What Can You Find Out, Relevant To You, About The Common Types Of Tracheostomies, And The Features Important To Their Use- E.G. Shirley Tubes, Silver Tubes Etc? In Large Burn Injuries

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Abstract: There are a number of components of tracheostomy tubes that can vary, however the essential components are universal across brands and designs. Large burn injuries will often have a tracheostomy for some time, and go through a stepwise progression to a fenestrated tube and eventually decannulation. This piece of work would try to find out, relevance, about the common types of tracheostomies, and the features important to their use such as Shirley tubes, silver tubes etc. This study is based on literature review.

Data Collection
MEDLINE/PubMed Data

Literature Review

Tracheostomies consist of an arc-shaped tube shaft which can either be a single cannula or dual cannula tracheostomy tube. Some also have a cuff which provides a seal that is airtight, in order to allow positive pressure ventilation and also minimise the risk of aspiration. In addition a neck flange creates security in the attachment of the tracheostomy to the skin, stabilising its position.

The length and diameter of the trachea is approximately in proportion to the size of an individual and therefore a tracheostomy should be chosen based on its outer and inner diameter, and the overall length of the tube. As a guide, the outer diameter of the tracheostomy tube should be approximately two thirds to three quarters of the six of the tracheal diameter.

Tracheostomy tubes can be made either from plastic (e.g. Shirley tubes) or can be silver tubes. Silver tubes have some advantages over plastic tubes. Silver tubes have very thin walls, allowing use of an inner tube without hindering airflow. The inner tube can be removed and cleaned without needing to remove the entire tube and silver tubes can remain in place for up to 30days. Disadvantages of silver tubes in comparison with plastic tubes include rigidity and inability to conform to the shape of the trachea.

There are a number of different variations of tracheostomy tubes;

- Single and dual cannula tracheostomy tubes – a non-fenestrated single cannula tube with an air-filled cuff is often suitable for the majority of adults requiring temporary tracheostomy during intensive care. Dual cannula tubes are however thought to be safer as the inner cannula can be removed quickly if obstruction occurs and therefore are chosen in preference for patients requiring tracheostomy on discharge from intensive care.

- Fenestrated tracheostomy tubes – there are often considered as an option for patient undergoing weaning from ventilation, as these tubes allow speech and reduce the work of breathing compared to non-fenestrated. It is important to be aware that there are two types of inner cannula provided with fenestrated tubes; one with fenestration promoting airflow and speech; the other without fenestration aiding suction. This type of tracheostomy tube is not recommended in newly formed stomas due to the risk of surgical
emphysema from the positive pressure ventilation.

- Cuffed tracheostomy tubes – The cuff pressure is an important aspect of the tracheostomy that should be monitored by staff. In order to prevent tracheal injury and aspiration, careful inflation technique should be used. The cuff pressure should be maintained between 25-34 cmH₂O (preferably lower end of range). Common causes of excessive pressure include poor lung compliance, overinflating the cuff, inadequate tracheostomy size, poor tube positioning.

- Uncuffed tracheostomy tubes – These tubes are usually selected for patients who are able to protect their own airway, have a sufficient cough reflex and can manage their own secretions. This type of tracheostomy tube removes the risk of tracheal damage caused by over inflation of cuff, can also aid with swallow and speech (in conjunction with a speaking valve). These are used commonly for patients being cared for in the community or on the wards.

References

ICS TICS. Standards for the care of adult patients with a temporary tracheostomy Standards and Guidelines 2008