How to perform a tracheostomy dressing and inner cannula change

Credland N (2016) How to perform a tracheostomy dressing and inner cannula change. Nursing Standard. 30, 30, 34-36. Date of submission: July 27 2014; date of acceptance: March 13 2015.

Rationale and key points

Proactive tracheostomy management increases patient safety and reduces adverse events.

- A cleaning regimen performed every four hours reduces the risk of a blocked tracheostomy cannula, complete tube occlusion and respiratory arrest.
- Sterile tracheostomy dressings allow secretions from the stoma to be absorbed and prevent pressure damage from the tracheostomy tube.
- Regular dressing changes and skin inspection permit timely identification of inflammatory processes and skin excoriation, enabling prompt treatment to be instigated.

Reflective activity

Clinical skills articles can help update your practice and ensure it remains evidence based. Apply this article to your practice. Reflect on and write a short account of:

1. How this article will change your practice.
2. How you intend to develop your knowledge and skills regarding tracheostomy management.

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Keywords

clinical procedures, clinical skills, tracheostomy, tracheostomy care, tracheostomy dressing, tracheostomy inner cannula

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Preparation and equipment

- The nurse should obtain assistance from another practitioner to avoid accidental tracheostomy displacement when the tracheal tapes are removed.
- The nurse should assess the patient's vital signs and respiratory function as a baseline before commencing a tracheostomy dressing and inner cannula change.
- The nurse should ensure the necessary equipment is available, including:
  - Non-sterile gloves, an apron and eye protection.
  - Suction equipment.
  - An emergency intubation kit, in case of accidental decannulation.
  - A tracheostomy dressing and tapes or ties.
  - An inner cannula of the same size as the one *in situ*.
  - Sterile gauze, long-handled cotton applicators or specific tracheostomy inner cannula sponges.
  - A sterile dressing pack.
  - A dressing trolley.
  - Sterile water.
  - Barrier cream.
  - A swab and specimen container.

Procedure

1. Explain the procedure to the patient and gain consent. If the patient lacks capacity, the nurse must act in their best interests in accordance with the requirements of the Mental Capacity Act 2005.
2. Place the patient in a supine or semi-recumbent position.
3. Wash your hands and put on personal protective equipment – eye protection, gloves and an apron.
4. Place the dressing pack, tracheostomy dressing, tapes or ties and inner cannula onto the dressing trolley.
5. Ask the practitioner assisting you to hold the tracheostomy tube securely in position to prevent accidental decannulation.
6. Remove and dispose of the existing tracheostomy tapes and dressing, according to local policy.
7. Inspect the tracheostomy stoma site for signs of infection, for example redness, swelling, heat

and the presence of exudate or discoloured tissue or skin. If signs of infection are identified, swab the area, place the swab in a specimen container and send it to the laboratory for a culture and sensitivity test.

8. Clean around the stoma with gauze, long-handled cotton applicators or inner cannula sponges soaked in sterile water.
9. Inspect the skin under the tapes and the dressing to check for any redness or swelling. If redness or swelling are identified, protect the skin using a barrier cream.
10. Insert a new sterile tracheostomy dressing around the stoma and tracheostomy tube.
11. Attach the new tracheostomy tapes (Figure 1). Ensure the tapes are not too tight by checking that one or two fingers can be inserted between the tapes and the patient's neck.
12. Assess the patient for any changes in vital signs and respiratory function to ensure that complications are identified and acted on promptly.
13. Remove the existing inner cannula and replace it with the new inner cannula (Figures 2 and 3, tinyurl.com/ht6mr4c).
14. If the inner cannula is non-disposable, clean it with sterile water. Do not leave the inner cannula to soak (Intensive Care Society Standards 2014, National Confidential Enquiry into Patient Outcome and Death (NCEPOD) 2014). If the inner cannula is disposable, it should be disposed of according to local policy.
15. Leave the non-disposable inner cannula to air dry, store it in a specimen bag and make it accessible, ready for the next cannula change (National Tracheostomy Safety Project 2013).
16. Repeat the assessment of the patient to identify changes in vital signs and respiratory function.
17. Instruct the patient to alert a nurse if they experience any difficulty in breathing.
18. Remove any personal protective equipment, dispose of it according to local policy, and wash your hands.
19. Document the procedure in the patient's notes.

Evidence base

An inner cannula is used alongside humidification to prevent blockage of the tracheostomy tube with secretions. This is recommended as a standard part of tracheostomy tube design and care (NCEPOD 2014). Patency of the tracheostomy tube is ensured by regular cleaning. The inner cannula attracts secretions and debris that may become hardened, narrowing the diameter of the cannula and making it difficult for the patient to breathe. This can lead to complete tracheostomy tube occlusion and respiratory arrest.

The National Tracheostomy Safety Project (2013) recommended that the inner cannula is removed and cleaned at least once per eight-hour shift. However, NCEPOD (2014) identified that a cleaning regimen every four hours was generally maintained throughout UK acute hospitals to reduce the risk of a blocked inner cannula. For patients with increased secretions or particularly thick, viscous secretions, it is advisable to undertake more frequent inner cannula checks.

FIGURE 1

Secured tracheostomy tube

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FIGURE 2

Removing and replacing the inner cannula

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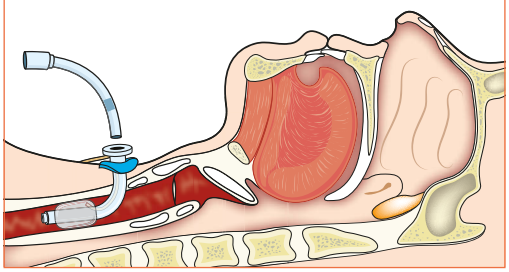
FIGURE 3

Placement of the tracheostomy tube and inner cannula



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It is accepted practice to clean the inner cannula using sterile gauze or specific tracheostomy inner cannula sponges, if available. Patients who are critically ill or have neutropenia may benefit from sterile inner cannula care. Soaking the inner cannula may increase its exposure to pathogens and is therefore not advocated (Intensive Care Society Standards 2014, NCEPOD 2014).

The tracheostomy must be secure to prevent accidental decannulation. This is achieved by the use of fabric tapes. It is essential that the tapes are not too tight, while still ensuring that the tracheostomy remains in place. If the tapes are too tight they may cause skin damage. This may be prevented by ensuring that one or two fingers can be inserted between the tapes and the patient's neck (Mallett *et al* 2013).

The use of a sterile tracheostomy dressing allows secretions from the stoma to be absorbed and prevents pressure damage from the tracheostomy tube (Mallett *et al* 2013). It is important to check for any signs of wound breakdown and infection when changing the dressing and securing the tapes. This promotes early detection of complications and encourages prompt treatment. Peri-stomal irritation and excoriation may be managed with the use of a barrier film, applied to the site, under the dressing (Mallett *et al* 2013).

The maintenance of a strict tracheostomy inner cannula cleaning regimen should prevent tube occlusion, which could lead to respiratory arrest **NS**

USEFUL RESOURCES

- National Tracheostomy Safety Project (2016) *Welcome to the National Tracheostomy Safety Project Website*. www.tracheostomy.org.uk
- The Global Tracheostomy Collaborative (2016) *The Global Tracheostomy Collaborative*. www.globaltrach.org

(Last accessed: February 16 2016.)

Disclaimer: please note that information provided by Nursing Standard is not sufficient to make the reader competent to perform the task. All clinical skills should be formally assessed at the bedside by a nurse educator or mentor. It is the nurse's responsibility to ensure their practice remains up to date and reflects the latest evidence.

References

Intensive Care Society Standards (2014) *Standards for the Care of Adult Patients with a Temporary Tracheostomy*. The Intensive Care Society, London.

Mallett J, Albarran JW, Richardson A (Eds) (2013) *Critical Care Manual of Clinical Procedures and Competencies*. Wiley-Blackwell, Oxford.

National Confidential Enquiry into Patient Outcome and Death (2014) *On the Right Trach? A Review of the Care Received by Patients who Underwent a Tracheostomy*. NCEPOD, London.

National Tracheostomy Safety Project (2013) *NTSP Manual 2013*. www.tracheostomy.org.uk/Resources/Printed%20Resources/NTSP_Manual_2013.pdf (Last accessed: February 16 2016.)