Archives of Anesthesiology and Critical Care (Summer 2021); 7(3): 187-188.

Available online at http://aacc.tums.ac.ir

Case Report

Ventilating through Mobile and Migrated Montgomery T-Tube: an Enigma

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ARTICLE INFO

Article history:
Received 23 January 2021
Revised 15 February 2021
Accepted 29 February 2021

Keywords:
Ventilation;
Montgomery T-tube;
Tracheostomy

ABSTRACT

Montgomery T-tube used to maintain a patent airway in post tracheostomised patients can act like a double edged sword. We report a case where a T-tube migrated into distal airway leading a precarious situation.

Anaesthetic management of a patient with Montgomery T-tube is challenging more so one that has migrated. Here we share our experience of patient with a migrated T-tube.

Case Report

A 40-year-old asthmatic female, operated case of tracheostomy with T-tube in situ presented to our ENT department with complaints of occasional breathlessness, cough and fever since 2 months. She was previously operated thrice. Once for tracheostomy 10 years back for strangulation. Second was one month later during which a T-tube was inserted. Third was five years later when she again presented with breathlessness and persistent stenosis during which the ENT surgeons decided to cut and suture the external horizontal limb and suture the vertical limb to the lateral tracheal wall and leave it in situ as a stent as she had refused to undergo the more morbid surgery of tracheal resection and anastomosis.

Considering her presenting complaints now, a virtual bronchoscopy was done which revealed that the T-tube had migrated distally and was mobile (Video). She was then posted for removal of the migrated T-tube and tracheostomy. Consent for the same was taken. Informed consent was taken from the patient for publication of her clinical details including images.

On pre-anaesthetic clinical examination, vitals were normal except for tracheal deviation to the left, scattered rhonchi and decreased air entry on the right side. Airway examination revealed adequate mouth opening, Mallampati grade I and a healed midline vertical tracheostomy scar with no external T-tube visible. Considering the unique airway related concerns and the patient being non-cooperative for local anaesthesia, it was decided to go ahead with conventional general anaesthesia with mask ventilation, having tracheostomy as standby.

The patient was premedicated with Inj. Glycopyrrolate 0.2mg, Inj. Midazolam 1mg and Inj. Fentanyl 100 µg I.V. and anaesthesia was induced with Inj. Propofol 100 mg I.V. Ventilation was confirmed with adequate chest rise and capnogram with mask. Muscle relaxation was attained with Inj. Vecuronium 5mg I.V. Ventilation and oxygenation were very well maintained throughout. After wound exploration by surgeons, it was noted that the T-tube had migrated distally. The T-tube was then extracted and then tracheostomised (Figure 1). Fiberoptic bronchoscopy done through tracheostomy tube later revealed subglottic stenosis. (Figure 2) for which tracheal

The authors declare no conflicts of interest.

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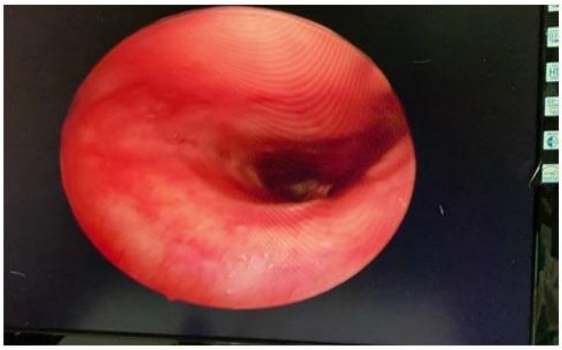
resection and anastomosis was done a week later, following which the patient was discharged.

Figure 1- Extracted T-tube

Figure 2- Subglottic stenosis noted through tracheostomy tube by Fiberoptic Bronchoscopy



Discussion

The Montgomery T-tube provides a functional airway to a patient with deranged laryngotracheal anatomy [1]. As mentioned by Lakshmi J et al., misplacement of T-tube can cause acute airway loss [2]. Dislodgement and migration can be either proximal or distal. Noirez et al. noted distal migration of the tube with the folding of proximal and external limbs in lower trachea with no predisposition [3]. Srirompotong S also noted dislodgement and aspiration of T-tube into the left main bronchus due to vigorous cough followed by strong negative inspiratory pressure [4]. Migration of the T-tube is rare because of its external limb, which works as an anchor in holding it in place [1]. In our case, absence of this external limb caused the dislodgement of the T-tube into the distal trachea. Anaesthesiologists should be aware of the over-flexibility of T-tube, leading to unusual complications [3]. Endotracheal intubation was not an option considering the fact it would have caused further migration. Supraglottic airway was an option but we proceeded with mask as surgeons intended to perform tracheostomy following T-tube extraction. An awake fiberoptic bronchoscopy with topicalisation would have been justified but wasn't considered for the patients' consent and presence of significant stenosis.

Conclusion

Ventilating through mobile and migrated Montgomery T-tube is indeed an enigma however in this case, the patent proximal and distal limbs of the T-tube maintained a patent airway in our case and saved our day from any untoward event.

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