Tracheostomy care 2 – inner tube

The procedure for changing the inner tube of tracheostomy

**INTRODUCTION**

There are many different designs of tracheostomy tube.

The silver Negus tube is a simple hollow tube generally used by patients with an established tracheostomy.

Most patients have a plastic device made up of a small inner tube inserted into a larger outer tube. This smaller tube can be removed for cleaning while the outer tube remains in place to maintain the patency of the airway. Tubes of this design may or may not have an inflatable cuff, which prevents the aspiration of secretions. Cuffs are also used where patients require mechanical ventilation, as a seal is required to allow positive pressure ventilation (Dougherty and Lister, 2008).

Some tubes have a small hole or fenestration to allow air to pass through the vocal cords. This allows the patient to talk and re-establish breathing though the upper airway when the tracheostomy tube opening is occluded with a one-way valve.

All patients, whenever possible, should have a tracheostomy with an inner tube. Problems associated with a blocked tube, such as airway obstruction, can be reduced by the use of an inner cannula that can be removed quickly in an emergency and a clean one inserted (NHS Quality Improvement Scotland, 2007).

Changing the inner tube regularly and using suction to remove secretions should prevent blockages (Serra, 2000).

The period between routine changes of inner tubes is controversial. Some authors suggest twice-daily changes (Woodrow, 2002; Serra, 2000). Frequency depends on the type and quantity of secretions produced – patients with copious or thick secretions may need changes every 2–4 hours.

It is important to assess respiratory function and the type of secretions removed by suction or coughing and to reassess regularly to ensure the airway is maintained.

A replacement inner tube should be specifically designed for the size and type of tracheostomy tube. The spare tube in the tracheostomy set may be intended only for temporary use during cleaning. The adaptor on the end of the spare tube is essential for connection to any ventilatory support devices while the regular tube is cleaned.

If a patient has a fenestrated tracheostomy and tracheal suction is required, a non-fenestrated inner tube should be used to avoid tracheo-bronchial trauma (from the catheter passing through the fenestration) and poor secretion clearance (NHSQIS, 2007).

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**Keywords**

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**Professional Responsibilities**

This procedure should be undertaken only after approved training, supervised practice and competency assessment, and carried out in accordance with local policies and protocols.
EQUIPMENT
The following equipment is needed:
- Apron;
- Sterile gloves;
- Spare inner tube;
- Suction equipment;
- Cleaning solution.

All patients with a tracheostomy should have a full range of safety equipment, including oxygen and suction, near the bed space (see part 1) (Higgins, 2009).

THE PROCEDURE
- Ensure you are familiar with how the inner tube is locked in place to the outer tube. Tubes have a locking mechanism to prevent them from being accidentally dislodged or displaced by coughing.
- Prepare equipment, including the spare inner tube and cleansing solution.
- Explain the procedure to the patient, particularly that the procedure may make them cough, and answer any questions.
- Wash hands and put on plastic apron and sterile gloves.
- Temporarily disconnect oxygen delivery device if one is attached (Fig 1).
- Unlock the tracheostomy inner tube (Fig 2).
- Remove the tube, following the ‘line’ of the tracheostomy (Fig 3).
- Insert the replacement tube into the outer tube following the line of the tracheostomy. Insert to the hilt of the adaptor on the outer tube. Lock the inner tube in place according to the manufacturer’s instructions (Fig 4).
- Reapply any oxygen therapy.
- Assess the patient’s breathing and check the patency of the airway. Changing the tube may stimulate a cough and suction may be required.
- Clean and dry the inner tube as outlined by the manufacturer and local policy (Fig 5). The inner tube should be cleaned with sterile warm water and the tube left to air dry before being reinserted (NHSQIS, 2007). The use of any other solutions, such as sodium bicarbonate, will depend on local policy and the manufacturer’s recommendations. Pipe cleaner-design brushes should not be used on plastic tubes unless recommended by the manufacturer (NHSQIS, 2007).
- If the replacement tube was a temporary tube, repeat the procedure to reinsert the cleaned tube.
- Clean the temporary tube.
- Remove gloves and dispose of equipment according to local policy.

REFERENCES


NHS Quality Improvement Scotland (2007) Best Practice Statement – Caring for the Patient With a Tracheostomy. tinyurl.com/tracheostomy


NEXT WEEK
Tracheostomy care 3
Changing the dressing

Fig 4. Insert the replacement tube lock into place
Fig 5. Clean and dry the tracheostomy inner tube
Fig 6. Document the procedure and reassess care plan

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Fig 5. Clean and dry the tracheostomy inner tube
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- Wash and dry hands.
- Document the procedure (Fig 6), reassess, then amend the care plan if tube changes are required more or less frequently.