



ANESTHESIA OSCE

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OSCE : 5 stations

- 1- airway management
 - 2- regional anaesthesia
 - 3- 2 vascular access
 - 4- pre operative assessment
- each station: 5 minutes

Reference: log book (main source), 432 team, 433 revision.



(INTRODUCE YOURSELF + You have to explain the steps while you're working.)



1. Endotracheal Tube (ETT) Intubation - Rapid sequence induction

Steps:	<ol style="list-style-type: none">1. Assume ventilation is in progress.2. Attach the patients to the monitors (ECG monitor, BP monitor, pulse oximeter)3. Assemble and checks all necessary equipment's4. Choose appropriate size ET tube5. Choose appropriate type (straight or curved) and size laryngoscope blade6. Check light ,Tests ET tube cuff integrity7. Insert the stylet and lubricates the ET tube8. Place head in neutral or sniffing position9. Clear airway if needed10. Insert laryngoscope blade11. Hold laryngoscope in left hand.12. Insert laryngoscope in right side of mouth, moving tongue to the left.13. Visualize epiglottis, then vocal cords.14. Insert ET tube to proper length for gender15. Inflate ET tube cuff to achieve proper seal; remove syringe16. Insert bite block17. Produce noticeable chest rise; auscultates breath sounds18. Confirm correct positioning of ET tube by colorimetric ETCO2 " Capnograph"19. Secure ET tube in place (commercial device or tape)20. Perform correct ventilation rate for respiratory arrest (1 breath every 5 to 6 seconds)21. Deliver each ventilation over 1 second22. Demonstrate complete release of bag between ventilations
Video:	https://www.youtube.com/watch?v=10enx5T-2_8
Qs and notes :	<ol style="list-style-type: none">1. How to confirm that the endotracheal tube is in the right place?<ol style="list-style-type: none">A. Visualizing the tube through vocal cords.B. X-rayC. Chest movements after connecting the tube to the circuit.D. 5 point auscultation: by auscultating the apices, bases of the lungs and the stomach (starting with the stomach first)2. Sizes: Male: 8.0-9.0 mm - Female: 7.0-8.0 mm - Pediatric: (age/4) + 4 mm3. Indications:<ul style="list-style-type: none">- To ensure airway patency in an unconscious patient.- To protect the lungs from the aspiration of gastric contents.- To provide positive-pressure ventilation, in the setting of respiratory failure or of general anesthesia.4. Contraindications: Any situation where the pharynx is obstructed (pharyngeal foreign body, massive



- swelling of the pharynx), or if there is serious maxillofacial trauma.
5. **Which type of laryngoscope you use for pediatric?** Straight type
 6. **What length of the ETT insertion you should stop?** Typically 23 cm for men, 21 cm for women

7. Instruments that ease the process of intubation:

1. Glidescope:

Indications	Contraindications
Patients with poor direct laryngoscopic view. Obese patients. Challenging airways (inability to view the vocal cords on direct view) due to anatomic variation or distortion. Small mouth opening (< 3 cm) - Limited neck extension. Excessive secretions in the airway. (The GlideScope has an anti-fogging heat lamp to enable views in the presence of excess/bloody secretions)	Absolute Contraindications: None. Relative Contraindications: may be overlooked in the true emergency situation because it is more important to resuscitate. Limitations to mouth opening (< 3 cm) Major trauma/fractures to the face (maxilla, mandible) or neck. Neck abscess (retropharyngeal) can cause difficulty with tracheal intubation. Neoplasm of the upper airway that may distort airway anatomy. Nasal intubation required for surgical procedure (e.g., oral surgery)

2. **Lighted Stylet:** Endotracheal stylet with a light source at the tip. Very helpful in intubation a airways. The light can be seen from outside the patient helping guide the ET
3. **Bougie:** Flexible device around 60 cm long.
Used in Bougie-assisted Endotracheal Intubation.

Fiberoptic laryngoscope intubation:

It can be used when the patient's neck cannot be manipulated, as when the cervical spine is not stable.
 It can also be used when it is not possible to visualize the vocal cords because a straight-line view cannot be established from the mouth to the larynx.
 Fiberoptic intubation can be performed either awake or under general anesthesia and it can be performed either as the initial management of a patient known to have a difficult airway, or as a backup technique after direct laryngoscopy has been unsuccessful.
 It is usually done if there was any thyroid enlargement.

Rapid sequence induction:

- Indications:**
- 1) When the patient has "**full stomach**", i.e. predisposed to regurgitation/aspiration.
 - 2) Decrease level of consciousness (LOC).
 - 3) Trauma.
 - 4) Meal within 6 hours.
 - 5) Sphincter incompetence suspected (GERD, hiatus hernia, nasogastric tube).
 - 6) Increased abdominal pressure (pregnancy, obesity, bowel obstruction, acute abdomen).
 - 7) Used in short procedures as well.

- Steps :**
- 1) **Apply ECG monitor, BP monitor, pulse oximeter**
 - 2) **Secure intravenous access**
 - 3) Test ET tube and all equipment necessary for intubation
 - 4) **Preoxygenate with 100% oxygen** by non-rebreather mask for at least 3 full, deep



breaths. Preoxygenate four minutes if situation allows.

- 5) Administer propofol OR etomidate.
- 6) Apply cricoid pressure and hold until patient has been intubated, balloon of ETT has been inflated, position of tube tip has been assured, and ETT has been secured in place. (Assistant performs Sellick's maneuver: **pressure on cricoid cartilage to compress esophagus between cartilage and C6.**)
- 7) Administer **succinylcholine (muscle relaxant)** 1 mg/kg IVP (100 mg for average 70kg patient) and wait for paralysis to occur.
- 8) Intubate.
- 9) When successfully intubated, confirm placement by
 - a. **Bilateral breath sounds, and**
 - b. **Chest wall rise, and**
 - c. **Absence of gastric sounds, and**
 - d. **End tidal CO2 measurement, and**
- 10) fixed
(no bag-mask ventilation in between induction and intubation.)





2. Central Venous line - Internal Jugular

Sterile procedure

Common Sites include: **Femoral vein, Internal jugular vein, Subclavian vein**

Internal Jugular Vein:

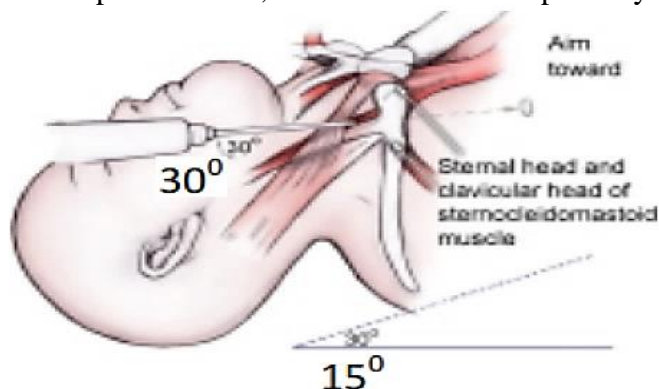
Position: in supine, at least 15 degree head down position, head turned away.

Before you start:

- Sterile procedure (drape, mask, gloves)
- Take **CONSENT**.
- Mention before the procedure that you want to **put patient on monitors**
- **Secure intravenous access**
- **mention if the patient is awake I'll put lidocaine local anesthesia.**
- mention: there should be someone with me to watching the monitors and tell me if there's any arrhythmia
- stand behind the patient's head (not to the right)

Steps :

- Patient In supine, at least 15 degree head down position, head turned away
1. Cleanse skin, use lidocaine if patient awake.
 2. Introduce needle attached to syringe in the center of triangle formed by **two lower heads of sternomastoid muscle and clavicle**.
 3. Direct needle caudally, parallel to sagittal plane, at 30 degree posterior angle
Or the easy way: 45 degree towards the nipple.
 4. If vein not entered, withdraw needle and redirect it 5 to 10 degrees laterally.
 5. Advance needle while withdrawing plunger of syringe.
 6. When blood appears and vein entered, remove syringe leave the needle.
 7. Insert the guide wire, until detecting arrhythmia on ECG. Then take out 1 or 2 cm.
 8. Remove the needle.
 9. Dilate of vein with the dilator. (3 times up and down)
 10. Insert catheter to predetermined depth (**15 cm**).
 11. Remove the guide wire and connect catheter to IV tubing
 12. Cover puncture site, and affix catheter in place by **suturing**. (not a tape)



Video: <https://www.youtube.com/watch?v=hmEMUCaU1y0>

Qs and notes :

1. **What we called Catheter over wire?** Seldinger
2. **What is the location of Internal Jugular Vein?** It descends in the carotid sheath with the internal carotid artery. usually between the heads of the sternocleidomastoid muscle. Other way is that you can locate the carotid a. by



pulse sensation then 1-2 cm lateral to it you can locate the jugular v.

What are the Complications of central line? Pneumothorax, Hemothorax, Chylothorax, Contamination and infection, Hypersensitivity reactions, Sepsis, Speed shock, Emboli (blood clot, air, and catheter), Thrombus embolism, Dysrhythmia, Hematoma, Cardiac tamponade, Trauma to nearby tissue.

3. What are Signs and symptoms of Air Embolism?

Hypotension, Cyanosis, Weak and rapid pulse, Loss of consciousness

4. What is the management of Air Embolism?

Close the tubing

Turn patient on left side with head down i.e. Trendelenburg/left lateral decubitus,

Consider Check tubing for leaks

Administer 100% Oxygen

Notify medical direction

5. What monitor you would use?

ECG to see if there Arrhythmia, pulse oximetry, BP

6. If you can't go to the jugular vein what vein you would use? Femoral vein (dirtier).

7. what's the drugs you can give through central vein catheter? Heparin or saline lock.

8. What are the Contraindications of central line?

Ipsilateral carotid endarterectomy

Injury, or infection at the site of insertion.

Anticoagulation

Renal cell tumor extended to RT ventricle

9. What are the Indications of central line?

Available when peripheral vessels collapse

Access to central pressure measurements

In-hospital procedure

Safer vasopressor administration

(from our team lecture 11) Monitoring CVP for fluid management (Hypovolemia, shock), Infusion of drugs, Infusion of TPN, Aspiration of air embolism, Insertion of pacemaker, Giving venous access in pt with poor peripheral vein, Access for insertion of pulmonary artery catheter, Usually we choose the right internal jugular vein.

10. What is the most common complication of left jugular vein line?

Thoracic duct (which present only on the left side of the body) injury.

(chylothorax)

11. How to rule out the catheter not in artery? By ABG \ X-ray

Or before inserting the catheter by using the syringe aspirate and look for:

Venous blood: Dark, slow, no pulse.

Arterial blood: lighter, faster, with pulse.

i.e. by physiological features of venous vs. arterial blood by naked eye.

12. How to know you are in? by aspirating and visualizing blood.

13. How to know you are in atrium? Arrhythmia

14. What is the most common complication of subclavian use? risk of thoracic injury (pneumothorax)





3. Peripheral IV Insertion

Maintain aseptic technique	
Before you start:	<p>Consent say that if the cannula was large(18 to 20 gauge), then you need to anesthetize the patient you have to explain the steps while you're working.</p>
Steps :	<ol style="list-style-type: none"> 1. Apply tourniquet proximally. 2. Locate vein and cleanse the overlying skin with alcohol or povidoneiodine. 3. Anesthetize the skin if a large bore cannula is to be inserted in an awake patient. 4. Hold vein in place by applying pressure on vein distal to the point of entry. 5. Puncture the skin with bevel of needle upward about 1/2 to 1 centimeter from the vein and enter the vein either from the side or from above. 6. Note blood return and advance the catheter either over or through the needle, depending on which type of catheter-needle device is employed. 7. Remove the tourniquet.(don't forget) 8. Withdraw and remove the needle and attach the intravenous tubing. 9. Cover the puncture site with povidone-iodine ointment and a sterile dressing and tape in place, excluding the point of connection of the intravenous tubing 10. wash hands, thank the patient, cover the patient, ask if the patient have any concerns or questions, document procedure put wasted material in the container
Video:	https://www.youtube.com/watch?v=Z1NtaV9Ct0w
Qs:	<ol style="list-style-type: none"> 1. What are the Common sites? Hands and arms, Antecubital fossa (AC space) 2. What are the Alternate sites? Long saphenous veins External jugular veins why we don't prefer to use the Alternate sites? because Embolism and infection rates higher 3. What are the indications of Peripheral IV line Insertion? <ul style="list-style-type: none"> • Fluid maintenance. (dehydration). • Nutritional supplementation. • Administration of medication. • Blood transfusions. 4. What are the Complications of Peripheral IV line Insertion? Pain and irritation, Infiltration and extravasation, Phlebitis, Thrombosis and thrombophlebitis, Hematoma formation, Venous spasm, Vessel collapse, Cellulitis, Nerve, tendon, ligament, and limb damage 5. Avoid sites that have injury or disease: Trauma – Dialysis fistula – History of mastectomy 6. What are the Signs & Symptoms of Infiltration? Cool skin around IV site, swelling at IV site, With or without pain, Sluggish or absent flow, Infusion flows when pressure is applied to vein above tip of cannula, no backflow of blood into IV tubing when clamp is fully opened and solution



container is lowered below IV site

7. What are the Management of Infiltration?

Discontinue IV infusion

Remove needle or catheter

Apply a pressure dressing to the site

Choose new site

Initiate IV therapy with new equipment

Document

8. how to differentiate between hematoma and extravasation and infiltration, and the management for each one?

a. A hematoma:

occurs when there is leakage of blood from the vessel into the surrounding soft tissue. A localized mass of blood outside of the vessel, usually creating a hard, painful lump.

Management: A hematoma can be controlled With apply direct pressure and elevate extremity until bleeding stops

b. Infiltration:

is the inadvertent administration of a non vesicant fluid or medication from its intended vascular pathway (vein) into the surrounding tissue

Signs and symptoms: Swelling, discomfort, burning, and/or tightness, Cool skin and blanching, Decreased or stopped flow rate

Management

Discontinue IV infusion

Remove needle or catheter

Apply a pressure dressing to the site

Choose new site

Initiate IV therapy with new equipment

Document

c. Extravasation:

is the inadvertent administration of a vesicant fluid or solution from its intended vascular pathway (vein) into the surrounding tissue

Signs and symptoms: Swelling, discomfort, burning, Cool skin, Blistering and/or skin sloughing

Management

Discontinue IV infusion

Remove needle or catheter

Administer the appropriate antidote according to your facility's protocol.

Elevate the extremity.

Follow the manufacturer's recommendations to apply either cold or warm compresses to the affected area.

Document





4. Regional Anaesthesia (Spinal Anaesthesia)

Sterilization (gloves, cap, mask, drape)

single hyperbaric Injection of small amounts (2-3 ml) of local anaesthetics into the CSF. at the level below (L2), where the spinal cord ends.
 anaesthesia of the lower body part below the umbilicus is achieved

Before you start:	<ul style="list-style-type: none"> • Taking Consent from the patient • You have to mention monitoring (ECG, Pulse oximetry) and IV fluids • when insert local anesthesia, tell the patient you are now going to insert the local anesthetic needle • prepare the equipment and check it's integrity (talk through the procedure)
Position:	<ol style="list-style-type: none"> 1. Sitting (c-shaped position : raising his legs and flexing his back to increase the interlaminar space) 2. Lateral decobitus
Steps:	<ol style="list-style-type: none"> 1- Taking Consent from the patient 2- Assessment (indications and contraindications) 3- Insert iv fluids 4- Mask, cap, gown and gloves 5- Prepare the back with antiseptic 6- Place a sterile Drape Over The Area 7- Identify the anatomical landmarks (Identify the top of the iliac crest. Tuffier's line generally corresponds with the 4th lumbar vertebrae) 8- Inject local anaesthetic into the skin and deeper tissue (small needle for skin, large for the deeper tissues) 9- Insert the large introducer needle into the selected spinal interspace 10- Direct the spinal needle through the introducer and into the subarachnoid space 11- Free flow of CSF confirms proper placement 12- Aspirate for CSF if clear inject the proper anaesthetic 13- Remove the needle, introducer and drape sheet 14- Have the patient lie down then check the patient blood pressure
Video:	https://www.youtube.com/watch?v=QKyjTRvyMUs
Qs:	<ol style="list-style-type: none"> 1- What is "Tuffier's" line ? is a line drawn across the iliac crest that crosses the body of L4 or L4-L5 interspace. This is a helpful landmark for the placement of spinal or epidural anesthetics. 2- what type of consent you will take? Written 3- why we ask patient to raising his legs and flexing his back in Sitting position? to increase the interlaminar space 4- When aspirate and see blood what will you do? go to another interspace. 5- What is the complications of Spinal Anaesthesia? Hypotension, Back pain (most common), Spinal head ache Epidural hematoma, Epidural abscess, Meningitis using unsterile technique or in immunocompromised patients , Cauda equina injected into the nerve itself, Neurological deficit, TNS transient neurologic symptoms , Bradycardia 6- How do you treat hypotension?



- Primary Treatment: Increase the cardiac preload Large IV fluid bolus within 30 minutes prior to spinal placement, minimum 1 liter of crystalloids
 - Secondary Treatment when the primary failed: Pharmacologic vasopressor: Ephedrine have alpha + beta effects used in bradycardiac pt. Phenylephrine have only alpha effects used in tachycardiac pt.
- 7- How do you treat Spinal headache?**
Bed rest, Fluids, Caffeine to cause vasoconstriction of brain vessels, Blood patch is the definitive treatment.
- 8- What is the monitor you would use?**
Blood pressure to rule out the hypotension, ECG, Pulse oximetry
- 9- What is the complications of Spinal Anaesthesia if it was intravascular?**
LAST
- 10- How can you manage LAST? IV fluids lipid emulsion + Ephedrine**
- 11- How we confirmatory for Spinal Anaesthesia and epidural Anaesthesia?**
Spinal Anaesthesia: CSF flow
epidural Anaesthesia: Loss of resistance
- 12- What is the type of :**
spinal needle: **Pencil point needle**(27G), Quincke needle (now it is not used)
epidural needle: **Tuohy needle**(size = 16 or 18)
- 13- When will you stop advancing your needle - what do you do before?**
administer IV fluid and prepare ephedrine
- 14- What is the Indications for Spinal Anaesthesia ?**
Any operations below the umbilicus and surgery duration 2-3 hrs: C/S (most commonly because it is fast and heavier). hernia repairs ,gynaecological, urological operation, orthopedics. any operation on the perineum or genitalia
- 15- what is the Contraindications for Spinal Anaesthesia ?**
- Absolute:
 1. Refusal
 2. Infection seen in immobilized patients who develop bed sores
 3. Coagulopathy & anticoagulated patient aspirin use is not a contraindication for spinal anesthesia according to guidelines
 4. Severe hypovolemia. Because the drug cause hypotension and that will worsen the situation.
 5. Increased intracranial pressure. To not cause brain herniation.
 6. Severe aortic or mitral stenosis. Not hemodynamically stable.
 - Relative: Use your best judgment
- 16- Midline Approach: Skin> Subcutaneous tissue> Supraspinous ligament> Interspinous ligament> Ligamentum flavum> Epidural space> Dura mater> Arachnoid mater**
- 17- Paramedian or Lateral Approach:** Same as midline excluding supraspinous & interspinous ligaments
- 18- Lateral approach used in thoracic epidural anesthesia** or when there is ossifications that difficult midline approach.
- 19- How to prevent hypotension following regional anesthesia? Preload pt. If pregnant? tilt the bed.**



- 20- **Pregnant and received spinal anesthesia and found to have hypotension?**
Change position, fluid, vasopressor.
- 21- **expected events if Level blocked:** T10 = hypotension , T1= bradycardia.



5. Preoperative Airway Assessment

<p>1.History</p>	<p>Has the patient had a previous difficult intubation? (i.e. Fiberoptic) Does the patient have an unstable c-spine or previous spinal fusion? Does the patient have a history of obstructive sleep apnea (OSA) with Continuous Positive Airway Pressure (CPAP) use? Does the patient have a history of burns to the head or neck? Does patient have severe rheumatoid arthritis? Has the patient had previous airway surgery or a previous tracheostomy? (General and anesthesia specific questions) <ul style="list-style-type: none"> ☉ Take very seriously history of prior difficult intubation. Difficulties: <ul style="list-style-type: none"> • Short immobile neck • Full set of teeth, buck teeth • High arch palate • Poor mouth opening – less than three fingers gap between upper and lower teeth • Receding mandible (may be hidden by a beard) • Inability to sublux the jaw (forward protrusion of the lower incisors beyond the upper incisors) </p>
<p>2.Symptoms</p>	<p>Upper airway obstruction may be found in patients with stridor, dysphagia and hoarseness.</p>
<p>3. Clinical Examination</p>	<p>LEMON Assessment Method L- Look: Ask the patient to flex and extend his neck and to open and close his mouth looking for short immobile neck. Some patients cannot be placed in the "sniffing position" secondary to neck trauma, cervical collar, musculoskeletal disorders like kyphosis and rheumatoid arthritis. A neck circumference of greater than 45cm in an obese patient with a BMI of greater than 40 kg/m² is likely to be a difficult intubation. Women with large pendulous breasts add a degree of difficulty to an intubation because the provider may not be able to position the blade handle appropriately toward the chest. Inspect the mouth and see if there are any obvious abnormalities, buckteeth, high arch palate, receding mandible (may be hidden by a beard), Inability to sublux the jaw (forward protrusion of the lower incisors beyond the upper incisors).</p>



E- Evaluate:

a. Thyromental distance:

- It is the distance from the thyroid cartilage to the mental prominence when the neck is extended fully. If the distance is more than **7 cm** (around 3 fingerbreadths), problems should not occur with intubation.

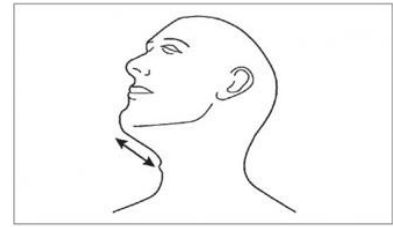


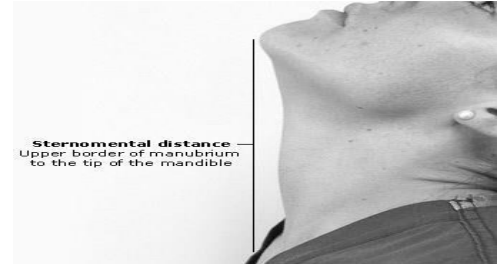
Figure 1.2 Line shows the thyromental distance from the thyroid cartilage to the tip of the chin.

- A distance of less than 6 cm suggests laryngoscopy will be impossible and for distances of 6-6.5 cm, laryngoscopy is considered difficult, but possible.

b. Sternomental distance:

- This test is claimed to predict up to 90% of difficult intubations.

- The distance from the upper border of the manubrium sterni to the tip of the chin, with the mouth closed and the head fully extended, is measured.



- A distance of less than **12.5 cm** indicates a difficult intubation.

c. Atlanto-occipital joint:

- Presence of a gap between the Occiput and C1 is essential.
- It should be (15-20 degrees).

d. C-Spine:

- **Flexion and extension of the head and neck** must be more than **90 degree**.

e. Intradental gap(mouth opening):

- Normal interdental gap **is 3 fingers**.
- Poor mouth opening: less than three fingers gap between upper and lower teeth.

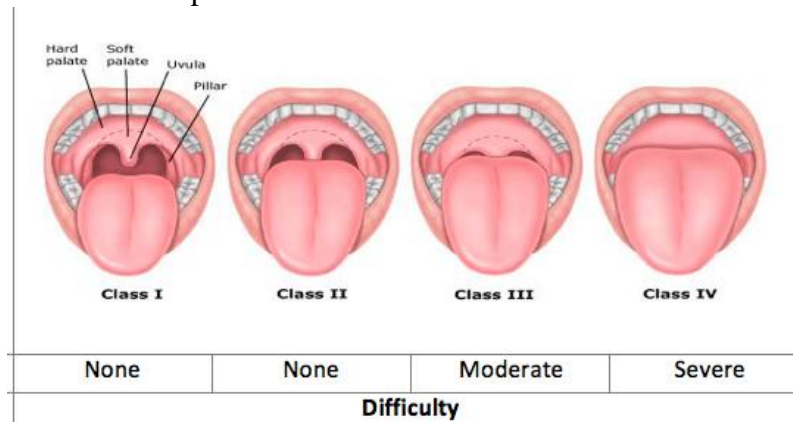
M- Mallampatti score:

Grade 1: faucial pillars, soft palate and uvula visible

Grade 2: faucial pillars, soft palate visible, but uvula masked by the base of the tongue

Grade 3: soft palate and hard palate only visible

Grade 4: hard palate



O- Obstruction:

Tumors, Stridor and Congenital Defects (Down's, Goiter, Pierre-Robin Syndrome)

N- Neck mobility:

	<p>Can the patient move their jaw forward? Can the patient fully bend / extend the head and neck? Is the patient in a c-spine collar?</p>
<p>Qs and notes :</p>	<p>1) Easy intubation : sternomental > 12cm, interadental gap > 5 cm, neck movement > 90 degree thyromental > 6.5 cm.</p> <p>2) Definition of preoperative period: It is the time from the decision to have surgery until admitted into the OR theatre.</p> <p>3) Indications of preoperative evaluation: Assess the anesthetic risks in relation to the proposed surgery. To decide the anesthetic technique (general, regional, or combination). To plan the postoperative care including any analgesic regimens.</p> <p>4) Evaluation of a patient in the pre-operative period:</p> <p>I. History taking:</p> <ol style="list-style-type: none"> 1. Introduction: Introduce yourself, Ask for permission to take a history and perform a physical examination. 2. Personal history 3. Present illness 4. Past medical. 5. Past surgical: Ask about any previous operations and post-op. complications. Enquire about previous types of anaesthesia received (local, general) and enquire about any anesthetic complications (malignant hyperthermia, Prolonged apnea *IMP*). 6. Medications and Allergies (Corticosteroids- adrenal suppression -hypotension) 7. Dental 8. Social e.g alcohol , smoking. 9. Complete review of the systems (just mention if there is no time) <p>II. Examination: Initially examine the patient generally then move to airway examination.</p> <p>1. General examination:</p> <ul style="list-style-type: none"> - BMI: Measure the patient's height and weight and calculate his body mass index. Ideal BMI is between 18.5 and 24.9. - Document the patient's blood pressure, oxygen saturation on air, pulse, respiratory rate and temperature. (Vital signs) - Perform a brief chest (don't forget the back), abdomen, cardiovascular and neurological examination. <p>2. Airway: (LEMON)</p>



III. ASA classification (Very important)

ASA Class	Patient description – Classification criteria
I	Normal, <i>healthy</i> patient without systemic disease
II	Patient with <i>mild</i> systemic disease
III	Patient with <i>severe</i> systemic disease, which limits her/his activity but is not life-threatening
IV	Patient with a <i>severe</i> systemic disease that is constantly life-threatening
V	<i>Moribund</i> patient, who is not expected to live beyond 24 hours with or without operation
VI	<i>Brain-dead</i> patient whose organs may be harvested for transplant
E	Emergency patient – This category is re-defined, according to the clinical condition, in Grades I – IV (e. g., ASA III – E)

IV. Investigations:

- Blood: Hemoglobin concentration, Coagulation profile, Screening for sickle cell disease, Urea, Creatinine, Electrolytes, Glucose.
- Chest X-ray
- ECG

V. Consent: It should be a written one and explains the anesthetic options for a given surgical procedure.

VI. Premedication: If your patient need any premeditations like anxiolytics mention them.

The 6 As of premedication :

1. Anxiolysis
2. Amnesia
3. Anti-emetic
4. Antacid
5. Anti-autonomic
6. Analgesic

VII. Preoperative starvation: Ideal NPO: 6-8 hrs.

From Solid Food = 6-8 hours.

From Clear Fluid = 2 hours.

From Breast Milk for Neonates = 4 hours.

From Formula Milk for Neonates = 6 hours.



6. Inserting an Oral Airway

1. SELECT THE PROPER SIZE

Measure the OPA from the victim's earlobe to the corner of the mouth.



2. OPEN THE VICTIM'S MOUTH

Use the **cross-finger** technique to open the victim's mouth.



3. INSERT THE OPA

For an adult:

Grasp the victim's lower jaw and tongue and lift upward.

Insert the OPA with the curved end along the roof of the mouth.

As the tip approaches the back of the mouth, rotate it one-half turn (180 degrees).

Slide the OPA into the back of the throat.

For a child or an infant:

Use a tongue blade or a tongue depressor and insert with the tip of the device pointing toward the back of the tongue and throat in the position it will rest in after insertion.

OR

Insert the OPA sideways and then rotate it 90 degrees.







4. ENSURE CORRECT PLACEMENT

The flange should rest on the victim's lips.

Note: If the victim vomits, remove and suction the airway, ensuring all debris is removed from the airway. Thoroughly clean the device and reinsert the OPA only if the victim is still unconscious and does not have a gag reflex

7. Nasal Airway

<p>1. Select The Proper Size Measure the NPA from the victim's earlobe to the tip of the nostril. Ensure that the diameter of the NPA is not larger than the nostril.</p>	
<p>2. Lubricate The NPA Use a water-soluble lubricant prior to insertion. With the bevel toward the septum, advance the NPA gently</p>	
<p>3. Insert The NPA If resistance is felt, do not force. If you are experiencing problems, try the other nostril.</p>	
<p>4. Ensure correct placement The Flange Should Rest The Victim's Nostril.</p>	

8. Oxygen delivery systems- Bag-Mask Ventilation

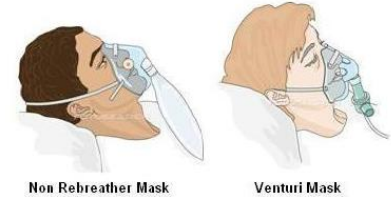
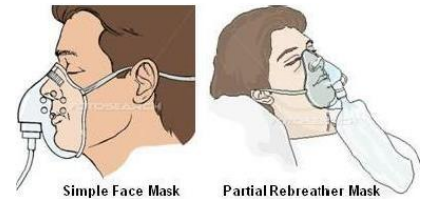
Low Flow Systems:

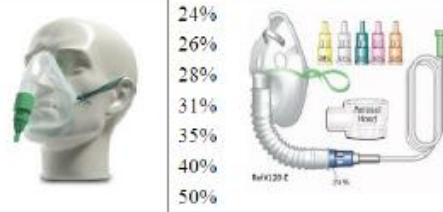

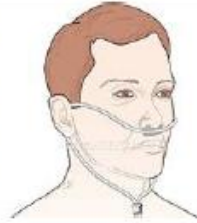
nasal cannula
facial mask
facial mask with oxygen reservoir

High Flow Systems:

Venturi mask

Venturi facemasks should be used in patients with COPD/emphysema where accurate oxygen therapy is needed



Method	FiO ₂ (Approximate)	Flowrate (L/min)
Non rebreather Mask	60-80%	10-15
Venti Mask	 24% 26% 28% 31% 35% 40% 50%	 3 3 6 6 9 12 15
Simple Face Mask	35-55%	5-10lpm
Nasal Cannula	 24% 28% 32% 36% 40% 44%	1 2 3 4 5 6

Bag-Mask Ventilation

Steps

- 1) Perform head tilt-chin lift
- 2) Perform suctioning within 10 seconds
- 3) Assembles bag and chooses appropriate size mask
- 4) Choose appropriate size OPA (Oropharyngeal Airway) or NPA (Nasopharyngeal Airway) and Inserts device
- 5) Hold and seal mask with 1 hand
- 6) Ventilate at proper rate (1 breath every 5 to 6 seconds)
- 7) Produce noticeable chest rise
- 8) Deliver each ventilation over 1 second
- 9) Release bag completely between ventilations
- 10) Hold and seals mask correctly with 2 hands
- 11) Apply cricoid pressure

Indications:



Failure of ventilation.
Failure of oxygenation.
Failed intubation

• **Contraindications:**

Severe facial trauma.

Bag mask ventilation is Absolutely contraindicated In the presence of complete upper airway obstruction. So, Foreign material in the airway should be removed before bag mask ventilation is initiated.

It is relatively contraindicated after paralysis and induction (because of the increased risk of aspiration).

• **Complications:**

The main complications of the -bag.mask technique are inability to ventilate and gastric inflation.

• **Face masks: (three types):**

A-Open facemasks:

• Are the most simple

• They do not provide good control over the oxygen concentration being delivered to the patient causing variability in oxygen treatment. .

• Maximum inspired oxygen concentration ~ 50-60%.

B-Venturifacemasks:

• They should be used in patients with COPD/emphysema where accurate oxygen therapy is needed.

• Arterial blood gases can then be drawn so correlation between oxygen therapy for hypoxemia and potential risk of CO₂ retention can be made.

• Masks are available for delivering 24%-50%.

C-Non-rebreathing facemasks:

• have an attached reservoir bag and **one-way valves** on the sides of the facemask.

• oxygen concentration of **95%** can be achieved.

• These masks provide the **highest inspired oxygen concentration for non-intubated patients.**



9. Laryngeal Mask Airway (LMA)

First step is to ask the patient about previous difficult intubation or in anesthesia

- Steps**
- 1) Prepare and assemble all necessary equipment
 - 2) Choose appropriate size LMA
 - 3) Test integrity of cuff by inflating it
 - 4) Deflate cuff on a flat surface and lubricate LMA on posterior surface
 - 5) only for use
 - 6) Open the mouth using the “crossed fingers” technique or by performing a tongue-Jaw lift; do not hyperextend neck.
 - 7) Clear the airway if needed
 - 8) Insert tube into mouth and place it so that the curvature is the same as
 - 9) that of the Pharynx, directing it posteriorly until resistance is felt.
 - 10) Inflate the cuff with the appropriate amount of air corresponding to the size of the tube , remove syringe
 - 11) Insert bite block
 - 12) Produce noticeable chest rise; **auscultate breath sounds**
 - 13) Confirm correct positioning of LMA by **colorimetric ETCO'' capnograph**
 - 14) Secure LMA in place
 - 15) Perform correct ventilation rate for respiratory arrest (1 breath every 5 to 6 seconds)
 - 16) Perform correct ventilation rate for cardiac arrest (1 breath every 6 to 8 seconds)
 - 17) Deliver each ventilation over 1 second
 - 18) Demonstrate complete release of bag between ventilations



Notes: **What size of LMA should you choose?**

- 4 for male adult**
- 3 for female adult**
- 1 for neonate**
- 1.5 if between 5-10 kg**
- 2 if between 10-15 kg**

If you have a difficult intubation **ASK FOR HELP.**

Indications:

It is often used for short procedures when endotracheal intubation is not necessary.

Contraindications:

Absolute contraindications: (in all settings, including emergent)

Cannot open mouth.

Complete upper airway obstruction.

Relative contraindications: (in the elective setting):

Anyone with increased risk of aspiration. (Morbid obesity, second or third trimester pregnancy, Patients who have not fasted before ventilation, and upper gastrointestinal bleed.)

Prolonged bag-valve-mask ventilation.

Suspected or known abnormalities in supraglottic anatomy.

Need for high airway pressures (in all but the LMA ProSeal, pressure cannot exceed 20 mm H2O for effective ventilation.)

Complications:

Complications due to LMA insertion:

Aspiration of gastric contents.

Local irritation.

Upper airway trauma.

Pressure-induced lesions.

Nerve palsies.

Mild sympathetic response.

Complications associated with improper placement:

Obstruction.

Laryngospasm.

Complications associated with positive pressure ventilation:

Pulmonary edema.

Bronchoconstriction.

NOTE: In any station expect to be asked about indications, contraindications, complications and other Qs from our Lectures on OSCE topics.

• **Appendix:**

1. Endotracheal Tube (ETT) Intubation – Rapid sequence induction
2. Central Venous line - **Internal Jugular**
3. Peripheral IV Insertion
4. Regional Anaesthesia (**Spinal Anaesthesia**)
5. Preoperative Airway Assessment
6. Inserting an Oral Airway
7. Nasal Airway
8. Oxygen delivery systems
9. Laryngeal Mask Airway (LMA) (“most likely won’t show up on OSCE” by Dr.jumanah. but we will have to study it anyway).

GOOD LUCK 😊

