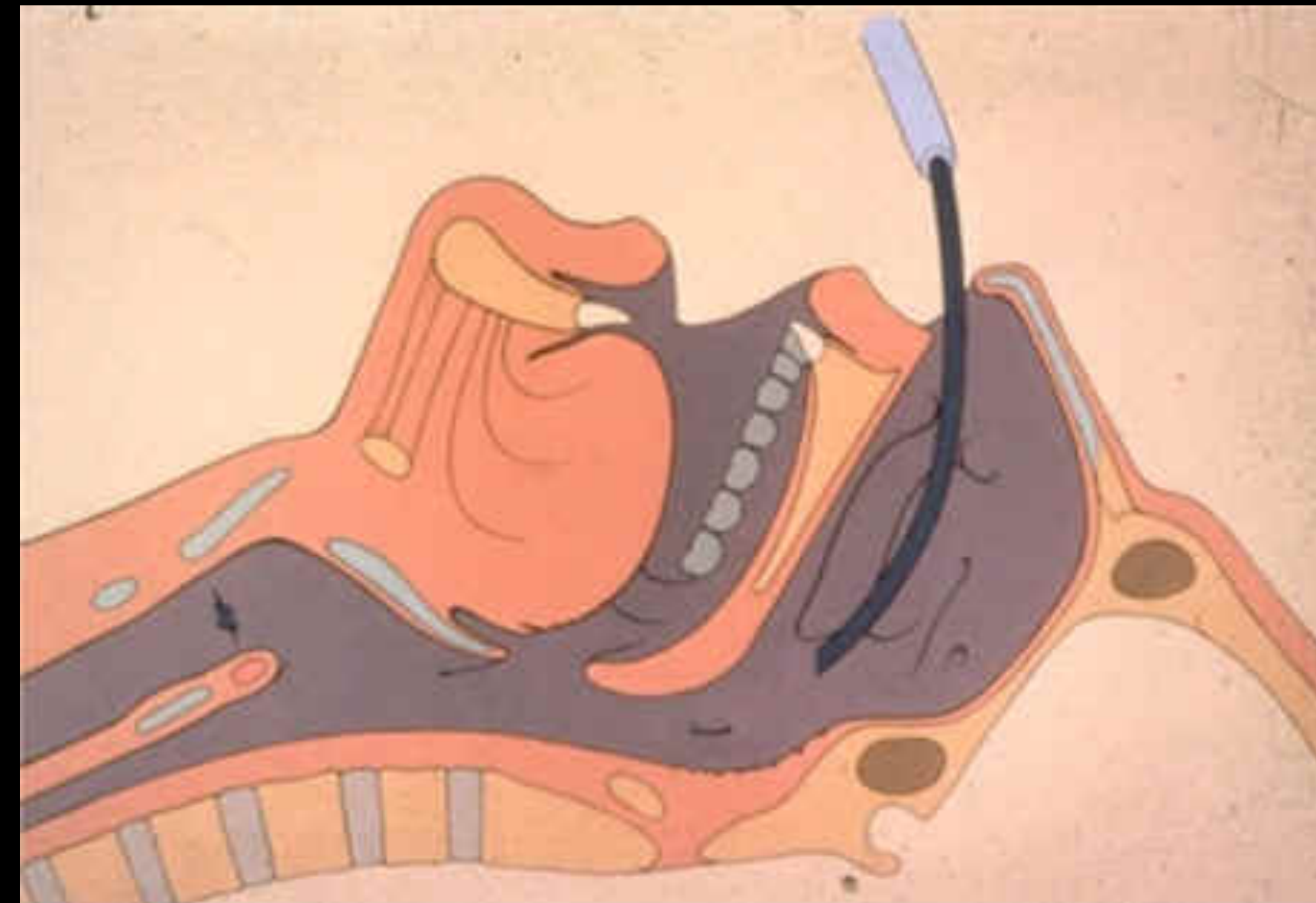
- **Easier for operator to stay midline and find the glottis**



# Nasal vs. Oral

- **NASAL**

- **Smaller tube— 6.0**
- **smaller fiberscope**
  - **less suction capability**
- **Easier access to glottis**
- **Bypass obstructed mouth**



- **ORAL**

- **accommodates bigger scope and ET tube**

# Preparation

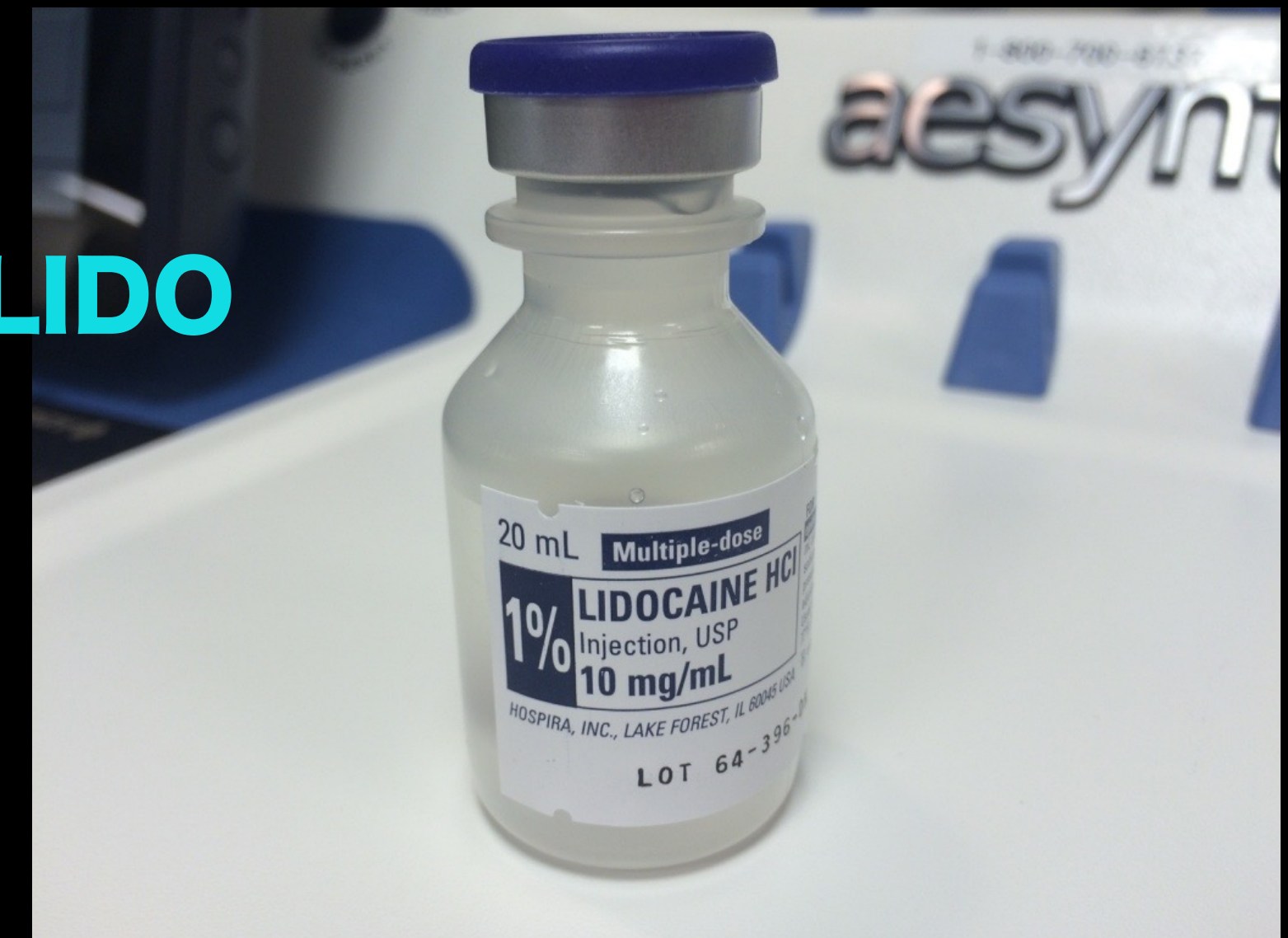
- **Restrain the Wrists!!!**
- **Oxygen: HFLNC/Face mask**
- **IV Sedation:**
  - **Ketamine/Precedex/Versed/Fentanyl/Propofol**
- **Topical Sedation**
  - **LIDOCAINE**
  - **Anti-Sialogogues**
    - **Glycopyrolate-tachycardia**



# Topical Anesthesia: Lidocaine



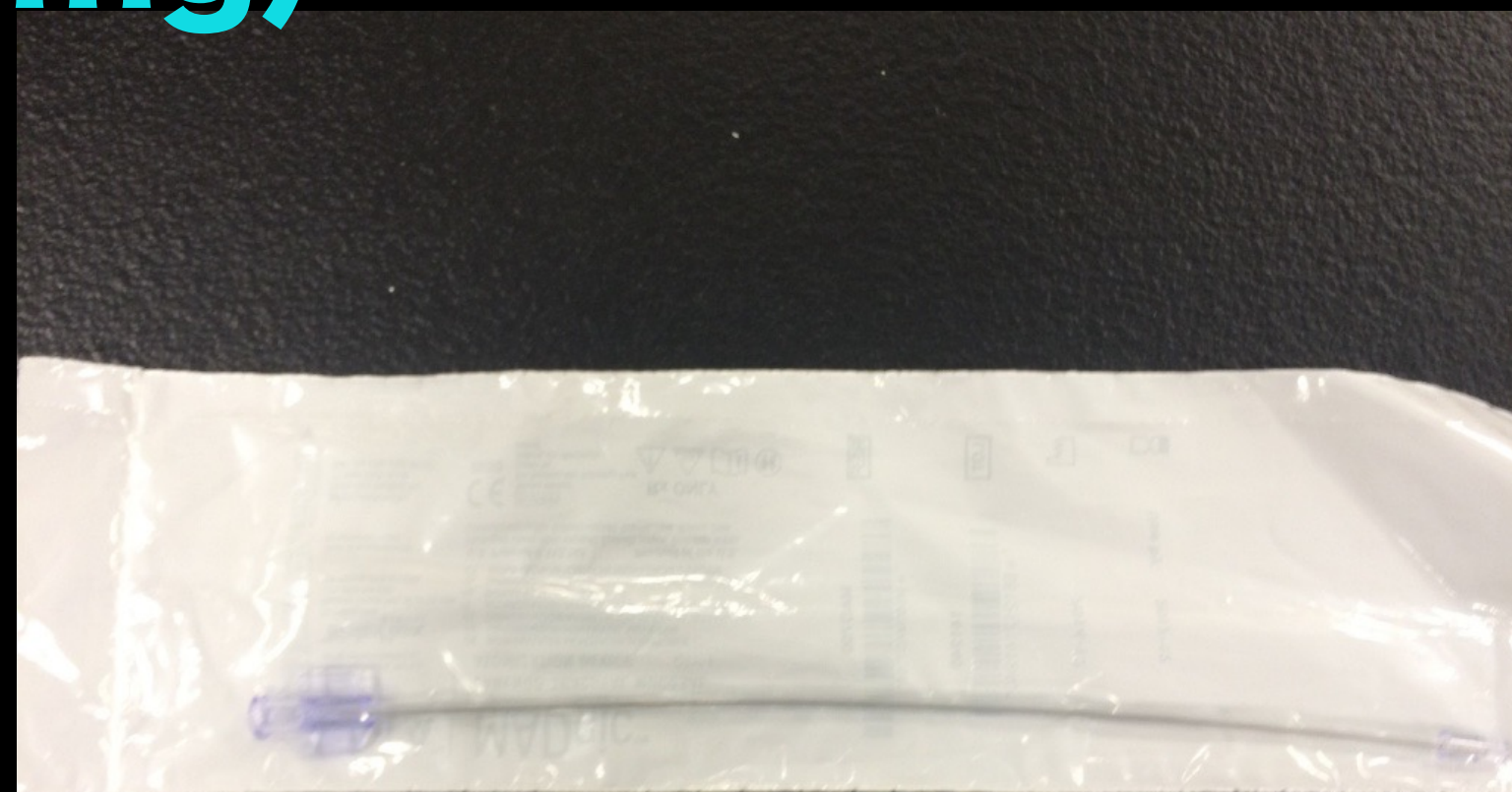
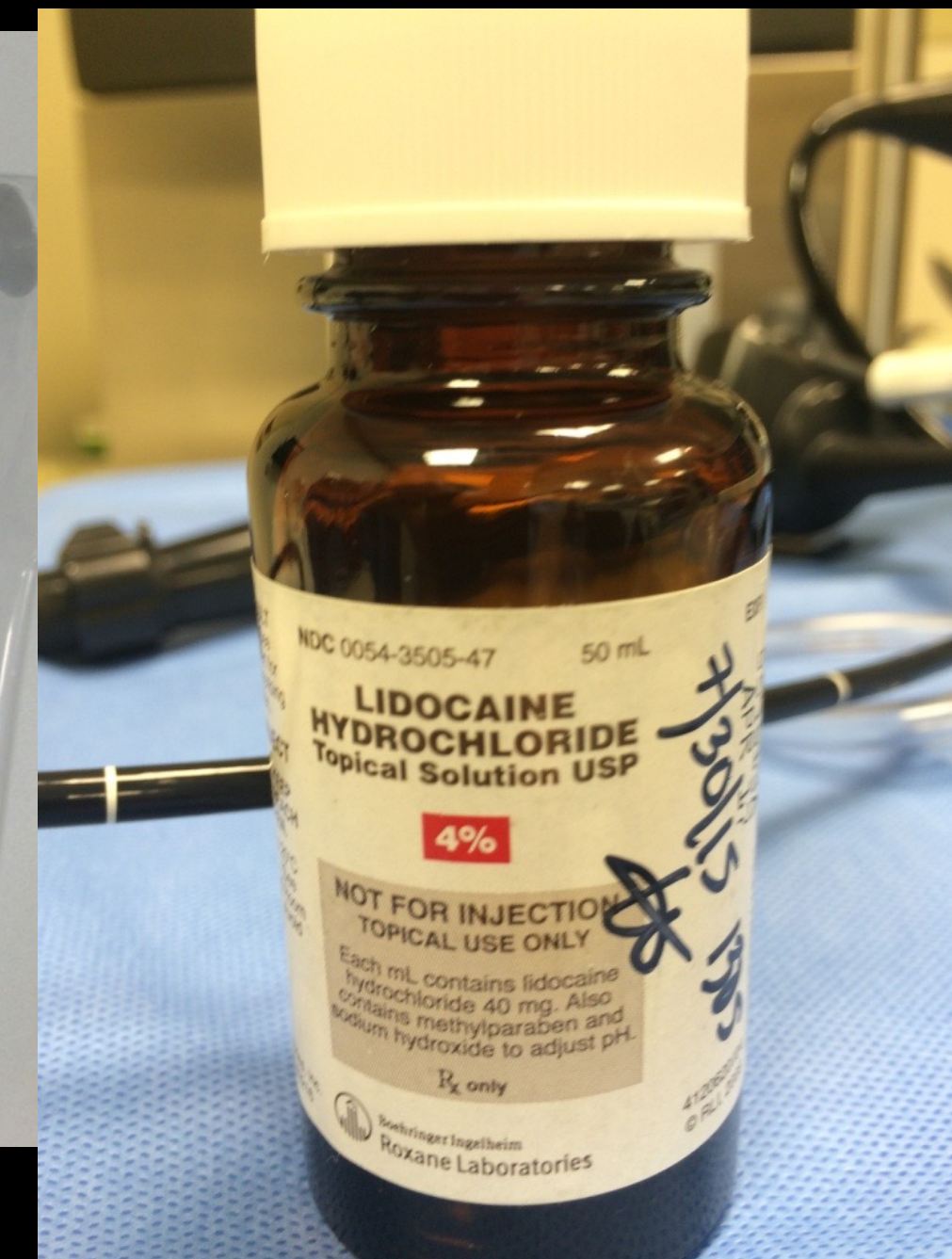
- **When you have TIME**
- **Prevent cough, vomiting, aspiration**
- **Lidocaine max dose: 300mg to 600mg**
  - **toxicity: seizures, hypotension**
- **Best: Spray via working channel 1-2 mL of 1% LIDO**
  - **20ml 1% above vocal cords**
  - **20mL below cords (400mg)**





# Lidocaine

- **MAD: atomizer (spritzer) 2% Lidocaine- 10mL (200mg)**
- **Atomizer: 2% 10 ml (200mg)**
- **Nebulizer: 3mL of 4% (120mg)**



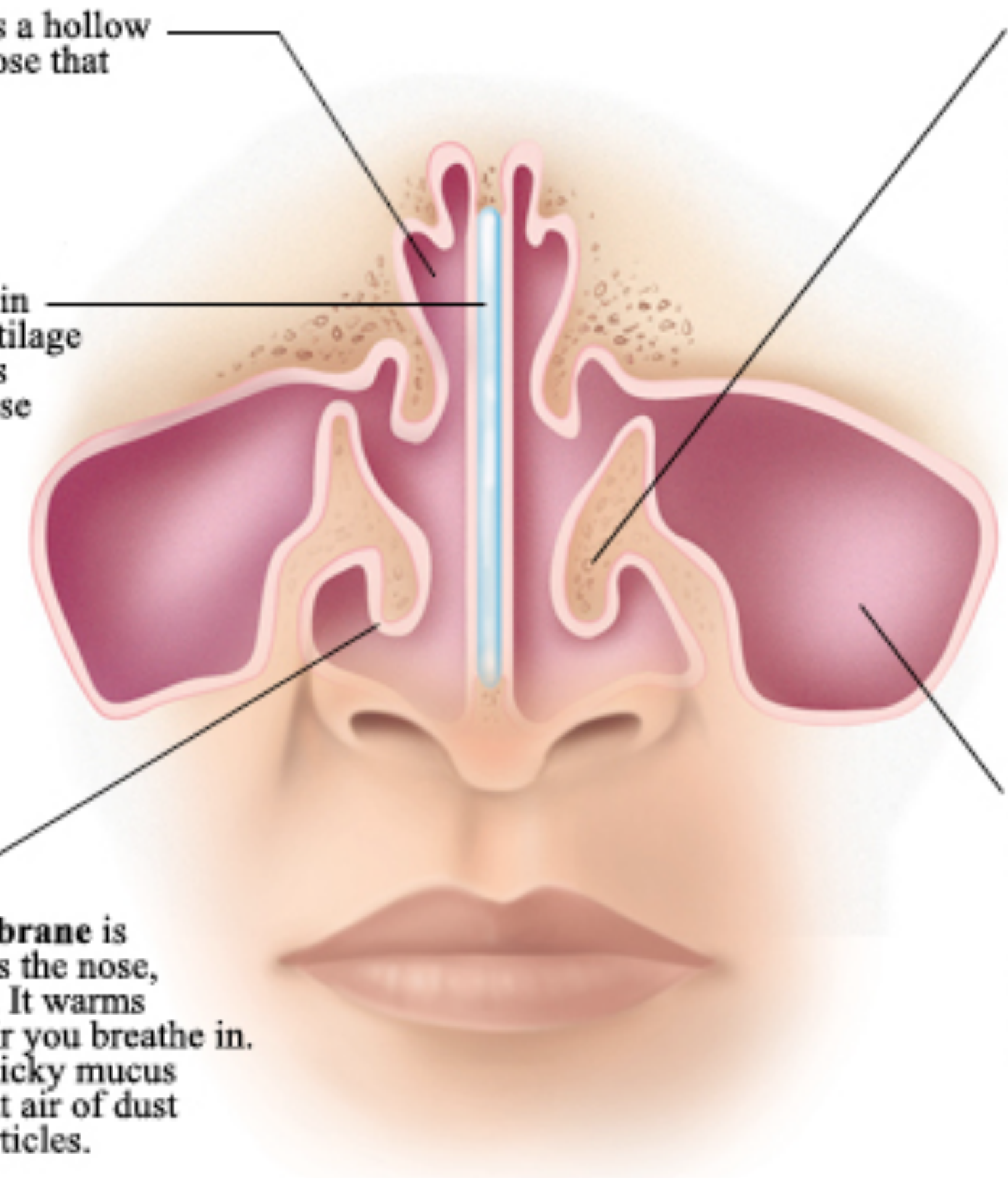
# Nasal (6-7mm tube)



**The nasal cavity** is a hollow space behind the nose that air flows through.

**The septum** is a thin "wall" made of cartilage and bone. It divides the inside of the nose into two chambers.

**The mucous membrane** is thin tissue that lines the nose, sinuses, and throat. It warms and moistens the air you breathe in. It also makes the sticky mucus that helps clean that air of dust and other small particles.



**The turbinates** on each side of the nose are curved bony ridges lined with mucous membrane. They warm and moisten the air you breathe in.

**The sinuses** are hollow, air-filled chambers in the bones around your nose. Mucus from the sinuses drains into the nasal cavity.

# Oral Approach

- Stay on target
- Stay midline
- ORAL AIRWAYS
  - Ovassapian
  - Berman (tear apart)





# ET via iGEL



# Tube Delivery

- **Tube hang up on posterior cartilages**
- **Counter Clockwise Rotation of ET tube**



# Conclusions

- **RESTRAIN WRISTS!!!**
- **Best for CAN'T intubate AND CAN VENTILATE**
- **When have time- LIDOCAINE**
- **DRIVING:**
  - **LEFT hand— like an airplane yoke**
  - **small movements, stay midline, head for trachea, drive to carina**
- **TUBE DELIVERY: Counter clockwise Rotate**

# Glottis Hunting

- **Stay midline**
- **Small movements**
- **Head for BLACK**
  - **tracheal rings**



**Anterior (facing)**



**END OF CASE**

# CASE 2

- **BAD pneumonia**
- **ON BIPAP x 36 hours**
- **Some Delirium**
- **on 80% oxygen**

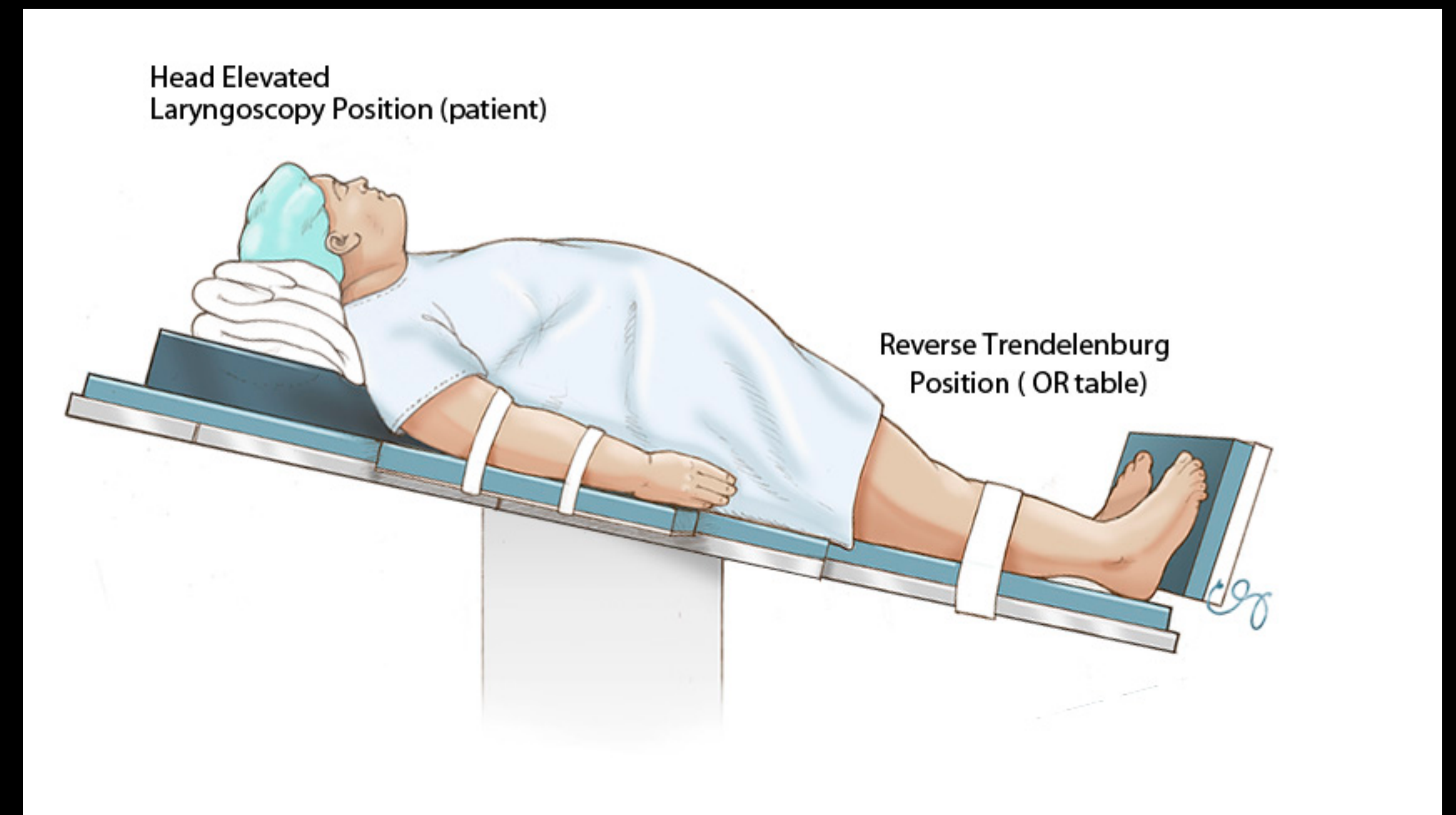


# USE your TASBB

- **TIME**
- **Anatomy**
- **Secretions**
- **BVM, Oxyenation, Ventilation**
- **BP (SHOCK)**

# Maximizing oxygenation

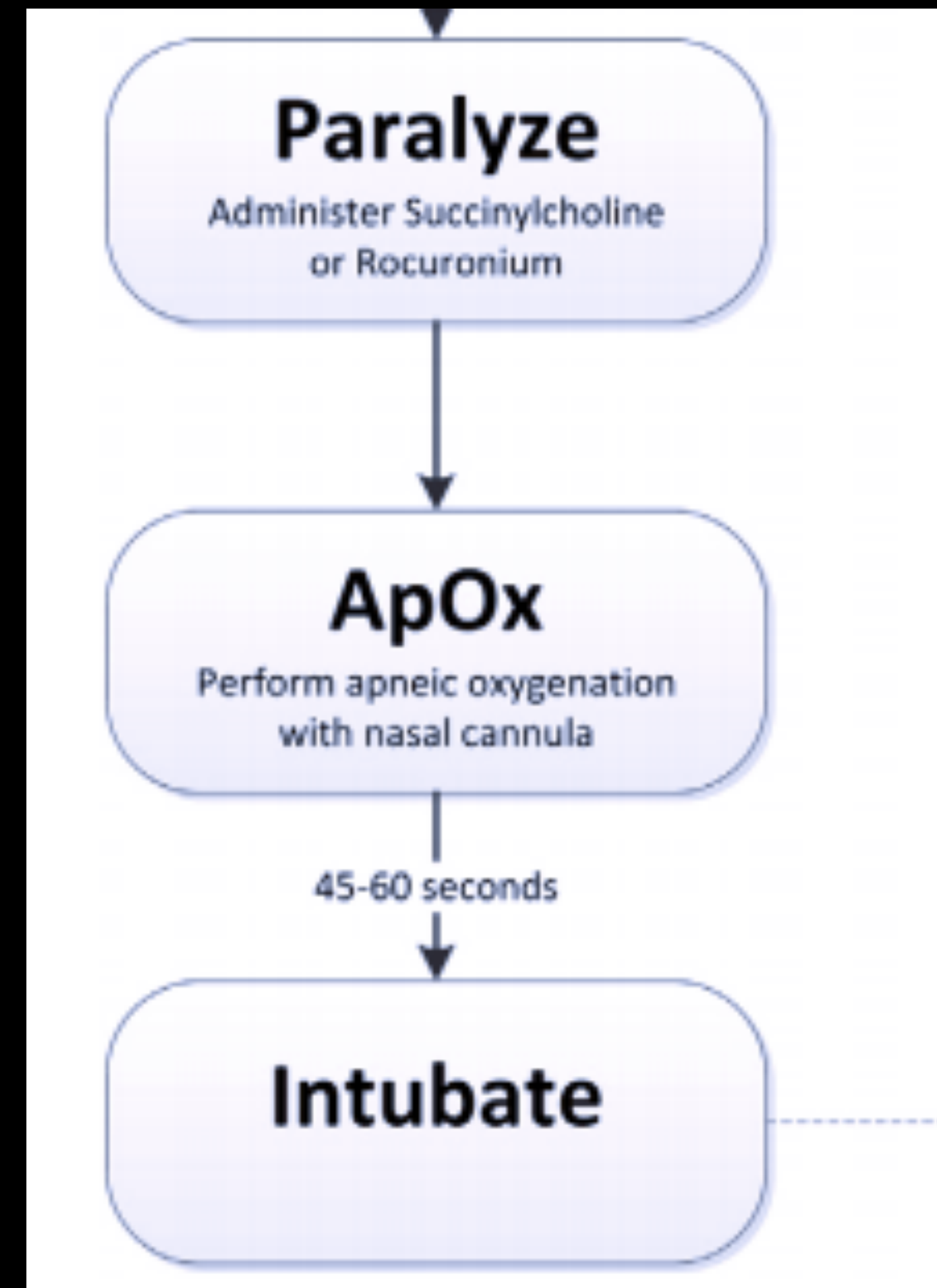
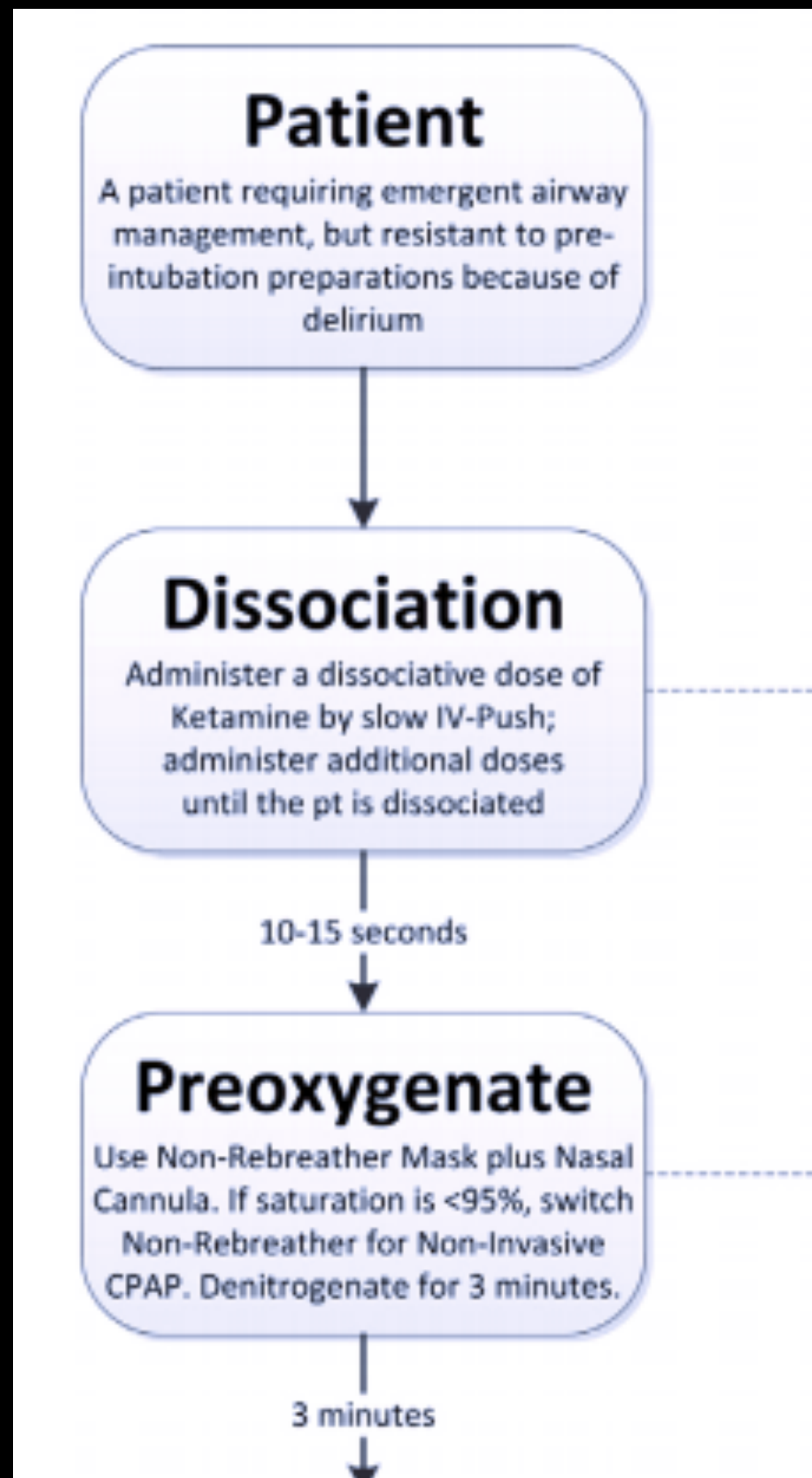
- **Positioning**
  - **Reverse Trendelenburg**
- **High flow nasal canula**
- **Low threshold for LMA**



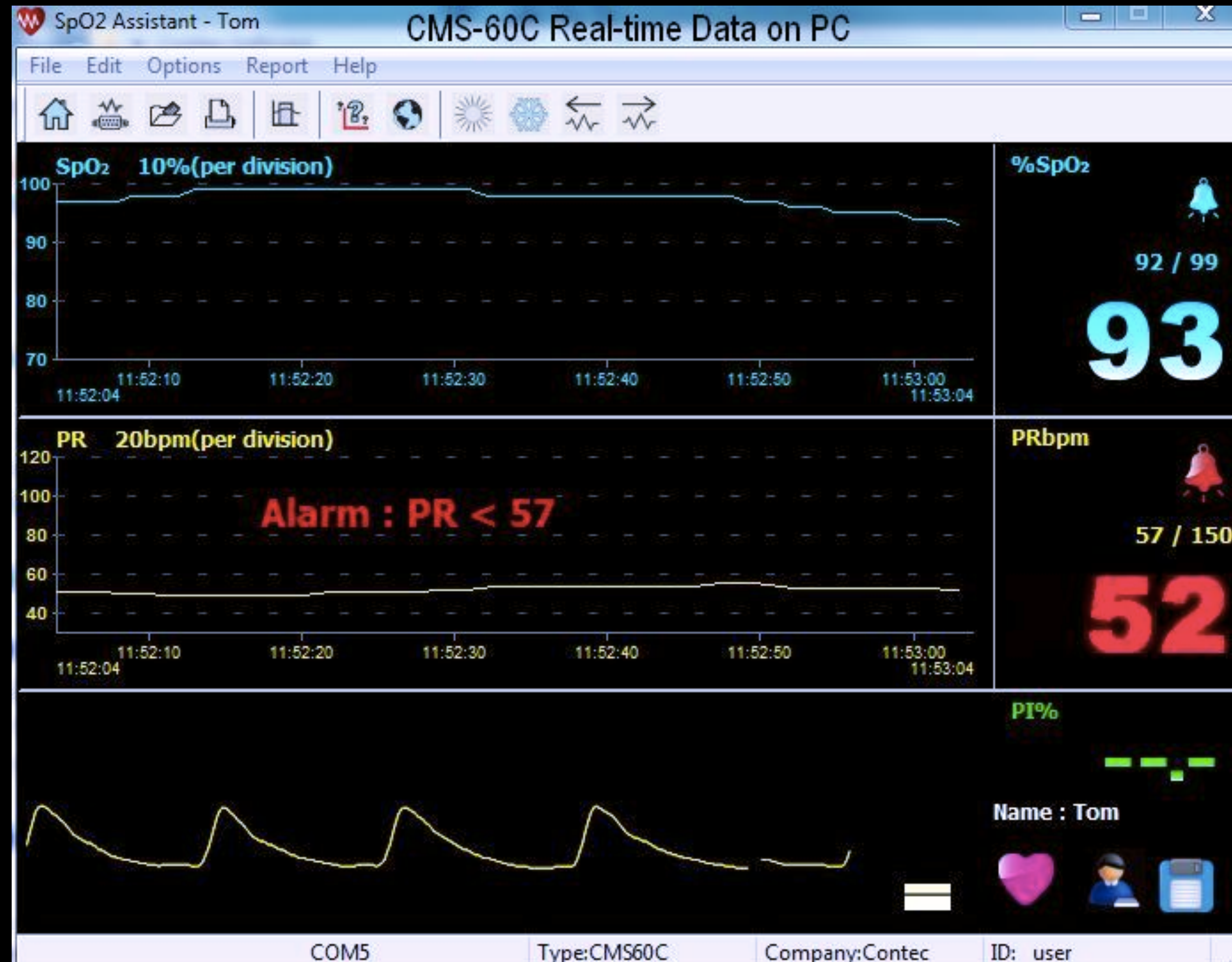
# Maximizing oxygenation

- **Delayed Sequence Intubation for the delirious/not cooperative patient**
  - **Sedation and Non-invasive ventilation to improve VQ matching prior to NMB**
- **Sitting up**
  - **Ketamine 1 to 1.5mg/kg**
  - **high flow oxygen CPAP 5-15**

# DSI: Weingart, Annals EM, 2014

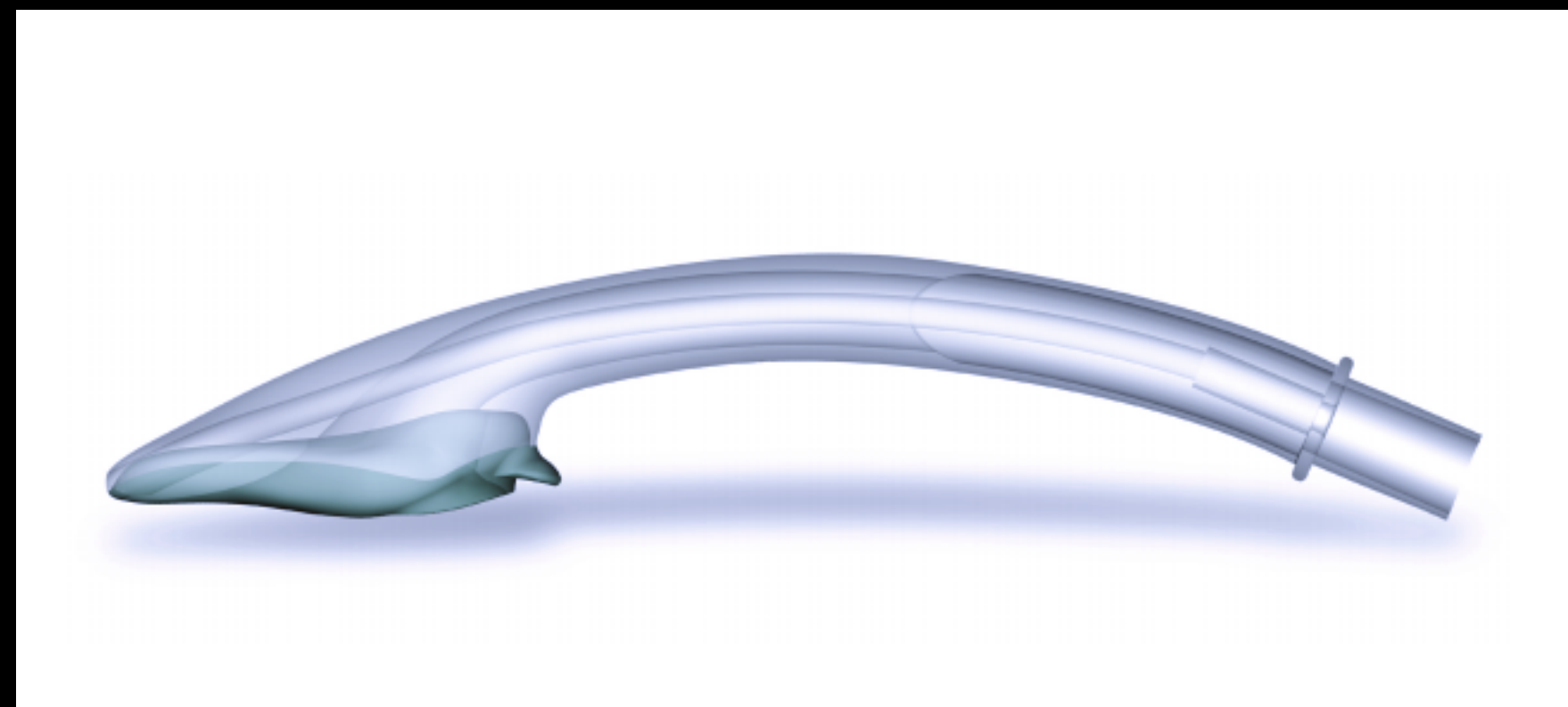


# Pulse ox dips to 93% while intubating



# Pulse ox Lag

- **Lag: up to 120 sec in shocked patients**
- **When starts diving— abort if NOT imminent**





# Conclusions

- Use your “They Are Seriously Breathing Bad” Scheme to prepare
  - Time and Resources dictate approach
- Aspiration statistically your NEMESIS
- Low threshold for fiberoptic/iGEL-SGA
- Have your fall back all ready: DL/GLIDE etc
- First pass optimization

# Recruitment

- **Looking for airway management leaders**
  - **simulation workshops**
    - **WISER**
    - **CORE**
  - **Systems approach with the MICU**
  - **Collaboration with our Anesthesia/EM/CCM/MTA colleagues**