Lecture 4
Normal vs. Rapid-Sequence Induction

**Normal Induction.**

- This assumes that the patient does not have a “Full Stomach” and that the patient does not have a known or suspected “difficult airway”.
- Equipment and Drugs checked, including suction.
- Check all patient monitors. (EKG, NIBP, Oximetry, End-tidal CO2/CO2 detector)
- Pre-oxygenate / nitrogen washout: 100% oxygen by tight fitting mask; 5 deep breaths or 3 minutes normal breathing; this replaces all lung nitrogen with oxygen, thereby allowing a longer apnic period.
- Induction; Lidocaine/Propofol or pentothal or inhalation induction by adding nitrous-oxide/sevoflurane to inhaled oxygen. We dose the IV induction agent high enough so that the patient will go to sleep, but also low enough so that it will wear off before the patient desaturates in case we cannot ventilate.
- Bag mask the patient; with this we establish that we can actually bag and oxygenate/ventilate the patient before we give a paralytic. If we cannot bag-mask the patient, we let the induction drug wear off and choose a different way of securing the airway.
- Paralysis: succinylcholine or your choice non-depolarizing muscle relaxant. We dose the paralytic high enough so that we attain vocal cord paralysis, but also low enough so that it will wear off before the patient desaturates in case we cannot ventilate, thereby returning the patient to the previously established asleep-bag-mask state.
- Bag-mask the patient; with this maneuver we establish that we can oxygenate/ventilate the now paralyzed patient. If we cannot bag-mask the patient at this point, we attempt an intubation or other means of establishing an airway. If we are unable to do so, we let the paralytic wear off and resume bag-maskin until the patient wakes up. Then we can choose a different way of securing the airway.
- If we can bag-mask the patient, we proceed with definitive airway control. There is no rush, as we have established that we can oxygenate/ventilate the asleep and paralyzed patient. So if we cannot intubate the patient, we can at least bag him/her until we find an other way to secure the airway or until the paralytic and then the induction drug wears off and the patient wakes up.
- Inflate the cuff; confirm ETT position; check bilateral breath sounds, end-tidal CO2, bilateral chest rise and fog in the ETT.
- Secure ETT, and begin manual/machine ventilation.
**Rapid Sequence Induction**

- The goal of a rapid sequence induction is to minimize the time when neither the patient nor you can protect the patient’s airway. I.e. the time between induction (the time the patient looses control) and intubation (the time you gain control).
- **Contraindication:** A known or presumed difficult airway is an absolute contraindication to a rapid sequence intubation. If you induce anesthesia and paralyze the patient and then can’t intubate, the patient will be left with an uncontrolled airway long enough time to potentially aspirate.

- **Indication:** Any “full stomach” patient has an indication for a rapid sequence intubation.
  - Equipment and Drugs checked, including suction.
  - Set up a second ETT tube one size smaller than the one you anticipate using. Set up a second laryngoscope blade with handle in case your favorite blade does not give you good exposure or fails.
  - Check all patient monitors. (EKG, NIBP, Oximetry, End-tidal CO2/CO2 detector)
  - Pre-oxygenate / nitrogen washout: 100% oxygen by tight fitting mask; 5 deep breaths or 3 minutes normal breathing; this replaces all lung nitrogen with oxygen, thereby allowing a longer apnic period.
  - Have an assistant provide cricoid pressure.
  - Give intravenous induction agent and paralytic.
  - Wait until paralytic has taken effect (30 seconds for 2mg/kg sux)
  - DO NOT mask ventilate the patient. This may insuflate air into the stomach and increases the risk of vomiting/aspirating.
  - Intubate the trachea.
  - Inflate the cuff; confirm ETT position; check bilateral breath sounds, end-tidal CO2, bilateral chest rise and fog in the ETT.
  - Secure ETT, and begin manual/machine ventilation.
  - Only now may your assistant stop the cricoid pressure

**Full Stomach**

- The patient does not meet the NPO guidelines.
- > 10 weeks pregnant.
- Significant gastro-esophageal-reflux disease.
- Significant gastroparesis.
- Trauma; pain itself and pain medications decrease gastric emptying.
- NPO but with a significant distracting injury (narcotics for treatment may slow bowel motility).