

Review Article on Tracheostomy

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1 Introduction

A tracheostomy is an opening through the neck into the trachea. A tracheostomy opens the airway and aids breathing. A tracheostomy opens the airway and aids breathing. A tracheostomy may be done in an emergency, at the patient's bedside or in an operating room.

Definition: A tracheostomy is an incision into the trachea at the 2nd 3rd or 4th tracheal ring.

Parts of the tracheostomy tube:

- Outer tube or outer cannula.
- The inner tube or inner cannula
- The obturator or pilot
- It is used as a guide to the outer tube.

Use of tracheostomies:

- To facilitate prolonged artificial ventilation.
- To bypass serious upper respiratory obstructions.
- To prevent aspiration of blood, secretions or food into the lungs.
- To provide easier access to the lower airways than is through nose or mouth.

Indications for tracheostomy:

- Apnea
- Respiratory obstruction
- Circulatory arrest
- Exanguating hemorrhage
- Carcinoma of the larynx
- Diphtheria, Ludwig's angina
- Head injury, neck injury or chest injuries.
- Respiratory failure
- Fracture of the larynx or trachea.
- In case of foreign body in hypo pharynx or larynx.
- Patient with severe burns, especially around hand, neck and face.
- Patient who have or had thyroidectomy or radical neck dissection.
- Patients with neurological disorders, drug overdose, bulbar paralysis or cerebro vascular accidents.
- Patient with severe emphysema.
- Weak, feeble patients.
- Canine biting.

Complications of tracheostomy:

- Subcutaneous emphysema
- Pneumothorax
- Mediastinal emphysema
- Obstruction of tracheostomy tube.
- Respiratory insufficiency
- Displacement of the tube from its position on the tracheal turner.
- Hemorrhage.
- Pulmonary infection.
- Atelectasis
- Tracheoesophageal fistula

Care of tracheostomy patient:

- Maintain an open airway.
- Suction and clean the tube as indicated. Prevent aspiration, e.g. of water, solutions etc. through the tracheostomy. Keep materials which may occlude the tracheostomy, away from the opening, e.g. clothing, bed sheets.
- Observe the patient carefully for indication of respiratory difficulty, e.g. noisy respirators, restlessness, cyanosis, intercostals and sub sternal retraction, alterations in respiratory rate, labored respiration.
- Practice asepsis. Strict aseptic techniques should be followed, while suctioning, cleaning and dressing the wound.
- Observe for complications of tracheostomy. If the airway is obstructed, do suctioning, if the tracheostomy outer tube has come out, put the tracheal dilator inside and inform the doctor. Never try to push a blown out tracheostomy tube back into its place. Sterile tracheal dilator and tracheal hook should be present near the patient all the time.
- Ensure maximal humidification of the inspired air and approximately warm inspired air. Sterile wet gauze covering the tracheostomy will help in humidification.
- Provide adequate hydration to help liquefy pulmonary secretions. At least 3,000 ml of iv fluids are ordered daily if adequate oral intake is not possible.
- Maintain fluid and electrolytic balance. Keep an accurate intake & output chart.
- Be gentle the tracheal mucosa is easily traumatized during suctioning.
- Keep the necessary articles like extra sterile inner tracheostomy tube, tracheal dilator, tape, Vaseline, gauze, sterile gauze pieces, suction

nozzles, sterile water & suction apparatus nearby.

- Prevent pressure trauma to tracheo bronchial tree.
- If cuffed tube is being used see that the cuff is deflated, as a ordered, to relive pressure periodically on the tracheal wall.
- Periodically inspect the tracheostomy. For trauma or infection.
- Ensure use of a fresh tracheostomy tube as needed
- Clean inner cannula of mucosa and encrustations as indicated. The inner tube is changed by Nurses and outer tube by doctors.
- Change the dressing & tracheostomy tube as necessary.
- Provide appropriate skin care.
- Keep skin clean & dry.
- Provide adequate nourishment.
- Provide frequent mouth care to minimize possible infection.
- Plenty of water should be given orally.
- Administer medications as ordered. Narcotics & sedatives are usually avoided. To minimize apprehension, only mild tranquilizers are given.
- For long term cases, the patient and his relatives are taught how to take care of the tube.
- Elevate the patient's apprehension by closely observing them, provide care in a calm, but efficient manner & helping him communicate by providing Call bell.

2 Suctioning procedure:

Auscultate the chest before and after suctioning.

Wash hands and use sterile gloves.

Place a sterile towel across the patient's chest just below the tracheostomy tube.

Clean the skin around the tube and the adaptors with a recommended antiseptic.

Select the catheter, attach it to the suction apparatus and lubricate it with sterile normal saline normal saline, gently insert into the tracheostomy tube and do the suctioning. It should not be continued more than 5 seconds at a time.

After suctioning, discard the catheter and gloves and also the saline. Note the amount and the character of the secretions aspirated.

Wash hands after completion of the procedure.

3 Cleansing inner cannulas

Inner cannula is changed every 2 to 4 hours. But in some cases, only twice. It can be cleaned with cold water and soap and also with hydrogen peroxide solution. After cleaning, it can be sterilized and can be used again. Do not leave the inner cannula out for longer than 5 to 10 minutes, while removing or cleaning it.

If left out for longer periods, secretions and crust begin to form in the outer cannula, making it difficult to reinsert the inner cannula.

The following conditions should be reported to the doctor if they occur during post operative period.

Tube replacement Indications of shock, haemorrhage, respiratory insufficiency and hypoxia. Respiratory obstruction Excessive restlessness or apprehension. In case of cyanosis, oxygen should be given Rhinorrhea Development of trachea esophageal fistula.

4 Conclusion

It is an opening through the neck into the trachea. A tracheostomy opens the airway and aids breathing. A tracheostomy may be done in an emergency, at the patient's bedside or in an operating room. Anesthesia may be used before the procedure.

References

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