Al Mustaqbal University

College of Health and Medical Techniques

Department of Anesthesia

# Practical Anesthetic Equipment

## Stage Three

## Course 1 Lecture 1

## Supraglottic Airway Devices

## By Lectures

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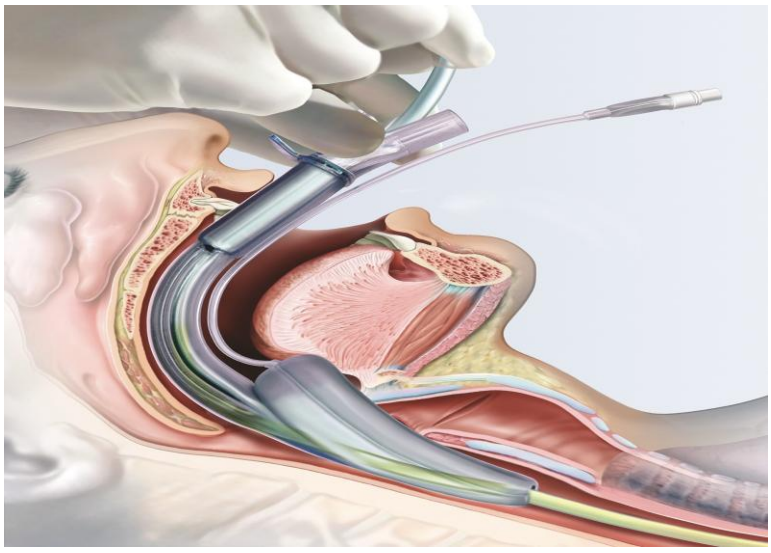
# Supraglottic Airway Devices

These devices are used to ventilate patients above the level of the vocal cords. The SADs are an intermediate between a face mask and an ETT.

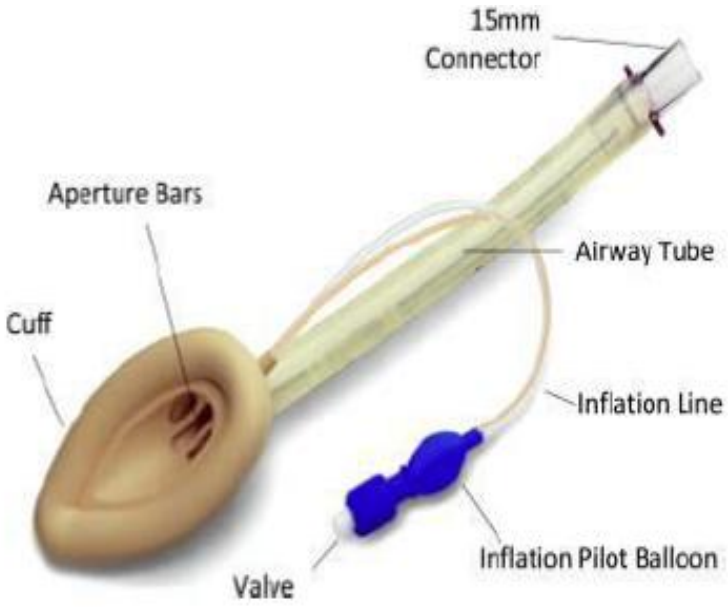


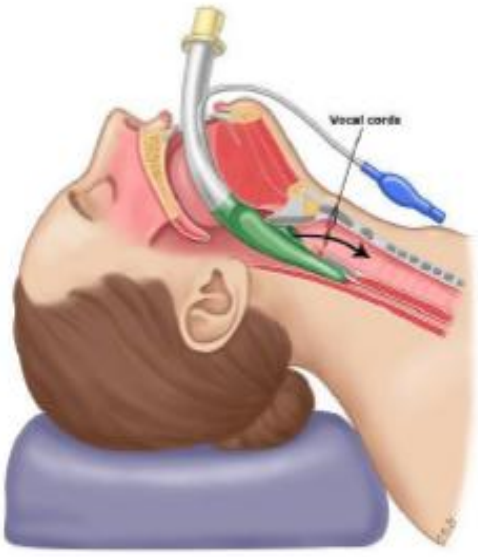
**These devices provide the following:**

1. The ability to be placed without direct visualization of the 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.
5. 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.
6. In the 'can't intubate, can't ventilate' scenario, the decision to use such devices is made.
7. Such devices normally provide little or no protection against aspiration of refluxed gastric contents and are contraindicated in patients with full stomachs.
8. Extraglottic airways would normally elicit airway reflexes such as the gag reflex, requiring depression of pharyngeal reflexes by general or topical anesthesia.
9. These devices are increasingly used in various settings, including routine anesthesia, emergency airway management, and as an aid to intubation.

## Components of classic LMA

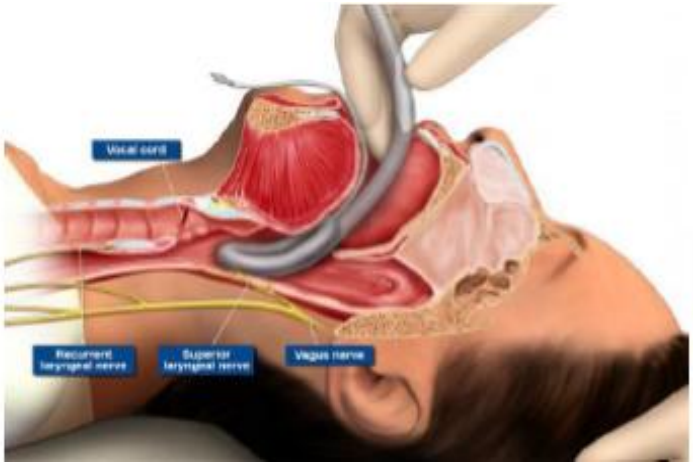
1. A transparent tube of wide internal diameter; the proximal end is a standard 15 mm connection.
2. An elliptical cuff at the distal end. The cuff is a small face mask and is inflated via a pilot balloon with a self-sealing valve.
3. There are slits at the junction between the tube and the cuff. These prevent the epiglottis from obstructing the laryngeal mask.




## Method of insertion

1. The cuff is deflated and lubricated before use.
2. Anesthesia must be deep enough to permit insertion; it is inserted through the mouth. The cuff lies over the larynx.
3. Once the cuff is positioned, it is inflated before connecting to the gas supply. This will permit the device to position itself correctly.
4. It is important to insert a bite block at the end of the procedure to prevent biting and damage to the LMA by the patient in a light plane of anesthesia.


Vocal cord
Recurrent laryngeal nerve
Superior laryngeal nerve
Vagus nerve

| The recommended sizes and cuff inflation volumes | | |
|---|---|---|
| | **Size of patient** | **Cuff inflation volume** |
| Size 1 | Neonates, infants up to 5 kg | Up to 4mL |
| Size 1.5 | Infants 5-10 kg | Up to 7 mL |
| Size 2 | Infants/children 10-20 kg | Up to 10 mL |
| Size 2.5 | Children 20-30 kg | Up to 14mL |
| Size 3 | Pediatric 30-50 kg | Up to 20 mL |
| Size 4 | Adult 50-70 kg | Up to 30 mL |
| Size 5 | Adult 70-100 kg | Up to 40mL |
| Size 6 | Large adult over 100 kg | Up to 60 mL |

## Advantages of LMAs

1. Ease of insertion.
2. Smooth awakening.
3. Avoiding the complications of intubation.
4. Ease of use.
5. Avoiding face mask complications.
6. Protection from barotrauma.
7. Cost-effectiveness.

## Disadvantages of LMAs

1. Less reliable airway.
2. The incidence of sore throat is higher.
3. It does not provide absolute protection against aspiration.
4. It is not a choice for restricted mouth opening or upper airway abnormality.

## Contraindications of LMAs

RODS:

1. Restricted mouth opening.
2. Obstruction in the upper airway.
3. Disrupted upper airway, e.g., trauma, intraoral burns.
4. Stiff lung (poor compliance).

## Complications of LMAs

1. Aspiration of gastric contents.
2. Gastric distention.
3. Airway obstruction.
4. Failure of the cuff to inflate or deflate.
5. Trauma.

# Types of Supraglottic Airway Devices

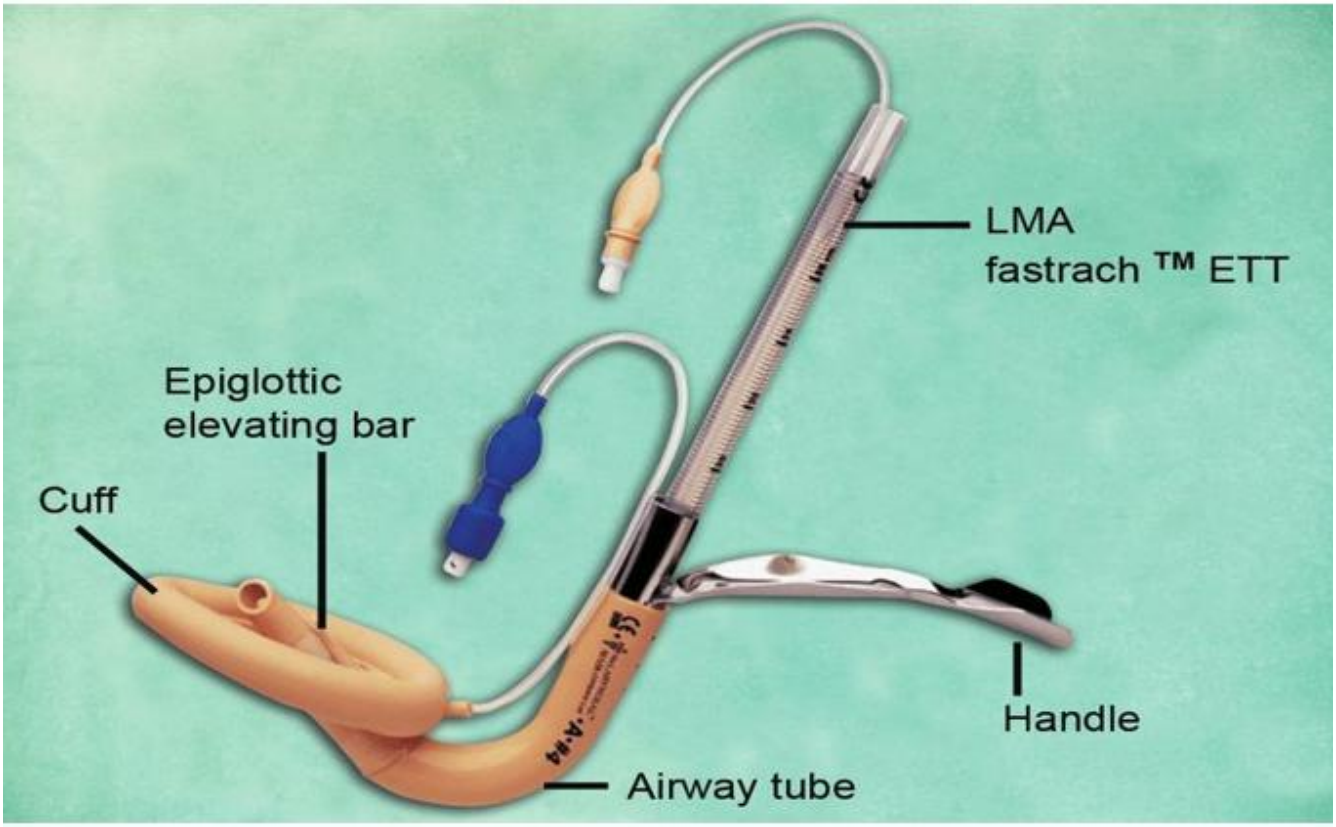
## 1. Classic LMA

## 2. Proseal LMA

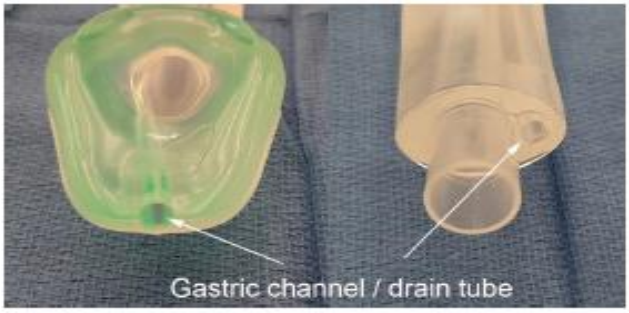
## 3. Supreme LMA

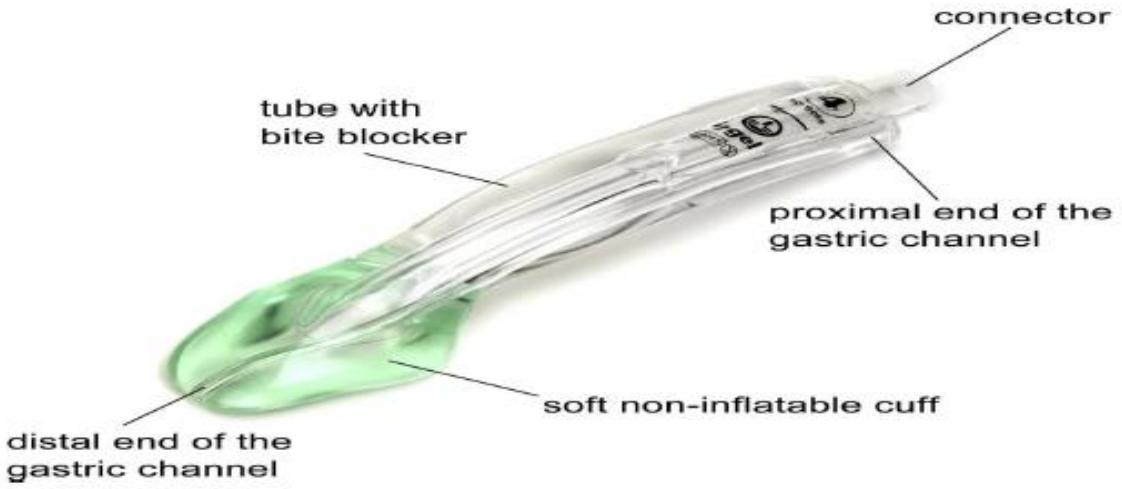
## 4. Reinforced LMA

## 5. The intubating laryngeal mask airway (ILMA)

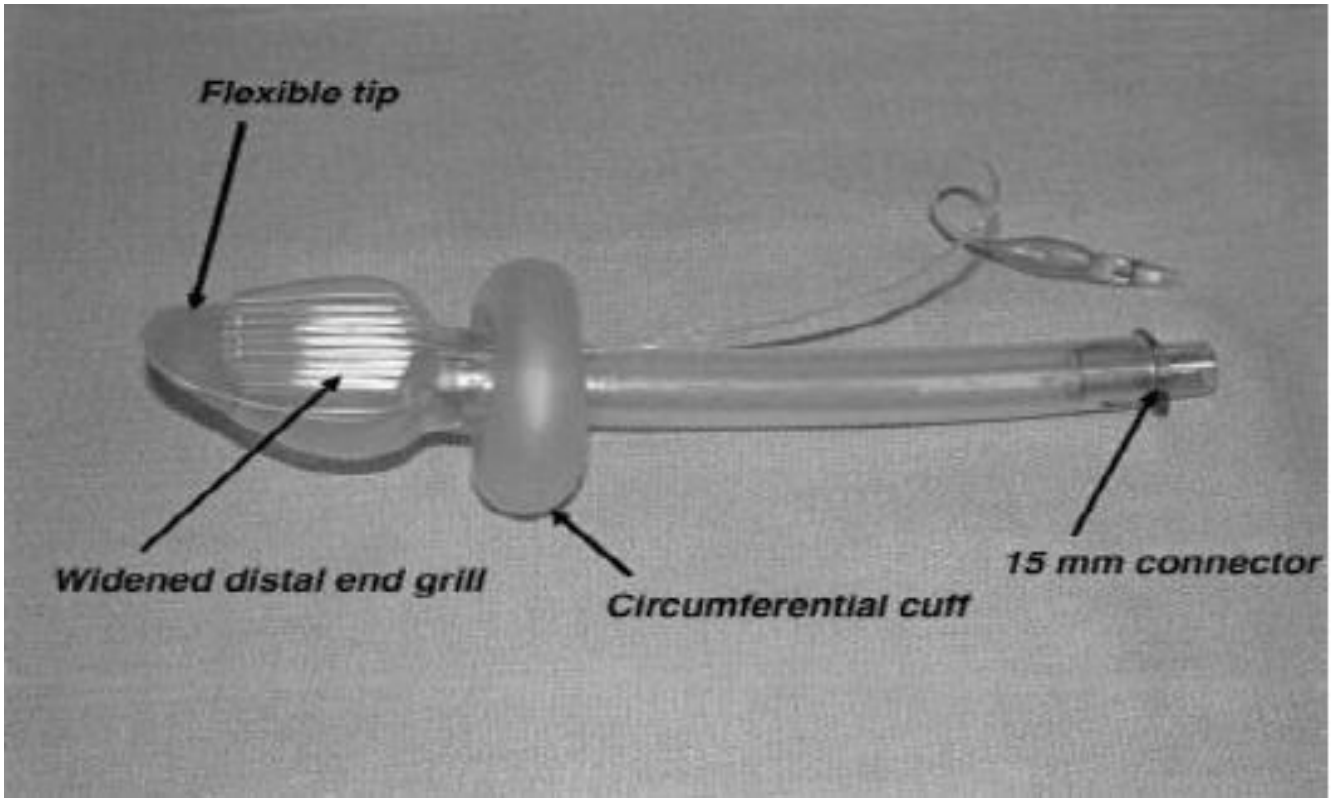


## 6. I-gel LMA

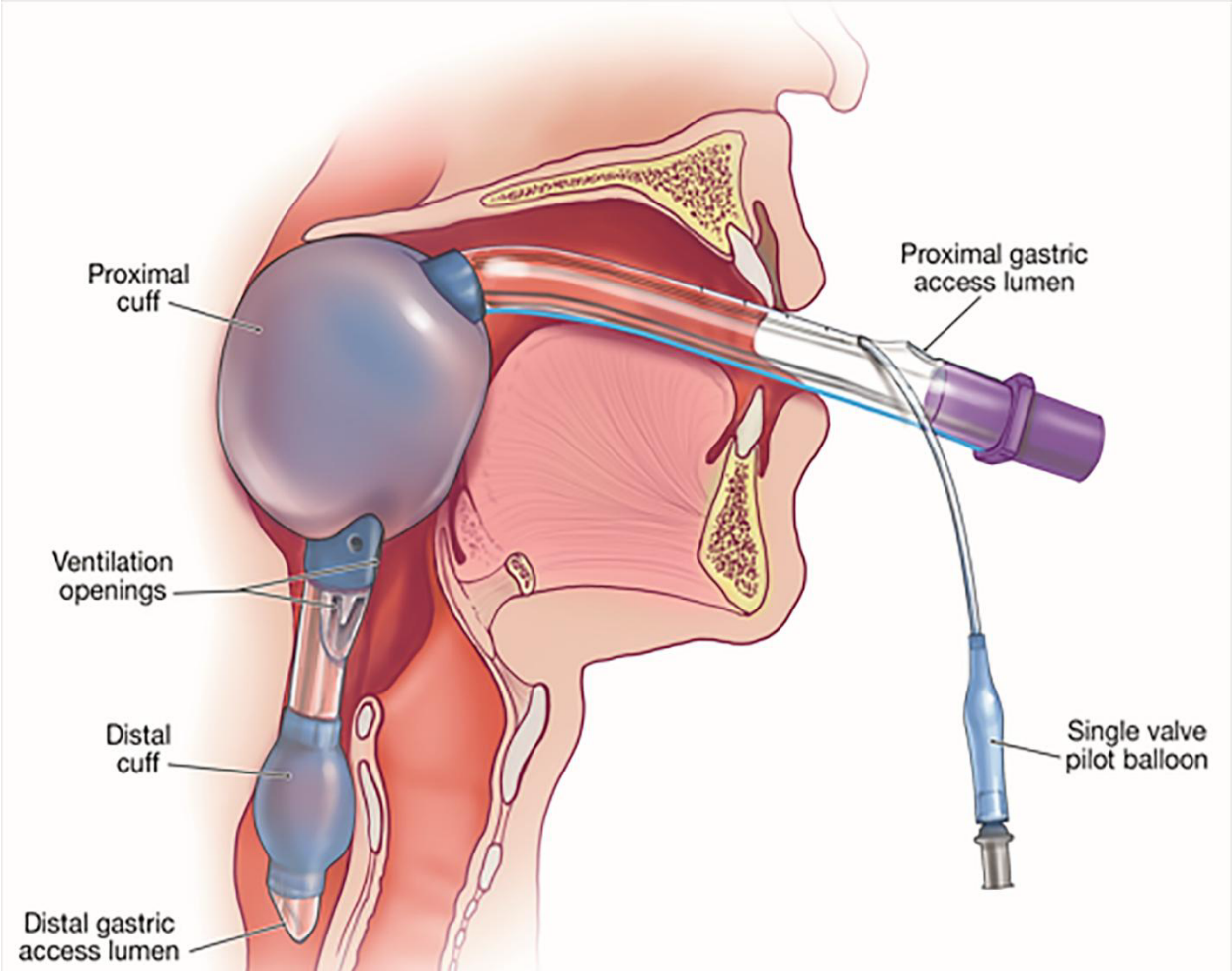



## 7. COBRA perilaryngeal airway (PLA)

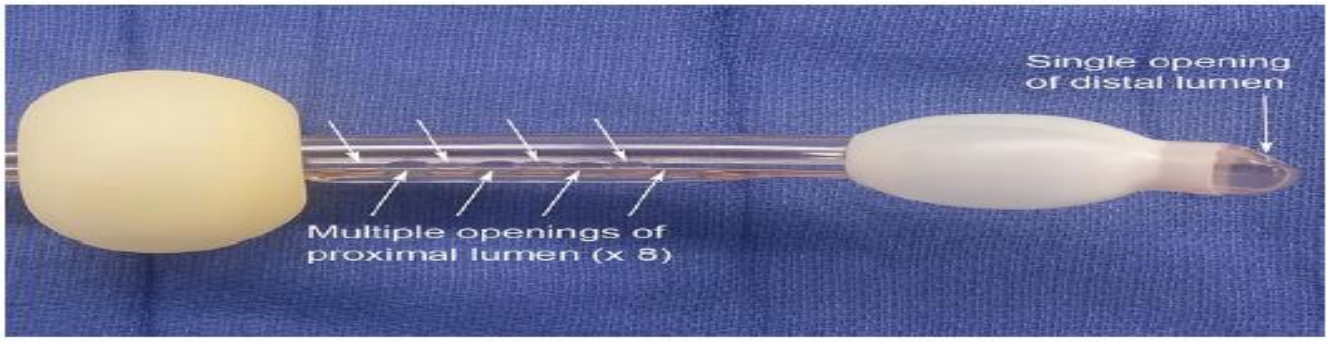


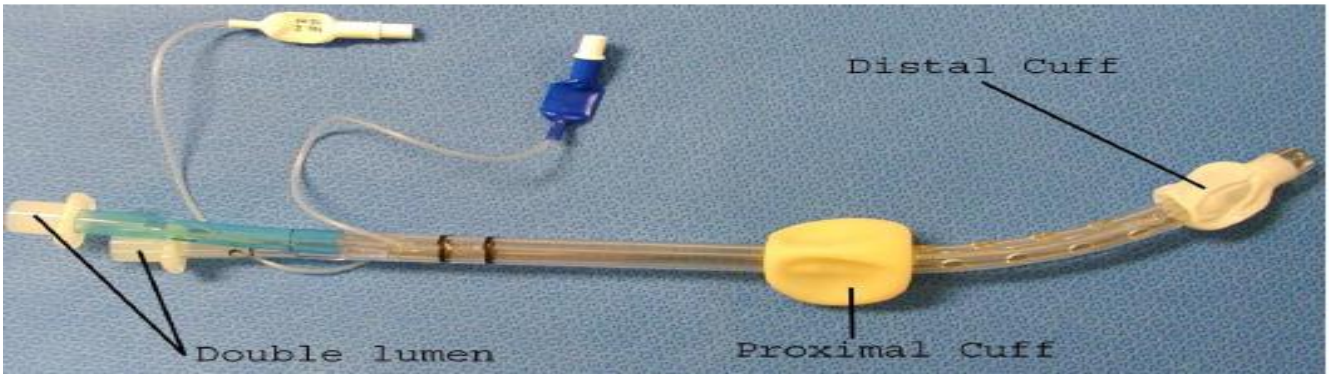
## 8. Laryngeal tube airway




## 9. Esophageal–Tracheal Combitube


Syringe for distal cuff (12 ml)
Syringe for proximal cuff (85 ml)


Single opening
of distal lumen
Multiple openings of
proximal lumen (x 8)


Distal Cuff
Double lumen
Proximal Cuff

THANK

You