

## **C-18 Managing the Unexpected: Difficult Airway and Gastric Ultrasound in Aspiration Risk Assessment**

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### **Objective**

After completion of this session, the participant will be able to:

- Demonstrate understanding of clinical indications for gastric ultrasound point-of-care imaging to improve safety in managing patients with difficult airways.

### **Case Stem Question**

An 86-year-old female 41kg with history of hypertension and esophageal cancer presents to the hospital with hemoptysis. She has history of radiation therapy and esophageal stent placement for strictures. The patient is brought to the bronchoscopy room for flexible bronchoscopy and esophagogastroduodenoscopy. On preoperative history, she reports having drank “some water” approximately one hour ago. What is her aspiration risk and how will you manage her anesthetic?

### **Guiding Questions for Discussion**

How much water is appropriate for her to drink within the 2 hours of surgery to be considered NPO?

When we give PO pre-medications with water, how much is safe?

What is the accepted value that current studies have shown is the threshold for aspiration risk of clear liquid?

Are there other aspects of her history that need to be considered?

The pulmonologist is concerned that the esophageal stent has eroded into the trachea and endotracheal tube placement could exacerbate this and cause hemorrhage. What are the anesthetic and airway management options available to us?

The pulmonologist suggests using a supraglottic airway device to avoid intubating the trachea and allow him to look with bronchoscopy. What are the concerns you have with this plan?

You decide to use ultrasound to assess the gastric content of the patient. What are the possible findings and how do we interpret the results?

What if the ultrasound is equivocal/unclear? How will you proceed?

After doing your ultrasound assessment, you find a heterogenous hyperechoic gastric antrum. How will you proceed?

What is the evidence for ultrasound assessment of gastric content evaluation and how can we apply it to this patient?

Given the risk for aspiration based on ultrasound findings, you decide a supraglottic airway device is not a safe option. What options do we have to avoid aspiration while safely protecting the airway from trauma?

The pulmonologist and gastroenterologist feel this case is urgent and must proceed.

Given the concern for aspiration and potential dangers of blindly passing the endotracheal tube below the vocal cords, you decide to do an awake intubation. How will

you prepare the patient for this procedure?

Given the unknown condition of the trachea, you avoid doing a transtracheal block. After using atomized 4% lidocaine, what concerns do you have while doing the flexible bronchoscopic intubation?

Once at the vocal cords, you spray 4% lidocaine through the bronchoscope and proceed with visualizing the trachea. The bronchoscopist is also viewing the image and decides there is only minimal bulging into the trachea and an endotracheal tube can be passed. You intubate the patient and proceed with induction of anesthesia. After flexible bronchoscopic exam, the gastroenterologist proceeds with endoscopy and notes blood and several solids in the stomach which are suctioned. What are your concerns with emergence and extubation?

What evidence exists for patients who are not adult, non-obese, non-pregnant patients? Can we apply this tool to pediatric, obese, and pregnant populations?

### **References**

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