Bilateral vocal fold granulomas following double-lumen endotracheal tube placement

Sir,

Contact granulomas can occur after continued attempts at healing following an abrasion from excessive force to the vocal processes.[1] Etiologies include vocal abuse, direct trauma, infection, and gastroesophageal reflux. This case involves discussion of vocal fold granulomas secondary to double-lumen tube endotracheal intubation. Published data suggest that the incidence of postintubation granuloma is 0.1%.[2] The first reported case of postintubation granuloma was histologically discovered by Gould in 1935 and has increased in prevalence as intubation is now common with the delivery of general anesthesia.[1] A large endotracheal tube may cause complications including laryngeal irritation, excessive pressure causing ischemia from an overinflated cuff, and hypoxia to the laryngotracheal mucosa.[2,3] Both frictional irritation from the endotracheal tube and endotracheal tube size have been described as important factors in granuloma formation.[4]

This case involves a 59-year-old female with a medical history significant for pulmonary adenocarcinoma, for which she underwent a left video-assisted thoracoscopic surgery (VATS) with left upper lobectomy and partial resection of the superior segment of the left lower lobe. The gold standard for VATS utilizes a double-lumen tube for one-lung ventilation. During this procedure, the patient required placement of a 35 Mallinckrodt French left-sided double-lumen tube that was positioned with one atraumatic direct laryngoscopy attempt and confirmed with fiberoptic bronchoscopy. Successful extubation occurred at the end of the 2 h case. The patient presented to the otorhinolaryngology clinic 2 months after her original surgery due to a change of voice, specifically noting a rough and raspy quality. A flexible transnasal laryngoscopy was performed in the clinic during this visit and demonstrated large, bilateral, posterior vocal fold polypoid lesions originating from the vocal processes with anterior sparing, prompting the physician to place the patient on a temporary steroid regimen. She was seen 1 month later as she developed dyspnea at rest. A repeat transnasal laryngoscopy was performed in clinic during this visit and showed progression of her vocal process granulomas [Figure 1]. The patient was then scheduled for a direct microlaryngoscopy with jet ventilation, biopsy, and KTP laser ablation with Kenalog injection into the base of the resected granulomas. After undergoing the mentioned procedure, the patient had complete resolution of her symptoms [Figure 2].

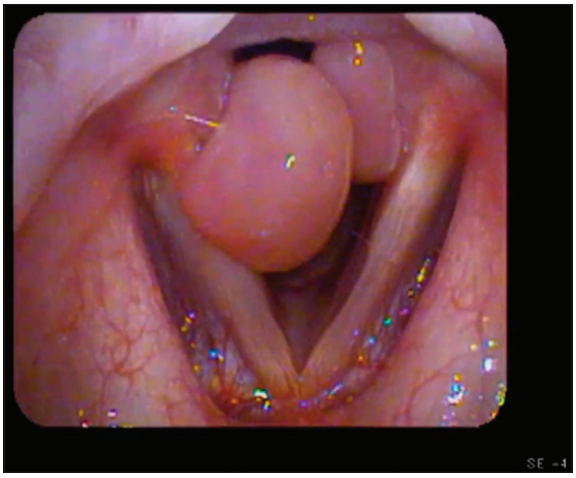

Figure 1: Prelaser therapy

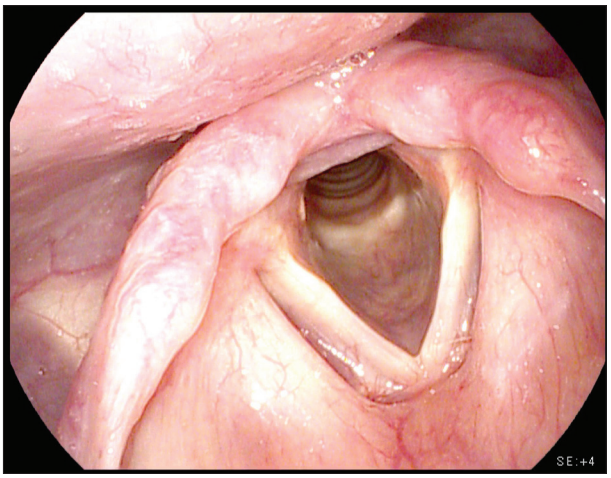

Figure 2: Postlaser therapy

Although medical and surgical treatments can cure vocal cord granulomas, the best management strategy is prevention. A study investigating risk factors associated with prolonged intubation and laryngeal injury suggested the following: using the smallest possible endotracheal tube for prolonged mechanical ventilation, prompt examination of the larynx if a patient experiences hoarseness, difficulty speaking, or dyspnea after intubation, and placement of a tracheostomy within 1–2 weeks of anticipated lengthy duration of airway support.[5] While millions of patients undergo thoracic surgery with double-lumen tube placement and a low complication rate, vocal fold granulomas can occur simply from contact of the endotracheal tube and vocal fold despite an atraumatic intubation. If recognized, this should warrant prompt referral to an otorhinolaryngologist for further examination.

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Conflicts of interest
There are no conflicts of interest.

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