



Clinical Practice Guidelines: Respiratory/Tracheostomy emergencies

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Date	April, 2016
Purpose	To ensure consistent management of patients with tracheostomy emergencies.
Scope	Applies to Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless stated otherwise.
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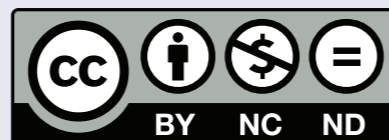
All feedback and suggestions are welcome. Please forward to: Clinical.Guidelines@ambulance.qld.gov.au

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Tracheostomy emergencies

April, 2016

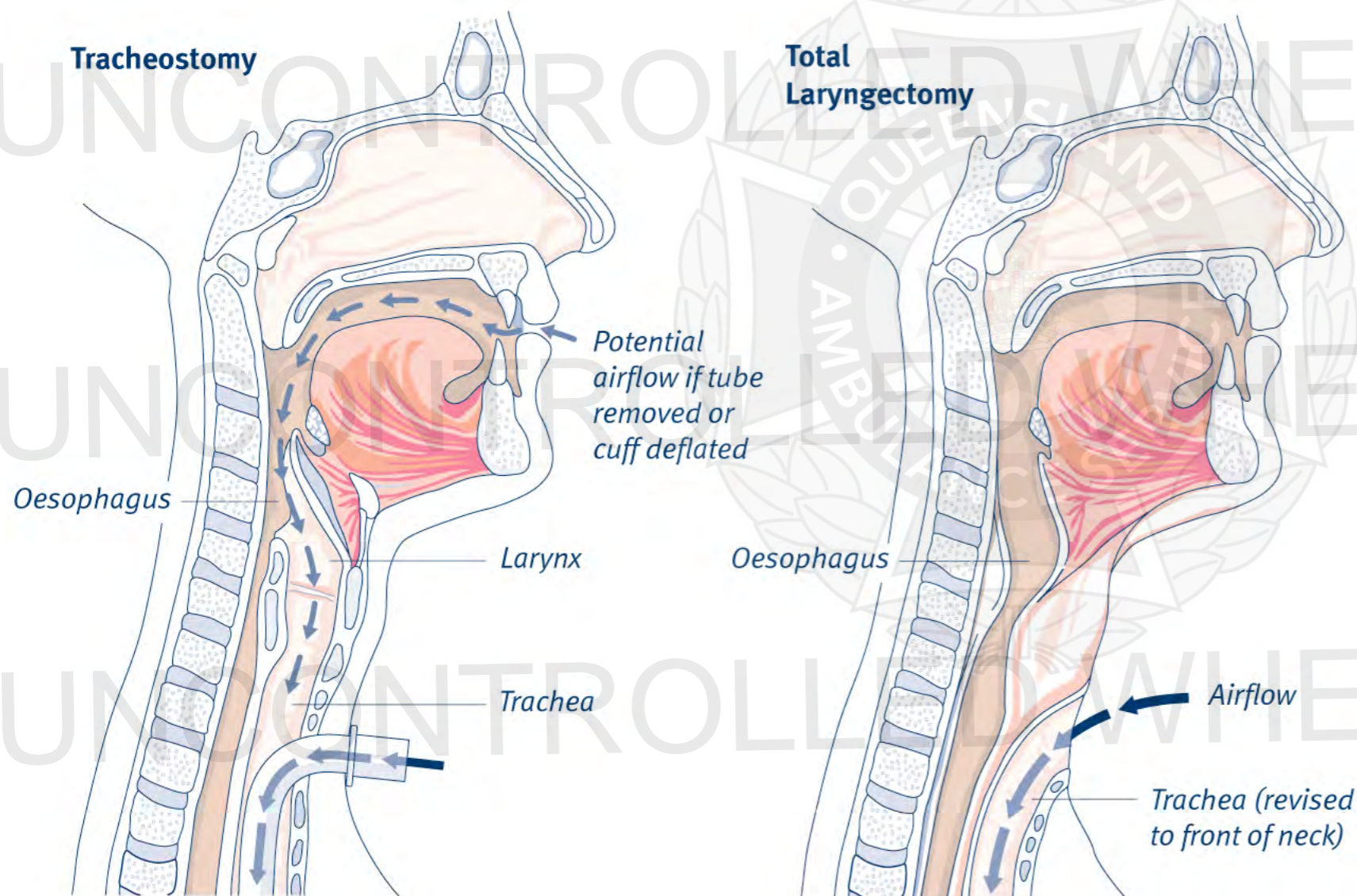
A **tracheostomy** is a surgical procedure where an opening is made into the neck of the patient to facilitate a patent airway. The opening (*stoma*) may be permanent or temporary. Tracheostomies are created for a number of reasons. For cancers of the head and neck the larynx may be completely or partially removed.

Following a partial laryngectomy the upper airway is still potentially patent, with the larynx connected to the trachea. A total laryngectomy involves the removal of the larynx and the trachea is revised to the front of the neck, permanently disconnecting the upper airway from the trachea.

A tracheostomy tube is inserted into the stoma to ensure a patent airway. There are various types of tracheostomy tubes including single and double lumen, cuffed and uncuffed, fenestrated and adjustable tubes. Total laryngectomy patients will predominately not have a tube fitted however some patients may. Those without tracheostomy tubes will have had a stoma for many years.

Life-threatening emergencies of the patient with a tracheostomy include:

- Partial/complete obstruction
- Partial/complete dislodgement of a tracheostomy tube



Clinical features



- Difficulty in breathing
- Tachypnoea and tachycardia
- Low oxygen saturations
- Grunting, snoring, gurgling or stridor
- Accessory muscle use or recession
- Restlessness, confusion, agitation, anxiety

Risk assessment

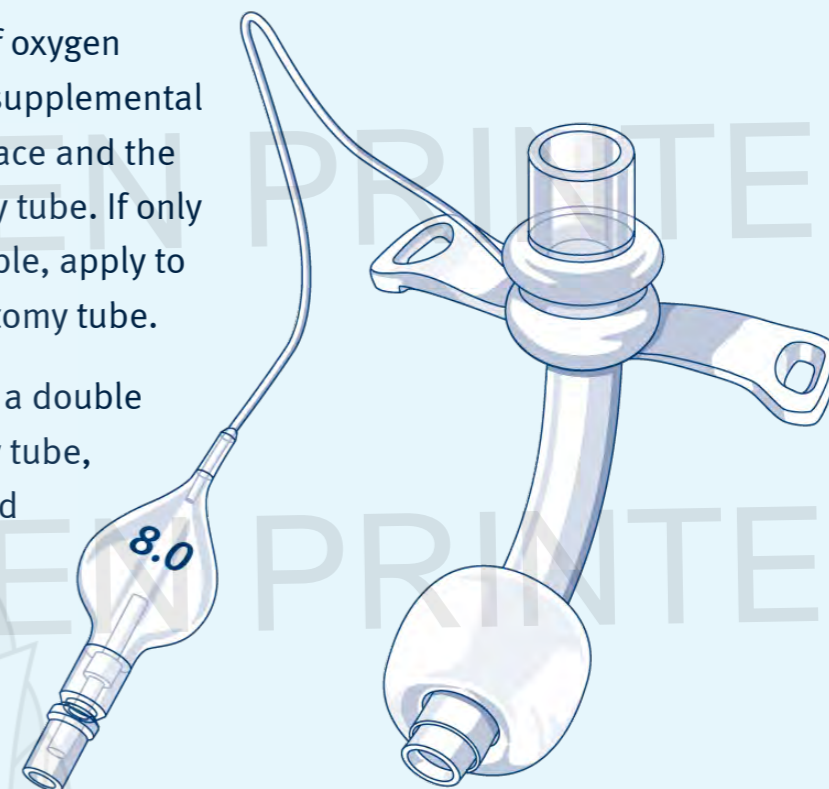


Factors contributing to a life-threatening emergency:

- Overproduction of sputum
- Coughing
- Irritation of the trachea
- Undue movement of tracheostomy tube
- Dry, hardened secretions

+ Additional information

- When two sources of oxygen are available apply supplemental oxygen to both the face and the stoma/tracheostomy tube. If only one source is available, apply to the stoma/tracheostomy tube.
- The inner cannula of a double lumen tracheostomy tube, if removed, may need to be re-inserted within the outer tube to allow connection of the tracheostomy tube to a BVM. Check the inner tube for obstruction and flush with normal saline if required prior to reinsertion.
- The patency of the tube or open stoma is tested by attempting to pass a suction catheter through without suction being applied. Once the catheter has passed through the tube into the trachea the patient is likely to begin coughing. If the catheter does not pass easily do not force it, instead attempt to suction.
- If the catheter passes easily through the tube there is still potential for a partial obstruction. If the patient is continuing to experience difficulty in breathing attempt suctioning.



Additional information (cont.)

- Fenestrated tubes have an opening in the posterior part of the tube to allow speech in some patients. Care must be taken when assessing patency to ensure the catheter does not pass out the fenestrated hole.
- Oxygenation and ventilation through the stoma is achieved by attaching the BVM directly to the tracheostomy tube if compatible, otherwise consider using a paediatric or neonate face mask over the stoma. An alternative is to consider placing a LMA with inflated cuff over the stoma to achieve a seal and allow ventilation of the patient.
- The tracheostomy tube should not be removed unless the patient cannot be ventilated through it (*complete obstruction*). If the tube is partially obstructed or dislodged, the tube should remain in situ and ventilation continued through the tracheostomy tube.
- When attempting ventilation through the stoma assess for escape of gas through the upper airway by the **'look and listen'** method. If gas escapes via the mouth, the upper airway is at least partially patent and upper airway manoeuvres and adjuncts may provide adequate patency.
- When ventilating via the upper airway, the stoma must be occluded with an airtight dressing creating a seal. (i.e. IV dressing or plastic cover)
- Oral ETT intubation is difficult in these patients due to potentially abnormal anatomical structures of the pharynx, larynx and trachea. If attempted, the tube should be inserted beyond the stoma and then the cuff inflated.
- Stoma ETT intubation may be attempted with the use of a Bougie to guide the tube down the trachea. There is a high risk of creating a false passage during stoma ETT intubation, especially within one month of tracheostomy surgery.
- If oral or stoma ETT intubation is attempted a smaller size ETT should be selected. If the size of the tracheostomy tube is known, select an ETT one size smaller. Ensure correct ETT placement when intubating via the stoma as there is an increased risk of endobronchial intubation.

This guidance is based on the United Kingdom National Tracheostomy Safety Project Emergency Algorithms.^[1]

CPG: Paramedic safety
CPG: Standard cares

Signs of life present?

N

Manage as per:
CPG: Resuscitation
- tracheostomy

Y

Apply oxygen to stoma

Consider:

- Oxygen to face
- If present remove:
 - speaking valve or cap
 - stoma cover
 - inner tube

Patent tracheostomy?
(e.g. suction catheter passes easily)

Y

For partial obstruction consider:
Suction

N

Suction airway

Able to ventilate?

Y

N

If the tracheostomy tube is still in situ deflate cuff (if present) and remove tube

Adequate ventilation?

Y

N

Note: Officers are only to perform procedures for which they have received specific training and authorisation by the QAS.

Check for upper airway patency by ventilating stoma

Gas escapes from upper airway?

Y

Occlude stoma and ventilate via face

Consider:

- Triple airway manoeuvre
- OPA
- NPA
- LMA
- Oral ETT

Adequate ventilation?

N

N

Patent potentially has a total Laryngectomy

Occlude mouth and nose and ventilate via stoma

Consider:

Stoma ETT

Continue with primary and secondary assessments
Transport to hospital
Pre-notify as appropriate

