Downfolding of the epiglottis during laryngoscopic tracheal intubation

Sir,

Epiglottis downfolding into the laryngeal inlet is believed to be a rare complication.[1] We describe two cases of epiglottis downfolding that occurred with conventional laryngoscopic intubation and were detected incidentally.

Case 1

A 32-year-old female was scheduled for post-burn contracture release. Anesthesia was induced with propofol 100 mg, fentanyl 85 μg, and intubation with cuffed tracheal tube size 7 was facilitated with vecuronium 4 mg. The supervising anesthetist performed laryngoscopy for oropharyngeal packing. The epiglottis was not seen. The intraoral portion of tracheal tube was depressed posteriorly with the index finger, and the downfolded epiglottis emerged from the laryngeal inlet. There was no epiglottic edema.

Case 2

A 44-year-old female was scheduled for laparoscopic cholecystectomy. Anesthesia was induced with propofol 100 mg, fentanyl 100 μg, and intubation with 7.5 size cuffed polyvinylchloride (PVC) tracheal tube was facilitated with vecuronium. Intraoperatively, hemoglobin saturation (SpO_2) decreased to 92%. On auscultation, air entry was decreased over left lung. Direct laryngoscopy was performed to rule out endobronchial intubation. The epiglottis was not seen. On questioning, the intubating resident anesthetist informed that the epiglottis was large and overhanging. After cuff deflation, the tracheal tube was withdrawn 2 cm, when the epiglottis (mildly congested and swollen) emerged from the laryngeal inlet. Air entry improved and SpO_2 was 99%. Postoperatively the patient had mild sore throat.

A large floppy epiglottis is more likely to be tucked into the larynx.[2] Literature search revealed one report of downfolded epiglottis with conventional laryngoscopic intubation in a patient undergoing laryngeal microsurgery that was noted by the otolaryngologist and corrected by 0.5 cm withdrawal of tracheal tube.[3] Epiglottis malposition is unlikely to occur during intubation techniques in which the epiglottis is elevated directly.[1]

Epiglottis inversion into the laryngeal inlet during intubation with nonconventional methods is more common.[4,5] Epiglottis malposition during blind intubation via the intubating laryngeal mask resulting in epiglottis edema has been reported.[4] In another case, the epiglottis was tucked into the laryngeal inlet by tracheal tube advancement during fiberoptic intubation.[5] Suzuki *et al.*,[1] reported epiglottis malposition during intubation with the Pentax Airway scope. Epiglottis downfolding induced by lighted stylet tracheal intubation and discovered during endoscopy has been reported.[2] Immediate extubation failed to return the entrapped epiglottis to normal, and the larynx remained obstructed. The epiglottis was restored to its normal position with endoscopic forceps.

An epiglottis that is inverted into the laryngeal inlet for a prolonged period may result in edema, congestion, impaired blood supply, and postoperative airway obstruction.[3-5] Fortunately this complication was recognized in time in both our cases. The epiglottis was restored to its normal position by posterior displacement (Case 1) and withdrawal (Case 2) of the tracheal tube.

It is important to note that both instances were "chance" discoveries. The actual incidence maybe much higher than is realized, because of missed detection. We suggest that a conscious effort be made by the laryngoscopist at the time of advancement of the tracheal tube under vision to see that the epiglottis is not being tucked into the laryngeal inlet, particularly if the epiglottis is large and overhanging.

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