Rigid Bronchoscopy for the Anesthesiologist: How much skill is enough?

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Why

• You can get an airway your way – why learn rigid bronchoscopy?
• May not have an otolaryngologist/bronchoesophagologist in an emergency...
• May be a helpful adjunct in an open airway case to save surgeon from scrubbing out for endoscopically assisted reconstruction

WHY NOT?!?

• Aspirated foreign body moving air well
  – IF foreign body does not result in death in the first 10 minutes there was no increase in death/morbidity in the next 8 hours vs immediate removal.
  – More time may increase post-obstructive pneumonia and makes recovery more complicated
• Nuts have irritative oils and create granulation tissue
• If foreign body is expansible may worsen with time
  • Bean without cover

What do you need to know?

• Don’t want to look “stupid” ...
• Know the parts
• Be familiar with how to hold a bronchoscope or a telescope
• Know pitfalls or when you could be dangerous.

Disclaimer

• This talk does not qualify anyone to be credentialed for bronchoscopy.
• Performing a procedure without credentials may trigger a peer review – at least...
• Rigid Bronchoscopy may be done with a person credentialed for the procedure.
• This is officially for your information only.
• But! Rigid Bronchoscopy is FUN!!
Let’s Get Started – Parts

• Hopkins Rod Telescope- aka Endoscope
  – Series of lenses with polished glass spacers between
  – “Feel” like you are at the end of the scope not at the eye piece (fiberoptic)
  – Karl Storz bought the patent 1967 from Howard Hopkins
    • British Physicist also developed Zoom lenses.

Bronchoscope

• Gustav Killian – 1897
  first rigid bronchoscope
  – Removal of a pork chop bone
  – Local anesthesia of topical cocaine
• Chevalier Jackson – refined in 1920’s.
  – Added bulb on outside
• Karl Storz 1950’s

Are all rigid scopes the same?

• Bronchoscopes have distal shaft holes.
• Esophagoscopes no holes and no anesthesia adaptor opening.

Put it all together...

• Endoscope (Telescope) goes through a thumb tightened lever adapter to the bronchoscope.
• Suction port has diaphragm to minimize gas loss
• Anesthesia circuit adapter to the left or bottom
• Prism plugs top hole

Unless you don’t (put it together)

• May use only the telescope (endoscope)
• Telescope has light cord attachment
• Camera has rotatory release to attach to scope
Pitfalls/Danger

- **FIRE!**
  - End of endoscope gets very HOT!
    - Put on standby as soon as done.

- **Puncture**
  - Advance gently
    - Telescope - Watch for side wall blanching
    - Bronchoscope – advance with left hand – drive with right hand

OK! Time to begin...

- **Tooth guard**
- **Use laryngoscope to expose the airway.**
  - Sweep the tongue from right to left as usual.
  - Straight blade because you are putting in a straight scope!
  - Use Wis-Hipple or Phillips for better exposure.

Next step...

- **Pick up the Bronchoscope**
  - Balanced just in front of the camera/lens connection and behind the connections.
  - May place down the center or more retromolar approach.
  - Pick the straight shot – Look at the screen

BE GENTLE!!

- Gently insert either telescope or bronch/endoscope combo with right hand into the mouth.
- IF ONLY telescope then leave the laryngoscope in place (left hand).
  - Right hand inserts and keeps in the center.
- IF placing bronchoscope then after passing the vocal cords – PAUSE insertion while removing the laryngoscope (left hand).
  - Left hand with continue inserting the scope and control the head position. 2 finger advance
  - Right hand is a rudder and keeps the scope centered

Why Gently?

- Protect from injury of the patient.
  - Good medicine
- Protect from injury of the scope!
  - Good for getting to try again...
Let’s see it in action...

How do I get started?

- Let the otolaryngologist know you have an interest
- Offer to hold laryngoscope for surgeon to do two handed surgery.
- If you are placing endotracheal tube for single stage surgery then this is an easy extension.

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- What questions do you have?

Conclusion

- Get to know the instruments
- Start by holding laryngoscope
- Be gentle
- Be safe – It’s HOT!