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LEARNING OBJECTIVE

Importance of preoperative recognition of retained esophageal fluid in patients with primary or secondary Achalasia and to formulate a strategy to prevent aspiration during anesthesia induction and intubation.

CASE DESCRIPTION

Here we present a 65-years-old male with COPD, chronic tobacco use, and secondary or pseudo achalasia due to near total occlusive lower esophageal cancer who was scheduled for IR-guided gastrostomy tube placement under general anesthesia. During pre-operative evaluation, anesthesia team was alerted by the interventional radiologist regarding a CT scan done earlier in the day showing significant amount of retained fluid proximal to esophageal tumor. The patient was noted to have followed standard NPO guidelines leading up to the procedure. Furthermore, patient interview revealed that he had aspirated on induction of anesthesia for a prior procedure. In the light of this vital information, an 18 Fr Orogastric tube was placed in mid esophagus prior to the induction of anesthesia. Suctioning of the orogastric tube yielded approximately 100 ml of thick, pale-yellow fluid. This was followed by an uneventful rapid sequence induction and intubation using video laryngoscopy. Throughout induction and intubation orogastric tube was placed to continuous suction and the patient was placed in the semi-recumbent position to avoid any passive regurgitation of remaining or missed retained esophageal fluid.

ANESTHETIC CONSIDERATIONS

1. Importance of in-depth pre-anesthetic chart review and interdisciplinary communication to maximize patient safety
2. Need for frank discussion with patient regarding anesthetic plan, including placement of orogastric tube prior to induction.
3. Analysis of benefits of interventions to prevent aspiration, including awake orogastric tube placement and semi-recumbent intubating position, weighed against risk of suboptimal intubating conditions

PET Scan

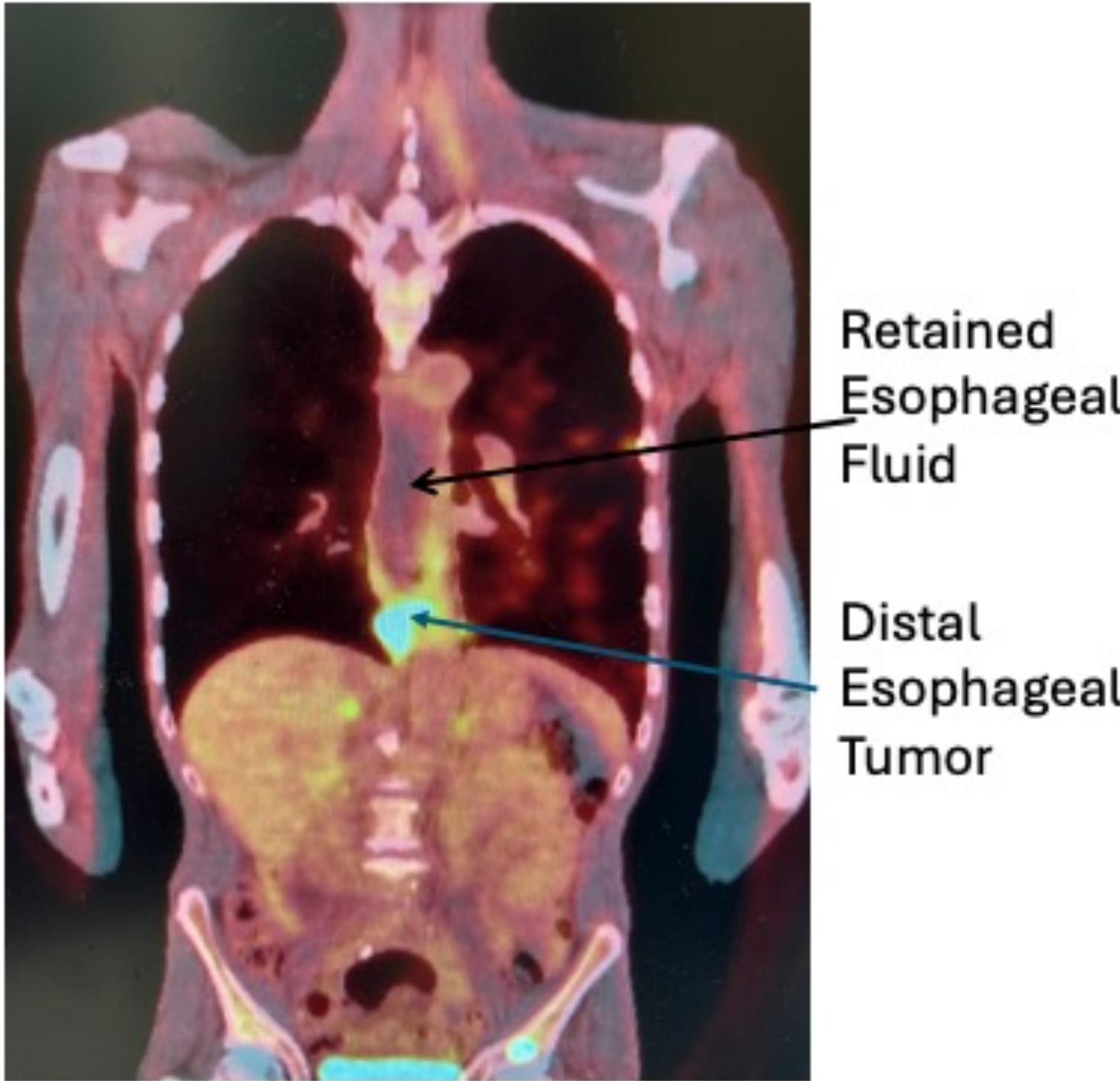
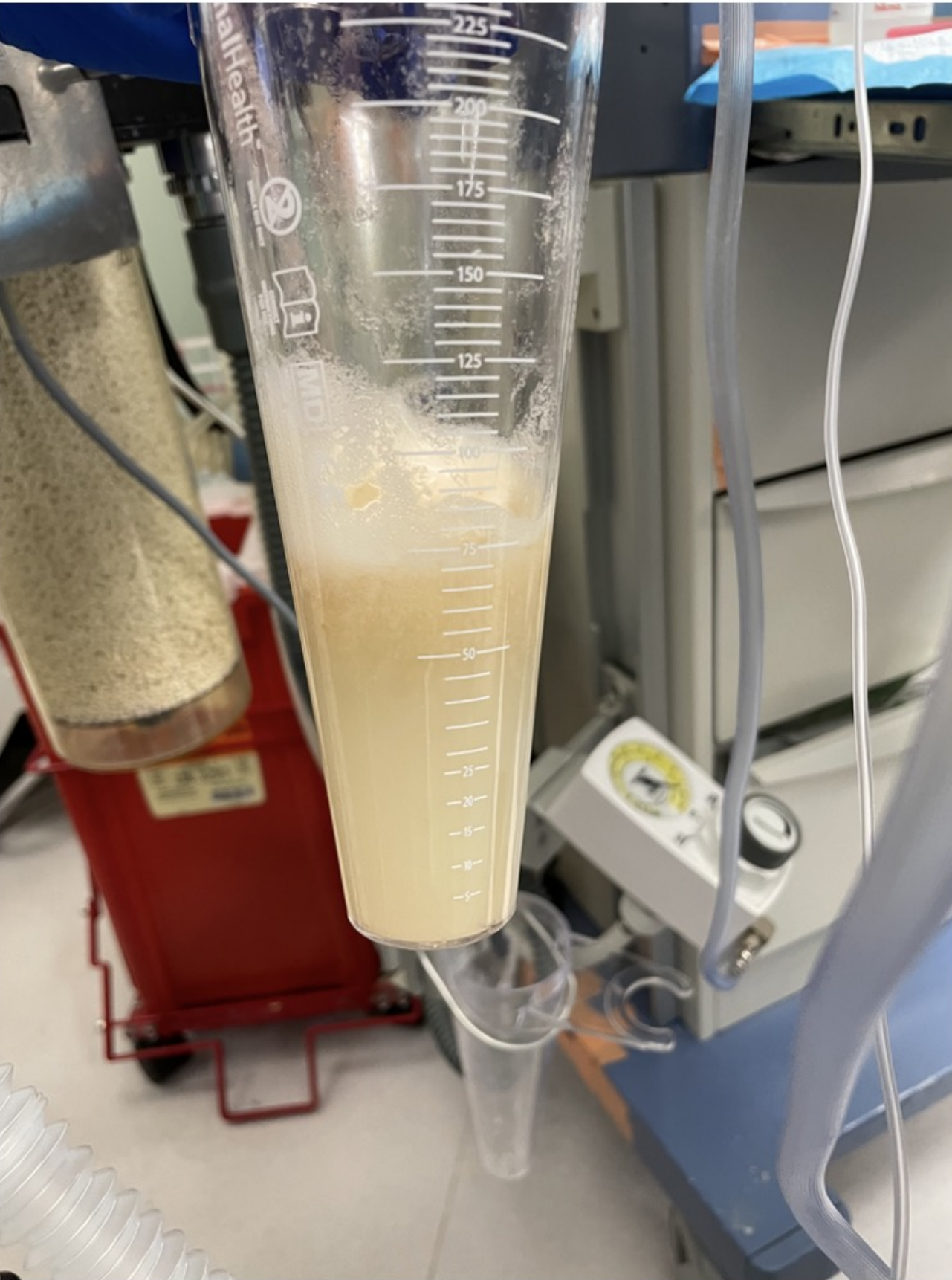


Figure 1: PET Scan demonstrating evidence of retained esophageal fluid



Retained fluid suctioned from mid esophagus

Figure 2: Retained fluid suctioned from patient after placement of NG tube

DISCUSSION

Primary or idiopathic achalasia is a condition where the lower esophageal sphincter fails to relax properly during swallowing, whereas secondary or pseudo-achalasia, as in our patient, is caused by an underlying condition such as a distal esophageal tumor which can obstruct the passage of food into the stomach mimicking the symptoms of primary achalasia.^{1,2} The esophagus itself loses its normal peristaltic contractions leading to dysphagia and regurgitation, predisposing patient to aspiration during general anesthesia.³

These patients can present for procedures like Peroral Endoscopic Myotomy (POEM), Heller Myotomy, esophageal dilation, G-Tubes or unrelated emergency procedures requiring general anesthesia.

Preoperative history of dysphagia, previous esophageal dilations, aspiration during previous anesthesia, as well as review of recent imaging such as CT scans and barium swallow films can give vital information, as regular NPO status may not be an adequate measure for preventing aspiration in this population. Number of case reports of patients with achalasia undergoing general anesthesia have noted presence of large volumes of retained esophageal fluid despite prolonged fasting status.^{3,4}

- Strategies to avoid aspiration include
1. Awake pre-induction placement of orogastric tube with suctioning of retained esophageal fluid. Semi-recumbent patient position (30-45 degree). Continued suctioning of orogastric tube throughout induction and intubation to remove any remaining fluid. Rapid sequence induction and intubation, preferably using a video laryngoscope. Cricoid pressure may be ineffective.³
 2. Awake fiber-optic intubation. This, however, can be an issue as topical anesthesia needed to facilitate intubation can blunt the gag reflex, potentially promoting aspiration of regurgitant fluid.

CONCLUSIONS

Pseudo-achalasia, much like achalasia, poses a significant risk of regurgitation and aspiration of retained esophageal fluid despite prolonged preoperative fasting. Careful consideration of this risk, facilitated by in depth preoperative planning to minimize risk of aspiration, must be made in this patient population. Placement of an orogastric tube before induction and maintained to suction throughout induction, semi-recumbent positioning, and rapid sequence induction and intubation are warranted and can be highly effective in preventing aspiration.

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