

Airway Protection during Anesthesia for Esophagogastroduodenoscopy in Patients with Achalasia

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Achalasia is a disorder characterized by aperistalsis of the esophageal body and impaired relaxation of the lower esophageal sphincter. Dysphagia and regurgitation of undigested, retained food or accumulated saliva are common presenting symptoms. Recurrent aspiration pneumonia may also occur particularly in older patients [1]. Patients with achalasia are clearly at a high risk for aspiration during general anesthesia. The rapid-sequence induction technique with endotracheal intubation and cricoid pressure is, therefore, indicated [2]. This is a report of two patients with achalasia who underwent esophagogastroduodenoscopy (EGD) during general anesthesia which was induced using the rapid-sequence induction technique. The cases illustrate the limitations of the airway protection that this technique offers such high risk patients.

The first patient was a 69-yr-old man, ASA physical status III, 120 kg, 175 cm, with a Mallampati class III airway. He was admitted for an EGD for evaluation of dysphagia. Recent radiographs were suggestive of achalasia. Rapid-sequence induction of general anesthesia using propofol and succinyl choline with cricoid pressure was performed with the patient in the supine, head-up position. Some difficulty in visualizing an anteriorly placed larynx was felt to be exaggerated by the cricoid pressure. Gradual release of the cricoid pressure to improve visualization of the larynx was immediately followed by regurgitation of milky fluid from the esophagus into the mouth. Immediate suctioning of the regurgitant fluid was followed by successful endotracheal intubation. The trachea was suctioned and was found to be clear of fluids prior to applying positive pressure ventilation. No evidence of aspiration was found following the procedure.

The second patient was a 72-yr-old man, ASA physical status II, 73 kg, 183 cm, with a Mallampati class I airway. He was known to have achalasia and was admitted for EGD with dilation of a lower esophageal stricture under fluoroscopic guidance. According to the endoscopist performing the procedure, the patient had previously received uncomplicated propofol anesthesia for EGD in the lateral decubitus position without endotracheal intubation. However, the rapid sequence technique was felt to offer better airway protection and was, therefore, used in this case. Upon insertion of the endoscope, a small amount of secretions was seen in the esophagus and was suctioned by the endoscopist. The intra- and immediate post-procedure course were uneventful. Several hours after discharge, the patient developed signs and symptoms suggestive of aspiration pneumonia which was confirmed radiographically. He was admitted to hospital for overnight observation and was treated with antibiotics. He later made full recovery.

EGD is frequently performed for patients with achalasia as a diagnostic as well as a therapeutic tool. Sedating patients for EGD has for many years been provided by the endoscopists using opiates and benzodiazepines [3]. When this technique is used for patients with achalasia, some preservation of the protective airway reflexes during the light sedation as well as the protective effect of the lateral decubitus position might help minimize the risk of aspiration. On the other hand, when propofol anesthesia is used for patients with achalasia the accompanying loss of the protective airway reflexes makes it intuitive to use the rapid sequence induction technique with endotracheal intubation. These two cases, however, illustrate the limitations of the airway protection the rapid sequence induction technique provides patients with achalasia.

The effectiveness of cricoid pressure in occluding the esophagus and preventing aspiration has been questioned [4]. The first case illustrates that properly applied cricoid pressure can be effective in occluding the esophagus. The drawback, however, is that it can make visualization of the larynx more difficult.

It is not clear why or when aspiration occurred in the second case. It could have happened pre- or post-procedure. It could have also happened during the procedure. Two factors might have predisposed to aspiration during the procedure. First is the supine position where gravity can direct regurgitant esophageal fluids towards the airway. Second is the incomplete aspiration protection that large-volume, low-pressure endotracheal tube cuffs provide. It has been shown that liquids can track along the folds of these cuffs by surface tension forces and capillary action [5].

In conclusion, although the rapid sequence induction technique may be intuitively indicated in patients with achalasia during anesthesia for EGD, it may still be associated with the risk of aspiration. It is, therefore, prudent to take additional measures to minimize that risk including positioning the patient in the lateral decubitus position as soon as the airway is secured, and being prepared for the immediate suctioning of any fluids that regurgitates into the mouth.

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Received August 22, 2011; **Accepted** September 17, 2011; **Published** September 23, 2011

Citation: Hannallah M (2011) Airway Protection during Anesthesia for Esophagogastroduodenoscopy in Patients with Achalasia. J Anesth Clin Res 4:307. doi:10.4172/2155-6148.1000307

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