Obesity in obstetrics

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Respiratory System

- Decreased FRC to < CC. Define these terms.
- Atelectasis

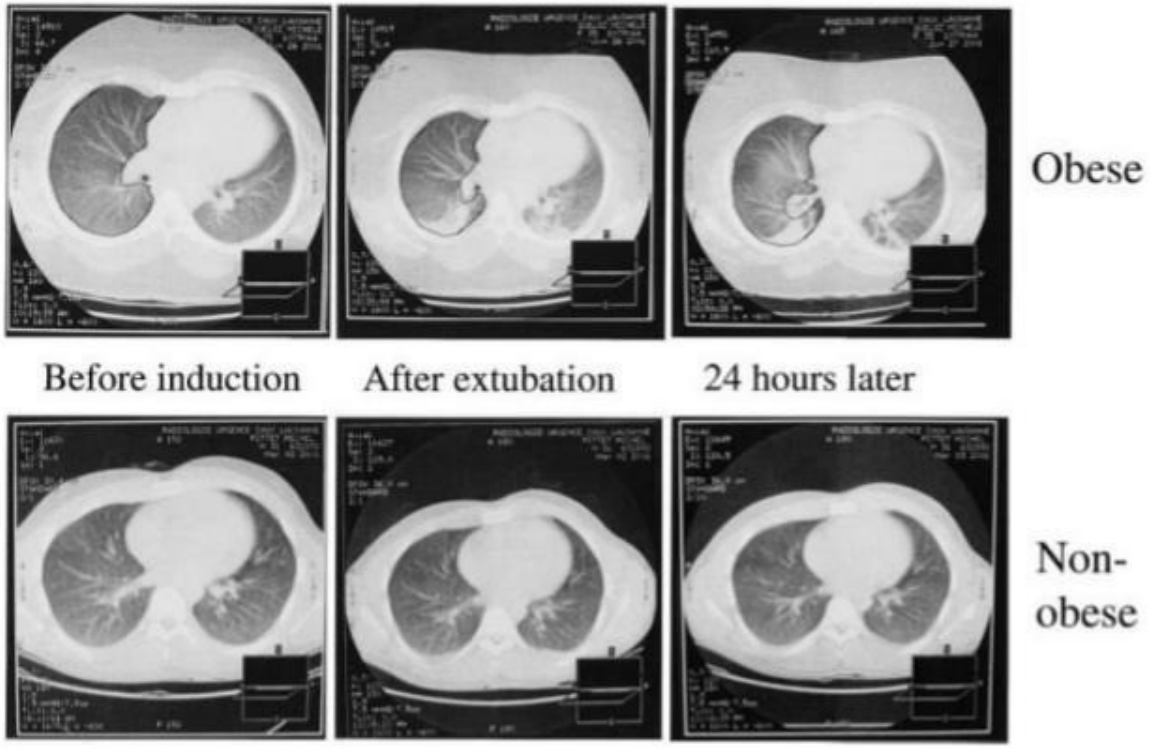


Figure 2. Samples of computed thoracic tomography scans of one morbidly obese and one nonobese patient before anesthesia induction, after extubation, and 24 h later. These slices were realized at the level of the interventricular septum.

FRC < CC

- FRC = “gas left in lung at the end of a normal tidal expiration.”
- CC = “the lung volume at which some conducting airways start to close.”
- Below CC, V/Q ratio of some alveoli decreases, or becomes 0 (shunt).

Hypoxemia in obesity

- Due to shunt and / or low V/Q alveoli.
- Q is highest in dependent portions of lung (high hydrostatic pressure dilates the easily distensible pulmonary vessels, decreasing resistance.)
- V is highest in non-dependent portions of lungs (where compression is less).

Hypoxemia in obesity

- Recruitment maneuver needs to visibly move the chest.
- Beginners will not give adequate pressure or time→ but don't overdo it!
- Don't rupture lung tissue!

Hypoxemia in obesity

- “Bronchospasm” after intubation of obese patient can be due to external compression of bronchi by heavy chest wall.
- Or it can really be bronchospasm.
- Difficulty ventilating obese patient after intubation is often a combination of both factors– heavy chest wall + true bronchospasm.
- Rx is recruitment maneuver, inhaled bronchodilator and muscle relaxant if needed.

Obesity / CV

- HBP
- LVH
- CAD
- Increased augmentation index / wave reflection?→ LVH, CAD.

Obesity / Endocrine

- Key concept is insulin resistance in both obesity and pregnancy. Obesity is inflammatory. Inflammation causes insulin resistance.
- Pancreas has to work harder in non-pregnant obese patients.
- Pancreas has to work especially hard in pregnancy due to increased cortisol, progesterone, placental growth hormone, human placental lactogen.

Obesity / GI

- Hiatal hernia more common.
- Traditional teaching: obesity increases gastric volume and decreases pH.
- In any case, airway may be difficult to manage and with increased intragastric pressure→ increased chance of regurgitation.

Obesity / Coagulation

- Increased risk of DVT.
- Worse in pregnancy.

Obesity / Pregnancy

- Worse pregnancy outcomes?
- Increased risk of pregnancy induced hypertension, chronic hypertension, DM.
- Macrosomia / shoulder dystocia.
- Failure to progress in labor?
- Increased cesarean delivery, ? Cause.

Obesity / Pregnancy

- Decreased risk of premature or low birth weight infant.

Obesity / Pregnancy / Anesthesia

- CSE is NOT a good idea if you are going to count on the epidural part in presence of difficult airway. Epidural may not work!

- Hence, morbidly obese patient (or difficult airway in general)→ straight (confirmed) epidural, continuous SAB, or GA with awake FOI.

Obesity / Pregnancy / Anesthesia

- Long needles very seldom needed.
- Interspinous ligament is often very soft due to fatty infiltration, but ligamentum flavum will feel normal. You may not feel much “grit” until you get to flavum.
- Ultrasound may help identify the spinous processes and midline. Try it out.

Obesity / Pregnancy / Anesthesia

- “Ramping up” the shoulders, neck and head is very important if GA + intubation.
- You can “take a look” at the epiglottis, glottis with topical anesthesia and sedation / analgesia.

Obesity / Pregnancy / Anesthesia

- Do not do RSI on morbidly obese patient with ? airway.
- Mother comes first.
- Don’t be stampeded.