High arch palate: A bane for ProSeal laryngeal mask airway but a boon for I-gel

Sir,

High-arched palate, a common occurrence of various syndromes, is a known cause of difficult laryngoscopy.[1] It may also lead to difficult laryngeal mask airway (LMA) insertion. We, hereby, report a case of failed ProSeal (PLMA) insertion in a 12-year-old female patient with brachial plexus injury where i-gel was successfully inserted at the first attempt. Her airway examination showed Mallampati grade I, adequate mouth opening and normal neck movements. Mask ventilation was adequate. After adequate depth of anesthesia, a well-lubricated PLMA size 3 using introducer tool technique was inserted. A resistance was felt in the oral cavity which could not be negotiated. Then, the digital technique was tried but failed. We opted for size 2½ presuming that size 3 is too big. We were able to place it with slight resistance but there was significant air leak. Finally, we decided to try i-gel of size 3 which was placed successfully at first attempt without encountering any resistance. Air leak test was done and position of the device was confirmed using fiberoptic bronchoscope.

Management of brachial plexus injuries is unique as neuromuscular blockade should be avoided to facilitate intraoperative peripheral nerve monitoring. The surgeries are usually long duration. Supraglottic airway devices with esophageal vent such as ProSeal LMA, i-gel, LMA-supreme are best suited as patient’s tolerance and acceptability is good and chances of aspiration are minimal.[2]

We speculated various causes for failure of PLMA insertion in our case. First, the device must have been impinging on the back of palate hence could not be slipped into hypopharynx. Second, there could have been narrowing of space at the back of oropharynx. Moreover, acute angulation might have prevented its rotation. i-gel being made up of soft elastomer, nonrigid, therefore, got moulded according to airway anatomy without facing any resistance. There are concerns that inflatable cuff of PLMA may impede its proper placement. Alternative techniques have also been described like introducer tool technique, digital and gum elastic bougie technique.[3] I-gel is found to have easier and quicker insertion than PLMA.[4] There is no perfect device and imperfections are related to various anatomical and pathological factors. Our case elucidates that although these devices are similar, they are not same and failure of one does not imply to all. One should have familiarity and expertise in all of them in face of difficult airway scenario.

Unusual airway foreign body: Vigilance is the price of safety

Sir,
Tracheobronchial foreign body aspiration is a serious medical problem, with clinical manifestations ranging from acute asphyxiation to insidious lung damage. We report a case, where a portion of the cuff of the endotracheal tube was recovered from the trachea.

A 59-year-old male patient in the ward complained of severe respiratory distress and inability to lie down supine.

Patient was admitted in our hospital 5 days ago with the diagnosis of fluid overload and chest infection. Patient was managed with antibiotics, fluid restriction, hemodialysis, and noninvasive mechanical ventilation. Later, the patient was intubated and mechanically ventilated. Patient improved in the next 53 h and was extubated.
Patient had mild respiratory distress in the immediate post extubation period which responded to nebulization and chest physiotherapy. Over the period of next 2 days, the patient’s condition worsened with the intensity of respiratory difficulty becoming so severe that the patient was unable to lie down supine and there was a need for supplemental oxygen to maintain a saturation of 95%. On examination, the patient was having biphasic stridor but no cyanosis. Bilateral wheezing was noted. A provisional diagnosis of tracheal stenosis was made from the X-ray, soft tissue of the neck showed the increased soft tissue density below the vocal cords. To further evaluate the patient, contrast-enhanced computed tomography at the neck was done which showed the circumferential thickening of trachea in subglottic region (approximately 3 cm) and a tubular object (foreign body approximately 3 cm) was seen lying in trachea 4.5 cm above the carina [Figure 1].

The plan was made for rigid bronchoscopy and the foreign body removal. The consent was also taken for tracheostomy, if the need arises. Anesthesia was induced, and general anesthesia maintained using fentanyl, propofol, and atracurium boluses and infusion respectively, and apnoeic diffusion oxygenation followed by intermittent positive pressure ventilation.

On bronchoscopy, slough covering the degenerative foreign body of approximately 3 cm with pericondritis, and narrowing of the trachea was found. The bilateral vocal cord and the subglottic region was normal. A supracarinal tracheal segment of approximately 5 cm was normal.

To our surprise, foreign body recovered was plastic in nature and it was concluded that it was a portion of the cuff of the endotracheal tube.

The endotracheal tube used in our hospital are PVC tubes which have a cuff of 50-80 microns in thickness. The ideal cuff pressure should be in the range of 20-30 cm of water (15-22 mm of Hg). The issues associated with the endotracheal cuff can range from high cuff pressure, insufficient inflation, progressive deflation, or damage to the cuff. Endotracheal cuffs can be damaged by teeth during passage or by the edge of the laryngoscope. The mechanism of cuff damage could not be explained, but we can always take measures to avoid such situations. On review of the literature, we found a few case reports, where the cuff of red rubber tube having high pressure ruptured intraoperatively.[2-4]

Hence one should inspect the endotracheal tube during extubation and document the body for its completeness. Constant vigilance is the price of safety.

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Conflicts of interest
There are no conflicts of interest.

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