



AIRWAY MANAGEMENT DEVICES

Oropharyngeal airway

Nasopharyngeal airway

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ANATOMY OF THE AIRWAY

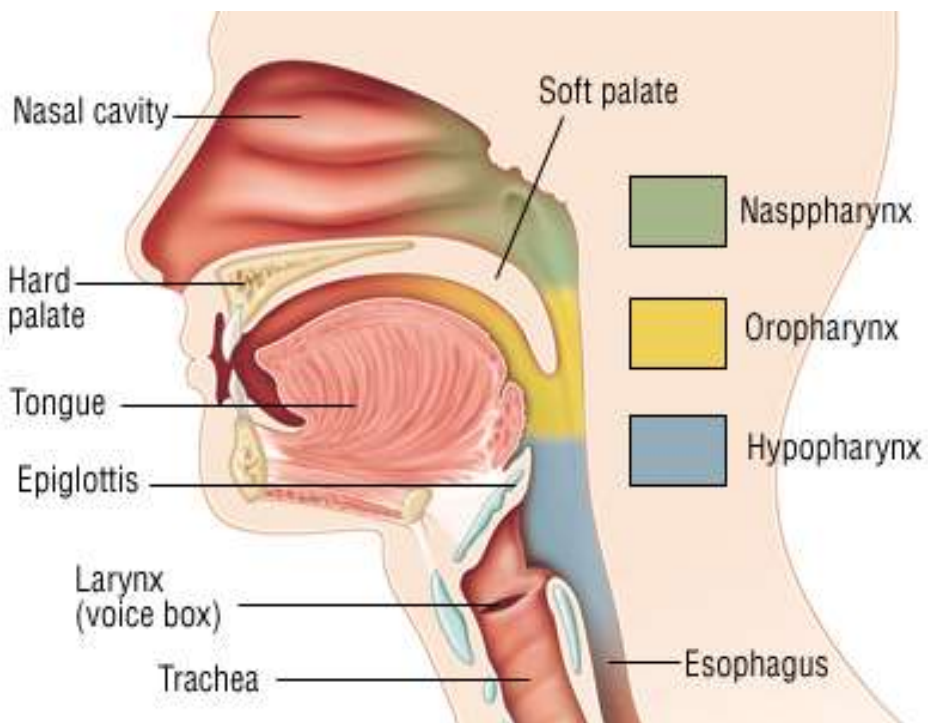
The respiratory tract is divided into :

- ▶ The upper airways
- ▶ The lower airways

THE UPPER AIRWAYS

The upper airways or upper respiratory tract includes :

- ▶ the nose and nasal passages
- ▶ the pharynx (The pharynx is can be divided into the nasopharynx, oropharynx, and laryngopharynx).
- ▶ the portion of the larynx above the vocal cords



The lower airways or lower respiratory tract

Includes the portion of the larynx below the vocal folds , trachea, bronchi and bronchioles , alveolar ducts, alveolar sacs, and alveoli where gas exchange occur.

SIGNS OF RESPIRATORY DISTRESS

- Tachypnea
- Tachycardia
- Stridor
- Head bobbing
- Inability to lie down
- Agitation
- Access muscles
- Wheezing
- Sweating
- Prolonged expiration
- Apnea
- Cyanosis

IMPENDING RESPIRATORY FAILURE

- ▶ Reduced air entry
- ▶ Severe work
- ▶ Cyanosis despite O₂
- ▶ Irregular breathing / apnea
- ▶ Altered Consciousness
- ▶ Diaphoresis

BASIC MANEUVERS

- Head-tilt, chin-lift maneuver
- Jaw-thrust maneuver
 - Airway-obstruction relieving maneuvers:
- Finger sweep
- Heimlich maneuver
- Back blow, chest thrust

ADVANCED AIRWAY METHODS

- ▶ Airways (Oropharyngeal airway, Nasopharyngeal airway)
- ▶ Bag-mask ventilation (by Ambu bag)
- ▶ Endotracheal intubation (crash airway)
- ▶ LMAs (laryngeal mask airway)
- ▶ Laryngeal-esophageal tube or Combi-tube
- ▶ Cricothyroidotomy

AIRWAYS

Airways are devices that can be passed orally or through nose to maintain the patency of air passages. Airway is a device which helps maintain the patency of the air passage for unobstructed breathing. Unlike other maneuvers to maintain a patent airway, including chin lift, jaw thrust and tracheal intubation, insertion of an airway does not affect the stability of the cervical spine.

USES

It prevents obstruction of the upper air passage by lifting the tongue and epiglottis away from the posterior pharyngeal wall

It prevents biting and occlusion of the orotracheal tube

It protects the tongue during biting and seizure activity

It facilitates oropharyngeal suctioning

It provides a better mask fit for ventilation

It helps insertion of tubular devices into pharynx or esophagus.

A. OROPHARYNGEAL AIRWAY:

In anesthetized or unconscious patients, the soft tissues of the oropharynx, especially the tongue, can obstruct the passageway between the mouth and the glottis. Oropharyngeal airways (OPAs) are used to stent open the oropharynx to allow passage of air/oxygen through the oropharynx. The majority of OPAs are made of curved hard plastic to conform to the oropharynx. They usually have an interior channel that allows the passage of gas or suction devices from the mouth opening through the channel into the posterior pharynx

OPAs uses

1. Anesthetized or unconscious patients who cannot be easily ventilated by bag/mask ventilation or 2.
2. Who are spontaneously breathing but have airway obstruction.

They are usually not tolerated by awake patients and can cause **gagging** and even **vomiting** when used in a conscious or semiconscious patient.

When inserting an oral airway, the anesthesia provider may use a tongue depressor to keep the oral airway from pushing the tongue back into the pharynx.

SIZE

OPAs come in a variety of sizes from newborns to extra-large adults and are often **color coded** to indicate the size of the airway. It is available in sizes 000–6. (40-120 mm)

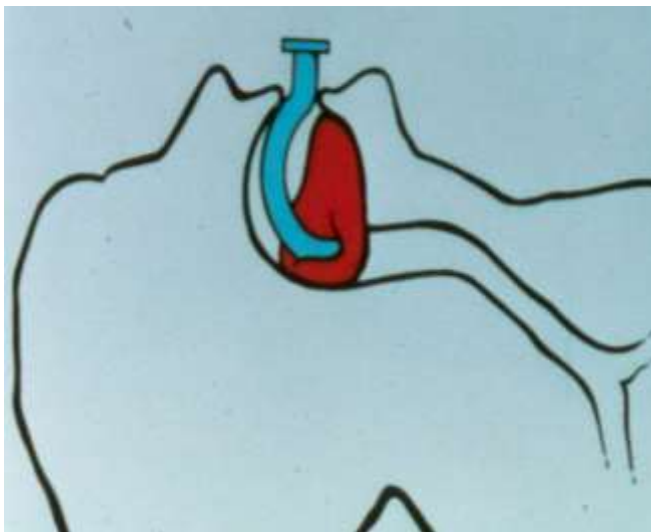


Oropharyngeal airway

Actually a better insertion method is to insert the airway at a 180 degree angle and then rotate it into position over the tongue



Don't allow this to happen !





ADJUNCTS: ORAL AIRWAY

C



Wrong size: Too Long

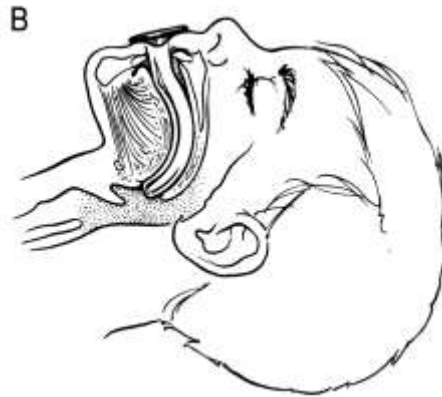
ADJUNCTS: ORAL AIRWAY

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Wrong size: Too Short

ADJUNCTS: ORAL AIRWAY



Correct size

TYPE OF OROPHARYNGEAL AIRWAY:

1. Guedel Airway

A Guedel is a rigid plastic tube which sits along top of mouth and ends at base of tongue (an adjunct to help keep airway open)

2. Safar's Airway

It is available in sizes for adult and pediatric. It is an "S" shaped airway that looks like two airways joined together. It is made of non-traumatic soft rubber. It is mainly used for artificial resuscitation.



3. BERMAN INTUBATION PHARYNGEAL AIRWAY

Sizes are available for infant, small child, child, medium adult, and large adult. It has no enclosed air channel. The sides are cut open and there is support through the center.

It is easier to clean and is less likely to become obstructed with foreign body or mucus.



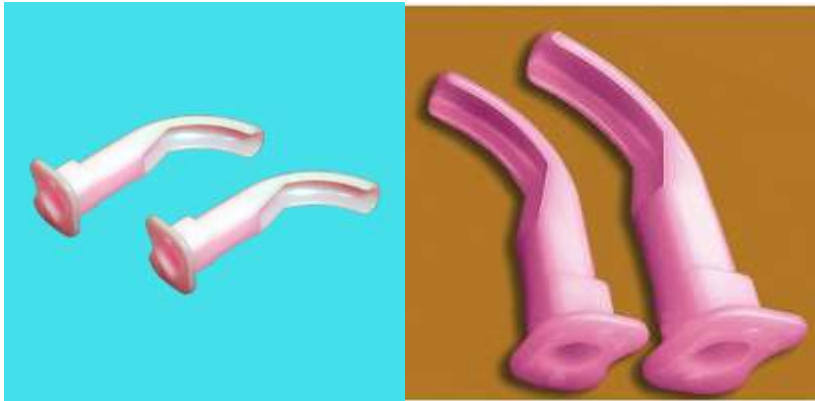
4. OVASSAPIAN FIBEROPTIC INTUBATING AIRWAY

It is designed for use during fiberoptic intubation.



5. WILLIAMS AIRWAY INTUBATOR:

The Williams airway intubator was designed for blind orotracheal intubations. The tracheal tube connector should be removed during intubation, because it will not pass through the airway.



6. CUFFED OROPHARYNGEAL AIRWAY

it can be as an alternative to the face mask use during spontaneous ventilation anesthesia

**It is a modified Guedel type of oropharyngeal airway.

**The inflatable cuff (capacity of 25–40 mL of air).



B. NASOPHARYNGEAL AIRWAY:

Description Nasopharyngeal airways are made of soft plastic, or latex rubber and have either a fixed or adjustable flange at its proximal end and a beveled distal end. It curves to fit the curvature of the nasopharynx. It is available in a range of lengths and internal diameters.

Important note1: These airways are inserted through the nose and into the posterior pharynx where they can prevent the tongue from collapsing against the posterior wall of the oropharynx.

Important note2: It is useful in patients who have limited mouth opening or pathology of oral cavity that makes it difficult to insert oral airway.

Important note3: Other uses of nasal airway are during pharyngeal surgery, fiberoptic bronchoscopy, to apply CPAP and facilitate suctioning.

Important note4: It is better tolerated in a semi-awake patient than an oral airway and is less likely to be accidentally displaced or removed

Nasopharyngeal airway Not recommended in coagulopathy, nasal sepsis and deformities.

Nasopharyngeal airway



Oropharyngeal airway



NASOPHARYNGEAL AIRWAY

Contraindications:

- Basilar skull fracture
- CSF leak
- Coagulopathy



INSERTION TECHNIQUE:

The length of the airway needed for the patient is calculated as the distance from the tragus of the ear to the tip of the nose. After lubricating it along its entire length, it is held in the hand on the same side as it is to be inserted.

Type of NASAL AIRWAY:

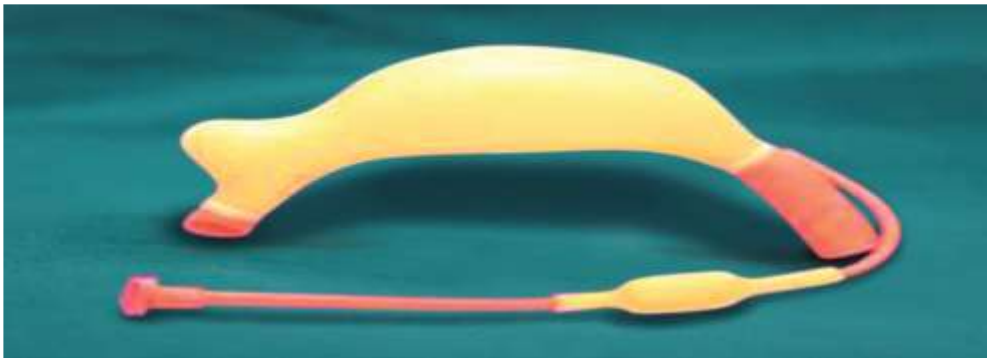
1. Bardex Airway

2. Binasal Airway It consists of two nasal airways joined together by a connection that has a 15 mm adaptor for attachment to the breathing system



3. EPISTAXIS AIRWAY

It is inserted into the nose and inflated. It is useful in epistaxis by providing local pressure and is available in several sizes.



4. LINDER NASOPHARYNGEAL AIRWAY

It is a clear plastic airway with a large flange. The distal end is flat and not beveled. It is supplied with an introducer which has a balloon that can be inflated and deflated by attaching a Luer syringe to the one way valve at the other end of the introducer.



5. RUSCH AIRWAY

It is made of red rubber. It has an adjustable flange at the nasal end. The pharyngeal end has a short bevel.



Thank you