Benefits of Spontaneous Ventilation During Esophageal Stent Placement

Self-expandable metal esophageal stents (SEMS) are commonly used as a palliative treatment for malignant dysphagia. Although the overall risk of airway compression for patients undergoing SEMS placement to relieve dysphagia is 2.2%, this complication can be fatal if not managed appropriately when it does occur. We present the case where spontaneous ventilation proved to be lifesaving in a patient whose SEMS placement caused significant airway compression.

A 73 year-old man with a history of squamous cell carcinoma of the larynx s/p total laryngectomy, partial glossectomy, and tracheostomy presented for self-expandable esophageal stent (ES) placement to palliate his dysphagia and tracheoesophageal fistula (TEF), which was located at the site of the stoma and the esophageal stricture. The patient was maintained spontaneously breathing via trach collar on total intravenous anesthesia with a propofol infusion of 200 mcg/kg/min. Immediately after the ES was deployed and expanded, the patient’s oxygen saturation and capnography decreased, requiring an emergent placement of a reinforced endotracheal tube (ETT) size 8 through the stoma. The airway had been compressed as a result of the ES, and on further discussion with the endoscopist and pulmonologist, it was decided to remove the ES. The patient was then successfully extubated through the stoma.

The use of spontaneous ventilation in TEF patients with esophageal stents prevents surgical complications including bronchospasms, chipped teeth, gastric distension, gastric acid reflux into the TEF, and aspiration pneumonitis which has accounted for 50% of perioperative morbidity and mortality in this patient population. Additionally, this modality allows for real time assessment and management of the patient’s airway, as well as decreased anesthesia time, surgery time, and postoperative recovery time. Most importantly, since the patient was spontaneously breathing when the esophageal stent was deployed, the collapse of the airway could be immediately identified. Had an ETT already been in place, the airway compression would only have become obvious upon extubating and would have been harder to link with the stent deployment. Given the dangers associated with SEMS placement and the many benefits of using spontaneous ventilation discussed in the literature as well as the lifesaving role it played in our case, this form of anesthetic management should be considered in patients undergoing ES placement.

References
