Dr. Hawraa Diaa B.M.T. Montadher Talib

Anesthesia for obese patient

(Practical Anesthesia)

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By:

Dr. Hawraa Diaa **B.M.T. Montadher Talib**

Anesthesia for obesity

- Obese: Obesity is one of the most common nutritional disorders.
- Obesity is classified by the Body mass index. **(BMI) = weight (kg)/height (m2**)
- Adipose tissue is a normal constituent of the human body that serves the important function of storing energy as fat for mobilization in response to metabolic demands. The body cannot store proteins &carbohydrates, so excess proteins & carbohydrates are converted to fat in the body.

Body mass index (BMI) قياس نسبة السمنة للجسم

A measure of obesity is the Body mass index (BMI)

Body mass index (BMI) = weight (kg)/height (m^2)

- BMI values are classified as follows:
  - BMI of 18 - 24 = normal
  - BMI of 25 - 29 = overweight
  - BMI of 30 - 34 = obesity
  - BMI of 35 or greater = sever obese (sever or morbid obesity)

Pathophysiology

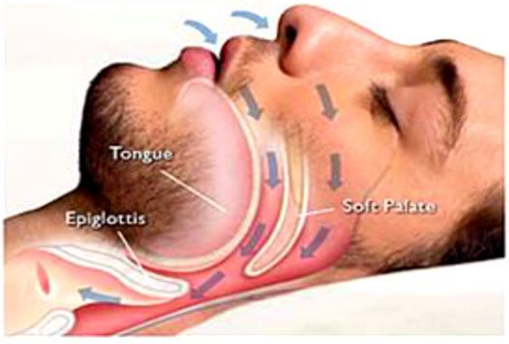
Obesity is a complex, multifactorial disease (mechanisms of fat storage, genetic). Most simply, it occurs when energy intake exceeds energy expenditure over a prolonged period of time.

Cardiovascular Disorder

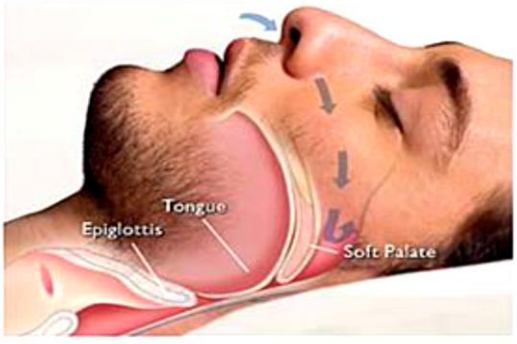
a. Systemic Hypertension
b. Coronary Artery Disease
c. Congestive Heart Failure

Respiratory disorder

a. Lung Volumes
b. Lung Compliance and Resistance
c. Obstructive Sleep Apnea (OSA)



Normal breathing



Obstructive Sleep Apnoea

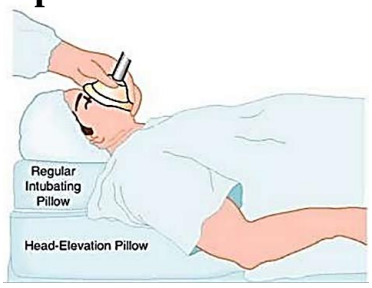
Airway

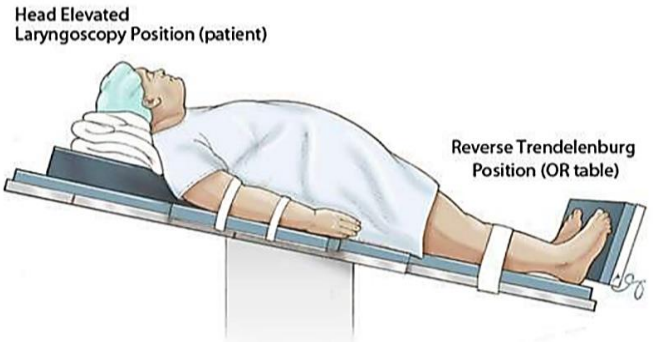
- Obese patients tend to have short, fat necks making both mask ventilation and direct laryngoscopy technically more challenging.
- A high BMI is associated with increased risk of difficult intubation.
- Avoid sedative premedication (difficult to maintain airway)
- Airway obstruction is very likely to occur in the postoperative period (give oxygen and apply CPAP if required)

Anesthesia management

- **Preoperative Evaluation:** History, Physical Examination, Diagnostic Testing.
- **Associated comorbidities**: HTN, DM, OSA (Obstructive Sleep Apnea) Cardiac & Respiratory problems. high risk of esophageal reflux & Aspiration.
- **Intra OR / Intubation:** Intubation with fiber-optic bronchoscope in selected patients. Rapid sequence intubation with:

Position: Head-up





- **Fluid Management:** Fluid management should be based on lean body weight.
- Postoperative Analgesia if needed

Postoperative considerations: Extubation:

- Delayed until effects of NMBAs completely reversed
- Fully awake
- Adequate airway maintenance
- Adequate tidal volume, Supplemental oxygenation
- Modified sitting position

Postoperative / Complications:

* Respiratory failure
  - Pre-operative hypoxia
  - Thoracic & upper abdominal Surgery.
* Deep Venous Thrombosis.
* Pulmonary Embolism.

Ideal body weight (IBW) قياس الوزن المثالي للجسم

A common formula is as follows:

Men: IBW (kgs) = 22 × (height in meters)2

Women: IBW (kgs) = 22 × (height in meters − 10 cm)2

Chose the correct answer

1- In obesity all true except one:

a- Avoid sedative premedication
b- A high BMI is associated with decrease risk of difficult intubation
c- Obese patients tend to have short, fat necks making both mask ventilation
d- energy intake exceeds energy expenditure

2- Postoperative considerations in obese: Extubation all true except:

a- Delayed until effects of NMBAs completely reversed
b- Adequate airway maintenance
c- Fully awake
d- Obstructive Sleep Apnea

3- BMI values are classified as obesity:

a- 18 – 24
b- 35 or greater
c- 25 - 29
d- 30 - 34