

Airway management & Endotrachial intubation

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Defeniation

- **Airway management** is the process of ensuring that:
- there is an open pathway between a patient's lungs and the outside world,
- the lungs are safe from aspiration.

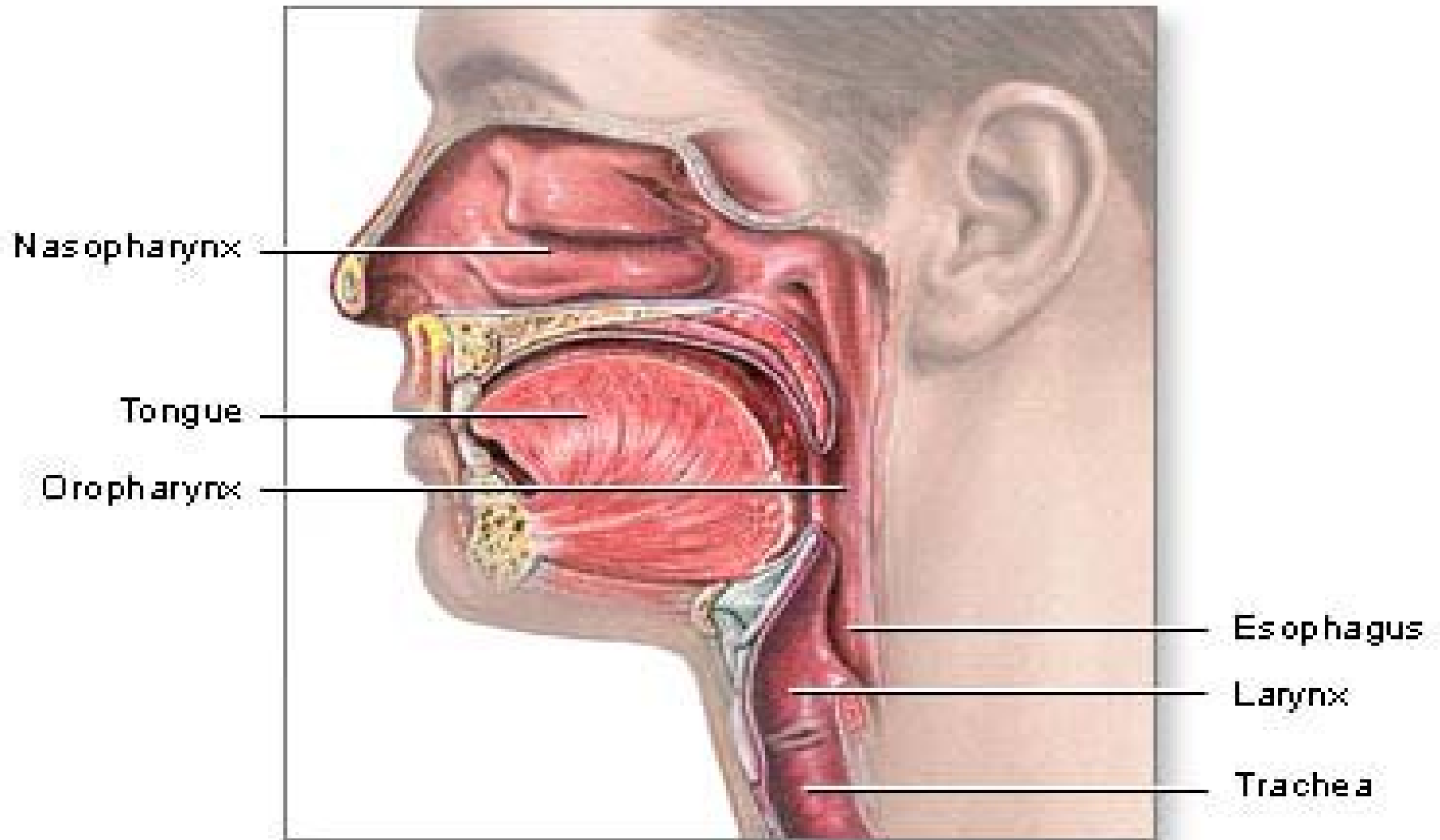
Indications for airway protection

- Decreased level of consciousness
- GCS <9 .
- Cerebral injury .
- Anaesthesia .
- Medical problems .

Potential causes of upper airway obstruction

- Tongue.
- Dentures
- Food stuffs
- Vomit
- Blood
- secretions

Anatomy



1. Epiglottis

5. Vocal Cords

4. Glottis

3. Esophagus

Air way assessment

Patient History

- - Prior History of Difficult Intubation
- - Tumor of Head and Neck
- - Arthritis
- - Pregnancy
- - Trauma - C Spine, Full Stomach

Physical Examination

- - Tongue versus Pharyngeal Size
- - Atlanto - Occipital Joint Extension
- Cervical Spine Mobility (normal 35 degrees)
- - Anterior Mandibular Space
- Thyromental distance - normal is 6 cm
- - Dental Examination (Loose Teeth, Prostheses)



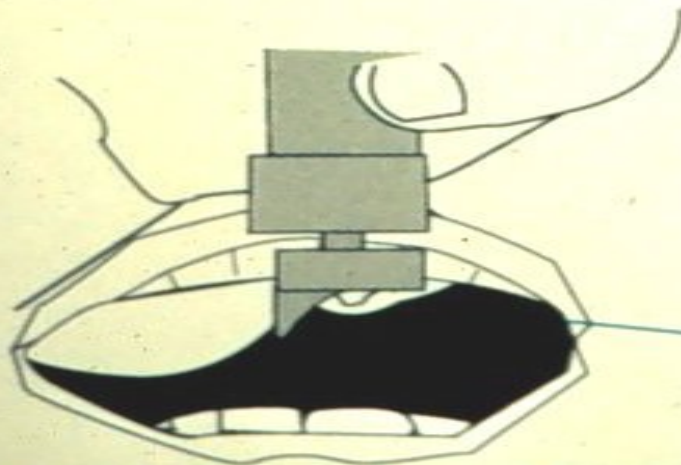
Checking for an Anterior Larynx



Distance from chin's inner rim to hyoid bone should = 3 fingers breadth in adult. If you only fit 2 fingers, expect anterior airway.



From side, patients with less than 2 finger breadth often appear to have hypoplastic mandibles (receding chins).



ARYTENOIDS

Anterior larynx: larynx appears anterior to your field of view. Here you see the arytenoids. Often you see no landmarks, making intubation difficult.

Checking for Mobility of Adult Jaw

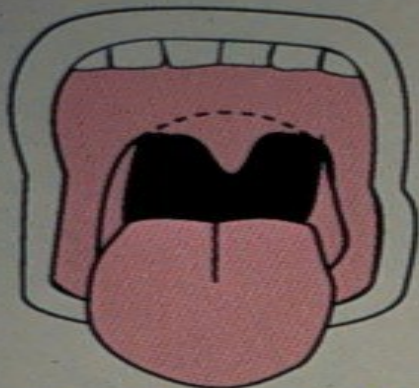


Can she open her mouth wide enough for 3 fingers? If not, you won't have room to insert your laryngoscope blade and visualize the larynx. Trauma, arthritis, tumor, or infection can limit mouth opening.

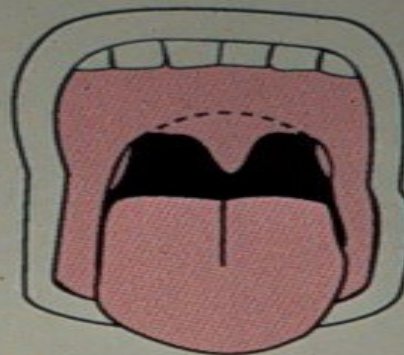
Have her place lower teeth outside upper teeth to check for ability of jaw to glide forward. This ability is often lost in patient with arthritis, before ability to open the mouth.



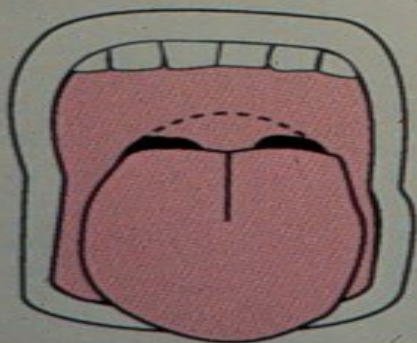
Mallampati Signs as Indicators of Difficult Intubation.



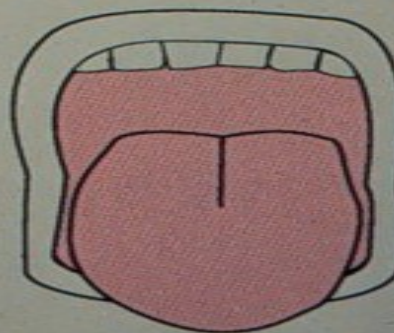
**Class I: soft palate, uvula,
fauces, pillars visible**
No difficulty



**Class II: soft palate,
uvula, fauces visible**
No difficulty



**Class III: soft palate, base
of uvula visible**
Moderate difficulty



**Class IV: hard palate
only visible**
Severe difficulty

Management of airway

- Manual stabilization
- Head tilt ,chin left beware of C-spine injury
- Jaw thrust maneuver
- Instrumental
- Oro-pharyngial air way
- Naso-pharyngial air way
- L.M.A
- E.T.T
- Surgical air way (cricothyredetomy , treachestomy)

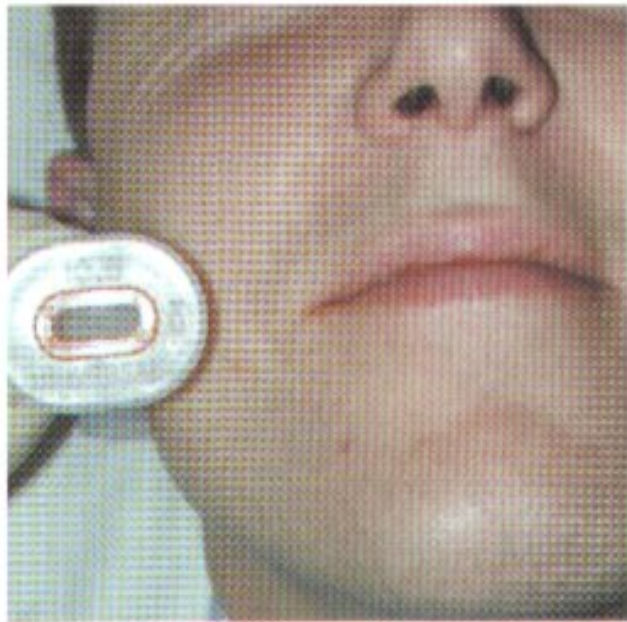


Figure 5.3 Sizing of an oropharyngeal airway

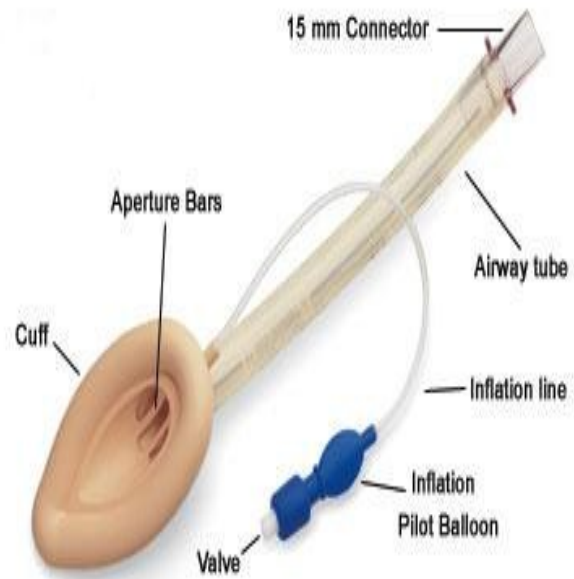


Figure 5.2 Nasopharyngeal and oropharyngeal air

Equipment for endotracheal intubation

- O₂ source .
- Suction apparatus .
- 2 working laryngoscopes with different plates.
- Appropriate Endo- trachial tube (size & type).
- Styles (guide), Gume elastic buggy (for difficult int.)
- Magil forceps .
- Stethoscope .
- Fixing material (tape , gauze strip)
- Syringe (to inflate the cuff).
- Oropharyngeal air way.

S.A.L.T

Technique for Endo- tracheal intubation

- **Conceder every unconscious patient having cervical spine injury until proven otherwise.**
- Patient's Head At The Level Of your Xiphoid.
- Sniffing Position.
- Laryngoscope In **LEFT** Hand .
- Open Mouth.
- Hold Tracheal Tube In Right Hand Like A Pencil.

How to confirm that you are in the right place ?????

- Visual :tube inside vocal cords.
- Capnography (3-6 breathing circule)
- Monitor (pulse oxymetry ,).
- Chest movement .
- Auscultation : where and why .
- Colure of the patient .

Complications (during intubation) .

- Dental And Oral Soft tissue Trauma
- Aspiration
- Esophageal intubation
- Unilateral intubation
- Hypertension And Tachycardia
- Cardiac Dysrhythmias And Myocardial Ischemia
- Surgical emphysema

Complications (intubated patient) .

- Tracheal Tube Obstruction .
- Barotrauma
- Accidental Disconnect
- Accidental Extubation
- Tracheal Mucosa Ischemia



Oropharyngeal Airway/ Guedel

- How to put it in:

Depress tongue

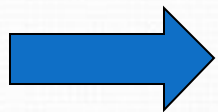
Slip over spatula with curve caudal direction

Place bite block between teeth

- **NO TWISTING MOVEMENT**

Oropharyngeal Airway/ Guedel

- Indications:



To open and maintain an airway in a patient with a depressed level of consciousness

- Contra indications:

Patient won't accept it

LOC (level of consciousness)

Risk of vomiting & aspiration

Nasopharyngeal Airway

- For maintaining airway in “more awake” patients
 - Sits in nasopharynx and opens airway
 - Does NOT protect against aspiration

Nasopharyngeal Airway

- How to size it?

Estimate by comparing to patients little
finger

- How to insert it?

Lubricate

Gently push posteriorly towards ear on same side

Fix with a safety pin

Nasopharyngeal Airway

- Contra-indications:

Base of skull fracture

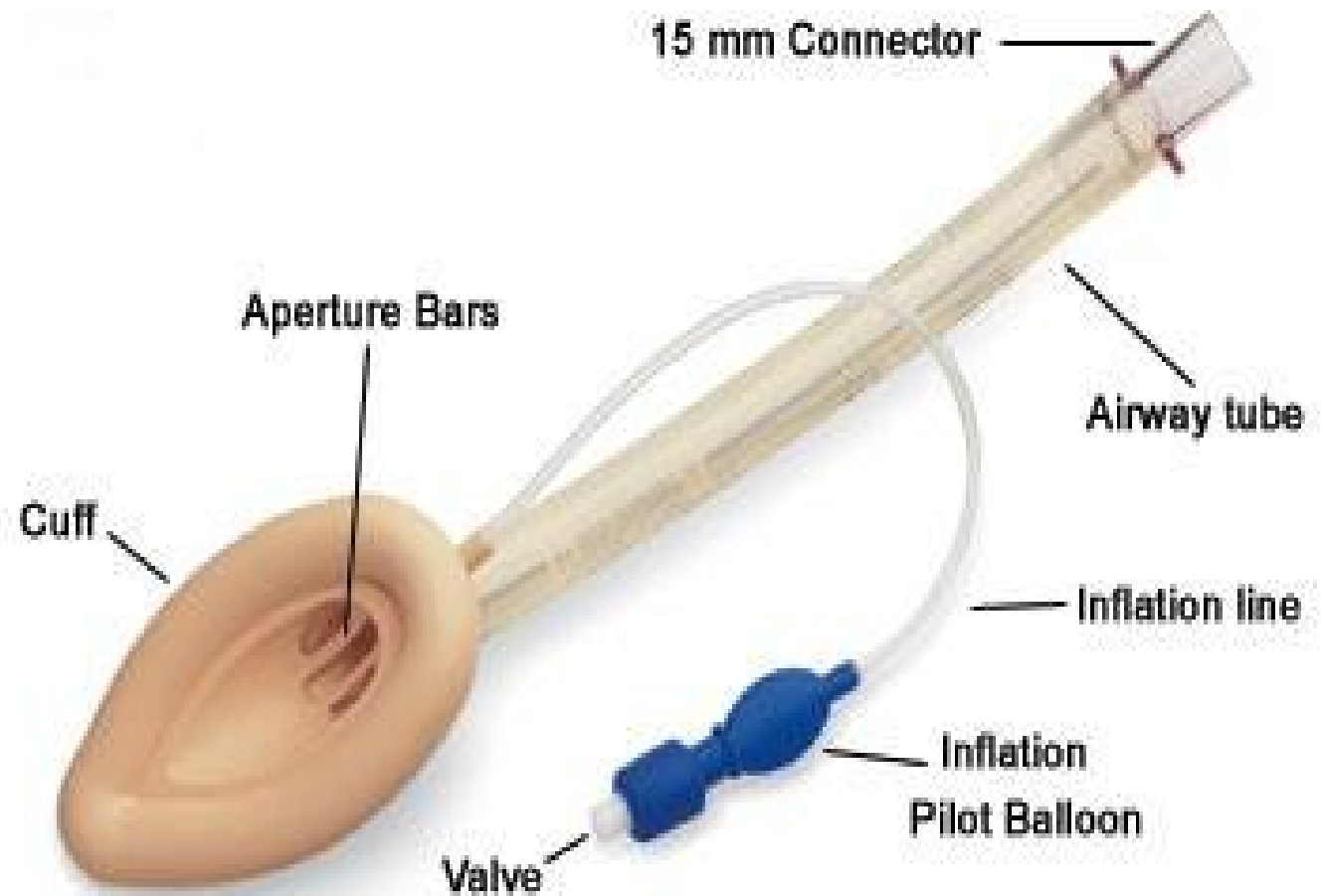
Serious midline facial fractures

When definitive airway needed

LMA

- Advanced airway
- Useful alternative for “difficult intubation”
 - Easy to use
- Sits on larynx - Protects lungs?

LMA



LMA

- Have a range in unit
 - Re-use ?20 times
 - Part of kit
- Formula for Children:
The combined widths of
the patient's index,
middle and ring fingers

SIZE	PATIENT
1	<5 kg
1.5	5-10kg
2	10-20kg
2.5	20-30kg
3	30-50kg
4	50-70kg
5	70-100kg
6	>100kg

LMA in Emergency Medicine

- Indications:

Unconscious or anaesthetized patients

AHA Guidelines for adults:
BLS: alternative to BMV

ACLS: Optional/alternative to BMV, failed ETT

- Aspiration?
- Paediatrics?

LMA in Emergency Medicine

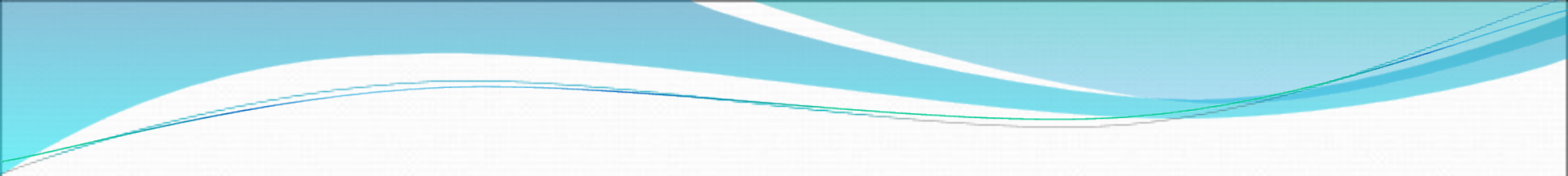
- Aspiration?

Less than with BMV

Supraglottic device

Aspirated from CPR or post LMA?

Cricoid pressure during CPR



Questions