Comprehensive Airway Management Workshop 2017
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Workshop Objectives:
- Discuss tips on successful awake fiberoptic intubation
- Review tricks to troubleshoot a difficult video-laryngoscopy assisted intubation
- Hands-on demonstration & review of:
  - Lung-isolation options
  - Pediatric airway tools
  - Surgical airways
  - Ultrasound to identify cricothyroid membrane
  - Practice percutaneous cricothrotomy on lamb trachea
  - Supraglottic airways
  - Flexible bronchoscopes
  - Video laryngoscopes

Awake Fiberoptic intubation & Videolaryngoscopy assisted intubations

Tips for successful Awake Fiberoptic Intubation
- **Dry the Airway** (Glycopyrolate 0.4mg or 20mg IM Benadryl) at least 20min prior!!
- Suction directly
- Use Gauze to dry oral pharynx/tongue
- Especially important with Ketamine

To Sedate or not to sedate???
- If impending loss of airway—AVOID SEDATION!
  - Topical only! (Even sedation with Dexmetomidine will depress respirations if in extremis)
- If sedation is appropriate, go light—-you need a cooperative patient
  - **Dexmetomidine**: 0.5–1mg/kg over 10 min (start in PreOp). Draw up syringe from 4mcg/mL bag, give over 10 min. Loading dose is important & usually all that is needed
  - **Ketamine**: start with 0.2mg/kg
  - **Remifentanil**: 0.05–0.2mcg/kg/min
  - **Midazolam**: judicious
  - **Fentanyl**: I usually avoid until ETT secure (AFOI is not painful)

Topicalization Options...
Needles work great but...

Nasal approach
- 4% cocaine works great (cotton Q-tips/pledgets)
- Nasal mucosa constrictor (Oximetazoline) plus:
  - 4% lido (2–3mL) via IV catheter or nasal atomizer
  - 4% lido soaked cotton tips (2–3 stacked up in each)

1st Topicalize oral pharynx (glossopharyngeal nerve)
Lots of Options:
- 2% viscous lidocaine gargle (& spit!)
- 4% lidocaine nebulized (encourage rapid/shallow breathing)
- Targeted Benzocaine spray

Targeting the glossopharyngeal nerve
- 4% lido cotton pledget to palatoglossal arch (3 min each)
- Advantage of low volume of local anesthetic

Oral approach
- Generous 2% lidocaine ointment on tongue blade or Ovassapian/Berman airway with 2% lidocaine ointment–advance as tolerated
- 2–4% Lidocaine via Curved mucosal atomizer
  - OR
  - Atomizing oral airway
**Base of tongue/Epiglottis**

- "Transoral Trickle": drip 5mL–10mL of 2–4% topical lidocaine via 14g IV plastic catheter very slowly while holding tongue forward to allow for aspiration of local anesthetic
- 0.5mL at a time, pause after 2mL but keep holding tongue to prevent swallowing (do not exceed 4mg/kg on this part)

**Glottis/Trachea**

- Spray as you go
- 5mL syringe of 2–4% topical lidocaine
- Attach to insufflation port of flexible bronchoscope
- Advance bronchoscope until epiglottis & glottis are visualized
- Spray 3mL of local just above vocal cords, wait 15secs (allow coughing)
- Advance just below the cords, spray additional 2mL to anesthetize trachea, wait

**What do I personally do?**

1. Glycopyrolate 0.4mg IV 20min before
2. Give 0.5–1mcg/kg of Dexmetomidine over 10 min (unless in extremis)
3. 15mL Viscous 2% Lidocaine Gargle & Spit (or 4% Nasal cocaine via cotton Q-tips)
4. “Transoral Trickle” 5mL of 2–4% Lidocaine while pulling tongue forward with gauze.
5. 5mL of 4% for “spray as you go” via FO scope (½ above, ½ below cords)

**We are numb...now what?**

**Intubating the trachea**

- Advance FO scope through glottis just until carina is visualized
- Do not advance the FO scope past mid-trachea or you may induce coughing
- Now advance the ETT over the scope into trachea

**Scope is in, ETT won’t pass**

- Lubricate the outside of ETT, not the scope (only make your fingers slimy)
- Tell Patient to take a big breath then advance tube
Still stuck?

› Rotate ETT 90° counterclockwise so that Murphy eye faces anterior then advance AKA the "Cossham Twist" (Also a good trick for Bougie assisted intubation)

Other tricks

› Try using a flexible tip ETT (Parker Flex-tip)
› Try using an intubating LMA ETT (flexible)
› Try Aintree catheter–ETT combo

ETT in trachea

› Confirm +ETCO2 prior to induction meds or parylytics

Videolaryngoscopy for difficult airways

› Anterior view of glottis
› C-collar
› Facial trauma
› Small mouth opening
› Obese

› Not great when excessive secretions/blood/emesis in airway

Tricks for Difficult Videolaryngoscopy

“I have a view, but can’t get the tube in”

› Lubrication inside and outside (lubricate the stylet) (especially important for small tubes/Peds)
› Spin the tube on the stylet
› Make sure the Murphy eye is anterior
› Use a flexible tip ETT
› Try a Reinforced ETT

Other tricks

› 2 curve airway (Sigma shaped)
Once ETT tip thru cords, slowly remove stylet

› If using Bougie, let go of the bougie while advancing ETT (so it spins freely)
› Fiberoptic scope assisted (when time)
Our Airway Stations:

- Lung Isolation Dr. Abts
- Cricothyrotomy Dr. Shindell, Dr. Janik
- Pediatric Airway tools Dr. Zieg
- Ultrasound airway/Topicalization tools Dr. Benish
- Videolaryngoscopy
- Fiberoptic scopes
- Supraglottic airways

Our Faculty Presenters:

- Dan Janik (UCH)
- Marina Shindell (UCH)
- Jennifer Zieg (TCH)
- David Abts (DHMC)
- Beth Benish (DHMC)