

Endobronchial intubation in tracheal stenosis: An uncommonly reported complication

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Case Report

Tracheal stenosis is a life-threatening condition resulting from various causes like congenital, postintubation injury, trauma, inhalational burns, irradiation, tracheal tumor, extrinsic compression of trachea by tumor and idiopathic [1]. Though the exact prevalence is unknown, the estimated incidence of postintubation tracheal stenosis is 4.9 cases per million per year [2]. Airway management of patient with previously undiagnosed tracheal stenosis after induction of anaesthesia is a challenging task. Airway management of tracheal stenosis is commonly complicated by failure of passage of endotracheal tube (ETT), but our case was perplexed by occurrence of left sided endobronchial intubation.

A 29-year-old female (Weight-35 kg, Height-152 cm, BMI-15kg/m²) with chief complaints of left calf swelling for past 6 months, subsequently worked up and diagnosed as soft tissue sarcoma of left popliteal region. The patient was planned for wide local excision (WLE) in prone position. On pre-anaesthetic checkup, her general and systemic physical examination and airway examination was unremarkable and chest radiograph

was normal. Since the surgery was planned in prone position, we decided for General Anaesthesia along with lumbar epidural as anaesthetic technique. After shifting the patient to operating room, peripheral intravenous access was obtained and all standard monitoring devices including electrocardiography, noninvasive blood pressure, and pulse oximetry were attached. Epidural catheter was placed at L2– L3 level. After pre-oxygenation with 100% oxygen, patient was pre-medicated with Inj Fentanyl 70 micrograms. General anaesthesia was induced using titrated doses of Inj Propofol. Adequate bag and mask ventilation was ensured and Inj atracurium 0.5 mg/kg was administered. After completion of 3 minutes, direct laryngoscopy (Macintosh#3), was done and endotracheal intubation was attempted using flexometallic endotracheal tube (ETT) of 7mm ID. The tube crossed the glottic opening but as resistance was encountered, tube could not be negotiated further. We used smaller flexometallic ETT of 6.5 mm ID, tube crossed vocal cords easily. As slight resistance was felt, we were able to negotiate it further with rotational movement till the transverse black line. On auscultation, we found that air entry was absent on right side. We attempted withdrawing ETT by 1cm and auscultated for the bilateral air entry. But, in order to avoid inadvertent extubation, we decided to use fiberoptic bronchoscope to find out the cause of absent air entry over right sided lung fields and difficulty encountered during tube negotiation. We could see a tracheal bulge from right side that distorted anatomy of trachea and lead to slipping of ETT into the left main bronchus (Figure 1b).

After carina was visualized, ETT was repositioned and finally fixed at 18 cm mark. Thus, successful airway management in our patient involved securing airway with smaller sized ETT, finding out cause of difficulty in negotiating age appropriate ETT and finally fixing it at the correct position to avoid inadvertent migration and one-sided ventilation. Rest of perioperative course was uneventful. Postoperative computerized tomographic scan revealed a large lymph node near carina which has increased in size over a period of one month leading to luminal narrowing.

Though American Society of Anesthesiologists (ASA) practice guidelines are available for management of difficult airway

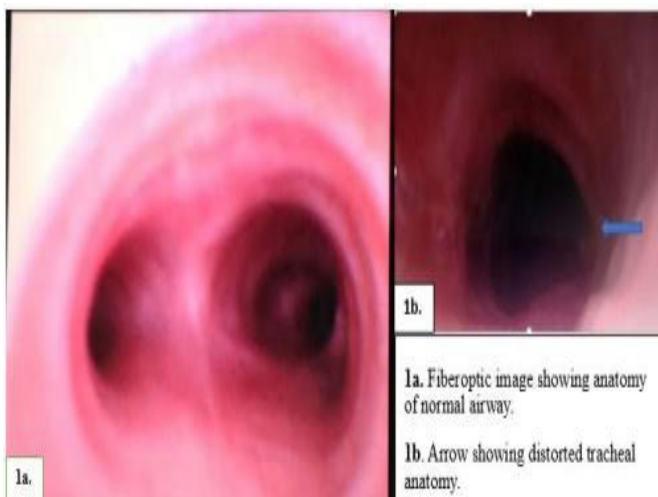


Figure1a: Fiber optic image showing anatomy of normal airway.

Figure1b: Arrow showing distorted tracheal anatomy.

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but they focus on airway caused by extrathoracic airway problems and hence may not be useful for managing patients with intrathoracic tracheal stenosis [3]. Hence, with quick, rational decision and application of knowledge about modifications that we routinely do in our day to day practice, we were successfully able to manage airway in this patient.

References

1. Gelbard A, Francis DO, Sandulache VC, Simmons JC, Donovan DT, Ongkasuwan J. Causes and consequences of adult laryngotracheal stenosis. *Laryngoscope.* 2015; 125:1137-1143.
2. Nouraei SA, Ma E, Patel A, Howard DJ, Sandhu GS. Estimating the population incidence of adult post-intubation laryngotracheal stenosis. *Clin Otolaryngol.* 2007; 32:411-2.
3. Apfelbaum JL, Hagberg CA, Caplan RA, et al. Practice guidelines for management of the difficult airway: an updated report by the American Society of Anesthesiologists Task Force on management of the difficult airway. *Anesthesiology.* 2013; 118(2):251-27002.