ESPCOP

The European Society for Perioperative Care of the Obese Patient

# What are the key points that are different when giving anaesthesia for morbidly obese patients?

## 1 Key points in pre operative planning

**a.** What is the body mass index (BMI), the total (TBW) and the ideal body weight (IBW) or lean body weight (LBW) and the amount of visceral fat, measured by the waist to hip or waist to height ratio (WHR)

**b.** Is the morbidly obese patient having a metabolic syndrome? Yes if the patient has three of the following four elements: diabetes, dyslipidaemia, visceral obesity and hypertension.

**c.** Cardiac and pulmonary assessment are important as morbidly obese patients are more likely to have atrial fibrillation, heart failure, pulmonary hypertension or a cardiomyopathy.

**d.** Preoperative 10% body weight reduction (by high protein diet) is important to reduce the visceral fat and liver size. It facilitates laparoscopic surgery, lung ventilation and post-operative breathing. This is the moment to encourage some exercise and to stop smoking. Tell them they will have to mobilize on day of surgery and have to take trombo-prophylaxis. Discuss postoperative pain management, diet and inspiratory muscle training.

**e.** "Stop bang" questionnaire or sleep study finds patients who have obstructive sleep apnoea syndrome (OSAS). They are at risk to increase their obstructive breathing postoperative and should take their home CPAP, if prescribed to the hospital. Anaesthesiologists should give an OSAS safe anaesthetic (regional or opioid free) or give postoperative CPAP and have a medium (or intensive) care (level 2 bed) bed available after anaesthesia.

## 2 Key points in anaesthesia induction

**a.** Induction is best performed in a head-up position, usually about 30 degree head-up. Anticipate hypotension post induction in this position, pre-loading with 500-750ml of fluid will help minimise this.

**b.** Thorough pre-oxygenation, and around 10 cmH2O CPAP until the moment of intubation, will maintain Functional Residual Capacity and prolong the apnoeic desaturation time.

**c.** Know the correct dosing scalars for induction agents and muscle relaxants. Be aware of the increased rate of re-distribution and clearance of these agents and hence risks of awareness.

**d.** Intubation is of similar difficulty to the non-obese population. The same predictors of difficulty should be used as in the non-obese, but with the additional recognition that a large neck circumference is associated with more difficult laryngoscopy. Fibre-optic intubation for increased BMI alone is not indicated.

**e.** Face mask ventilation is frequently problematic and the need for two-hands to hold the airway is common. Airway adjuncts (oral and/or naso/pharyngeal airways) are often helpful. Anticipate difficulty here.

**f.** Laryngeal and supra-glottic devices are acceptable if the patient is in a head up position, but the splinting of the diaphragm from a large abdomen often results in inadequate minute ventilation if the patient is supine or head-down. Endotracheal tubes should be the default airway in most cases.

## 3 Key points in anaesthesia maintenance

**a.** Lung recruitment after intubation followed by sufficient PEEP is essential even when oxygen saturation is normal.

**b.** Always give lung protective ventilation and beach chair position when surgery allows it.

**c.** Prefer the use of drugs, like water-soluble, that are easy to dose and to monitor.

**d.** Prefer loco regional anaesthesia. If general anaesthesia is required combine with loco regional or local infiltration and avoid long working sedatives and opioids.

**e.** If neuromuscular blockade is required use monitoring of neuromuscular block TOF (train of four) responses and PTC ( post-tetanic count) to provide a sufficient depth.

**f.** Depth of anaesthesia monitoring helps limit the anaesthetic load, avoids intraoperative awareness.

## 4 Key points in anaesthesia emergence

**a.** Start Pressure Support Ventilation,

**b.** Give lung recruitment and CPAP before extubation,

**c.** Empty stomach and avoid suctioning endotracheal tube, if needed follow with recruitment maneuvers.

**d.** Be sure to have full neuromuscular blockade reversal.

**e.** No sedation and the lowest level of opioids possible.

**f.** Extubation in beach chair position.

## 5 Key points in postoperative care

**a.** Continue with CPAP mask if used before surgery.

**b.** Beach chair position or better sitting up 60°.

**c.** Sufficient pain and PONV (postoperative nausea and vomiting) treatment.

**d.** Promote early mobilization and physiotherapy.

**e.** Provide tromboprophylaxis.

**f.** Look for ominous patterns of SpO2 desaturations and hypercarbia suggestive for obstructive breathing or carbonarcosis with arousal failure.

**g.** In case of prolonged surgery in the sitting position: be aware of rhabdomyolysis.

*Key points to remember in anaesthesia for the morbidly obese patient* © **www.Espcop.org**

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