Letter to Editor

Postoperative lingual edema is not always a predictor of airway compromise

Sir,

Lingual edema has been reported in neurosurgical patients during different positions.\[1,2\] However, these cases mainly focused on the issue of difficult airway and its management. Here we have highlighted the unusual presentation of lingual edema without causing any obvious airway compromise.

A 25-year-old man admitted with complaint of headache since 5 years. On examination the patient had weakness in the right upper limb and lower limb (4/5). Magnetic resonance imaging showed tonsillar herniation up to C2 vertebra with syrinx extended up to D3. He was diagnosed as a case of Chiari type 1 malformation with syrinx. He was posted for posterior fossa decompression in prone positioning. Laboratory investigations were within normal limit. The patient was given intramuscular glycopyrrolate 0.2 mg 1 h prior to surgery. He was induced with fentanyl 2 μg/kg, propofol 2–3 mg/kg and rocuronium 1 mg/kg. Trachea was intubated with portex 8.0 mm cuffed endotracheal tube. Cotton made soft bite block was put in the oral cavity as our routine protocol. He was maintained on sevoflurane anesthesia with oxygen, nitrous oxide mixture (1:2). Invasive cannulation (central venous line and arterial line) was done. The patient turned prone and slight flexion of neck was done. Bilateral air entry was checked, and peak airway pressure was noted, both of the parameters were normal. Intraoperative course was uneventful. Fluid intake (2 L) and output (350 mL) was appropriate. After the completion of surgery, the patient was turned supine. At this time, we noticed large protruded tongue. We carried out a gentle direct laryngoscopy and it showed gross edema only in the anterior part of the tongue. Therefore, we planned to give extubation trial to this patient. After giving neuromuscular reversal, the patient became fully conscious and following commands. Trachea was extubated. We observed the patient for 30 min in the operation theater. There were no signs of airway compromise. Hence, the patient was shifted to postanesthesia care unit for further observation. We called ENT specialist to rule out the cause of this lingual edema. He did a gentle laryngoscopy which showed left sided 4 × 6 mm area of redness on ventral surface of the tongue with swelling in anterior one third of tongue (L>R) [Figure 1].

In view of difficult airway and extubation concerns, postoperative lingual edema remains a major issue for anesthesiologists. Lingual edema is mainly reported as a consequence of vascular compromise due to extreme neck flexion. Other causes include lymphatic drainage obstruction, thrombosis or embolism of lingual artery and compression due to hard bite block or other objects inside the mouth even throat pack.\[3\] In our case, we checked neck flexion, assessed airway pressure and abdominal compression immediately after prone positioning. We used soft bite block to minimize local pressure over the tongue. However, this case emphasized that even soft cotton bite block can cause laceration of the tongue and selectively compressed the ventral lingual surface, which in turn caused the obstruction of venous supply of anterior two third of the tongue, and resulted lingual edema in the anterior part only. The soft bite block might prevent local compression of the tongue by the teeth, but cannot prevent regional venous obstruction from neck flexion. Because flexion of the neck can result in the whole spectrum of obstruction, from the absence of obstruction to complete venous obstruction, mild to moderate swelling of the tongue may occur without causing significant airway impairment.\[4\] In addition, the role of anesthesiologist became important to rule out the possible causes of such event. Here, we gave the extubation trial to the patient and it was successful. So every case of lingual edema should not be treated as same and if edema presents only in the anterior part, the patient can be extubated. The selective edema of the tongue should always be considered as an effect of local compression and tongue should be thoroughly checked by using direct laryngoscopy in such cases.

Figure 1: Postoperative lingual edema with lacerations over ventral surface of tongue
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