



AL-Ayen University
College of Health and Medical Technology
Department of Anesthesia



Laryngoscope

Lecture (5) theoretical
Basics of Anesthetic Equipment (1)
2nd Stage
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Laryngoscope:

- A direct vision laryngoscope is a device for viewing the larynx. It consists of a handle and a blade and is designed with a light to illuminate the tip.
- Indirect vision laryngoscopy involves visualizing the vocal cords by means other than obtaining a direct sight, with the potential to improve outcomes

The main purpose of laryngoscope is to aid the intubation of trachea with an endotracheal tube.

Uses:

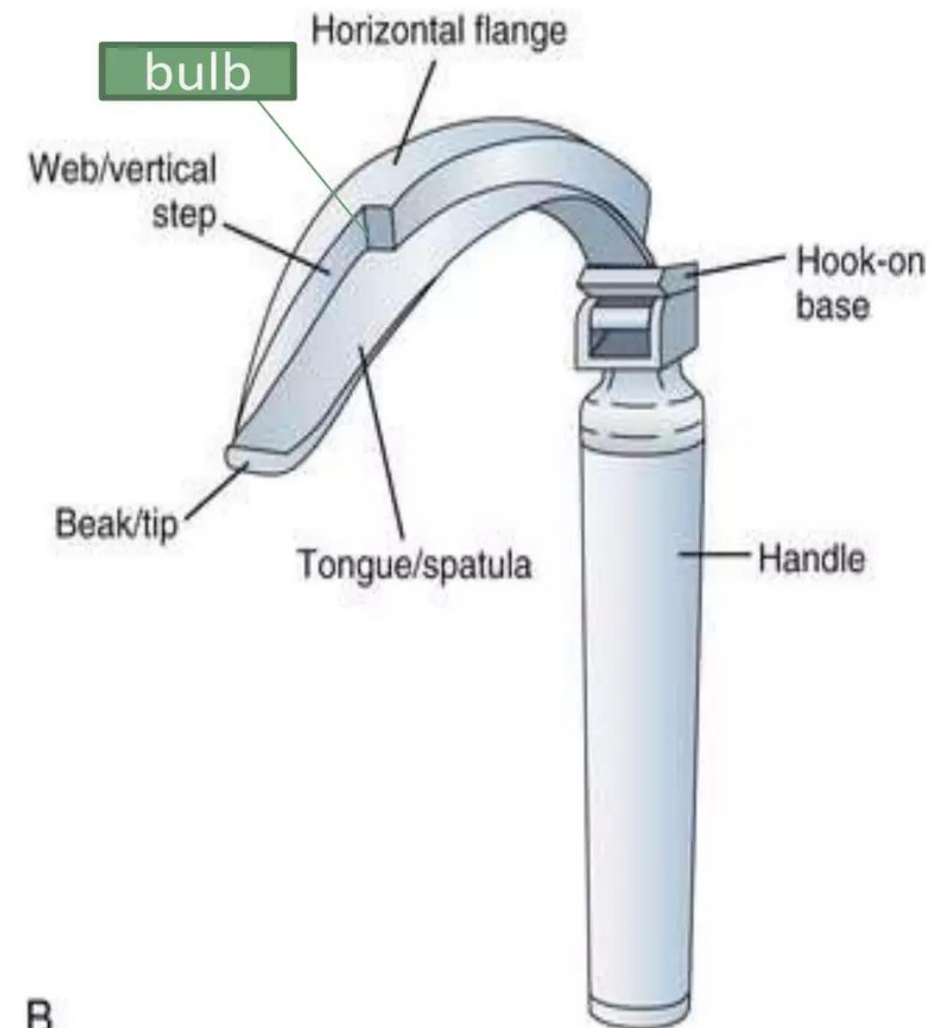
1. Tracheal intubation.
2. Visualization of the larynx and pharynx for foreign body removal or suctioning.
3. Placing of nasogastric tubes, throat packs and other devices.
4. Upper airway lesion biopsy

PARTS OF LAYNGOSCOPE

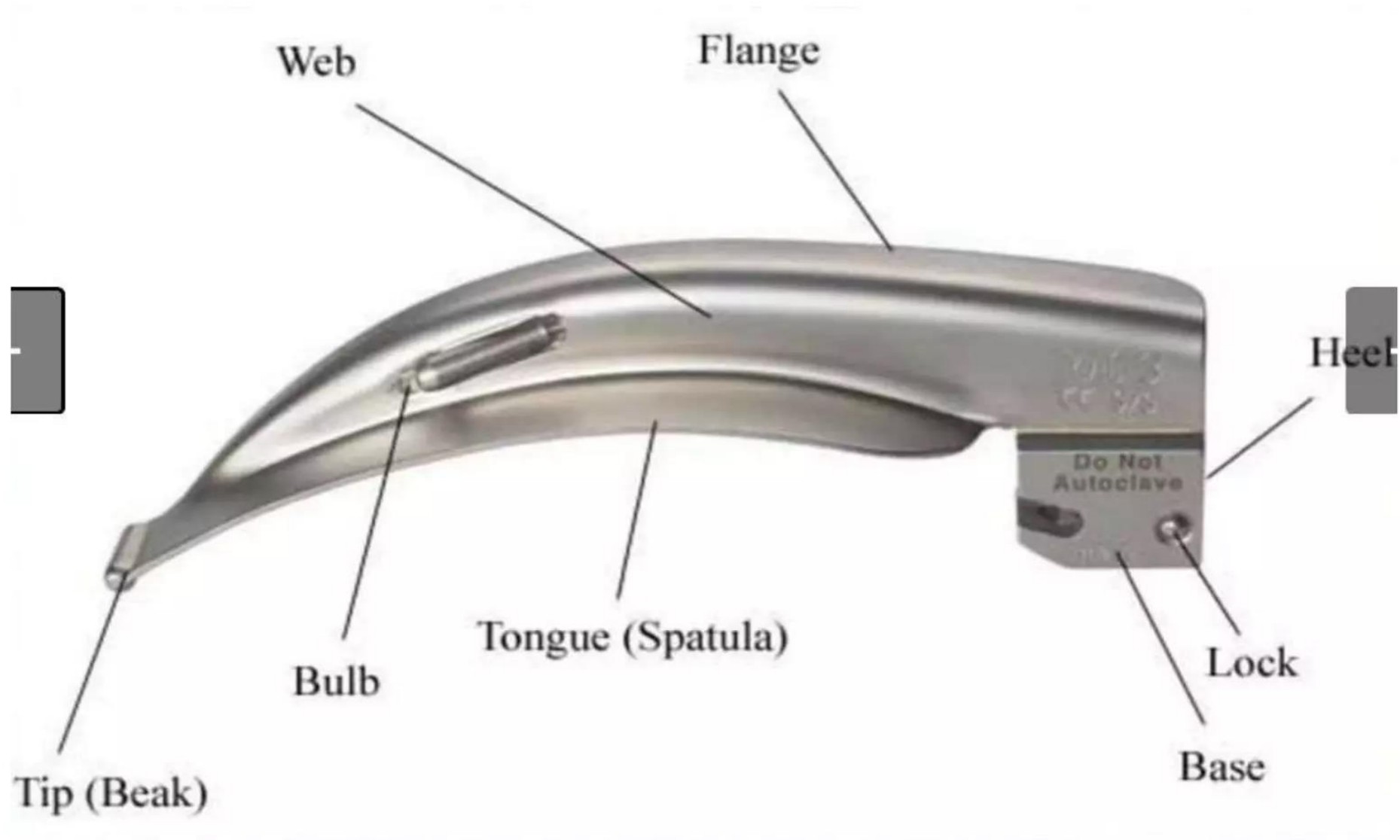
- Handle
- Blade -

- Base
- Heel
- Tongue(Spatula)
- Flange
- Web
- Tip(beak)
- Light source

- Hook on(hinged,folding)
connection between handle and
blade



Blade



Laryngoscope blades:

1-Macintosh: The most commonly used blade in the UK is the English profile Macintosh.

American and German profiles are also available. The curved blade is designed with a large reverse-Z shaped flange to sweep the tongue to the left of the mouth. The tip is placed in the vallecula, indirectly lifting the epiglottis via pressure on the epiglottis ligament. The light source pierces the blade towards the tip so as not to interfere with the view. Left-handed Macintosh blades are available for use for all patients. Despite the name, they are not specifically designed for use by left handed operators.

Sizing: infant (1), child (2), adult (3), large adult (4).



2-Miller:

- ✓ Again available in English, American and German designs, the Miller is the most commonly used straight blade.
- ✓ It is also manufactured in **neonate** to adult sizes, though the adult designs are rarely used.
- ✓ The small flange does not permit a tongue sweep
- ✓ instead the blade is directed along the right side of the mouth and the tip re angled once it has passed the base of the tongue .
- ✓ Straight blades are particularly useful in neonates and infants because of the relatively large epiglottis.



3-McCoy:

The McCoy is a modification of a Macintosh blade. Its design allows the tip to be flexed (using the lever alongside the handle) in order to lift the epiglottis without the degree of force that would be required using a standard blade. It makes some difficult intubations easier and is commonly found on difficult airway trolleys.



4-Polio Macintosh:

- ✓ A modification of the Macintosh design with the blade mounting on the handle at 135° rather than 90°.
- ✓ This allowed it to be used in polio patients.
- ✓ It now finds occasional use in patients with restricted neck mobility or large breasts, sometimes in conjunction with a stubby handle.



How it works:

Direct laryngoscopy is performed in anaesthetized or unconscious patients. The oral and pharyngeal axes must be aligned with the laryngeal inlet in order to provide a straight line for light to pass from the larynx to the operator's eye. A number of different designs are available to achieve this. The handle contains batteries to power the light source. the bulb is situated at the tip of the blade with an electrical connection activated when the blade is opened. the bulb is in the handle and the light is transmitted along the blade in a glass fibre bundle (acrylic fibre in disposable blades). Handles are available in **standard**, **paediatric**, **stubby** (to avoid large breasts) and angle-adjustable versions. Laryngoscopy is almost always carried out using the left hand, with the right available to manipulate the endotracheal tube. The very rare exception is in patients with right-sided facial deformities in whom a better view may be obtained using a (confusingly named) left-handed blade. This is used to sweep the tongue to the right thus allowing a view in the left side of the mouth

Advantages:

- Simple and widely available.
- Wide range of blades and handles.
- Success rate for intubation over 99% with experienced operators.

Disadvantages

- Direct laryngoscopy is a skilled technique
- It is difficult to teach because trainee and trainer cannot simultaneously see the same view
- Direct line of sight to the glottis is impossible to achieve in some patients

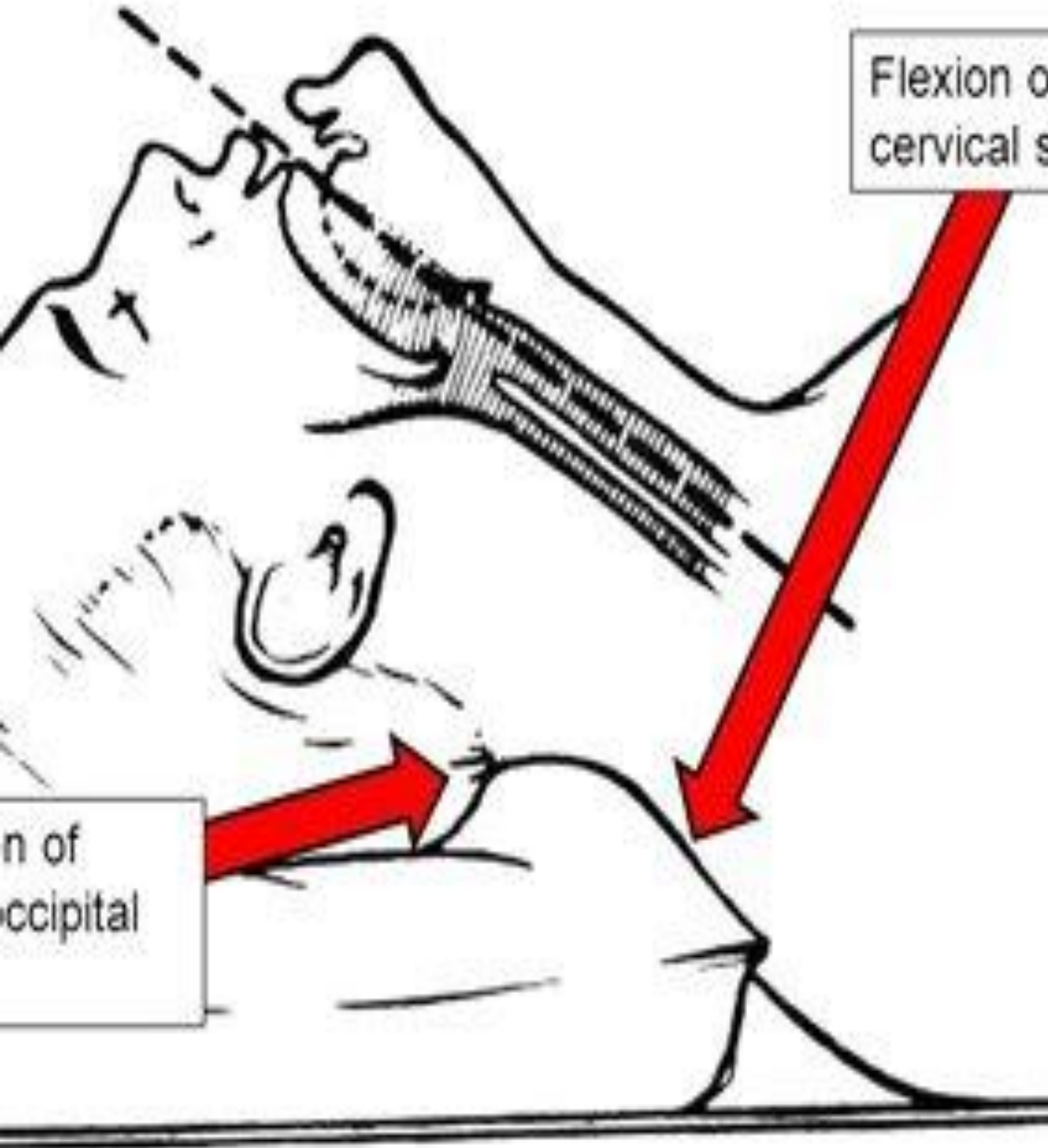
Complications:

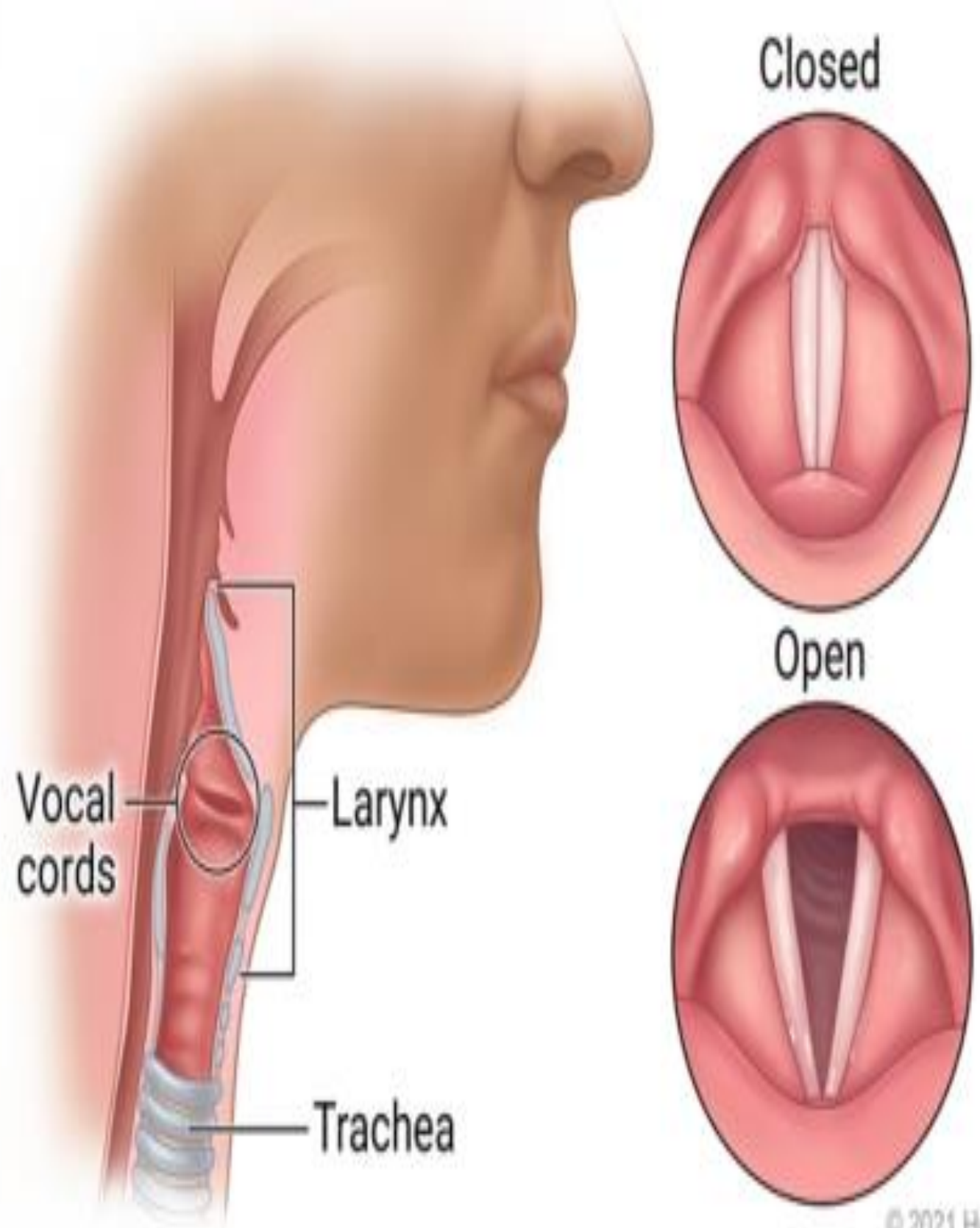
1. Equipment failure
2. Bleeding /hematoma
3. Complete airway obstruction
4. Poor view /fogging
5. Coughing
6. Esophageal intubation
7. Failure to pass ETT

Technique for curved blade laryngoscopy:

1. • Position patient with the neck flexed and the atlanto-occipital joint extended. In an ideal position, the external auditory meatus should be in the same horizontal plane as the sternal notch.
2. • Insert blade along the right side of the mouth until it reaches the back of the tongue.
3. • Sweep the tongue to the left to provide a sight line down the center of the mouth.
4. • Advance the laryngoscope under direct vision.
5. • Lift the epiglottis with the force applied in line with the axis of the laryngoscope handle. Avoid excessive leverage of the handle backwards as this may worsen the view and break the patient's teeth.
6. • Visualize the glottis and advance the tube in from the right side of the mouth so as to maintain your view.

Sniffing Position





Indirect laryngoscopy





**THANK
YOU**

