Airtraq

TRAINING PORTAL

BASIC INTUBATION TECHNIQUE

INDEX

Objective:

- To acquire a basic knowledge on how to intubate with the Airtraq
- To identify potential problems during initial usage and suggested solutions

Time Required: 30 to 45 minutes

AIRTRAQ SIZE SELECTION

Choice of Airtraq size depends on the ETT size to be used for intubation.

- Specific model for double lumen tubes 28 Fr to 41 Fr.

Double lumen
28-41 Fr

- Airtraq Nasal does not have a guiding channel.

Nasal

DESCRIPTION SIZE AND CODE	ET TUBE SIZES	MOUTH OPENING	COLOUR
REGULAR Size 3 A-011/ATQ-011	7.0 - 8.5	16 mm	 Blue
SMALL Size 2 A-021/ATQ-021	6.0 - 7.5	15 mm	 Green
PEDIATRIC Size 1 A-031/ATQ-031	4.0 - 5.5	12.5 mm	 Purple
INFANT Size 0 A-041/ATQ-041	2.5 - 3.5	12.5 mm	 Gray

PREPARATION OF AIRTRAQ SP

- Turn on the light. Switch located below the battery cover.
- Light blinks for 30 seconds while the lens is warmed to body temperature to prevent fogging.
- While the light blinks, lubricate the ETT and the Airtraq blade without contacting the lens.
- Slide ETT into the lateral channel of the Airtraq from the top, aligning the tip of the ETT with the end of the guiding channel.
- If desired, connect to visualization devices

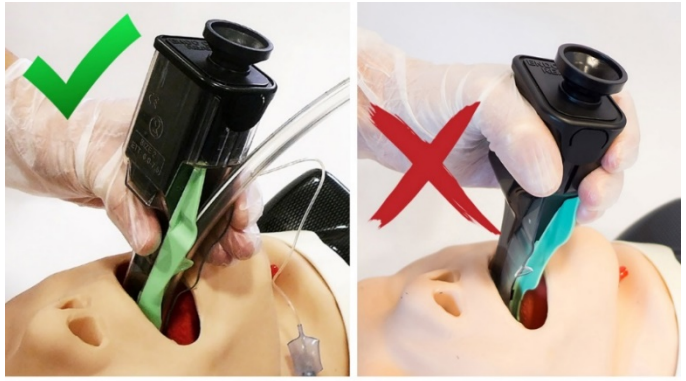
PREPARATION OF AIRTRAQ AVANT

- Check Optic battery and service life either on the Optic Status LEDs or in the Docking Station.
- Select the appropriate size of blade based on the size of ETT to be used.
- Insert Optic into the blade fully, until it clicks into position.
- Light blinks for 35 seconds while the lens is warmed to body temperature to prevent fogging.
- If intubating under direct view place eyecup over the proximal end of the Optics. If not, connect other visualization devices
- Lubricate and load ETT as with Airtraq SP

HOLDING AIRTRAQ

- Use your dominant hand to facilitate insertion into patient's mouth

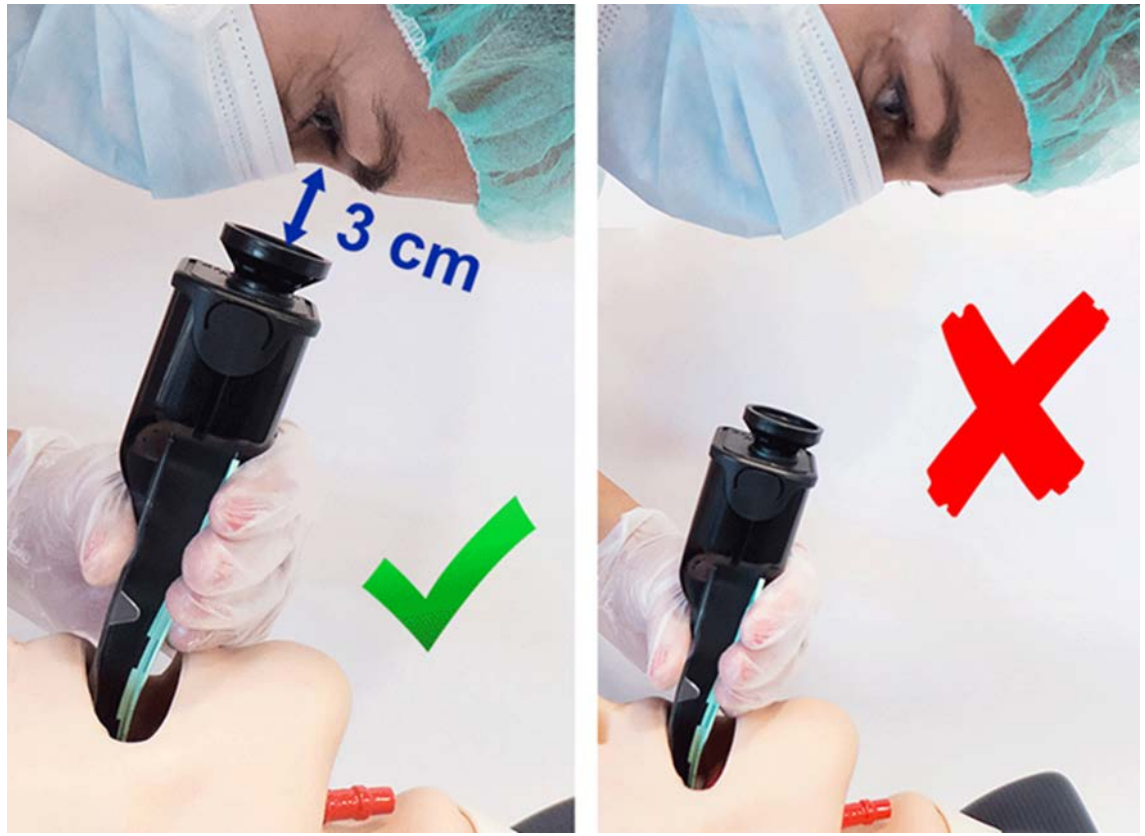
- Hold it with gently using your fingers rather than the full palm.
- Do not hold like a direct laryngoscope



- Hold Airtraq close to the patient's mouth. Do not hold it from the top.

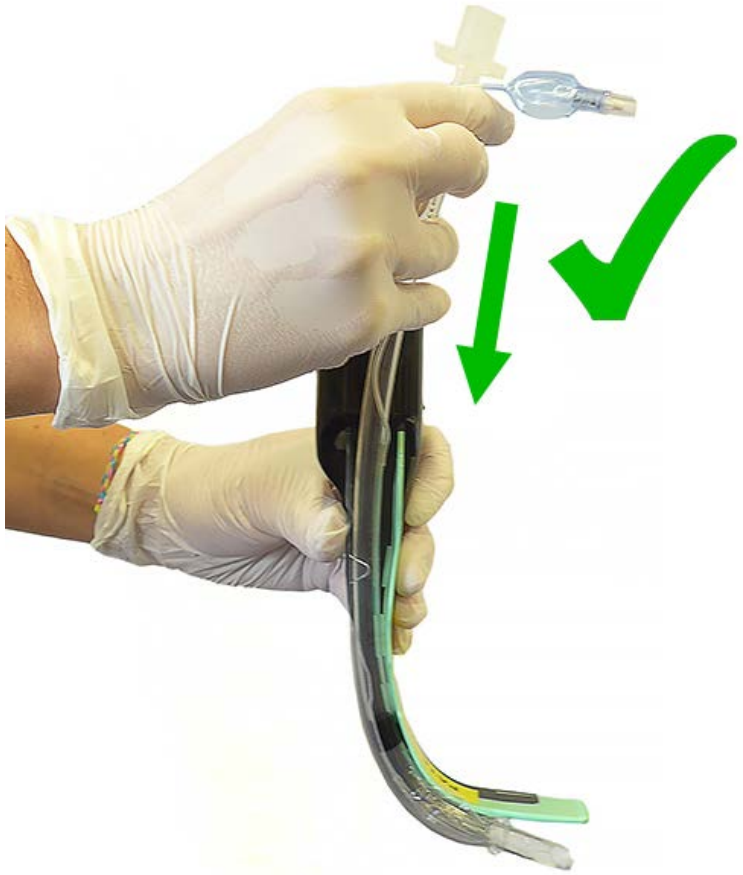
DIRECT VIEW

The optimal view is obtained when the user places their eye at 3 cm or 1" from the Airtraq eyecup



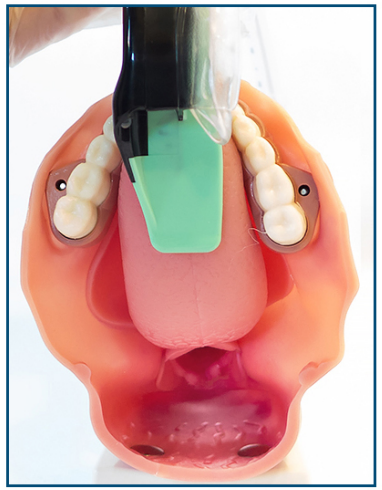
ETT ADVANCEMENT

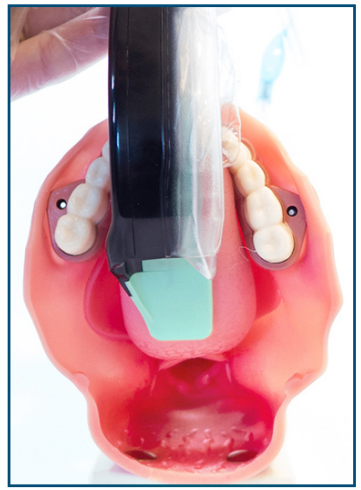
- To facilitate sliding of the ETT, align its proximal end with the channel

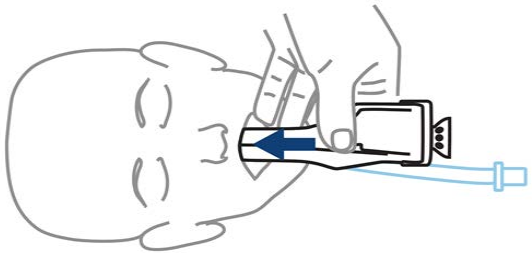


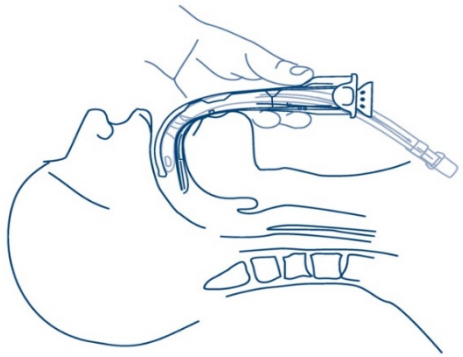
AIRTRAQ INSERTION

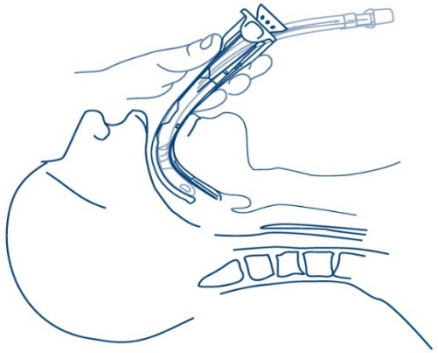
- Insert the Airtraq Avant into the midline of the patient's mouth, until the straight portion of the tip of the Airtraq is fully inside the patient´s oral cavity.
- Slide Airtraq over the tongue.
- To prevent pushing the tongue back into the posterior pharynx, do not elevate the Airtraq until the tip of the blade has reached the back of the tongue.
- Avoid pressure against upper teeth.







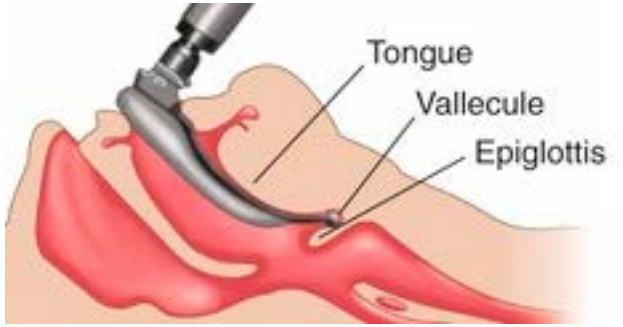


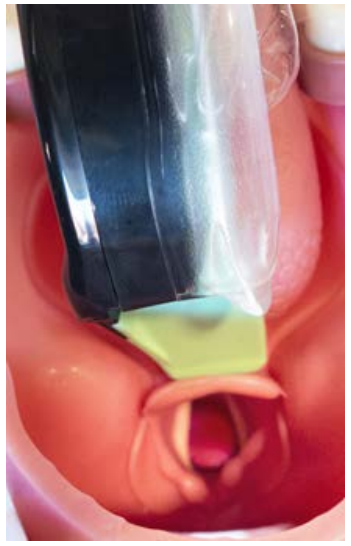


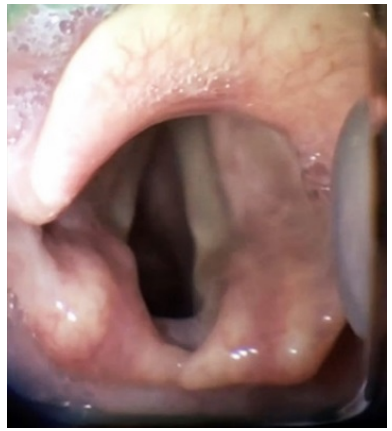
LOCATION OF GLOTTIC STRUCTURE | Macintosh vs Miller

- Once the Airtraq is inserted into the posterior oropharynx the user can identify the main glottic structures: Epiglottis, Arytenoids and Vocal Cords.
- Airtraq design allows for both techniques placing the tip of the blade in the vallecula and placing the tip of the blade underneath the epiglottis.
- Macintosh style is the preferred option since it requires less upward traction and therefore it is softer on patient tissues.
- If the Airtraq is already underneath the epiglottis and the user prefers to intubate Macintosh style withdraw the Airtraq until the epiglottis falls and advance the tip of the blade into the vallecula.

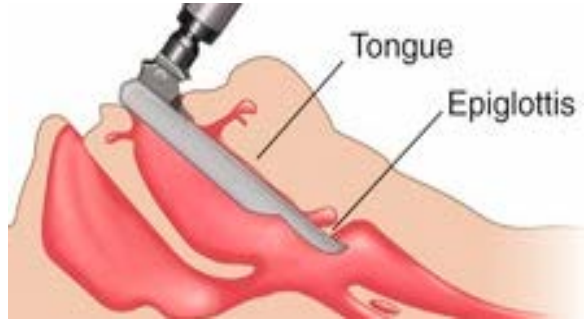
Macintosh
Blade in the Vallecula

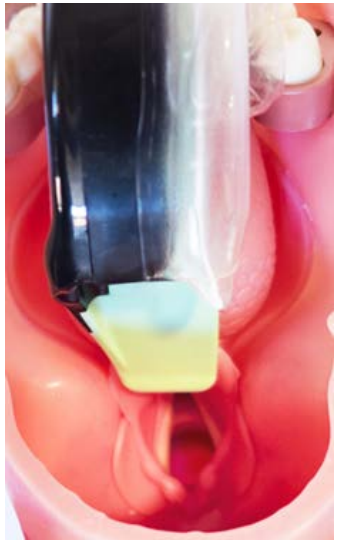


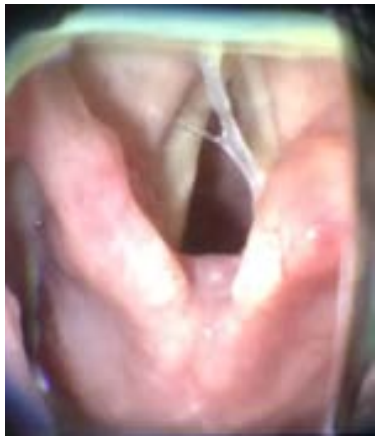




Miller
Blade underneath Epiglottis

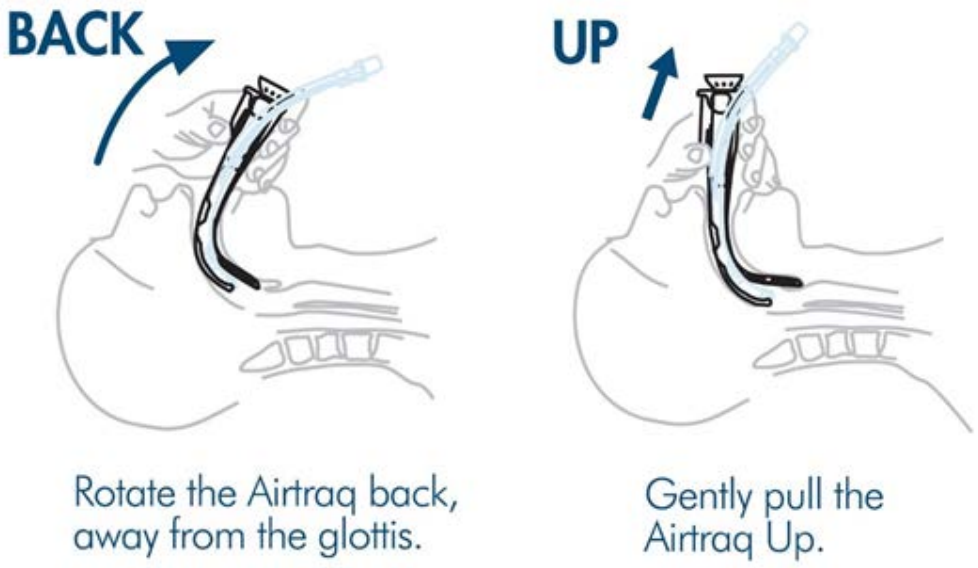




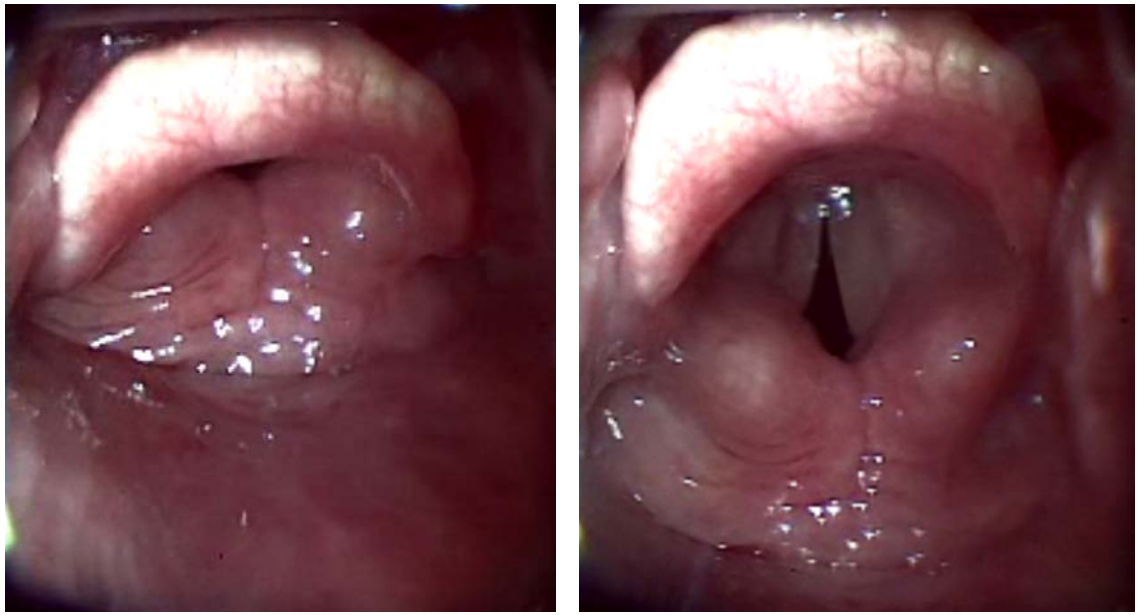


LOCATION OF GLOTTIC STRUCTURE

- If vocal cords are not seen it is very likely that Airtraq has been inserted TOO DEEP, if so perform the following maneuver:



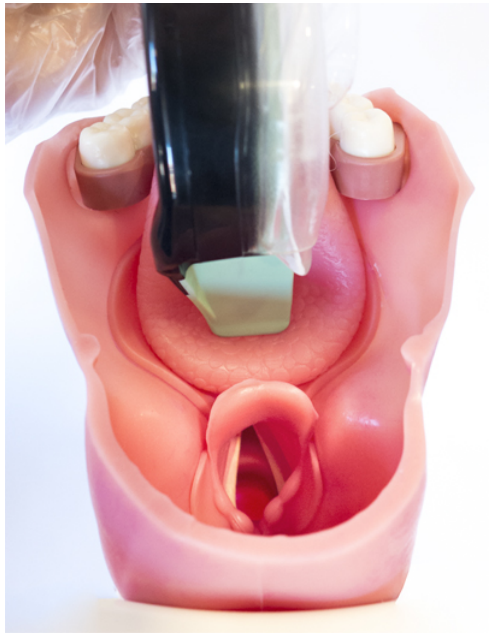
- A gent lift of the Airtraq causes the glottis to open and drops the interarytenoid notch below the middle of the image (optimal position for successful ETT insertion)



AIRTRAQ INSERTION & LOCATION OF GLOTTIC STRUCTURE | Most common pitfalls

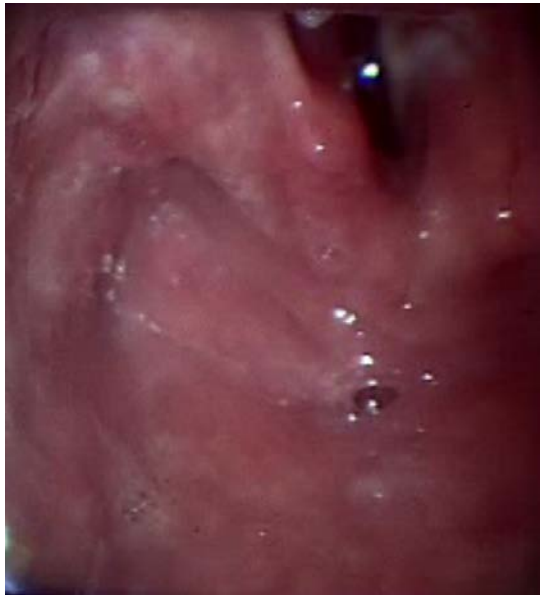
✗ **Pushing tongue inwards**

Airtraq elevation too early, before tip of the blade gets to back of tongue



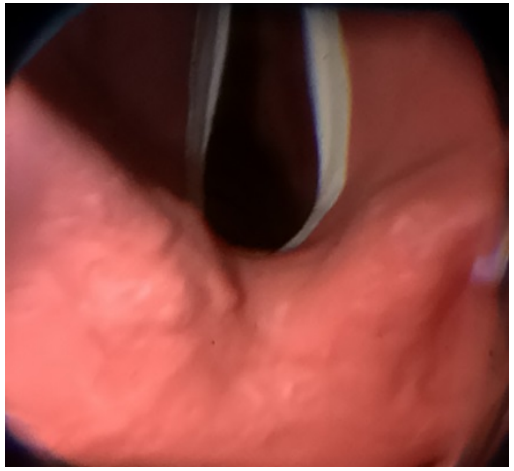
✗ **Airtraq not midline**

Airtraq inserted like a direct laryngoscope blade (to the left of the oropharyngeal cavity)



✗ **Airtraq inserted Too Deep**

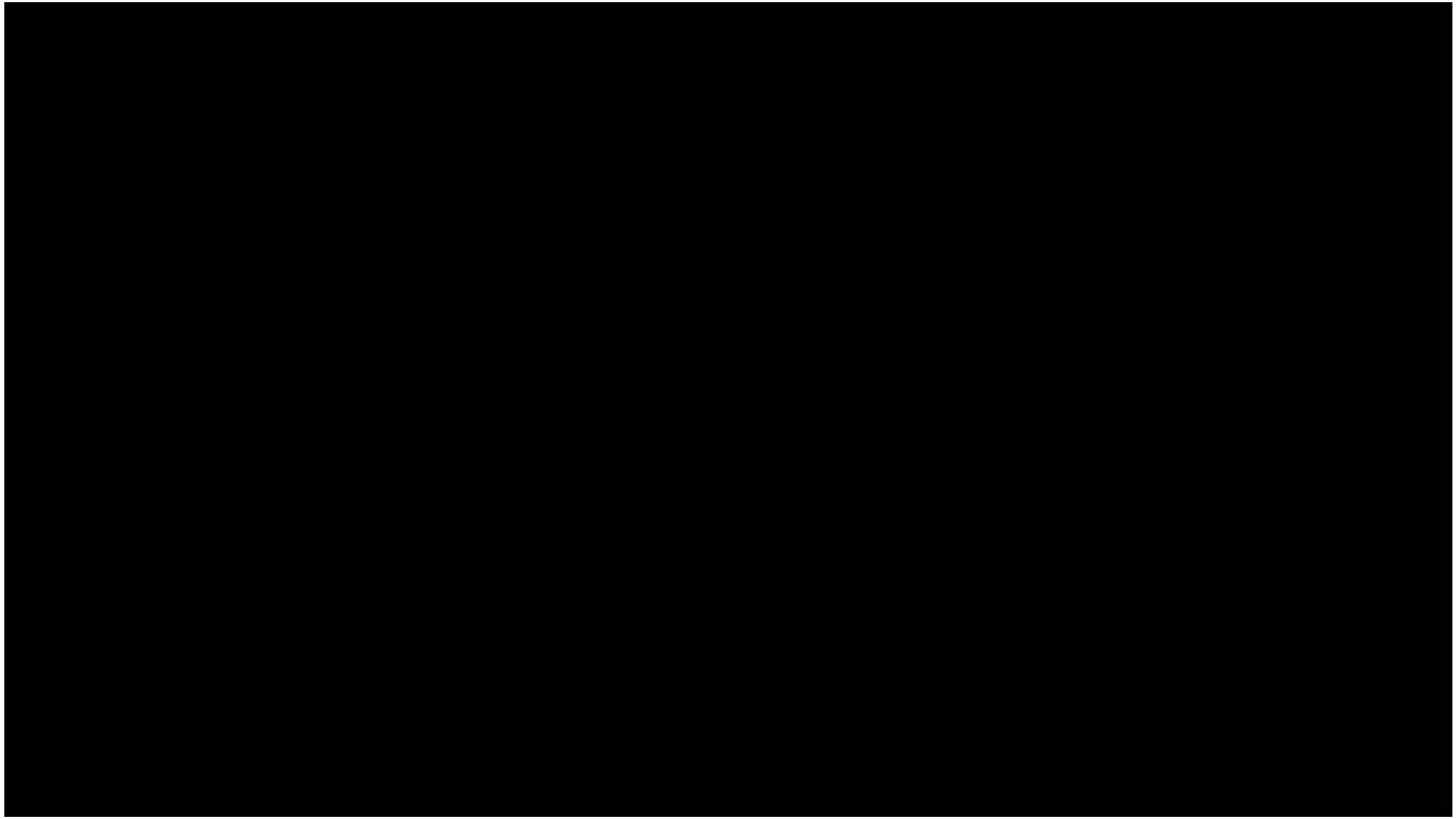
Airtraq inserted too close to the glottis or too posterior in front of the oesophagus



✗ **Airtraq tilted against upper teeth**

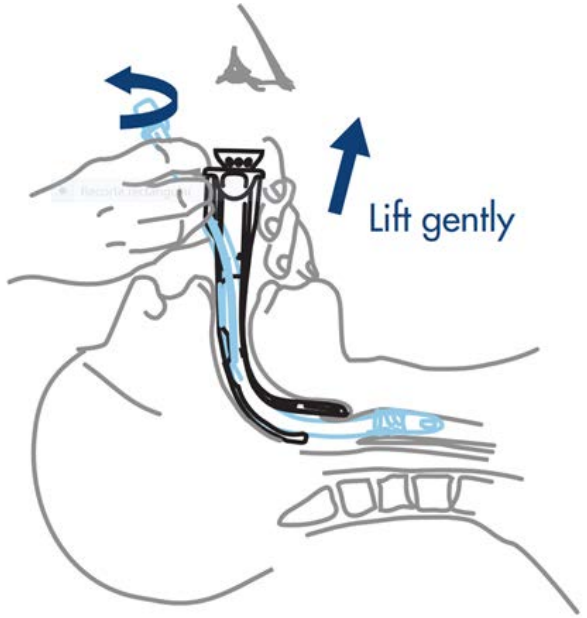
Airtraq tilted against upper teeth

LOCATION OF GLOTTIC STRUCTURE | MACINTOSH VS MILLER



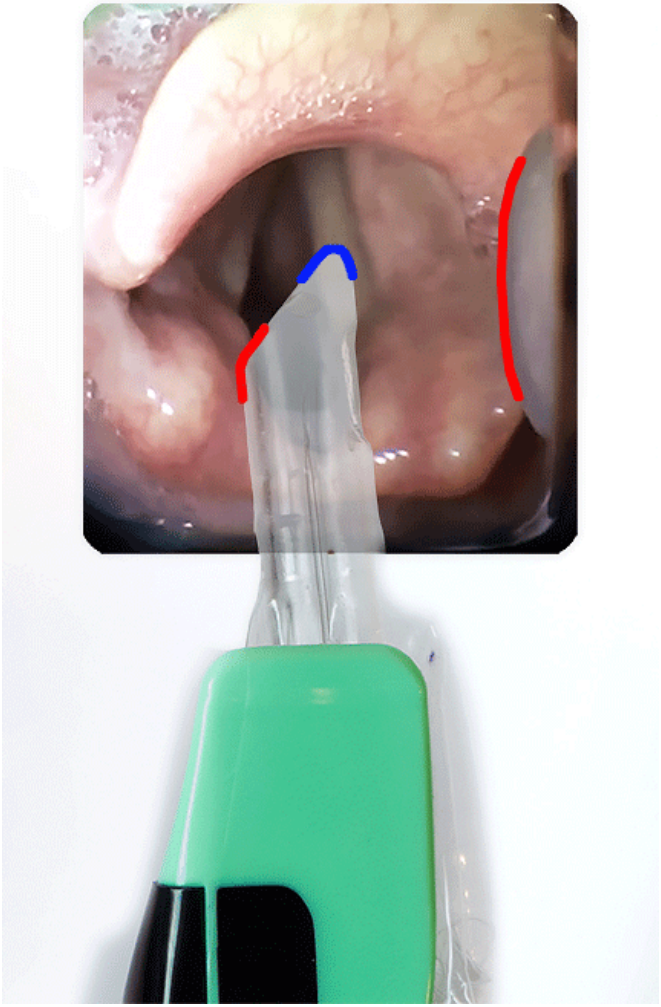
ETT INSERTION

- Advance the ETT keeping it inside the guiding channel until it passes the vocal cords.
- ETT advancement should be performed in slow progressions, correcting position if necessary. If the ETT does not pass the vocal cords easily do not try again without correcting the position.
- If the ETT goes too posterior, rotate Airtraq back away from the glottis and gently lift
- Once the ETT is inside the glottic openning relax upwards traction before passing the ETT through the vocal cords. This reduces tension on the cords and makes for gentler tube insertion.



ETT INSERTION | Beveled ETTs

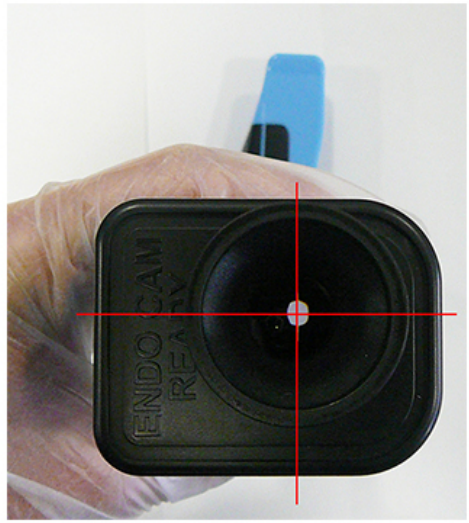
- Most ETT´s have a leftward bevel. The most forward point of the ETT is at the right side.
- The image that the user gets through the Airtraq shows the left side of the ETT (marked in red in the figure).
- Therefore the right tip (marked in blue in the figure) is not seen.
- The ETT part that the user sees (marked in red in the figure) should be pointed towards the left vocal cord

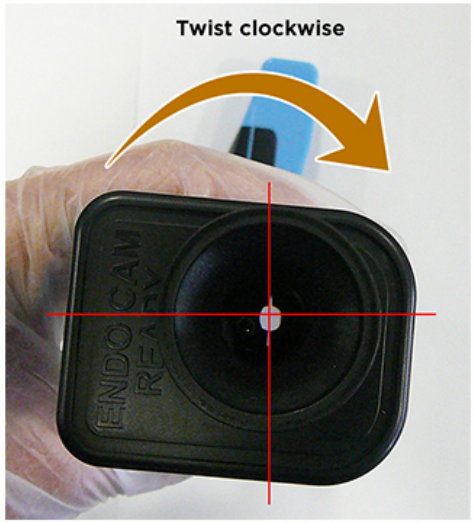


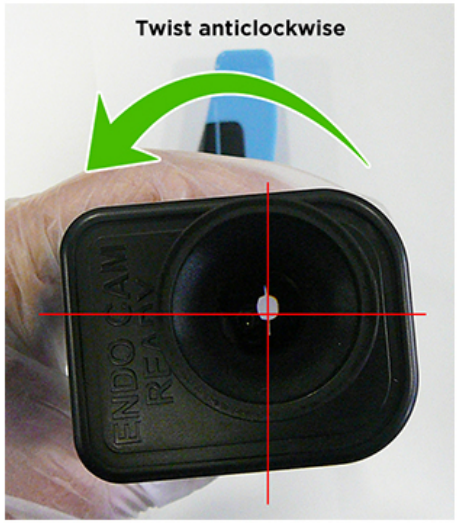
ETT INSERTION | Airtraq Twist

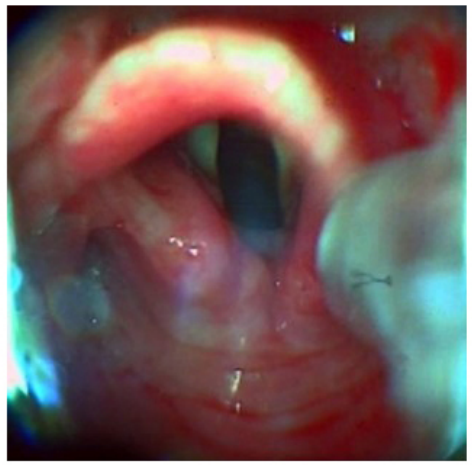
If the ETT hits on the arytenoids or epiglottis, the Airtraq should be twisted to orientate the vocal cords.

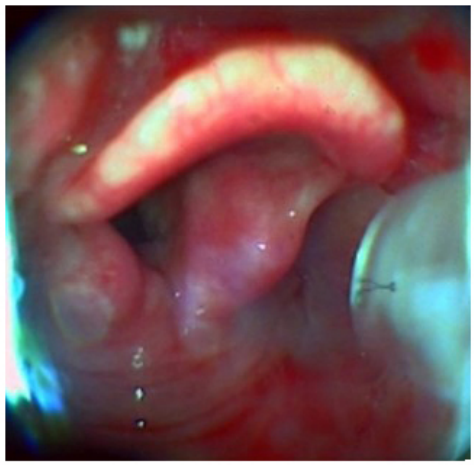
In most cases a slight anti clock wise twist will help to insert the ETT.

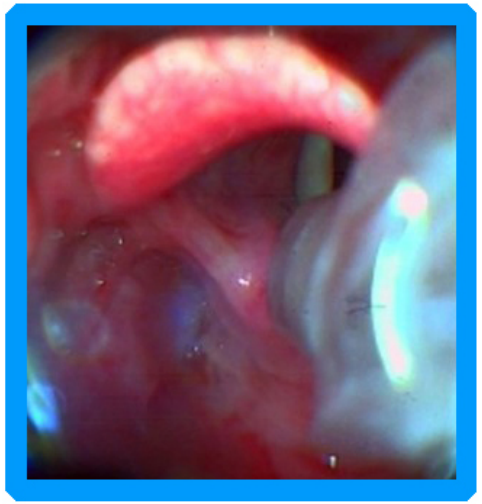






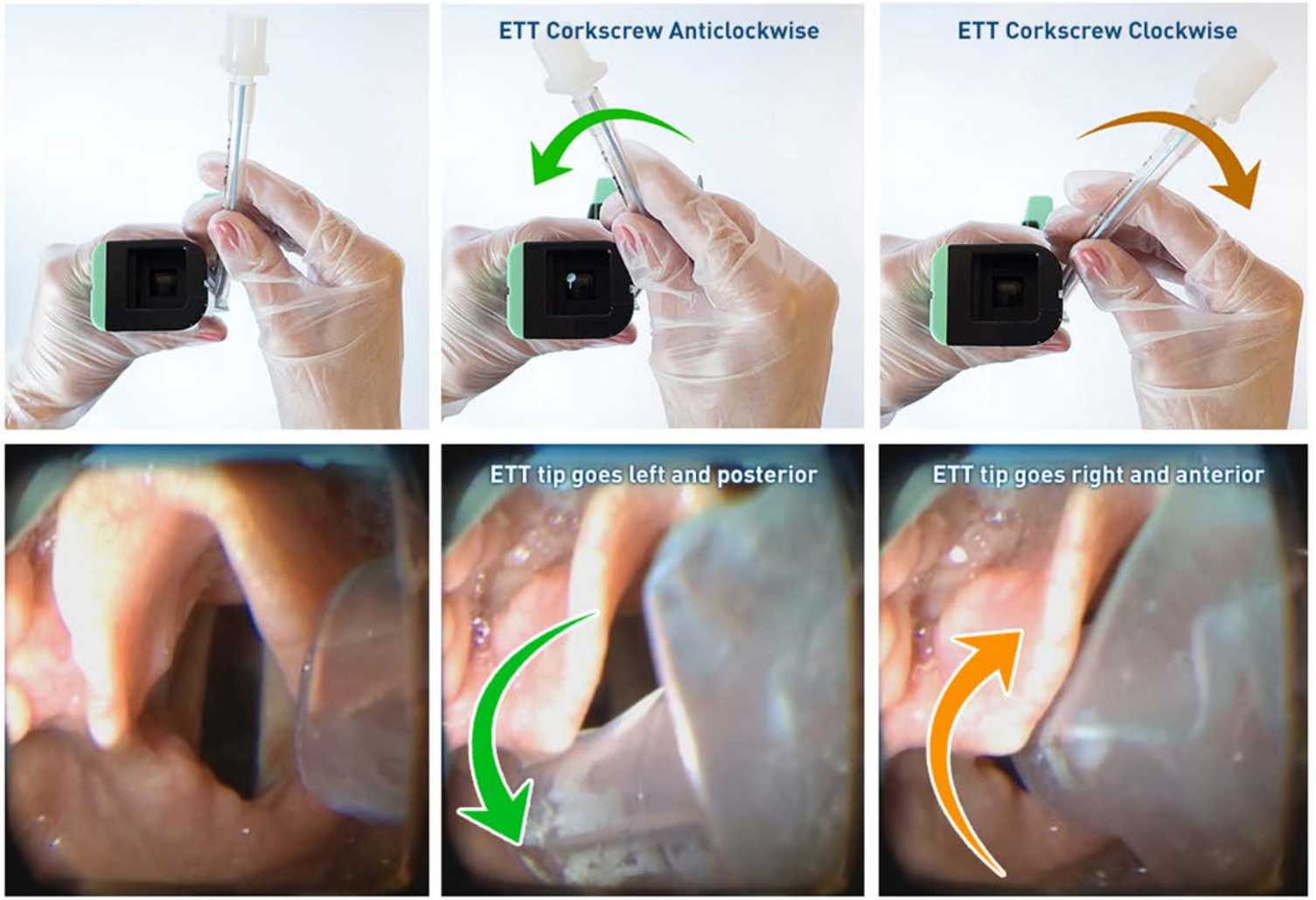




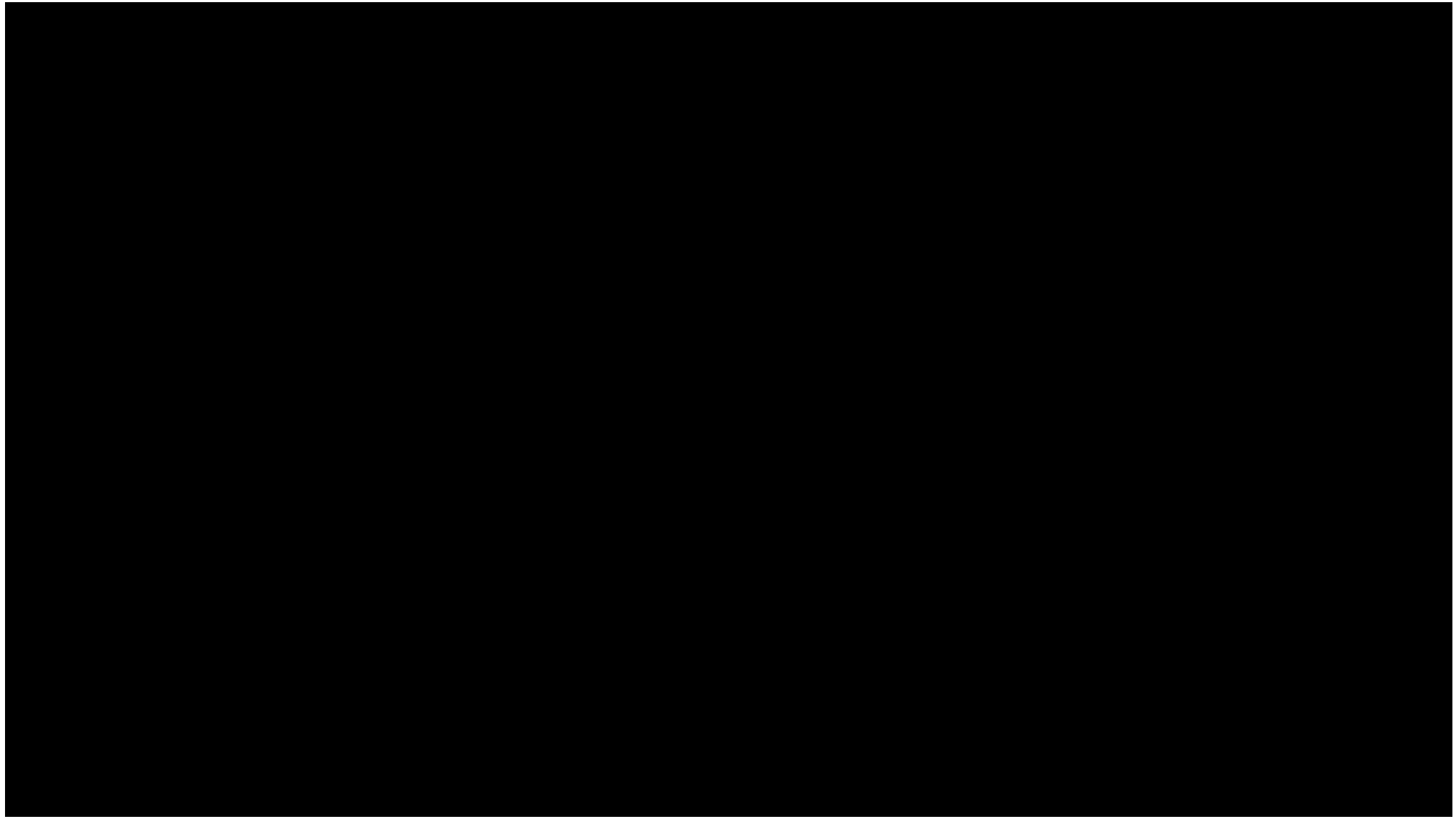


ETT INSERTION | ETT Corkscrew

If the ETT hits on the right arytenoid or aryepiglottic fold, the ETT can be corkscrewed inside the guiding channel to pilot it towards the vocal cords.



ETT INSERTION | ETT Corkscrew

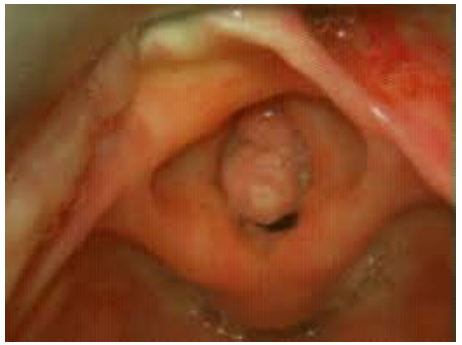


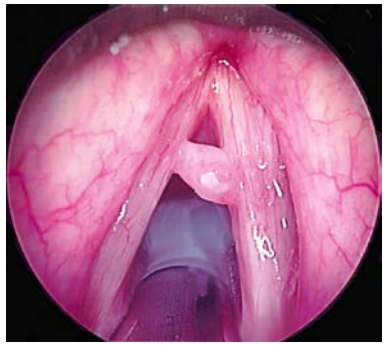
ETT INSERTION | Using a bougie

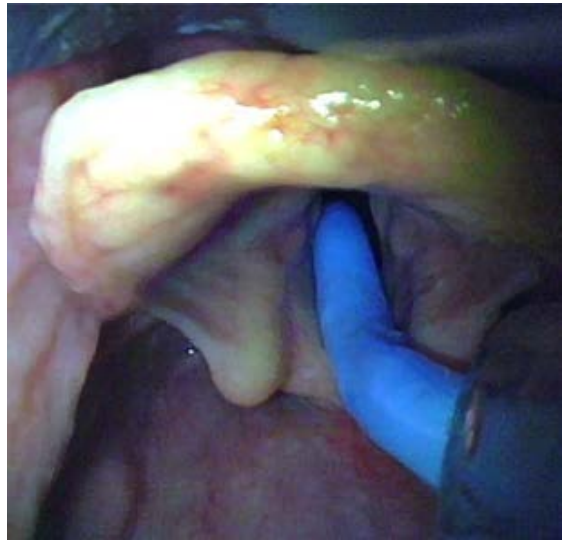
There are a few cases when passing the ETT is difficult due to abnormal anatomy.

When the ETT cannot be inserted it is recommended to use a bougie.

The bougie is loaded inside the ETT with the angled tip towards the tip of the ETT.





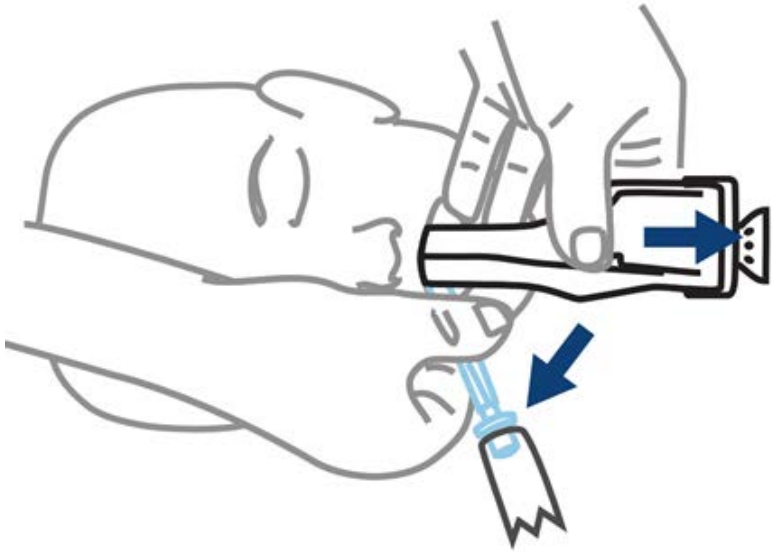


ETT INSERTION | Most common pitfalls

- ✘ Trying to insert the ETT before achieving a good view of the vocal cords
- ✘ Too much upward lift (interarytenoid notch too low in image)
- ✘ Not enough upward lift (interarytenoid notch too high in image)
- ✘ Repeated ETT advancement without repositioning the Airtraq
- ✘ Detaching the ETT from the guiding channel

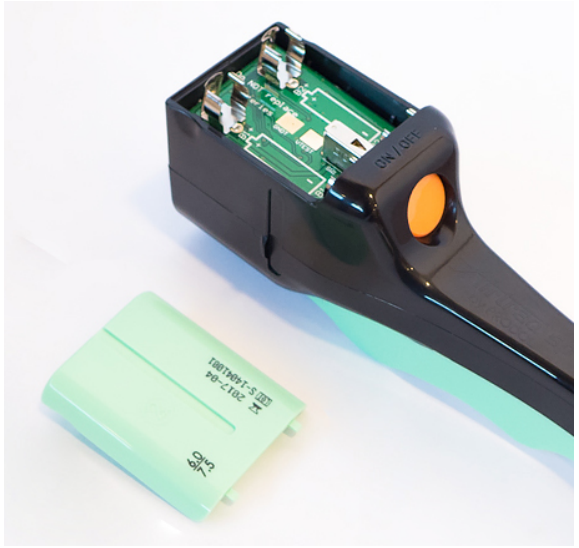
AIRTRAQ REMOVAL FROM PATIENT'S AIRWAY

- Before removing the Airtraq:
  - Check ETT insertion depth
  - Inflate ETT cuff
- Detach ETT from the Airtraq channel by pulling it laterally, while holding the ETT in position to avoid accidental extubation.
- Remove the Airtraq from the patient´s airway keeping to the midline.



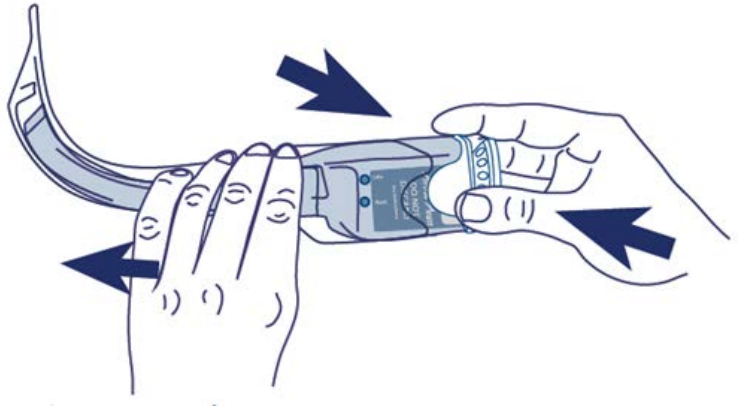
AIRTRAQ SP DISPOSAL

- Take off eyecup
- Release battery cover and remove batteries according to institution´s policies.



BASIC INTUBATION TECHNIQUE | Avant Blade disposal and Optic discard after 50 uses

- Separate the Airtraq Avant Optic from the Blade by firmly gripping both lateral sides of the Eyecup and pulling apart. Make sure the Optics do not become in contact with any potentially contaminated surface.
- The Optic automatically turns off when it is taken out from the blade.
- Discard the disposable Blade and Eyecup as any other potentially contaminated waste following local governing ordinances and recycling plans regarding disposal or recycling.
- If needed, place the Optic back onto the Docking Station to recharge the battery.
- Discard Optic once the service life is zero.
  - Remove Battery
  - Discard Optic



DOUBLE LUMEN INTUBATION

For use with double lumen tubes sizes 28-41 Fr. Any style of DLT (right-sided or left-sided, carina hooked or not hooked) can be used.
Minimum patient mouth opening: 19 mm

- Remove the stylet from inside DTL.
- Load the DLT and orient the deviated tip of the DLT so it points towards the light of the Airtraq (if the DLT tube is a right side style, then rotate the DLT 180 degrees)
- If the DLT has a carina hook, the hook should point toward the open side of the Airtraq guiding channel.
- Stop advancing when the DLT proximal cuff has just passed through the vocal cords. Do not insert further. This places the DLT at approximately the midpoint of the trachea. Check insertion depth.
- Follow standard procedure to check DLT proper position.
- In case of difficulty inserting DLT it is recommended to use a bougie through the bronchial lumen of the DLT.

NASAL INTUBATION

For use with any standard ETT used in naso-tracheal intubations.
Minimum patient mouth opening: 15 mm

- Firstly insert nasotracheal tube into patient´s nostril and advance it until it reaches the oropharynx.
- Insert Airtraq into the patient´s mouth and advance until its blade is placed either in the vallecula (preferred) or underneath the epiglottis.
- Advance tube under view until it is inserted. Corkscrew tube if needed. Magill's forceps may be used in case steering the tube is necessary.
- Although Guided orotracheal Intubation is recommended, Non channeled Airtraq can also by used for orotracheal intubation using a stylet. Shape stylet to mirror contour of the blade. Freehand guide ETT. Partly retract the stylet before advancing the endotracheal tube through the vocal cords.

PEDIATRIC INTUBATION

Pediatric
4.0 – 5.5 ETT

Infant
2.5 – 3.5 ETT

- Minimum patient mouth opening:
  - Pediatric: 12 mm
  - Infant: 11 mm
- Select size depending on ETT to be inserted.
- Laryngoscopy may be performed either Macintosh or Miller style.
- Take special care to avoid inserting the Airtraq too deep
- Infant size has been successfully used in 2.0 kg neonates.

END OF

MODULE B: BASIC INTUBATION TECHNIQUE

GO TO QUIZ

GO TO NEXT MODULE