ASSIST. LECT. ADEL AMEN

الثالثة

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Oropharyngeal airway

This anatomically shaped airway is inserted through the mouth into the oropharynx above the tongue to maintain the patency of the upper airway.

In cases of upper airway obstruction caused by a decreased level of consciousness in a patient. Decreased consciousness can lead to loss of pharyngeal tone that can result in airway obstruction by the tongue, epiglottis, soft palate or pharyngeal tissues.

There are various regularly used types of oropharyngeal airway.

The most common type is the Guedel airway, named after its developer Arthur Guedel, an American anaesthetist who served in France during the First World War.

It is available in up to nine sizes, which have a standardized number coding (the smallest '000' to the largest '6')

Components

1. The curved body of the oropharyngeal airway contains the air channel.
   It is flattened anteroposteriorly and curved laterally.
2. There is a flange at the oral end to prevent the oropharyngeal airway from falling back into the mouth so avoiding further posterior displacement into the pharynx.
3. The bite portion is straight and fits between the teeth.
   It is made of hard plastic to prevent occlusion of the air channel should the patient bite the oropharyngeal airway

Mechanism of action

1. The patient's airway is kept patent by preventing the tongue and epiglottis from falling backwards
2. Oropharyngeal airways are designed in different sizes to fit the majority of patients from neonates to adults
3. The air channel should be as large as possible in order to pass suction catheters
4. As a good indication, a suitable Guedel airway size can be equivalent to either distance from the patient's incisors to the angle of the mandible, or corner of the patient's mouth to the tragus
5. In adults, the Guedel airway is initially inserted upside down, with the curvature facing caudad.
   Once partially inserted, it is then rotated through 180° and advanced until the bite block rests between the incisors.
   This method prevents the tongue being pushed back into the pharynx, causing further obstruction
6. In children, it is often recommended that the Guedel airway is inserted the right way round, using a tongue depressor or laryngoscope to depress the tongue.
   This is done to minimize the risk of trauma to the oropharyngeal mucosa.
   The same technique can also be used in adults.
7. Bermann airway is another type of oropharyngeal airway, designed to assist with oral fibreoptic intubation.

It acts to guide the fibreoscope around the back of the tongue to the larynx, with the purpose of both maintaining the patient's airway and acting as a bite block, thus preventing damage to the fibrescope.
Unlike a Guedel airway, it has a side opening which allows it to be removed from the fibrescope, prior to the railroading of the tracheal tube into the trachea

Problems in practice and safety features

1. Trauma to the different tissues during insertion
2. Trauma to the teeth crowns/ caps ifthe patient bites on it
3. If inserted in a patient whose pharyngeal reflexes are not depressed enough, the gag reflex can be induced that might lead to vomiting and laryngospasm
4. They confer no protection against aspiration.
5. The degree to which airway patency has been increased after insertion of a Guedel airway should be assessed, not assumed.
   It should also always be remembered that a badly inserted Guedel airway can make airway patency worse rather than better.

Nasopharyngeal airway

This airway is inserted through the nose into the nasopharynx, bypassing the mouth and the oropharynx.

The distal end is just above the epiglottis and below the base ofthe tongue.

Components

1. The rounded curved body ofthe nasopharyngeal airway
2. The bevel is left-facing.
3. The proximal end has a flange.
   A "safety pin" is provided to prevent the airway from migrating into the nose

Mechanism of action

1. It is an alternative to the oropharyngeal airway when the mouth cannot be opened or an oral airway does not relieve the obstruction.
2. Nasotracheal suction can be performed using a catheter passed through the nasal airway
3. It is better tolerated by the semi awake patient then the oral airway.
4. A lubricant is used to help in its insertion
5. The size inserted can be estimated as size 6 for an average height female and size 7 for an average height male.
6. Once lubricated, it can be inserted through either nares, although the left-facing bevel is designed to ease insertion into the right nostril.
   On insertion, it should be passed backwards through the nasopharynx, such that its distal end lies beyond the pharyngeal border of the soft palate but not beyond the epiglottis

Problems in practice and safety features

1. Its use is not recommended when the patient has a bleeding disorder, is on anticoagulants, and has nasal deformities or sepsis
2. Excess force should not be used during insertion as a false passage may be created.
3. An airway that is too large can result in pressure necrosis of the nasal mucosa, while an airway that is too small may be ineffective at relieving airway obstruction

Supraglottic (or extraglottic) airway devices

The introduction of the laryngeal mask airway heralded an era of hands free airway maintenance without the need for tracheal intubation.

Many other airway devices that lie outside the trachea and attempt to provide a leak-free seal for spontaneous ventilation, while some provide an adequate seal for positive pressure ventilation under normal conditions, have been used.

These devices are collectively known as supraglottic or extraglottic airways devices

These devices provide the following

1. The ability to be placed without direct visualization ofthe larynx.
2. Increased speed and ease of placement when compared with tracheal intubation, both by experienced and less experienced operators.
3. Increased cardiovascular stability on insertion and emergence.
4. During emergence, improved oxygen saturation and lower frequency of coughing
5. Minimal rise in intraocular pressure on insertion.
6. When the device is properly placed, it can act as a conduit for oral tracheal intubation due to the anatomical alignment of its aperture with the glottis opening.
7. In the ‘can’t intubate, can’t ventilate’ scenario, the decision to use such devices should be made early to gain time while attempts are made to secure a definite airway.
8. Such devices normally provide little or no protection against aspiration of refluxed gastric contents, and are therefore contraindicated in patients with full stomachs or prone to reflux. However, second-generation devices (e.g. LMA- ProSeal, LMA-Supreme, and i-gel) offer many improvements such as high cuff seal, second seal, gastric access and drain tube. These allow for rapid drainage of gastric fluids or secretions and reduce the risk of gastric gas insufflation during ventilation.
   Future indications might even be in emergency medicine, where gastric vacuity is unknown, and in cases of increased risk of regurgitation.
9. Extraglottic airways would normally elicit airway reflexes such as the gag reflex, and therefore require depression of pharyngeal reflexes by general or topical anaesthesia.
10. These devices are increasingly used in a variety of settings, including routine anaesthesia, emergency airway management and as an aid to intubation