The Montgomery T tube is a device which serves the purpose of tracheal stent and tracheostomy tube to prevent post-operative tracheal stenosis. It was introduced in 1964. This device is an uncuffed silicone T tube. The T-tube has a vertical limb or the perpendicular limb is occluded. Further, unlike standard tracheostomy tubes, the Montgomery T-tube has the disadvantage of not taking standard catheter mount connectors. Therefore the anaesthetist must devise ways of delivering volatile agents and carrier gases for maintenance of general anaesthesia during such critical periods.

The management of patients with T-tube poses difficulty in controlled ventilation as t-tubes do not possess any standard connectors to fit with anesthesia breathing circuits and the proximal upper open end causes loss of inspired gases. Anaesthetists may experience problems like air dilution, hyperventilation and patient awareness during anaesthesia for T tube insertion.

Numerous techniques have been used with good success to overcome all these problems related to ventilation through T-tube insertion. We herein describe the case of successful management of the patient for anaesthetic management for insertion of t-tube using laryngeal mask airway to overcome the problem of hyperventilation and air dilution successfully managed the patient of subglottic stenosis using laryngeal mask airway.

Thirty years old female weighing 60 kg was tracheosmised for subglottic stenosis following accidental ingestion of poisonous liquid reported for Montgomery T tube insertion. A size 3 LMA was inserted, cuff inflated with air and its open end was blocked by the plastic cap of vial to prevent the leakage and dilution of anaesthetic gases.

After an anterior collar incision, stenosed segment of trachea was exposed and granulation tissue around the tracheostomy stoma was shaved off to remove the tracheostomy tube and finally space was generated for placement of Montgomery T-tube. The perpendicular limb of the T-tube was connected using a no. 7 universal adaptor. Ventilation was continued via the perpendicular limb till wound closure & return of spontaneous respiration.

The difficulty that is encountered with T-tube is in maintaining controlled ventilation as the two limbs of the T tube are open. The loss of air flow and inhalant anesthetics through the open upper intraluminal limb of the T-tube after its insertion has been an important problem. Positive pressure ventilation & delivery of anaesthetic gases after placement of the T tube is impossible unless the upper limb or the perpendicular limb is occluded. Further, unlike standard tracheostomy tubes, the Montgomery T-tube has the disadvantage of not taking standard catheter mount connectors. Therefore the anaesthetist must devise ways of delivering volatile agents and carrier gases for maintenance of general anaesthesia during such critical periods.

To circumvent this, a short laryngeal portion or extratracheal segment must be occluded for ventilation.

An LMA can be used as a pathway of ventilation by occluding the extratracheal lumen of T-tube with the spigot or employed as a means of upper airway occlusion while ventilation continues via the extratracheal portion. Uchiyama and Yoshino occluded the top end of the LMA, continued ventilation via the extratracheal portion of the T tube.

With use of this technique we can ventilate the patient through LMA whenever required by occluding...
the other end of T-tube. 6,8 We also used LMA which was occluded at the top with the help of cap of vial, for preventing the leakage and ventilation was done successfully through extratracheal limb by connecting it with 7mm tube connector.

Various methods have been documented in literature for effective ventilation and prevention of leakage. Leakage can also be prevented by tightly packing the pharynx with ribbon gauze. This formed a supra glottis air tight seal. 7 Montgomery also suggested passing a Fogarty embolectomy catheter through the extratracheal lumen up to the upper stem of the T-tube and occluding the open upper end by inflating the balloon of the catheter. The airway can be maintained by inserting the endotracheal tube through the extratracheal portion.7 Jet ventilation can be an alternative mode of ventilation. Airway can also managed spontaneously under deep anaesthesia as managed by Gupta et al.9 The use of Bain’s breathing system, in which a Y-connector is connected at the end of the circuit, and fresh gas flow is delivered to the extratracheal part of the T-tube and the face mask can be another alternative. 7

In conclusion, an anesthesiologist may not be familiar with anaesthetic airway control via a Montgomery T-tube. Therefore, prior to its use, the anesthesiologist must understand the structure and characteristics of the Montgomery T-tube, and must have various options available for use before initiating anesthesia.

Legends for figure:
Fig 1: showing sealed upper part of LMA

REFERENCE