Cardiac and respiratory arrest following removal of tracheostomy tube

Sir,

In this report we describe a case of 53-year-old female who is admitted electively for removal of the tracheostomy tube. The tracheostomy tube was present for the last 5 months when the patient had Lithium toxicity and renal failure which required prolonged tracheal intubation and lung ventilation followed by tracheostomy. The patient was then discharged home for further follow up in the outpatient clinic. The patient was admitted this time to the general thoracic ward to be assessed for the removal of this tracheostomy tube. The patient underwent a CT of the nasopharynx and the upper airway and it was reported as focal narrowing mainly in coronal caliber of the trachea where it has been compressed by an adjacent large left thyroid lobe and nodule. The trachea was also pushed toward the right side. No other focal stenosis or tracheal thickening or nodule or masses was found. The tracheostomy tube was closed for about 24 h since the admission and the patient remained stable hemodynamically, with good oxygen saturation on room air and she was not distress, so the tracheostomy tube was removed.

The patient remained in a good condition and clinically stable for 2 h, then the patient deteriorated suddenly, became cyanotic with gasping respiration along with desaturation and bradycardia. She was coded and resuscitated by the cardiac arrest team as she required “after few attempts to pass tracheostomy tube which was unsuccessful.” An endotracheal intubation and one dose of adrenalin 1 mg i.v. were given with successful outcome. Later after she was stabilized the tracheal tube was removed and tracheostomy tube size 6 was inserted. The patient regained full consciousness and she remained stable. Portable chest X-ray in the ward was requested as routine practice [Figure 1].

Next morning she underwent another assessment of the upper airways by fiber-optic and rigid bronchoscopy under general anesthesia. During this procedure, a foreign body (FB) was found in the right main bronchus reaching mid of the trachea which was a large piece of folded plastic suction catheter, however, this FB was removed successfully [Figure 2]. The rest of the bronchoscopy examination was within the normal findings and there was no stricture or tracheomalacia.

Tracheostomy tube size 7 reinserted again at the end of the procedure. The most probable explanation of this FB which was found in the major airways is this suction catheter inserted during the resuscitation period when the patient coded, as it was not present in the CT scan or the previous chest X-ray but only in the X-ray after this event which was overlooked. Post-operatively the patient remained in the ward in a good and stable condition, and she was referred to the ENT surgeon for further evaluation.

We conclude and recommend from this report that during any resuscitation events everyone involved from the team should remain calm and in control and not to rush to any unnecessary maneuvers or to a panic phase, as what happened in our case report which explains the insertion of this piece of suction catheter in the upper airway and left behind there during the establishment of the airway and resuscitation. Also, the chest X-ray which is requested routinely post-event should be studied very carefully and thoroughly.
Letters to Editor

Waseem Hajjar
Department of Surgery, College of Medicine, King Saud University,
King Khalid University Hospital, Riyadh, Saudi Arabia

Address for correspondence:
Dr. Waseem Hajjar,
Department of Surgery, College of Medicine,
King Saud University, King Khalid University Hospital, Riyadh 11472,
PO Box 7805, Saudi Arabia.
E-mail: washajjar@yahoo.co

Easy way of improving seal with Rendell-Baker-Soucek mask: Old equipment revisited

Sir,
Rendell-Baker-Soucek (RBS) face mask has been used for mask ventilation in pediatric patients. It reduces dead space to a quarter of anatomical masks with inflatable pad but has the disadvantage of not providing padded seal.

[1-3] This makes the use of RBS face mask inadequate in cases where mask holding is difficult, especially when the anesthesiologist has had limited experience with the pediatric airway. At times, it is not possible to obtain adequate seal even with two-hand technique. Further, when the duration of anesthesia is brief or endotracheal intubation is planned, the issue of dead space seems less important than the ability to deliver positive pressure ventilation. As a result, a very few centers now use these masks. However, a simple modification in the RBS mask could improve its seal in difficult situations. We report three cases wherein difficult mask ventilation was encountered and managed successfully with the modified RBS face mask.

Case 1: A 5-year-old malnourished male child with shrunken cheeks was posted for unilateral pyeloplasty. Even with two-hand technique, size 2 RBS mask failed to provide an adequate seal for adequate positive pressure ventilation after induction of anesthesia.

Case 2: A 6-year-old male patient developed laryngospasm following removal of laryngeal mask airway at the end of hernia repair. Continuous positive airway pressure (CPAP) was applied in an attempt to treat laryngospasm and maintain oxygenation. Size 2 RBS face mask, though used successfully to ventilate the lungs at induction, failed to provide an effective seal during CPAP therapy.

Case 3: A female patient of age 5 years and 6 months with empyema was posted for decortication surgery. Adequate ventilation could not be provided with size 2 RBS mask due to poor compliance and inadequate seal between the face and the mask. This resulted in rapid desaturation.

An alternate means of obtaining seal in these cases was by mounting/applying foam pad of head phone over the perimeter of the face mask [Figure 1]. This improved the seal and adequate mask ventilation was obtained without difficulty, even with one-hand technique. Further, the effective dead space of the equipment was not increased as the body of the detachable foam pad mainly fell within the cavity of the face mask [Figure 2], especially when pressure was applied in an attempt to obtain tight seal between mask and face. Thus, this modification to the RBS mask retains the benefits of low profile of the mask while providing foam pad to it. We recommend that a preformed detachable foam pad according to the size of respective RBS face mask can be provided by the manufacturer, to be used in cases of difficult seal and mask ventilation.

Figure 1: RBS face mask and foam pad of head phone. Arrow points the groove in the foam pad where margins of the mask fit.