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Difficult BMV

Airway Management and Ventilation

PATIENT POSITIONS

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Recovery Position

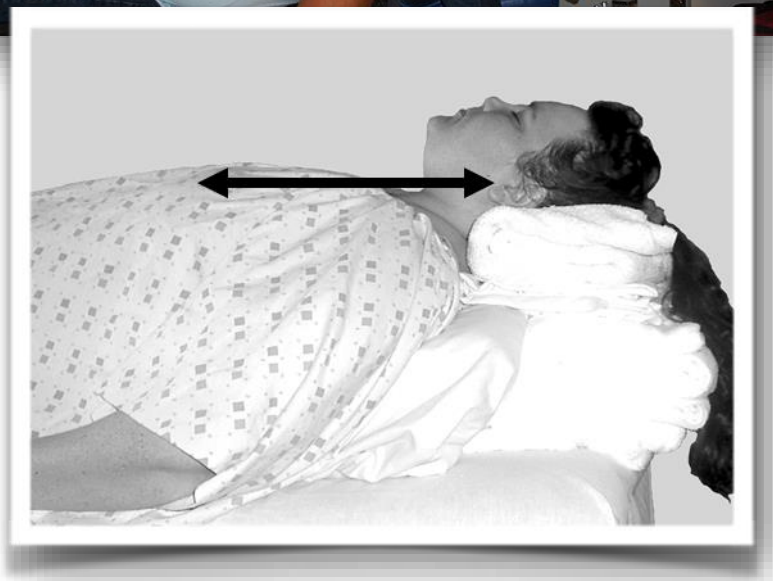
What About C-Collar in Trauma?

- **Take the collar off for airway management!!!**
- Common error to leave on, it is impossible to do proper jaw thrust and BMV with it on!
- Replace with in line immobilization done by human, as shown, from below, out of the way of the airway manager.

What about lying down/sitting up?

- Common error is to "lie patients down" when they are awake and in severe SOB.
- These patients will ventilate better sitting up, don't fight them.

Bagging the Obese Patient



- As discussed already, elevate the head to displace the weight of the abdomen off the chest, allowing easier chest expansion!
- “Ramping” for intubation of obese patients is more specific in terms of bringing pt into sniffing position.

Airway Management and Ventilation

EXTRAGLOTTIC DEVICES

Extraglottic Airway Devices (EAD)

- Previously referred to as supraglottic devices.
- Defined as an airway that controls below the level of the oropharynx but does not enter the trachea
- Directly or indirectly oxygenates the trachea
- Requires additional training in usage and skills maintenance

Extraglottic Airway Devices (EAD)

- These “rescue airways” were initially designed for use during “can’t intubate/can’t ventilate” emergencies.
- Placed without direct visualization of the trachea
- Due to the usefulness and success of these airways, they are now considered a backup airway, or have replaced orotracheal intubation in some prehospital areas.

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Supraglottic Airway Devices (SAD)

Laryngeal Mask Airways

King LTS-D Airway

i-Gel Airway

Airway Management and Ventilation

KING LTS-D

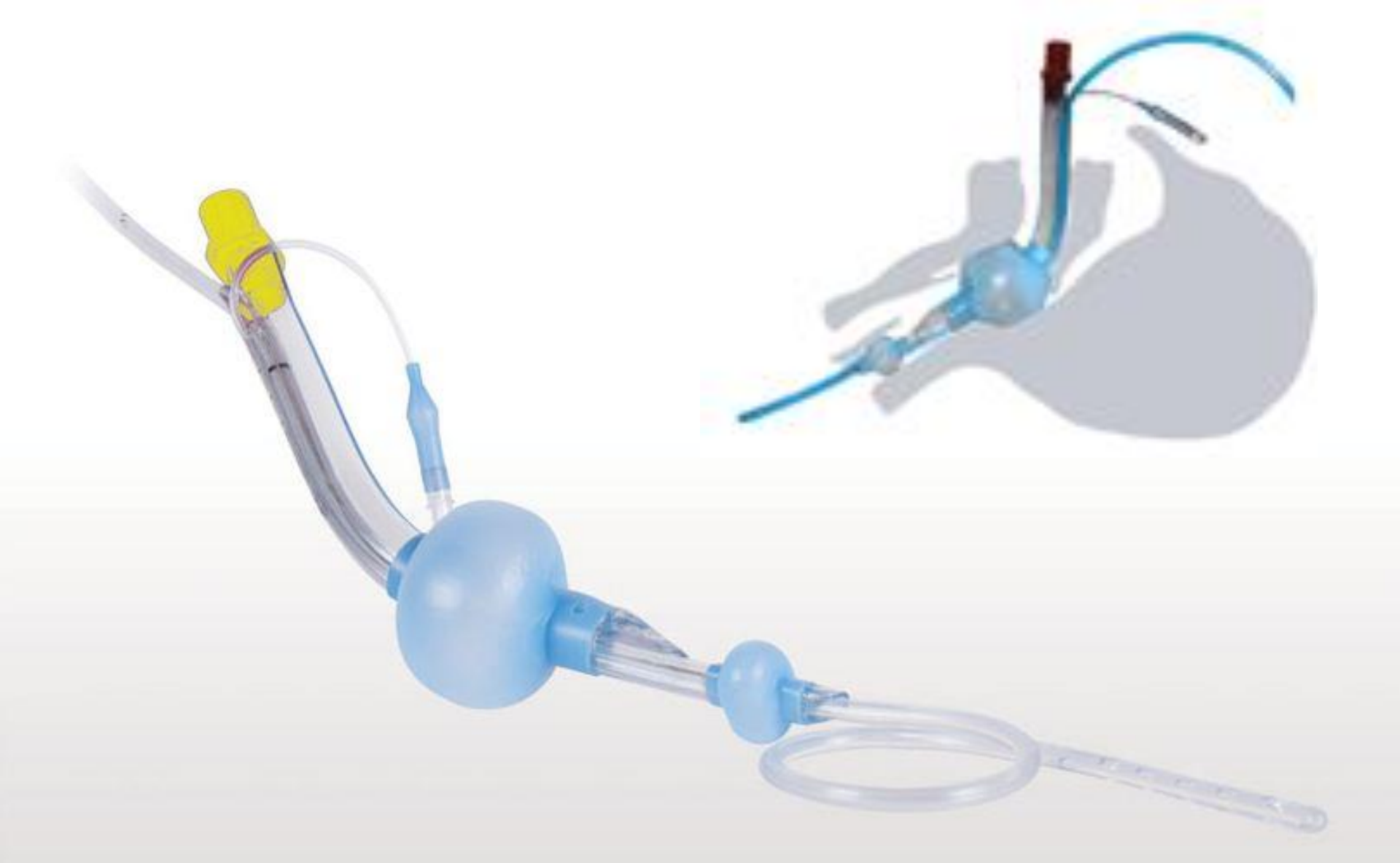
King LT

- Designed for hospital use.
- Can be autoclaved up to fifty times

King LT-D (Disposable)

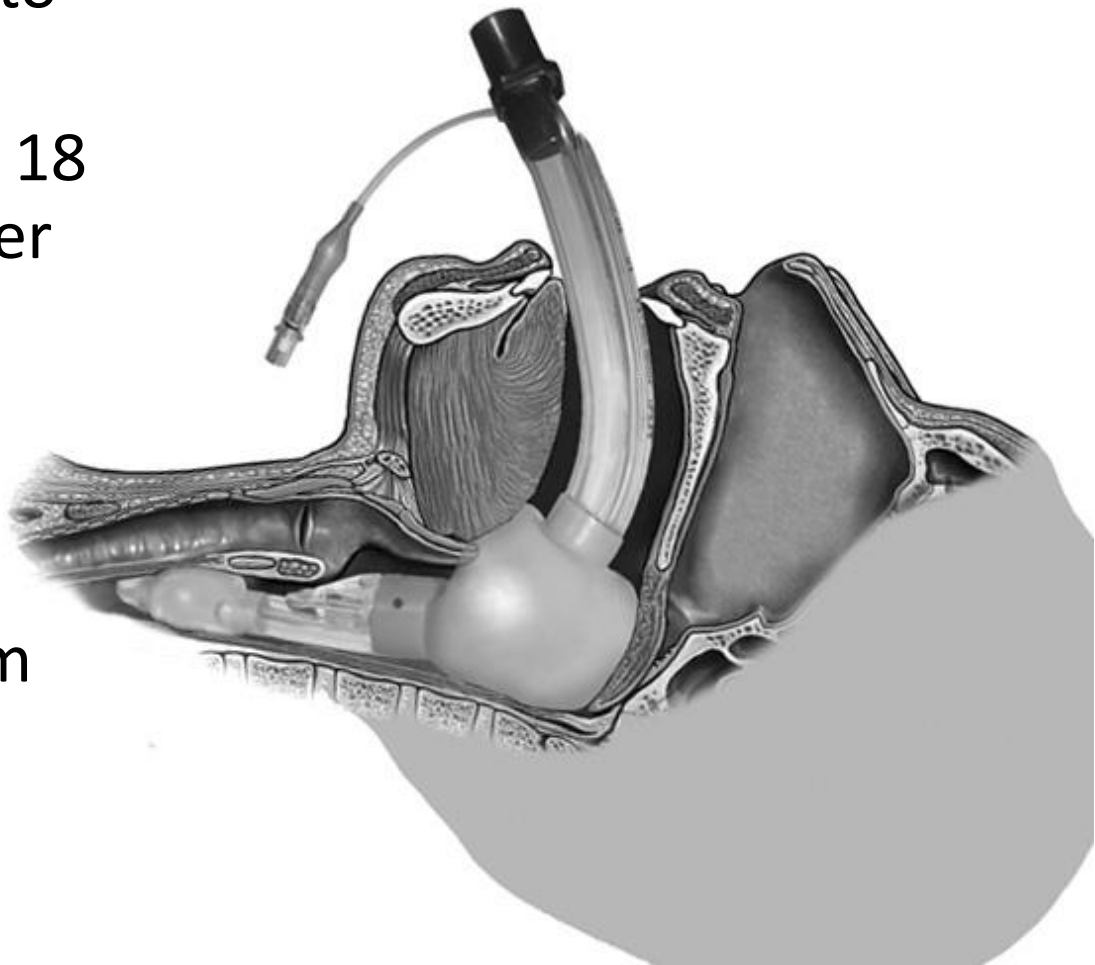
- The disposable version of the King LT Airway
- Single use device
- Partially occludes esophagus to limit gastric distention and aspiration

King LTS-D (Suction-Disposable)



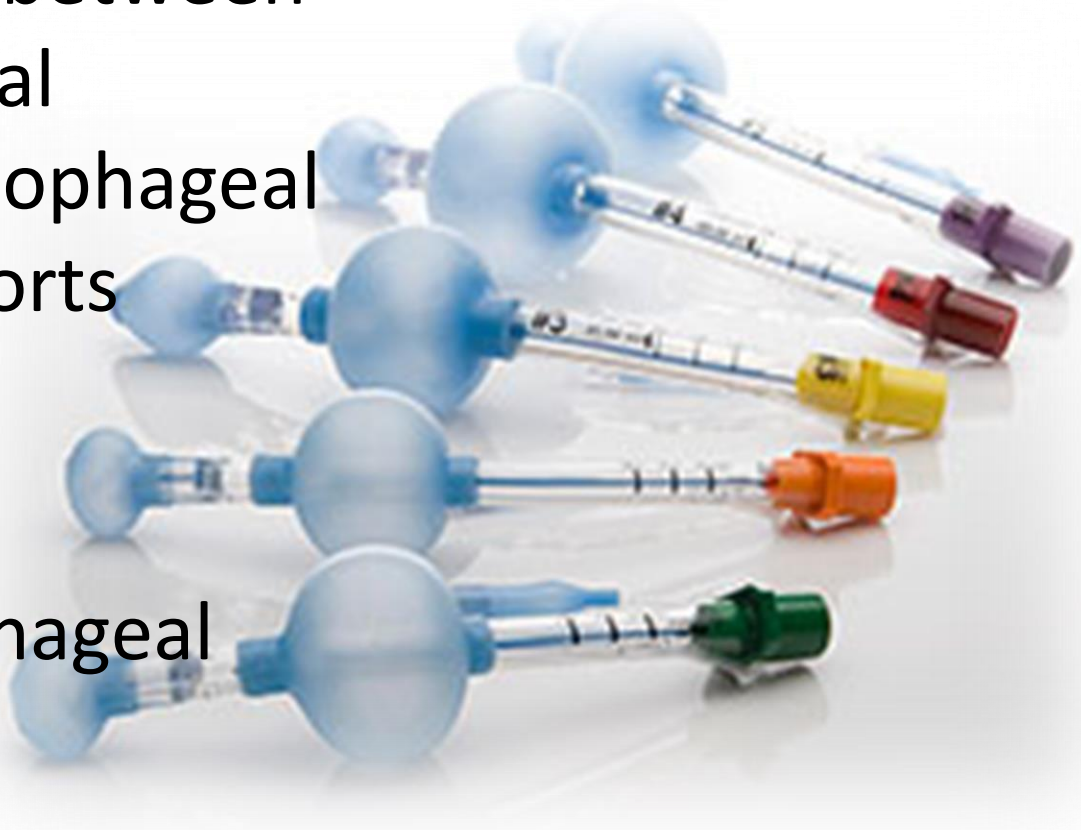
King LTS-D

- Has a second lumen that allows direct passage to the esophagus
- Will accommodate an 18 French suction catheter
- Allows for decompression of the stomach
- Can accommodate a tube exchanger system



King LTS-D

- Available in 5 sizes
- Ventilation occurs between the hypopharyngeal balloon and the esophageal balloon through ports along the tube.
- Latex free
- Designed for esophageal placement



Indications

- Unresponsive breathing or non breathing patient in need of ventilation
- Absence of a gag reflex must be confirmed prior to use
  - Only tolerated in patients who are deeply unconscious or in cardiac arrest

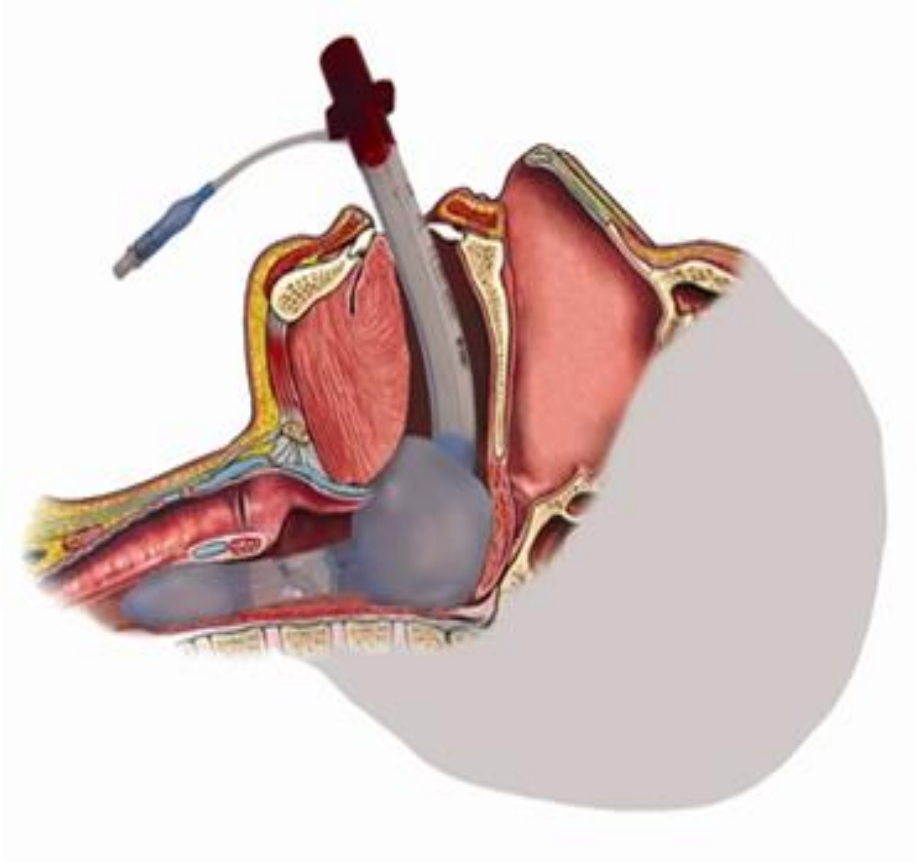
Contraindications

- Intact gag reflex
- Known esophageal disease
- Known caustic substance ingestion

Warnings/Precautions

- Does not protect from aspiration
- Is not tolerated unless deeply unconscious
- Not useful for upper airway pathology (burns, angioedema, epiglottitis)
- Can be accidentally placed in the trachea, must be removed and repositioned in the esophagus
- Must be properly sized to avoid esophageal damage or air leakage

Limitation of the Upper Airway Pathology



- Note where bulbs are sitting in relation to the glottic opening.
- You can see if there is upper airway swelling (burn, epiglottitis, allergic reaction), abscess, mass and foreign body, this adjunct will not be helpful.

Sizing

- King LTD #2 (no suction)
  - Green
- King LTD #2.5 (no suction)
  - Orange
- King LTS-D #3
  - Yellow
- King LTS-D #4
  - Red
- King LTS-D #5
  - Purple

- 35 – 45 inches (12 – 25 kg)
  - 25 – 35 ml inflation
- 41 – 51 inches (25 – 35 kg)
  - 30 – 40 ml inflation
- 4-5 Feet Tall
  - 45 – 60 ml inflation
- 5-6 Feet Tall
  - 60 – 80 ml inflation
- Above 6 Feet Tall
  - 70 – 90 ml inflation

Insertion

- Pre-oxygenate with BVM to ensure airway is patent
- Correctly size tube based on patient height.
- Test cuffs by inflating with maximum amount of air (remove all air before insertion)
- Apply a water soluble lubricant to the posterior side of the tube (not on cuffs)

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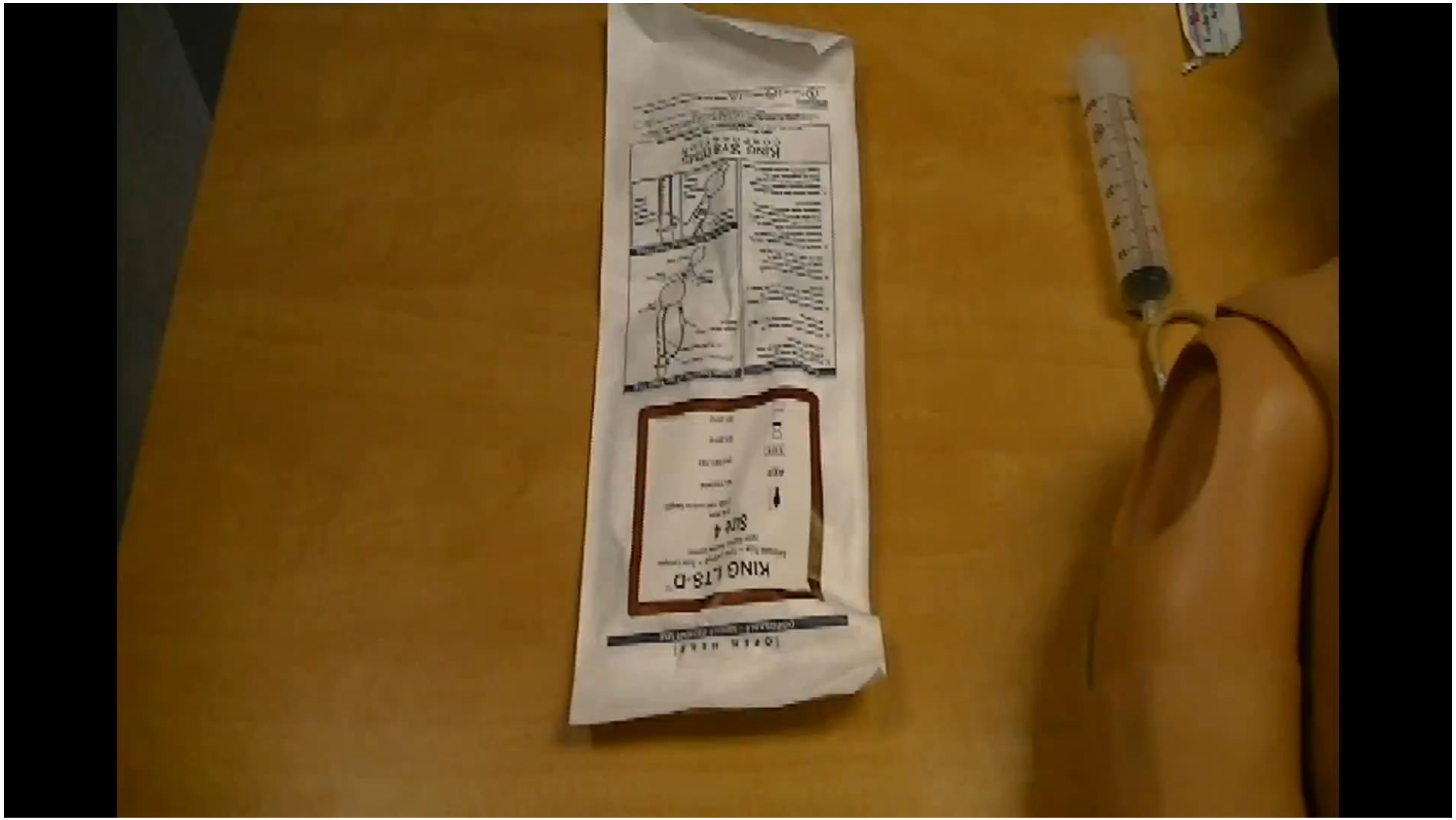
Preparing the King LTS-D



Insertion

- Place patient neutral or in the sniffing position.
- Ensure the absence of a gag reflex
- Open the mouth and lift the chin (or cross finger technique)
- Place the airway to the corner of the right side of the mouth (blue orientation line should be in line with the mouth)

Insertion

- As the tube passes under the tongue, rotate the tube to align the blue guideline with the chin

Insertion

- Without exerting excessive force, advance the airway until the teeth or gums are aligned with the connector

Insertion

- Inflate cuffs to the minimum pressures indicated by the size of the tube
- While ventilating, withdraw the tube until ventilation is easy and unobstructed (maximum chest rise)
- Auscultate for bilateral breath sounds
- If necessary, add additional volume to cuffs to maximize seal of the airway

Airway Obstruction

Insertion

- Note the depth of insertion
- Secure the tube to the patient using tape or other acceptable method
- Apply capnography to ensure tube placement and ventilation

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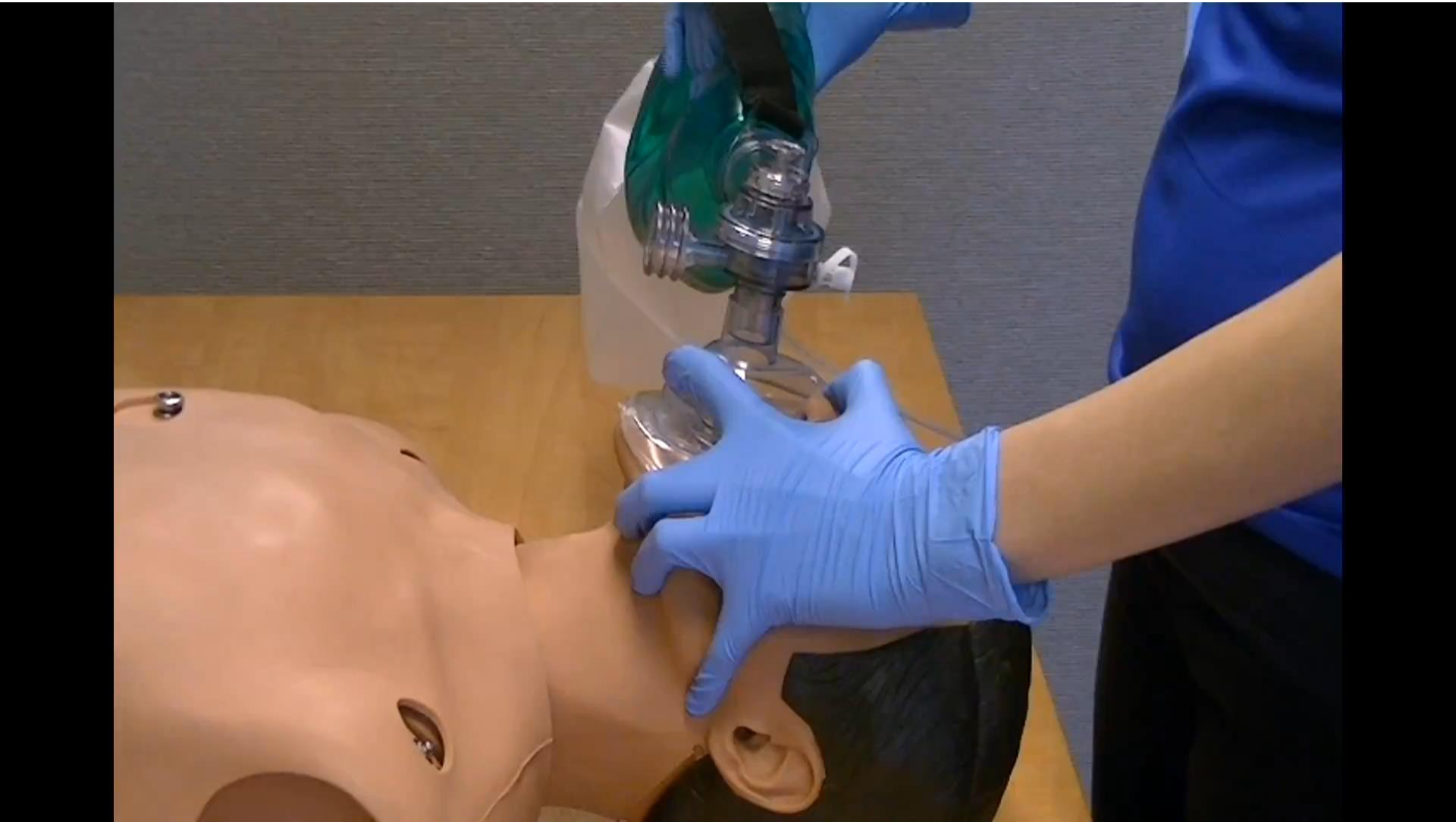
Insertion the King LTS-D



Removal

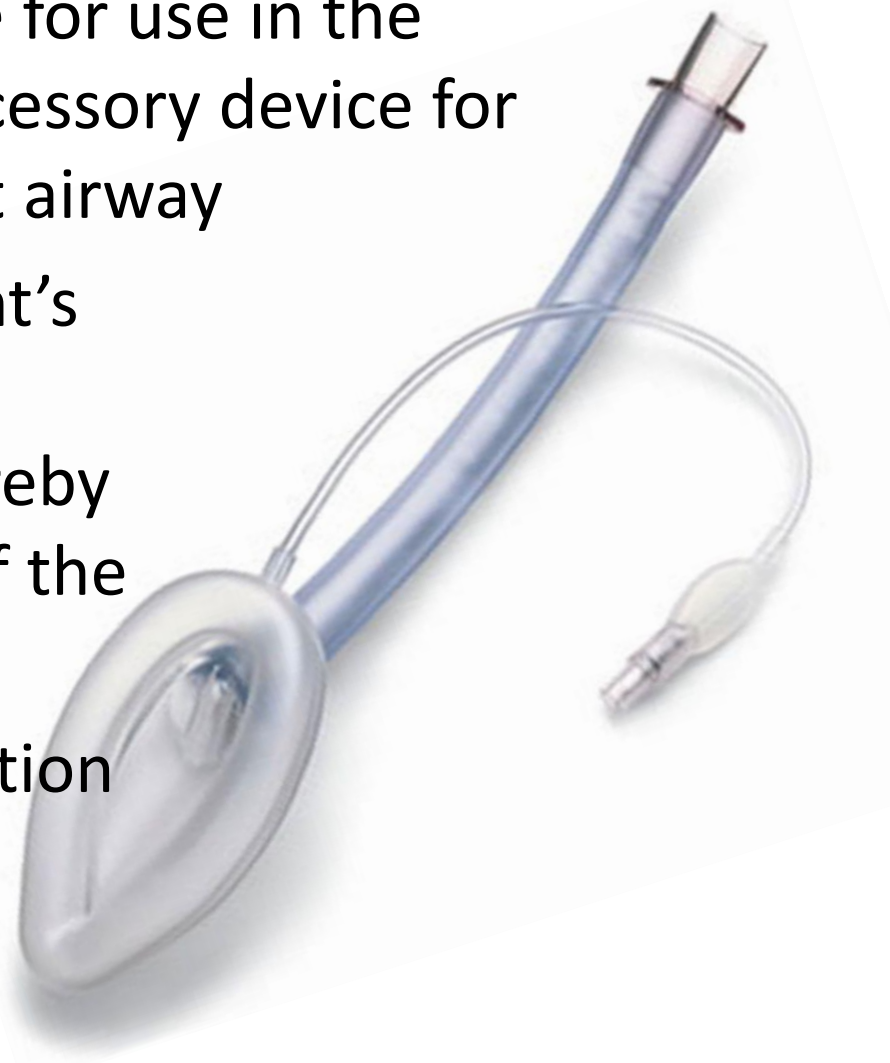
- If there is a return of gag reflex, it may become necessary to remove the device.
- Have suction ready
- Deflate the cuffs fully
- Withdraw the tube
- Suction if required

Airway Management and Ventilation

LMA

Laryngeal Mask Airway (LMA)

- A supraglottic airway device for use in the emergency setting as an accessory device for management of the difficult airway
- Designed to sit in the patient's hypopharynx and cover the supraglottic structures, thereby allowing relative isolation of the trachea
- Results in less gastric distention than with bag-valve-mask ventilation alone



Sizing

LMA Size	Patient Size
1	< 5 kg
1.5	5 – 10 kg
2	10 – 20 kg
2.5	20 – 30 kg
3	30 kg to small adult
4	Adult
5	Large adult (poor seal with size 4)

Indications

- Patients in cardiac arrest.
- Ventilation in normal/abnormal airways
- Failed intubation
- Unconscious patients without a gag reflex, and in need of ventilator support.
  - Patients in irreversible respiratory arrest (i.e. narcotic overdose, hypoglycemia).

Contraindications

- Intact gag reflex
- Conscious – arouseable patient
- Partial or complete FBAO
- Upper airway pathology (burn, epiglottitis, abscess, angioedema)
  - LMA has same issue as King LT in that it is not a definitive airway secured through the vocal cords.
- Mask sits above the glottis, therefore pathology here may still obstruct ventilation.

Insertion

- Inflate cuff checking for leaks
- Patient in supine position
- Open airway using jaw lift
- Inserted to such a depth that resistance is felt
- Inflate the distal cuff with air
- Ventilate listen for gurgling sounds over the epigastrium or breath sounds over the lungs and watches for chest rise
- Secure airway

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Insertion