

Retropharyngeal dissection: a case report of cervicofacial subcutaneous emphysema and mediastinal emphysema during attempted nasotracheal intubation

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To the Editor:

Nasotracheal intubation is an established airway management technique in patients undergoing oral and maxillofacial surgery. We encountered a case of retropharyngeal dissection by the tip of the endotracheal tube with severe complications of cervicofacial subcutaneous emphysema and mediastinal emphysema.

A 58-year-old Japanese woman (height 147.9 cm, body weight 82.5 kg) with mandibular odontogenic cyst was scheduled for a cystectomy. The patient's past medical history was diabetes mellitus, hypertension and dyslipidemia. She had no difficulties in extension and flexion of her neck. The maximum distance between the upper and lower incisors was 35 mm when she opened her mouth. General anesthesia with nasotracheal intubation using a nasotracheal tube was planned. Propofol 80 mg, vecuronium bromide 50 mg and remifentanyl 0.3 µg/kg/min were administered intravenously during induction. The right nasal passage was lubricated with the direct application of 3 mL of lidocaine hydrochloride jelly. A 7.0-mm

endotracheal tube (Smiths Medical, Lower Pemberton Ashford, UK) for nasotracheal intubation by an experienced anesthetist could not be advanced distally because of resistance. The left nasal passage was lubricated in the same manner. Rigid laryngoscopy then provided a satisfactory view, and orotracheal intubation was performed. Anesthesia was maintained for the 2-h surgical procedure using sevoflurane, remifentanyl, and oxygen.

After the operation, the tracheal tube was extubated without difficulty. Physical examination revealed crepitations in the buccal, submandibular, and neck region. An urgent computed tomography showed a discontinuity of the retropharyngeal mucosa and the false tract of the retropharyngeal space filled with air (Fig. 1), extending from the infratemporal space to the buccal region, branching into the submandibular, parapharyngeal, retropharyngeal, and mediastinal spaces. Endoscopic examination of the nasal cavity and the nasopharynx showed no active bleeding or hematoma formation.

The diagnosis of cervicofacial subcutaneous emphysema and mediastinal emphysema due to retropharyngeal dissection by the tip of the nasotracheal tube was made. The patient remained clinically stable and received an intravenous injections of amoxicillin 4 g daily. The retropharyngeal dissection was therefore managed without intubation or surgery. The emphysema had completely resolved by post-operative day 10.

Retropharyngeal dissection is a rare complication of nasotracheal intubation and has seldom been reported in the literature [1]. Forceful insertion of the nasotracheal tube is the most commonly mechanism accounting for retropharyngeal dissection [2]. Multiple intubation attempts, over-inflation of the cuff, malposition of the tube, use of a stylet, use of a double-lumen tube, or improper tube size can also increase the risk of this complication [3]. The

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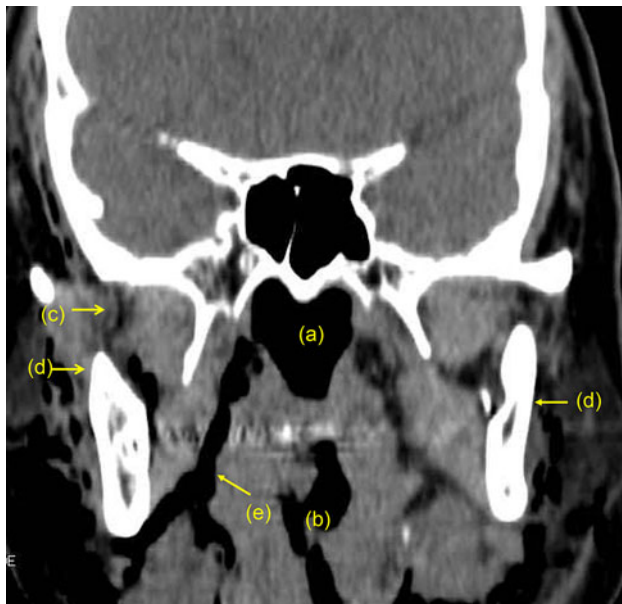


Fig. 1 Coronal section of the computed tomography scan demonstrating the false tract of retropharyngeal dissection filled with air. *a* Nasopharynx, *b* oropharynx, *c* infratemporal space, *d* mandible, *e* false tract of the retropharyngeal space

retropharyngeal space is an area of loose connective tissue. In some cases, when the air dissects into the retropharyngeal space, it can spread caudally into mediastinum producing pneumomediastinum [4].

In our case, during attempted nasotracheal intubation, the tip of the tube made a false passage into the nasopharyngeal submucosa. The patient was manually ventilated through the nasotracheal tube. This procedure may have extended the retropharyngeal dissection and contributed to the development of emphysema. Early recognition of the complication, immediate endoscopic assessment of the injury, careful follow-up of the patient's airway using imaging studies, observation of the patient, and prophylactic antibiotic treatment are all recommended in such cases [5].

Conflict of interest None.

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