

## Airway management: Few more lessons to learn

The Editor,

Airway management has always been the forte of the anesthesiologist, even then, we are challenged by difficult airway every once in a while. We are presenting an interesting case regarding airway management. A 52-year-old male patient presented in emergency with severe respiratory distress with features of upper airway obstruction. Patient was hemodynamically stable with oxygen saturation of 86% with oxygen supplementation. On auscultation of the chest, vesicular breath sounds with bilateral rhonchi and conducted sounds were heard. Patient was in respiratory distress, and hence detailed history was not available. In the absence of previous medical records, only history available was that patient was suffering from cancer of the food pipe and was undergoing treatment for the same. Fiberoptic laryngoscopy showed tumor mass involving the laryngeal inlet and did not appear amenable to endotracheal intubation. A plan for emergency tracheostomy under local anesthesia was made. While attempting to manipulate the tracheostomy tube into the trachea, patient went into very severe, life-threatening stridor. Laryngoscopy under topical anesthesia was done which revealed that it was Cormack Lehane's grade IV. Patient was intubated with 5 mm cuffed endotracheal tube (awake intubation) guided by breath sounds. Correct placement of the tube was confirmed by auscultation, capnography, and movement of rebreathing bag. After that, patient was induced with propofol 2 mg/kg, fentanyl 3 µg/kg, and vecuronium 0.1 mg/kg. Later on, his documents brought by the family members revealed that he was a case of advanced stage of carcinoma esophagus with tracheoesophageal fistula. Patient had tracheal and esophageal self-expandable metallic stents (SEMSs) *in situ* [Figure 1]. The reason for stridor in our patient was occlusion of the

tracheal stent by the advancing tracheostomy tube. Plan for tracheostomy was deferred in view of new facts, and it was decided to do further investigations on the patient to establish the reason and level of airway obstruction.

Management of patients with airway tumors leading to central obstruction is an exception to the rule of difficult airway algorithm. The end point of difficult airway algorithm is invasive airway access, which may not be the case with airway tumors. Central airway obstruction is a dynamic condition and hence every case needs to be individualized. In this subset of patient, rigid bronchoscopy can provide detailed information about the airway anatomy, which a chest X-ray or a computed tomography scan may fail to reveal.<sup>[1]</sup> The use of the rigid bronchoscope requires intermittent jet ventilation (the Sanders technique) via a side port of the bronchoscope. As volatile agents cannot be reliably delivered via this method, anesthesia should be maintained with either boluses, simple infusions, or target-controlled infusions of propofol and opioid and a short-acting muscle relaxant.<sup>[1]</sup>

SEMSs have been widely used in the past decade to treat patients with benign and malignant airway diseases. They have been successfully implanted using a flexible bronchoscope while the patient received conscious sedation and a local anesthetic. As per the US Food and Drug Administration recommendation, SEMS implantation should be considered only if the patient is not eligible for surgery, rigid bronchoscopy, or silicone stent implantation.<sup>[2]</sup> Covered SEMSs have been used to seal off tracheoesophageal fistulas and to avoid aspiration symptoms.<sup>[3]</sup>

A patient with a metallic stent may present to us in various case scenarios.

- Patients with tracheal stents *in situ* may require anesthesia unrelated to stent.



**Figure 1:** Computed tomography scan - tracheal and esophageal stent *in situ*

Endotracheal intubation, if needed, should be done under fiberoptic vision for the fear of stent migration

- Patient may present with respiratory difficulty with the stent *in situ* if there is a migration of stent or there is progress in primary disease beyond the limit of stents.

With the increase in life expectancy, nuclear families, and development in medical science, different types of difficult situations will be encountered. Patient coming to emergency in distress, with no family member to give the history is a very difficult situation. Hence, we should be able to make a differential diagnosis from the little information from the patient. In the patient coming with stridor and history of esophageal cancer, possibility of tracheal stent *in situ*, should always be considered. Management of respiratory distress in airway tumors may have certain deviations from the difficult airway algorithm. Moreover, old technique such as breath sound guided endotracheal intubation will always retain their value in difficult situation like this.

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