

# Tracheotomy - A Student

One of the oldest successful ventures into the realm of surgery, and has been instrumental in saving lives of countless people over many centuries. Nowadays, it is being used with increasing frequency in the treatment of any patient with respiratory failure.

Tracheotomy may be indicated in:

- a) Central lesions causing depression of the respiratory centres, to guard patients from inhaling secretions and to help intermittent positive pressure respiration.
- b) Lesions of the efferent nerves controlling the muscles of respiration and lesions of the neuromuscular junction since the patient cannot be maintained for more than one to two days with a cuffed endotracheal tube.
- c) Lesions of the chest wall.
- d) Lesions of the lungs themselves.
- e) Major operations on upper respiratory tract
- f) Airway obstruction which may be due to laryngeal carcinoma, paralysis of the vocal cords, (especially through severance or destruction of the recurrent laryngeal nerves) foreign bodies in the larynx. These require urgent operation.

## Technique:

Tracheotomy is a surgical construction of a 'window' in the trachea — best done under general anaesthesia. In respiratory obstruction it must be done under local anaesthesia. If possible it is best done in an operating theatre.

The patient's neck is extended, a sandbag being placed under his shoulders. What will be briefly described is the way a beginner had best act in the face of an emergency requiring this operation. So, with the patient in the above mentioned position, the area to be incised is cleaned and with a knife (possibly sterile) a vertical skin incision is made from the level of the cricoid cartilage to the supra sternal notch. Dissection is carried out strictly in the **midline**. The strap muscles are separated until the trachea can be felt. The opening into the trachea is made at about the fourth tracheal ring, having first divided the thyroid isthmus (between clamps). It is of great help to steady the trachea using a blunt hook placed beneath the cricoid and pulled gently, but firmly, towards the patient's chin. To keep the incision open, use small retractors on each side. The tracheostomy tube is introduced and tied with tapes. At this stage the trachea is aspirated. It is safer to open the trachea from below upwards for the innominate vessels may pass across the trachea higher than usual.

After-care of a tracheotomy includes:—

- a) Humidification — provided, as for example, in the form of steam to prevent crusting of secretions occurring.
- b) Suction— because the patient is deprived of his cough

reflex. This procedure must be carried out under strict aseptic conditions for infection is very easily introduced.

- c) Cleaning of the tube— about twice a day. This is easily done with a metal tube, but with a rubber tube which has to be removed this should not be done in the first 2 days since the hole might close on removal of the tube as a track would not yet have been formed (especially in children).
- d) Deflation of the cuff in the case of a rubber tube — so as not to cause pressure necrosis.
- e) Spare tube should always be handy — in case the original one comes out.
- f) Tube feeding — often required making sure the patient is having an adequate diet.
- g) The patient should always have a bell handy — to attract attention. He should be given the means by which he can express his necessities.

Complications of Trecheotomy include:-

- i) Apnoea — if the patient has been exposed to a high concentration of Carbon Dioxide.
- ii) Bleeding.
- iii) Damage to the oesophagus.
- iv) Damage to the cricoid cartilage — occurs if the tracheotomy has been done in the first and second tracheal rings.
- v) Surgical emphysema of the neck and chest — occurs if the skin is tightly sutured round the tracheostomy.
- vi) Pneumothorax — a chest X-Ray should always be taken after a Tracheotomy.
- vii) Pressure Necrosis — from neglect of deflating the cuff for at least 5 minutes every hour and left so as soon as possible.

Stridor after tracheotomy may occur from tube displacement or blockage by secretions. This, together with the complications, is attended to accordingly as it crops up — the patient requires **constant supervision**.

Many tracheotomies are done in order to produce temporary relief, and so should be closed as soon as possible due to the risk of infection. Decannulation may be done by progressive corking of the tube or by substituting smaller and smaller tubes. The tube should be blocked for twenty four hours before removing it. If the patient can conduct his normal necessities without stridor, it is safe to remove the tube. Decannulation is more difficult in an infant because scarring narrows the lumen of the trachea considerably, and the child has to be retrained to breath from his nose since he would have got used to breathing through the tube.

Some patients require a permanent tracheotomy which is handled by experts. These raise a flap of the trachea and suture it to the skin with a better chance of remaining patent.