Critical Care Mailbag: Tube Exchange

Scott Weingart, MD and Anand Swaminathan, MD

- We don't often exchange endotracheal tubes in the ED, however, the recent COVID surge and increase in boarded patients has prompted a review.
- Indications
  - Endotracheal tube is clogged or has some type of obstruction
  - Cuff rupture
- Equipment
  - Video laryngoscope
  - New tube and another one size smaller (test the cuffs!)
  - Suction
  - Tube exchanger (or bougie)
  - Syringe
  - Scalpel
  - End-tidal CO_2 monitor (preferably waveform)
  - Airway backup devices (in case you end up needing to re-intubate)
  - Bag-valve-mask
- Technique

PEARLS

- It is difficult to safely complete the procedure without an assistant.

COMMENTARY

- While you can do this with deep sedation, Scott prefers both deep sedation and a paralytic to make this as easy as possible.
  - Discuss exactly what you are going to do beforehand.
  - The intubator places the video laryngoscope and never takes their eye off the cords just like when you're doing a regular intubation.
  - This visualization should continue throughout the procedure; either an endotracheal tube or a tube exchanger/bougie should always be in position across through the cords.
  - Ask your assistant to insert the tube exchanger and advance it no further than the depth of the endotracheal tube. Be careful not to force it any further or against any resistance.

- Gently withdraw the endotracheal tube, being careful not to let the tube exchanger retract from its position.
- Under continued visualization, insert the replacement tube.

Rural Medicine: A Case of Recurrent Paralysis

Vanessa Cardy, MD and Mel Herbert, MD

Summary:

Case: A healthy, young 30-year-old male presents with acute onset of weakness in his hands and feet. This was his third ED visit with a similar presentation. The visits were about 6 months apart, and the first two presentations were preceded by a sore throat. He was noted to have claw-like spasms with attempts at fine motor movements. Ultimately, he was diagnosed with hypokalemic periodic paralysis.

- **Hypokalemia periodic paralysis** is a disease of potassium sequestration. It can be genetic/familial or related to hypothyroidism and can present in a wide range of ages, starting as early as age 2.
- Triggers
  - These include high salt and carbohydrate intake, prolonged immobility, excessive alcohol intake, anesthetics, stress, cold weather, exercise, **medications like glucocorticoids, insulin**
- Diagnostic Tests
  - Potassium level and an ECG. Thyroid testing is also important.

PEARLS

- Always order an ECG when considering hypokalemia to assess for cardiac effects and abnormalities. ECG changes (U waves, flattened T waves, depressed ST segments) are not always present, but are more common in severe hypokalemia.

- Acute management/treatment:
  - Minor episodes - often resolve spontaneously
  - Moderate episodes - oral potassium salts at home
  - Severe episodes - typically need IV potassium infusion, serial measurements of potassium, and ECG monitoring

PITFALLS

- Magnesium level should also be measured because potassium cannot be replenished in the setting of hypomagnesemia.
- Have a low threshold for central line placement (recurrent lab draws and lots of medications to be given).