

KingVISION™

Educational Series



Educational Collaboration between King Systems and
Michael Sweeney MSN, CRNP, CFRN, CCRN, CNRN, CEN, CPEN

Learning Objectives

Understand the following:

- Design and fundamental operation of the King Vision
- Technique for channeled blade intubation
- Technique for standard blade intubation
- User tips for improving intubation success



Display Anatomy

Rubber Gasket

The disposable blade slides over the stem of the display and locks into place at the rubber gasket



High Intensity OLED Display

Creates clear image viewing in 160° panoramic field

Power Source

Removal of the plastic cover in the identified direction exposes the storage of the three AAA batteries that power the King Vision

Latest Camera Chip Technology

Cell phone camera technology in the blade connects to the bottom of the display for lightweight use and accurate imaging

OLED Screen

(Organic Light Emitting Diode)

- Exceptional brightness
- Exceptional color reproduction
- Outstanding contrast levels
- Crisp wide angle viewing (160°)
- Low power consumption
- Anti-glare coating for viewing in bright light

Reusable Display Stats

2.4" Full Color OLED Screen

Three AAA Batteries

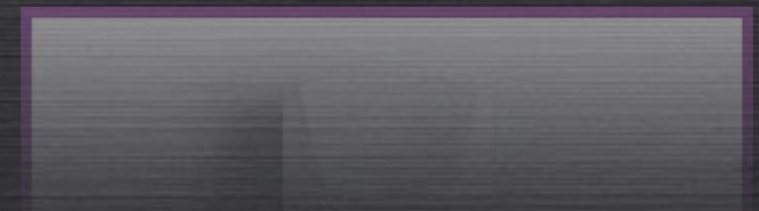
Auto Shut Off

Auto Exposure, White Balance

Protective Foam Case

LED Battery Indicator

Video Output



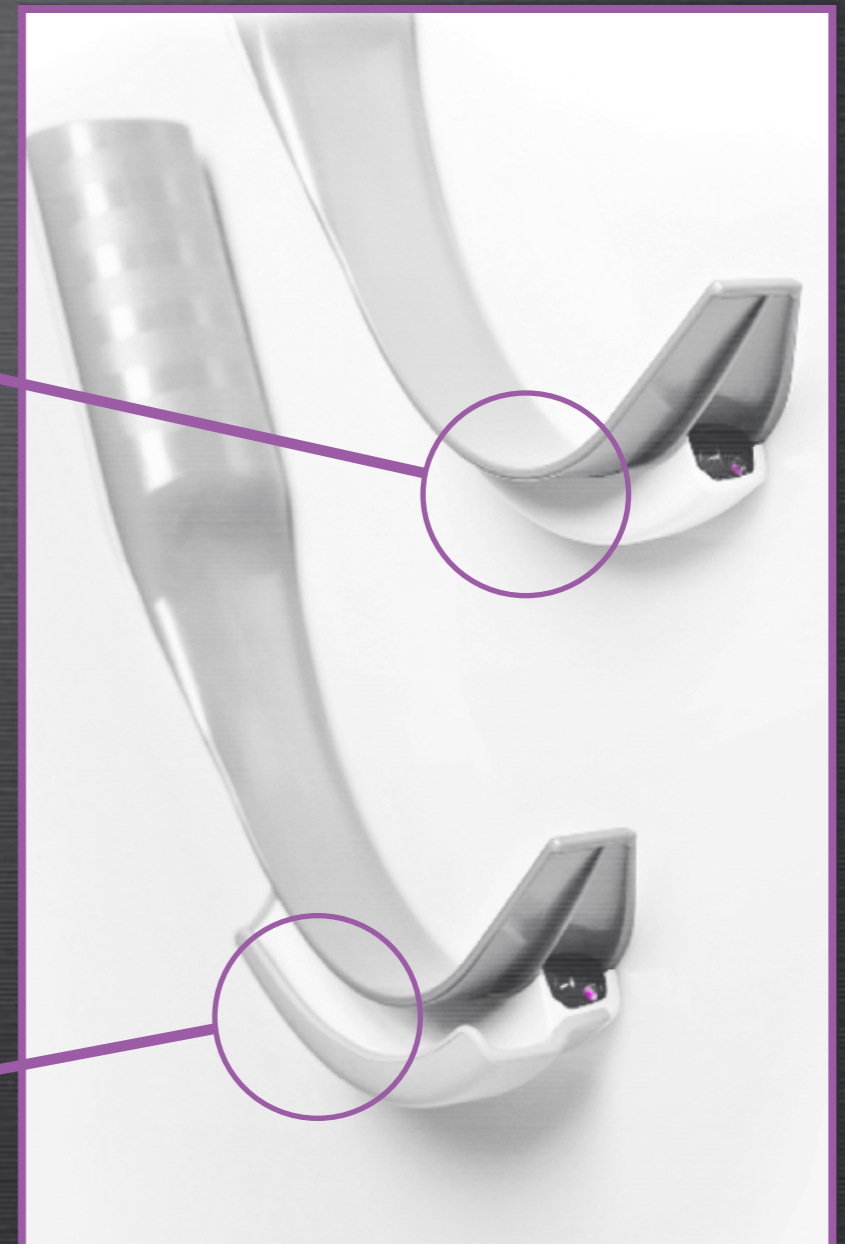
Blade Type

Standard Blade

A non-channeled blade allows freehand manipulation of the endotracheal tube to the laryngeal inlet

Channeled Blade

Blade includes a guiding channel to load and aim the endotracheal tube toward the laryngeal inlet



Blade Connection

● Display ●

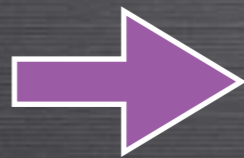
● Blade ●



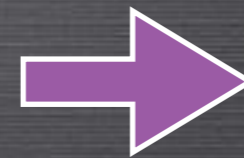
Connecting The King Vision



Power Off
Align Colors



Connect Device
Merge 1/2 Circles



Will "Click"
When Connected

Display Power

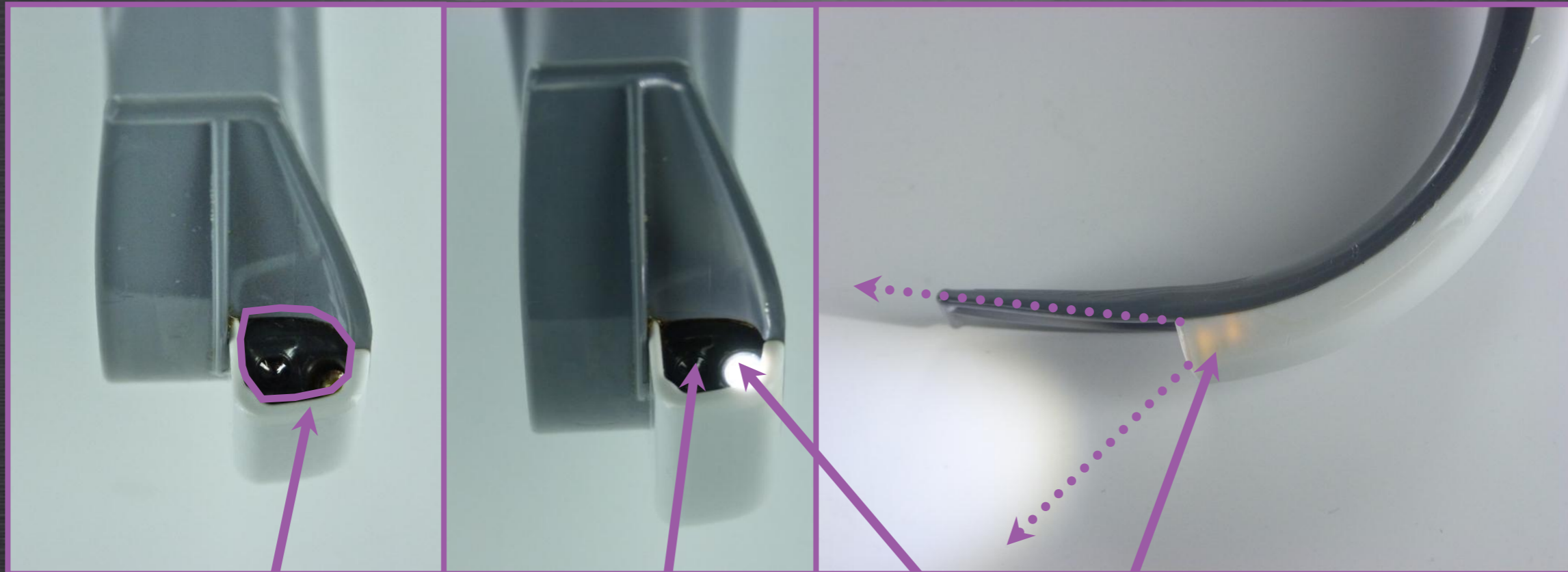


Press to power on.
Press and hold for approximately
one second to turn power off.



- Green Light indicates adequate power (90 minutes of continuous battery life).
- Flashing Red Light indicates the batteries need to be replaced.

Camera and Light Source



Anti-Fog
Coating

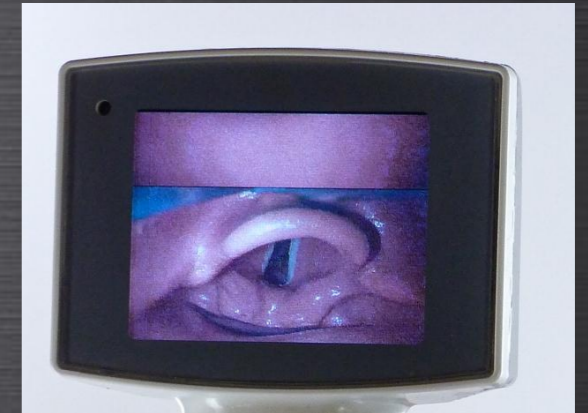
Camera

Brilliant White
Light LED

Trouble Shooting

The King Vision Display

Split screen: Caused by powering the display and then connecting to the blade.



Static screen: Caused by the display being powered but not connected to the blade.



Frozen Screen: Caused by the display being disengaged from the blade before powering off the device.



Replacing the Batteries



Push Down to
Remove Cover



Pull Black
Strap To
Remove Batteries



Replace Three
AAA Alkaline
Batteries

The Video Display Output



- Only use the custom cable from King Systems (item # KVCABL).
- The custom cable incorporates a standard RCA male adapter for connection to an external display.
- Video Output should only be connected to certified devices conforming to UL/IEC 60601-1 Standards.

Blade Anatomy




Channeled Blade Stats

Min. 18mm mouth opening required
No stylet required
ETT can be preloaded in the channel
Accommodates 6.0-8.0 ETT



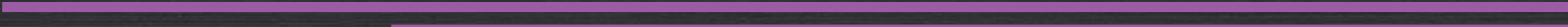

Standard Blade Stats



Min. 13mm mouth opening required
Stylet required
Stylet shaped to 60-70°
Freehand guiding of ETT

Fundamental Operation



- Blade lubrication
 - Hand position
 - Avoiding the chest
 - Tips to optimize the view of the larynx
 - Epiglottic elevation
- 
- 

Lubricate the Blade



- Lubricate the posterior aspect and the tip of the blade using a water soluble lubricant.
- Channeled blade only: Lubricate channel to allow endotracheal tube to slide easily in the channel.
- Avoid getting lubricant on the camera.

Hand Position

Proper hand position is pinching mid-blade with the thumb on the anterior side and the second, third, and fourth fingers compressing the King Vision on the posterior side.



Holding the King Vision

Do not hold the device above the purple gasket

Holding the device at the gasket loses some of the focused control and can cause accidental separation of the blade from the monitor.



Do not hold like a direct laryngoscope

Indirect Video Laryngoscopy is very different than Direct Laryngoscopy(DL). Holding the device like a DL will make the clinician revert back to the techniques used for direct laryngoscopy and may result in intubation difficulty.



Avoiding the Chest During Insertion



In patients with a small oropharynx, large tongue, or large body habitus, introducing the blade into the mouth can be complicated by the display contacting the chest.

Tips for Avoiding the Chest During Insertion

1. If not contraindicated, elevate the head or place in a ramped position
2. Scissors the mouth open
3. Use lateral insertion technique
4. Disconnect Display from Blade



Note: As illustrated, all these techniques can be combined.

Lateral Blade Insertion

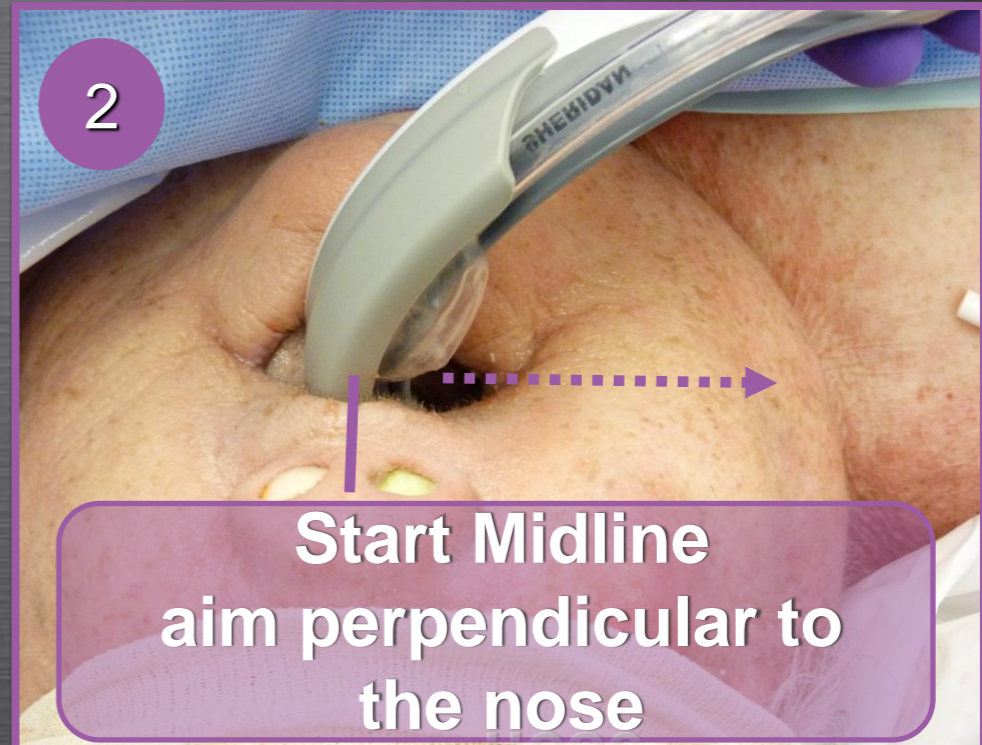


Channeled Blade introduced from the left



Standard Blade introduced from the right

Lateral Blade Introduction Technique

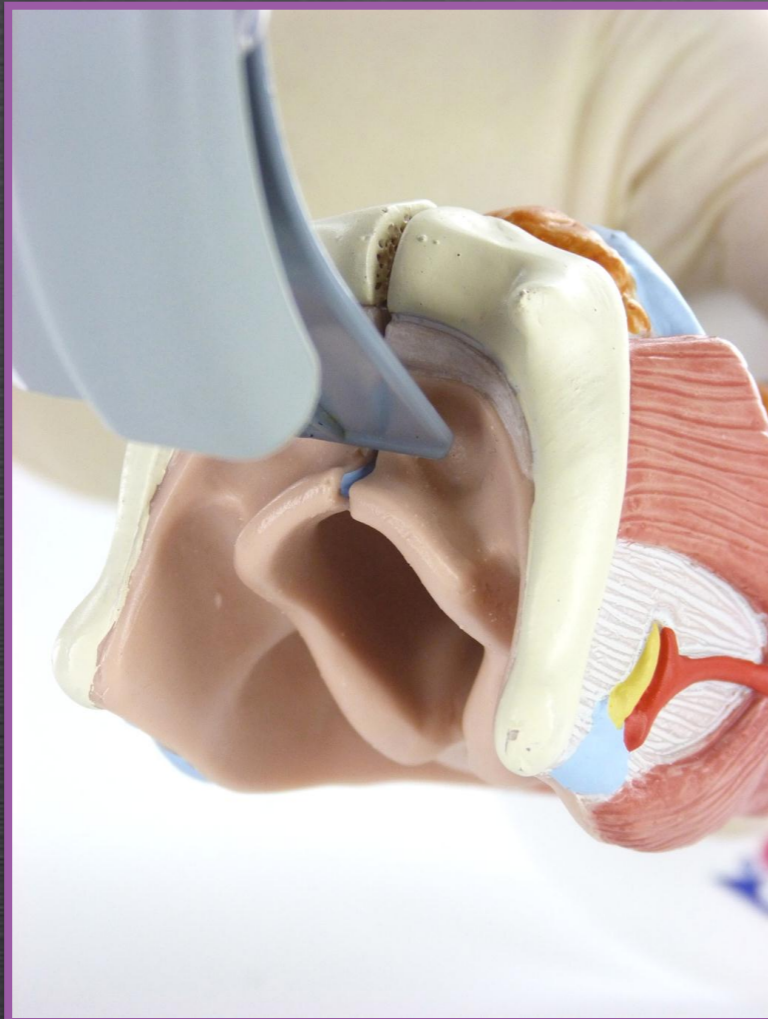


Keys For Optimal Placement



Maintain tongue and jaw retraction, device elevation, and midline approach while seeking optimal placement.

Optimal Placement



Placement in
the vallecula



View should not be
a close-up view of
the vocal cords

Common Problem with any VL: Inserting Too Far



When the video laryngoscope is inserted too far, there is limited room to pass the tube, and it can get caught on the right arytenoid.

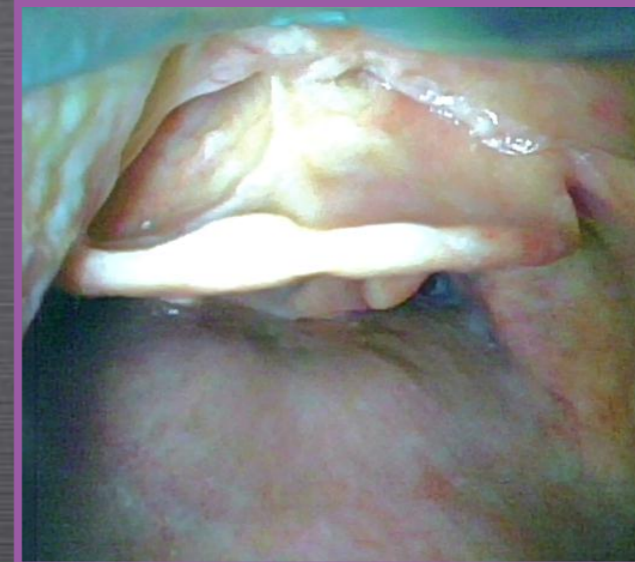


A panoramic view should be obtained, which allows for plenty of room to pass the tube.

Elevating the Epiglottis

Problem:

Difficulty elevating the epiglottis to visualize the laryngeal inlet



Solution:

Change approach and directly elevate the epiglottis



TECHNIQUE FOR INTUBATION

CHANNELED VERSION

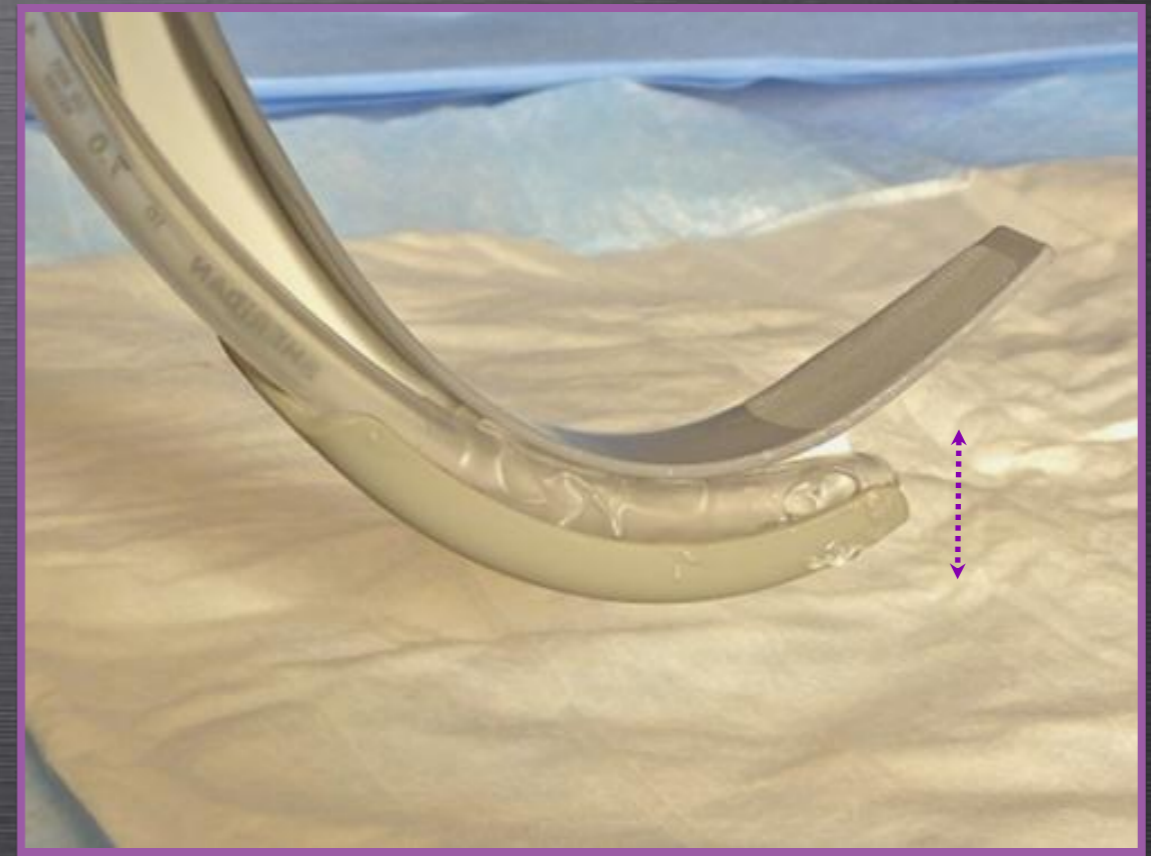
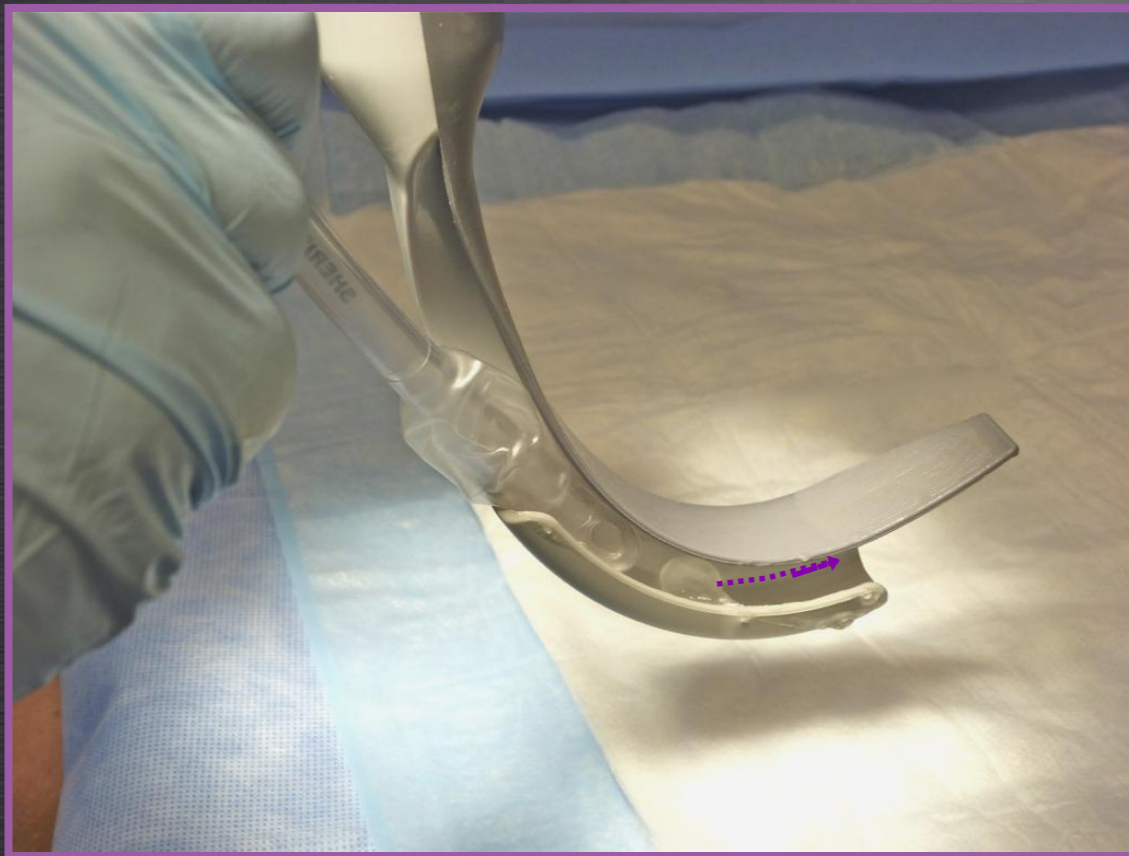


Channeled Blade

Connect blade and power on as previously shown



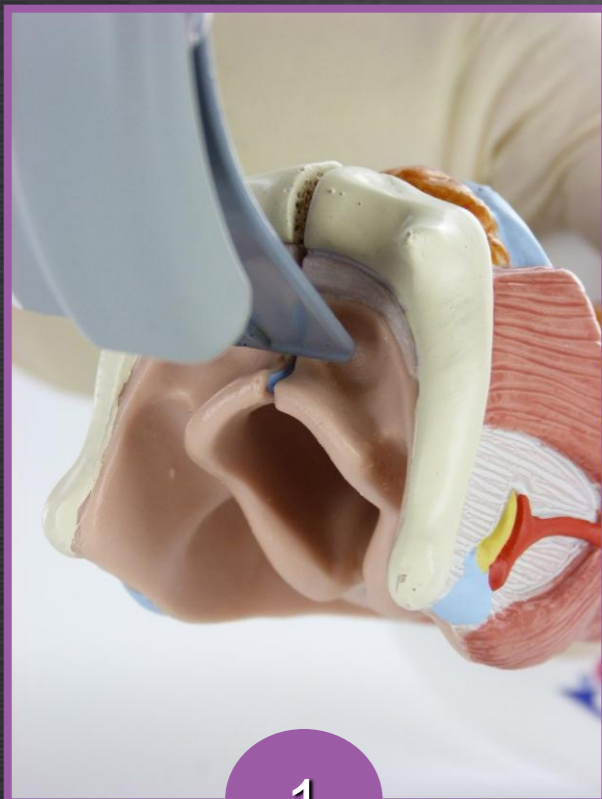
Channeled Blade Preload of Endotracheal Tube



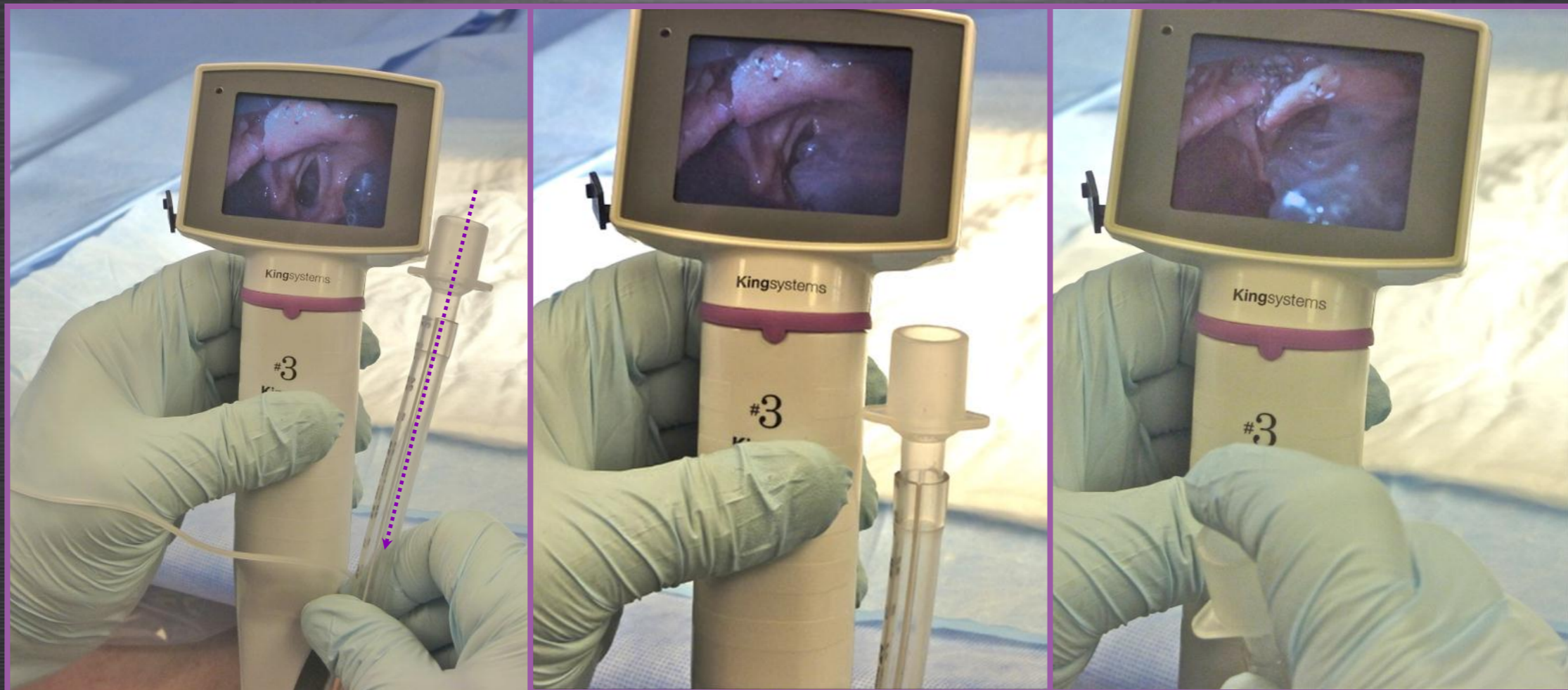
After lubrication, load the endotracheal tube into the channel, stopping at the end of the channel, not the blade tip.

Channeled Blade

Progression of device placement to endotracheal tube delivery through the laryngeal inlet



Channeled Blade Tube Advancement



Tube advancement should be performed in slow one centimeter progressions with correction after each movement.

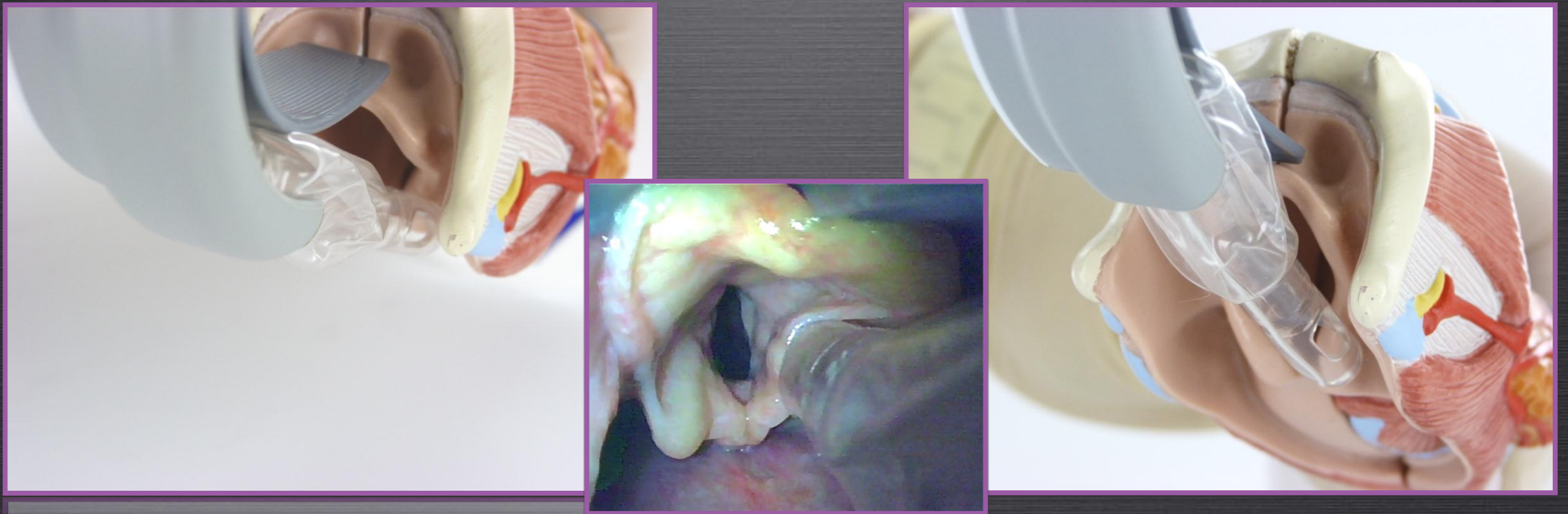
Optimal Placement



Slight anterior lift may be needed to visualize vocal cords

Channeled Blade

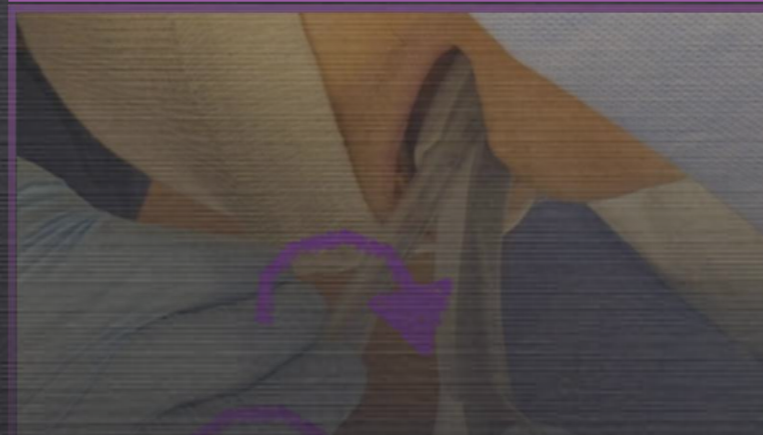
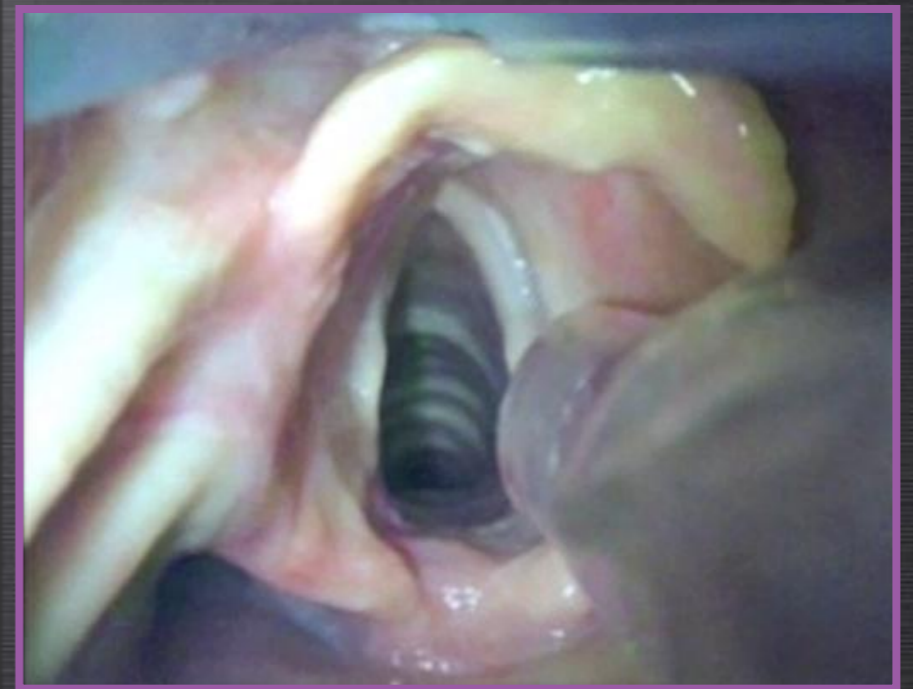
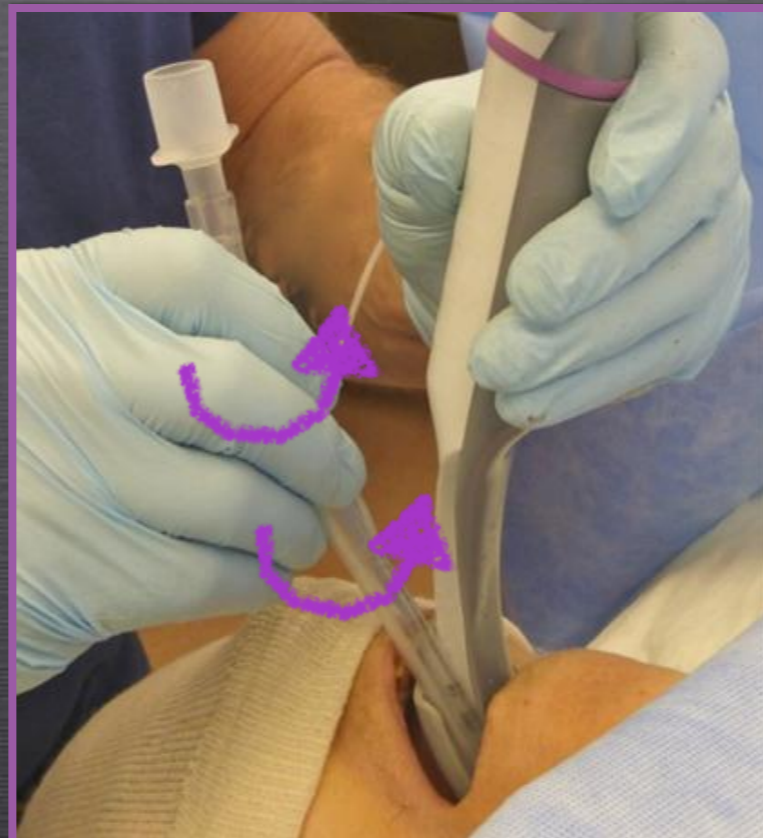
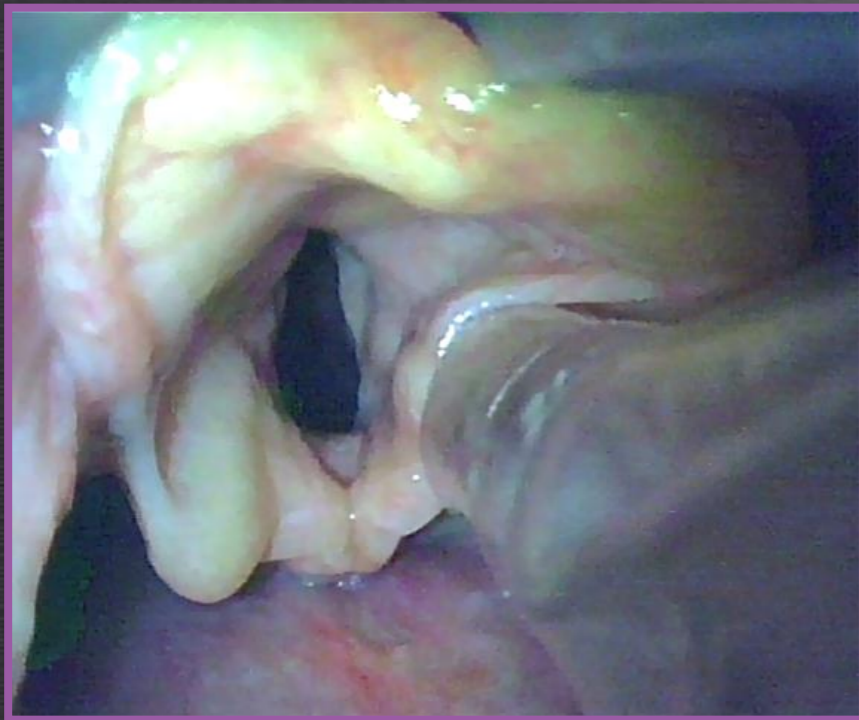
Endotracheal Tube Placement Difficulties



Due to the leftward bevel, it is common to catch the right arytenoid or aryepiglottic fold.

Avoiding Right Arytenoid/Aryepiglottic Fold

Option #1: Retract endotracheal tube, twist counterclockwise and advance through vocal cords

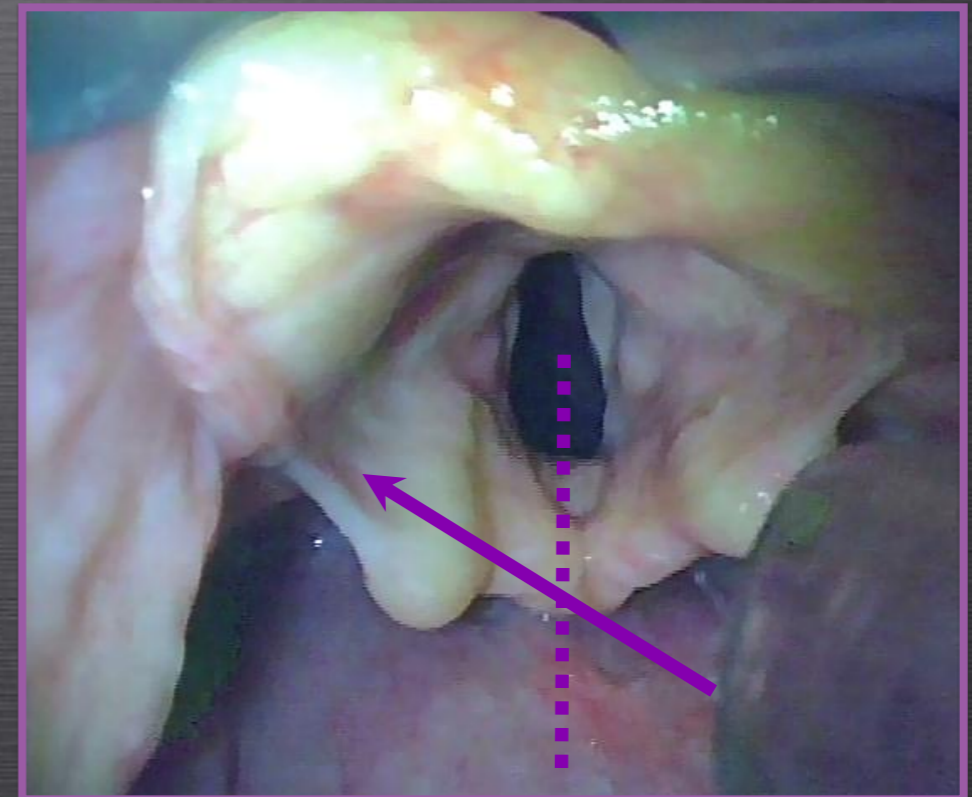


Avoiding Right Arytenoid/Aryepiglottic Fold

Option #2: Rotate blade to redirect ETT

1 Aim blade tip towards the left aryepiglottic fold. Advance ETT 1cm. The endotracheal tube will enter slightly in your field of vision.

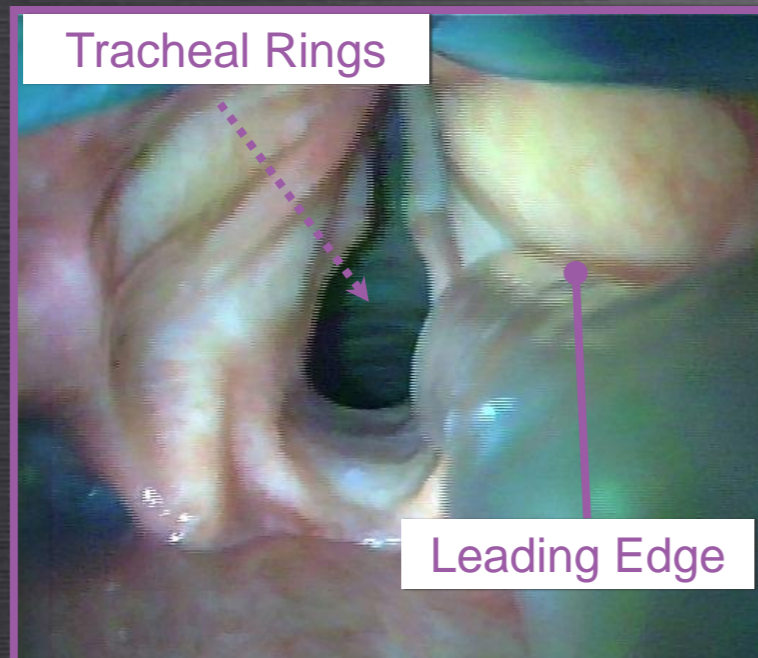
2 Then redirect King Vision back towards the interarytenoid notch and advance endotracheal tube.



Channeled Blade

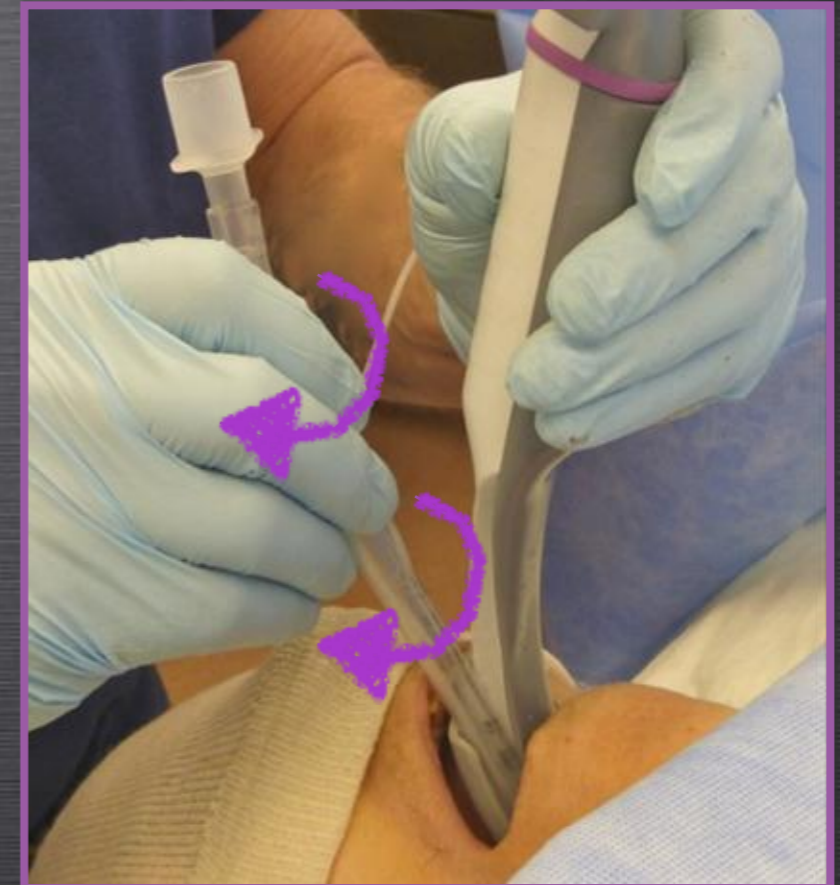
Catching on Tracheal Rings and Tube Rotation

Problem:



The leading edge of the endotracheal tube can get caught on the tracheal rings.

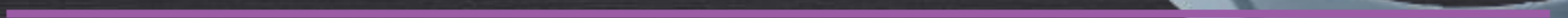
Solution:



TECHNIQUES FOR INTUBATION

◆

STANDARD BLADE VERSION



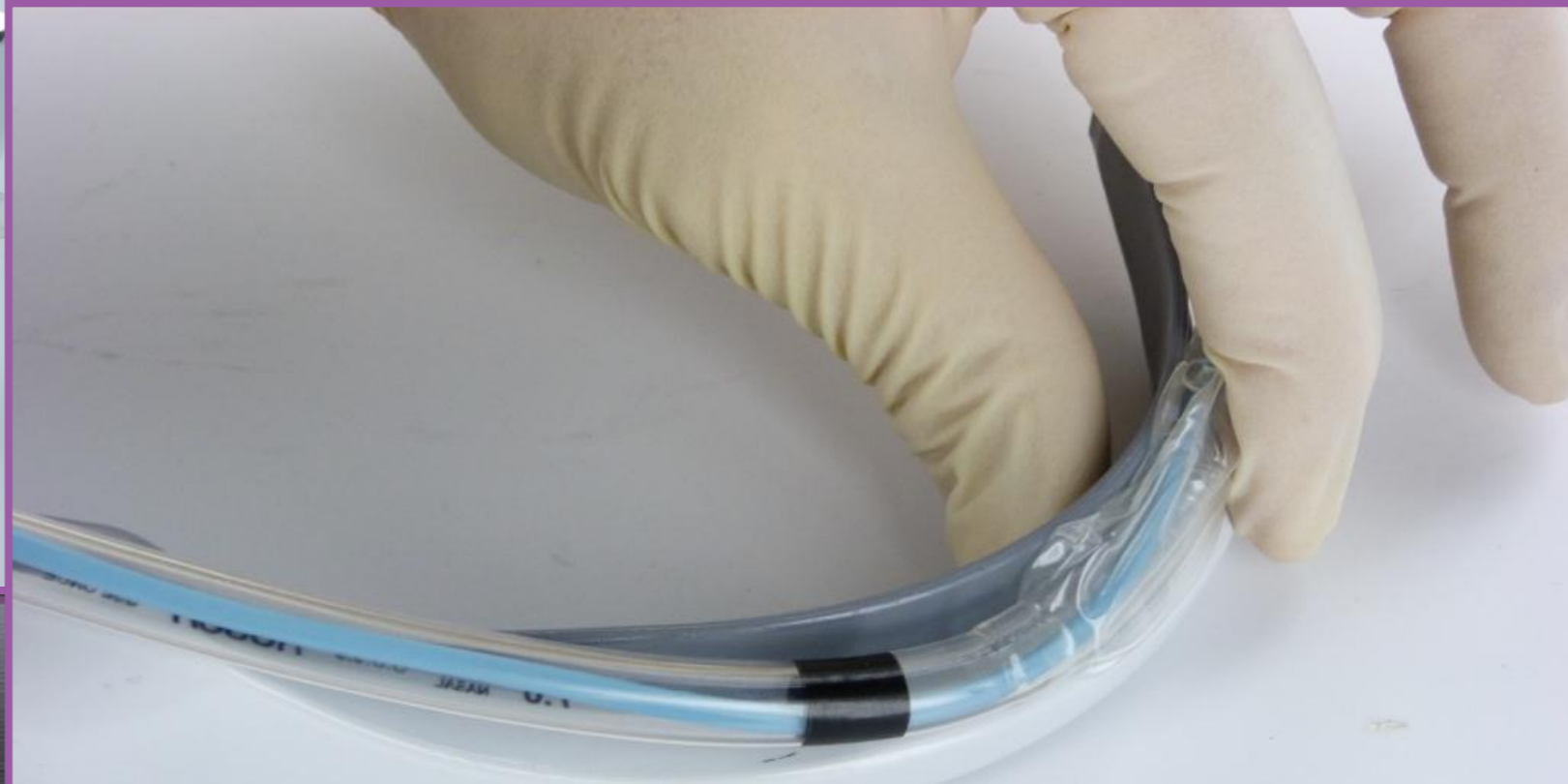
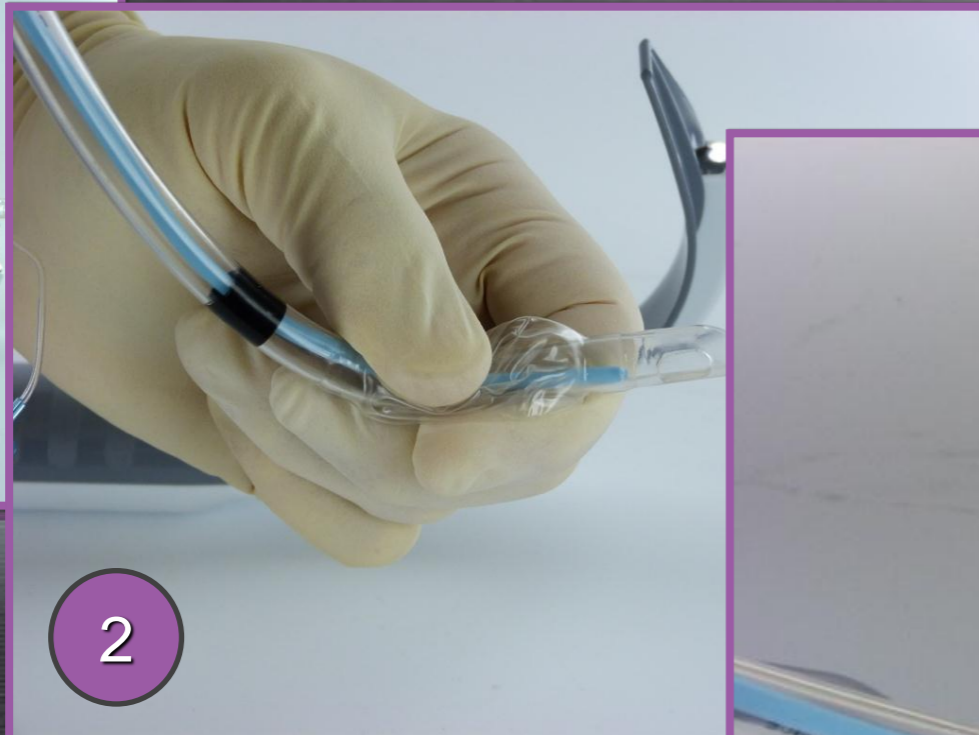
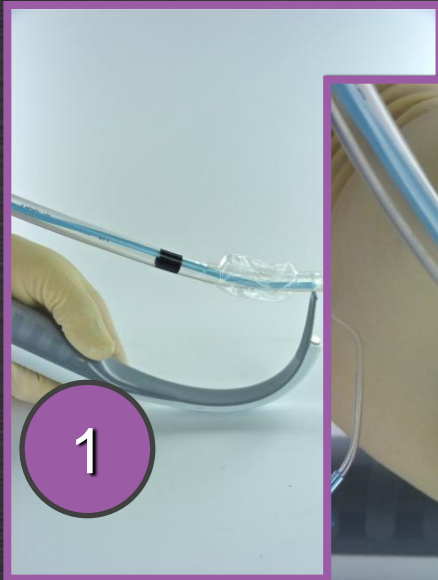
Standard Blade

Connect blade and power on as previously shown



Standard Blade

Shaping the ETT and Stylet

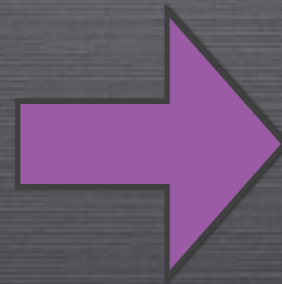


Shape stylet to mirror contour of the blade (approx. 60-70°)

Standard Blade Keys To Success



Midline Insertion
(Use Nose As Reference)



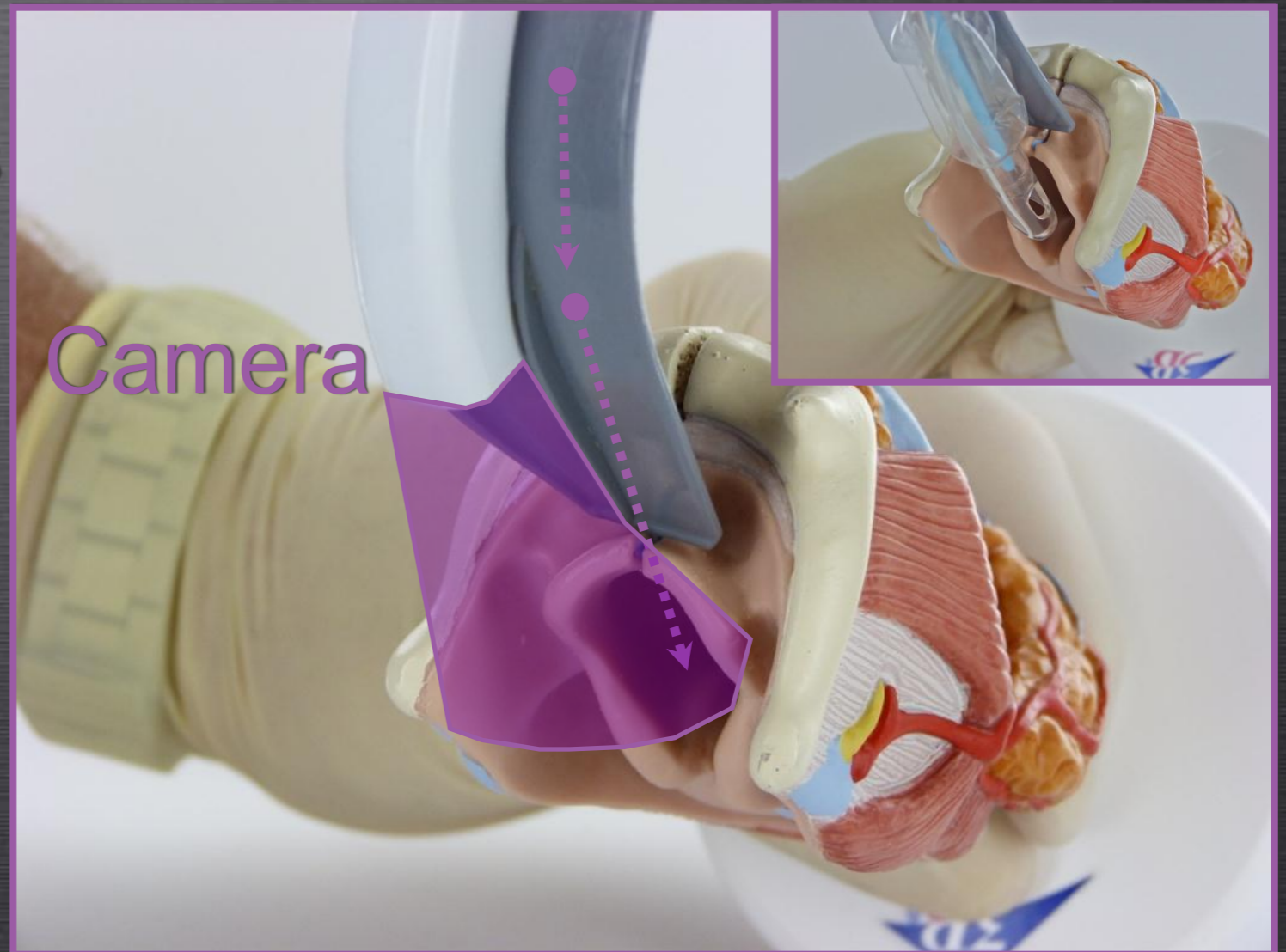
Tongue and Jaw
Retraction

Standard Blade

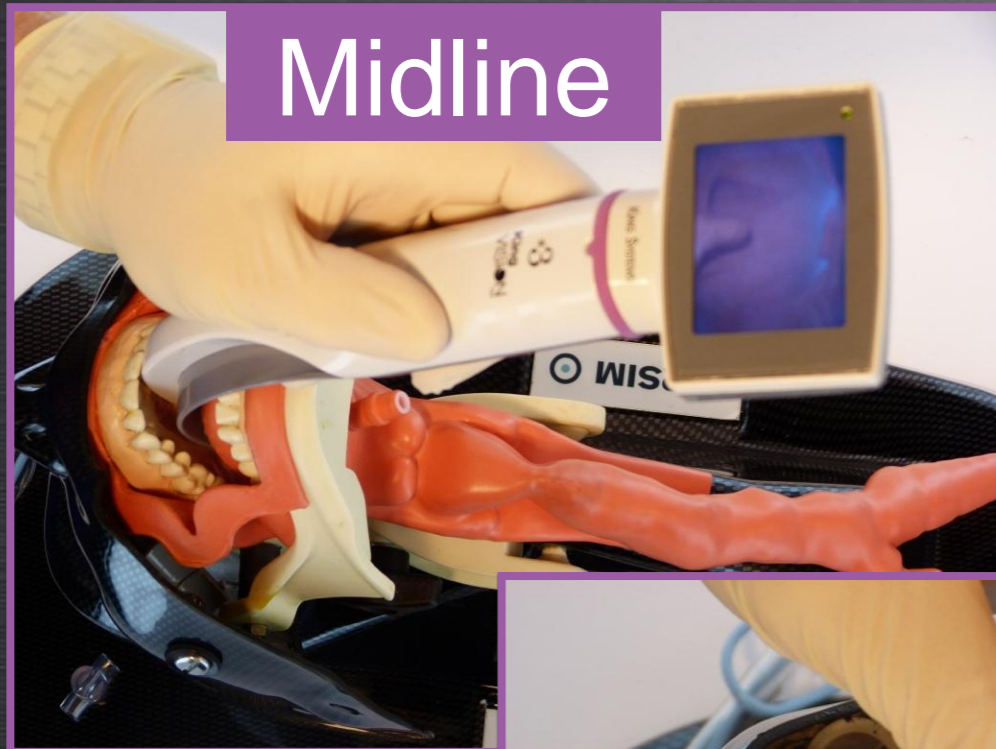
Why Do We Follow the Midline?

Following midline provides a reference point when there is no channel.

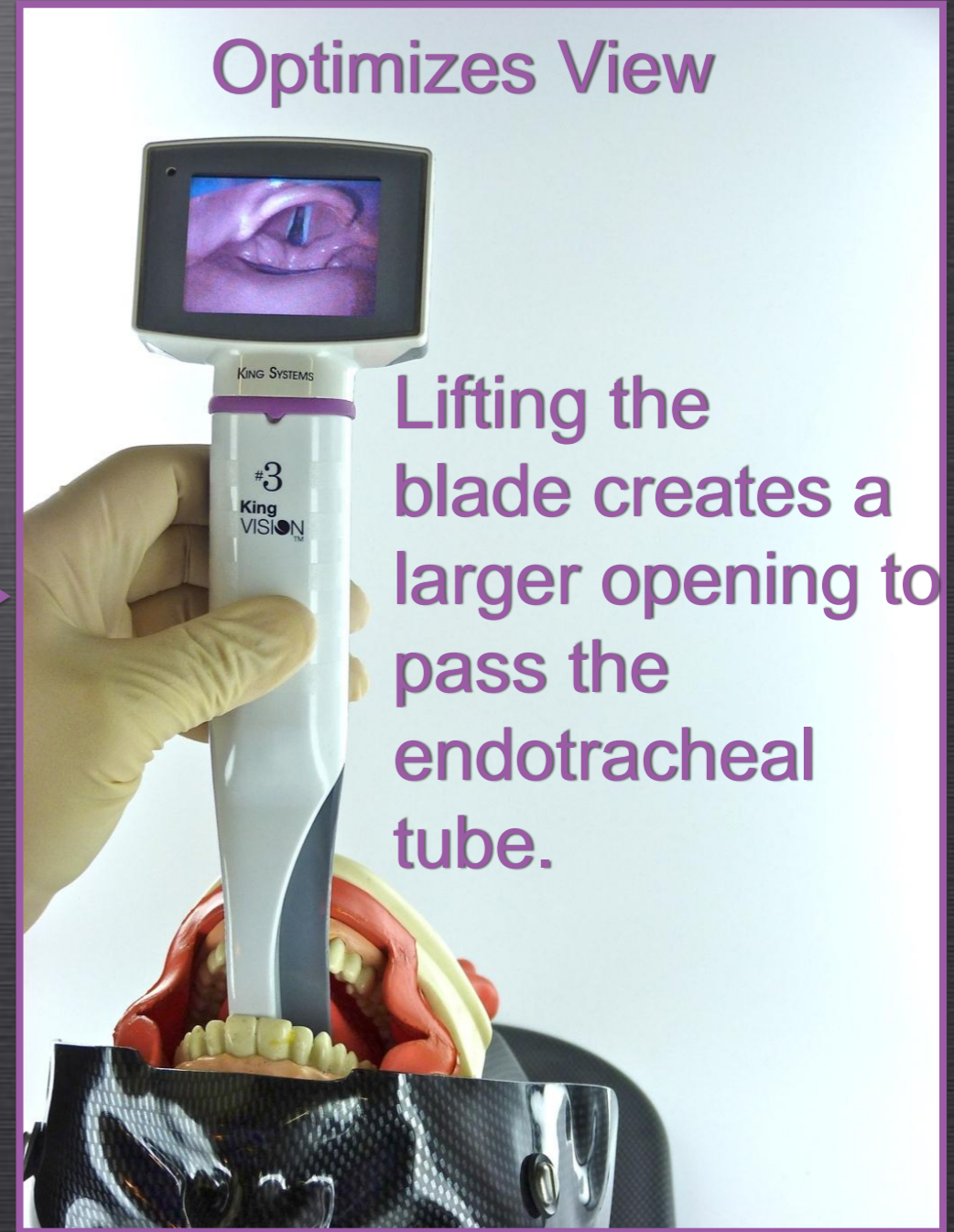
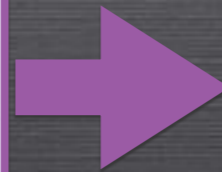
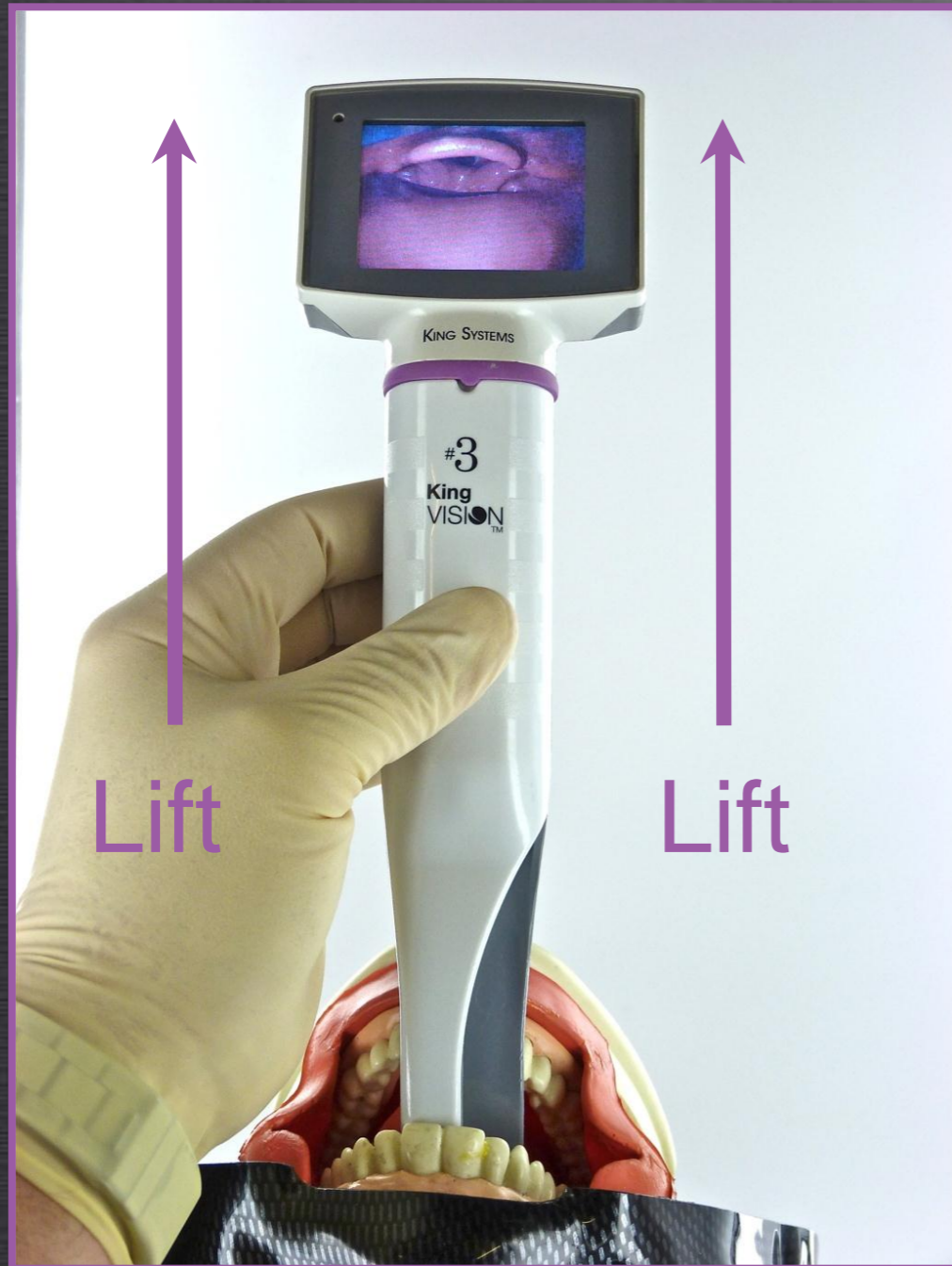
The endotracheal tube will come into the field of vision of the camera if you follow the underside of the blade.



Standard Blade Inserting Endotracheal Tube



Standard Blade Lifting Device for Optimization



Standard Blade

Inserting Endotracheal Tube

- Ensure that the device is midline.
- Insert the shaped ETT with stylet.
- Direct the tip of the ETT along the underside of the Standard Blade.



Standard Blade

Once Through Laryngeal Inlet



Once the endotracheal tube has passed through the vocal cords you must do one of the following:

You must partially retract the stylet before advancing the endotracheal tube.

or

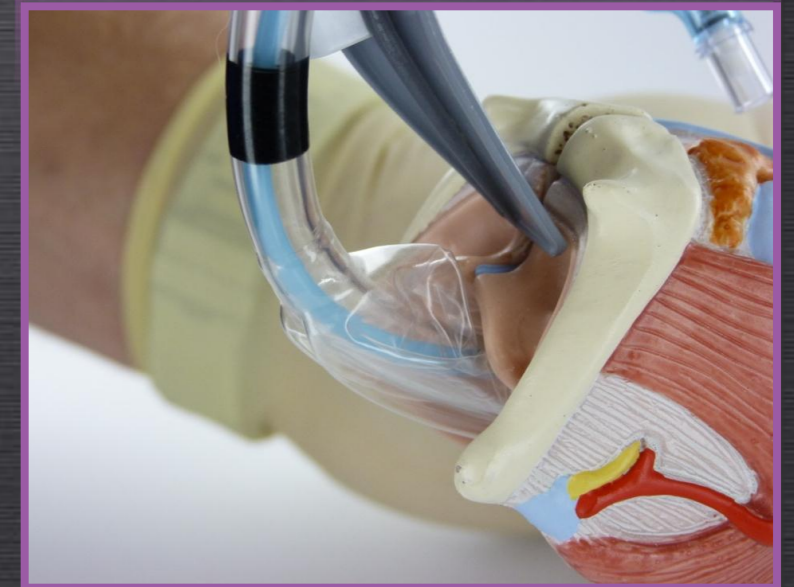
You must turn the tube clockwise 90° as you pass the tube through the laryngeal inlet.

Standard Blade

Once Through the Vocal Cords, Why Do We Have to Retract the Stylet?

Recall that the stylet was shaped to a 60° to 70° angle.

If no manipulation of the stylet is performed, the sharp angle will cause the endotracheal tube to catch on the anterior tracheal rings.



Standard Blade

Progression of stylet withdrawal

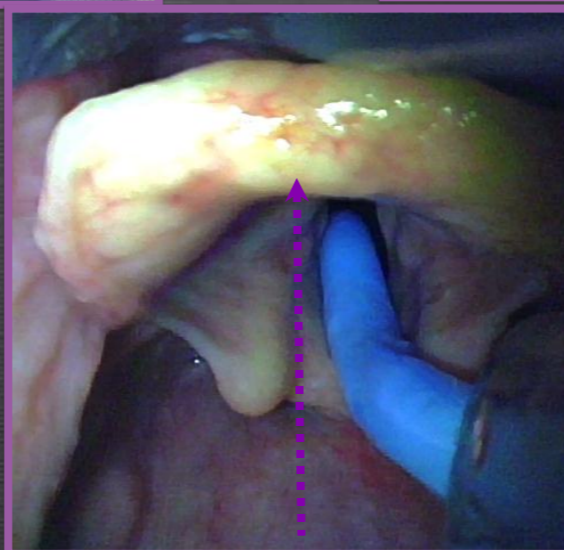
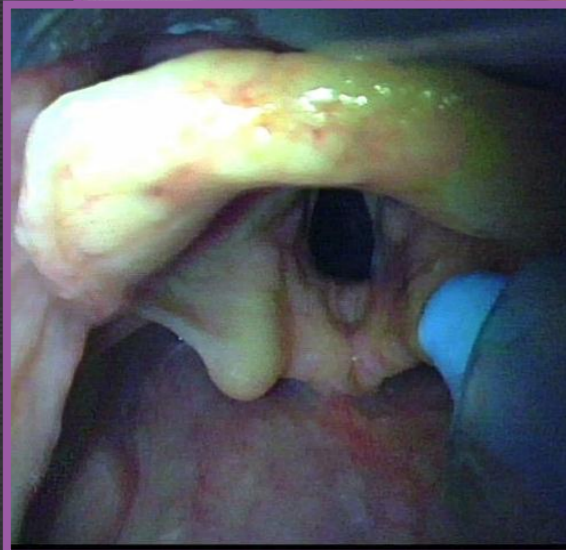
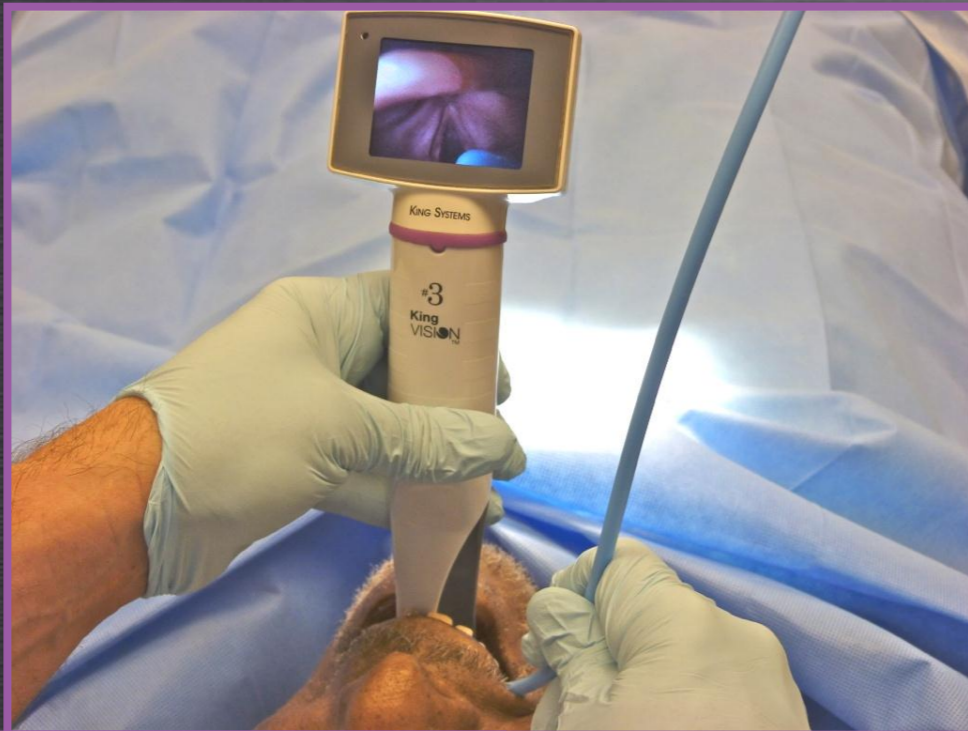


Other Tips – Use of a Bougie

There may be a few cases where passing the endotracheal tube may be difficult secondary to small anatomy, swollen laryngeal structures, or abnormal anatomy. In these cases, a bougie may be beneficial.

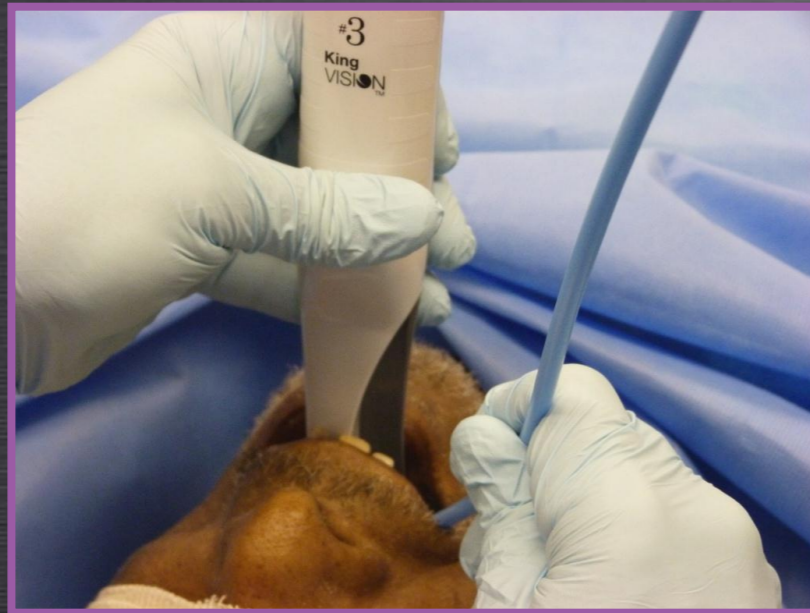


Channeled Blade Using a Bougie



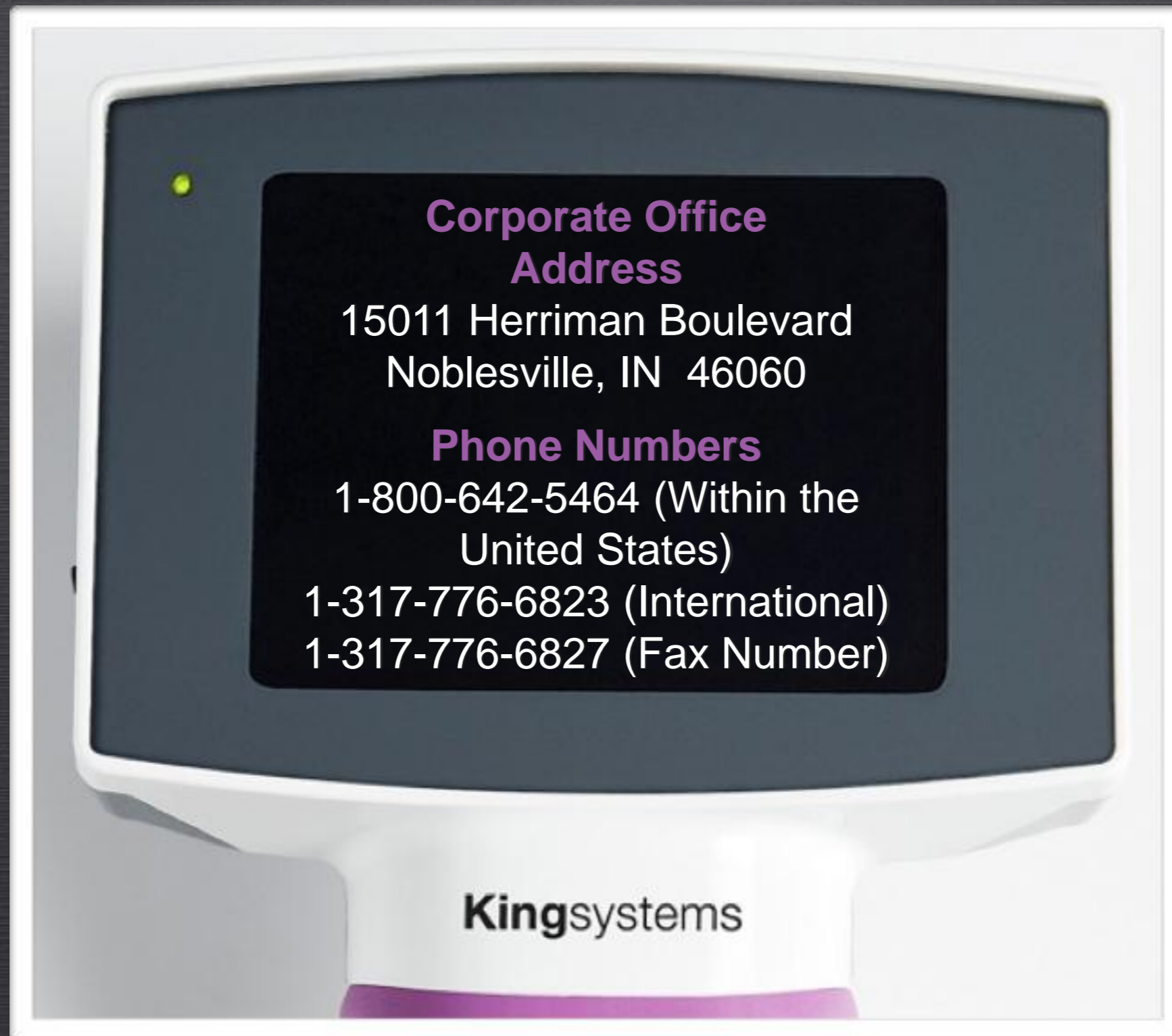
Bougie inside ETT; ensure angled bougie tip is facing upward as it exits the ETT

Standard Blade Using a Bougie



A bougie has a significantly smaller outer diameter than an endotracheal tube. This allows for easier passage into challenging airways.

King Vision Contact Information



Kingsystems

For more information
visit

www.OwnTheAirway.com

All video and educational content has been created by:
Michael Sweeney MSN, CRNP, CFRN, CCRN, CNRN, CEN, CPEN
in collaboration with King Systems

sweeneyemp@gmail.com
