

A Modified Endotracheal Tube Serving As A Long Tracheostomy Tube

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Citation

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Abstract

Tracheostomy is a life saving procedure, performed for a number of indications and on a wide spectrum of patients having a diverse anatomy of the neck. A surgeon performing tracheostomy on a patient having a large neck is always wary of the potential complications¹. Often in these cases a tracheostomy tube of adequate length is not available or there is a chance of the tube getting dislodged at the slightest movement of the patient's neck causing inadequate ventilation or an obstructed airway. The scenario gets even worse if the tracheostomy tube has to be attached to a ventilator machine². This exerts traction on the tracheostomy tube which may be yanked out of the trachea. An endotracheal tube (ETT) passed through the tracheostome provides adequate length in these patients but the extra length jutting out of the neck is not only cosmetically unacceptable³ but also restricts the neck movements of the patient. Attempts at cutting the ETT to a smaller size to fit the individual's thick neck also cuts the cuff pilot line (used to inflate the balloon and regulate pressure), which is moulded in the ETT wall. The cuff is unable to inflate and an airtight seal is not maintained thus rendering it useless in preventing aspiration and connecting with a ventilator machine. The other problem is securing this improvised ETT. An ingenious method of securing the ETT using the flange of an adjustable flange tracheostomy tube as a temporary measure⁴, has been described in the literature but this occasionally causes kinking of the cuff pilot line causing problem at tube replacement as the cuff cannot be deflated. I present a method of reducing the length of ETT to a suitable size while maintaining the integrity of the cuff and also a method of securing it in patients with a very thick neck.

METHOD

Take a cuffed Portex® endotracheal tube of a size similar to that of a tracheostomy tube which you would otherwise use on the same patient. Mark the length required to safely reach the tracheal lumen. If the cuff pilot line is moulded to the ETT above this mark cutting through the tube will result in an incompetent cuff. Therefore carefully cut a sliver of plastic tube along the length of the cuff pilot line above the desired level. After an appropriate length has been achieved inflate the cuff to check its integrity. To make a flange, cut a flat rectangular strip from a firm plastic drip bag approx 1"x 3". Make an aperture in its middle slightly smaller than the diameter of the ETT. Cut two holes on both ends for the strings to pass through. Remove the connector from the discarded top end of the ETT. Pass its tip through the central aperture of the improvised flange and firmly insert it in the cut ETT. Move the improvised flange to confirm that it is secured between the top of the ETT and the lower surface of the connector. The sliver of plastic cut along the cuff pilot line lies below the self made flange and prevents it from sliding down the tube. Your extra length modified

tracheostomy tube is ready for use. (Fig.1) .A comparison of ETT, regular and modified tracheostomy tubes is also shown (Fig.2)

Figure 1

Figure 1: Components of the modified tracheostomy tube

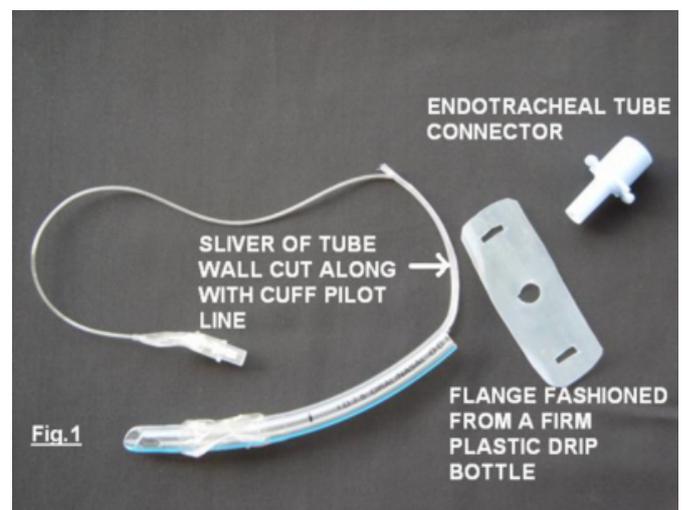
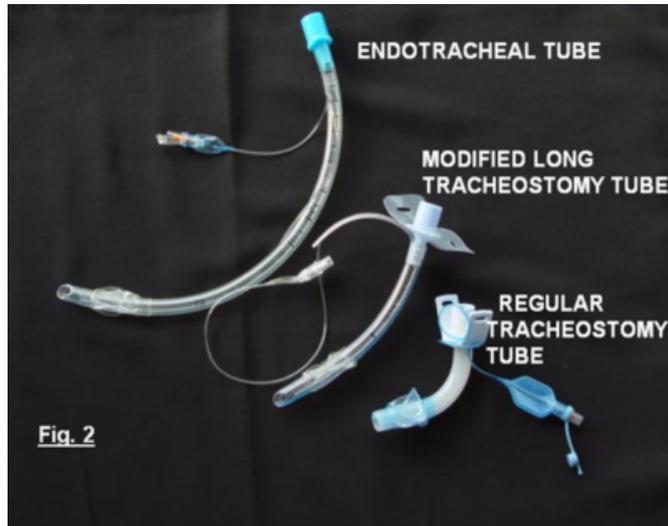


Figure 2

Figure 2: A Visual Comparison Between Endotracheal Tube, Regular Tracheostomy Tube & The Modified Long Tracheostomy Tube.



This modified tube helps maintain a secure airway in patients with a very thick neck till the oedema settles or until a longer tracheostomy tube is obtained.

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