Continuous education in sedation 3: Obesity and the sedation practitioner

SADJ August 2016, Vol 71 no 7 p326 - p327

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INTRODUCTION

Sedation providers are often faced with difficult decisions when they plan a sedation technique for very anxious patients. Not only must they decide which technique to use, but they need to assess the patient's suitability for sedation in the surgery.

Sedation guidelines indicate which patients can safely undergo sedation in the dental surgery.[1] There are particular conditions that may preclude surgery-based sedation e.g. the obese patient.

Keywords: Obesity, Body Mass Index, ASA status

DISCUSSION

The most important and crucial question is whether the obese patient is suitable for safe sedation in the dental surgery? All international sedation guidelines recommend that only ASA 1 and 11 patients can be sedated in primary care.[1] So we need to understand what in fact are ASA 1 and 11 patients?

According to the ASA classification (American Society of Anesthesiologists Physical Status Classification System), only patients with an ASA I (normal, healthy) or ASA II classification (patient with mild systemic disease) qualify for sedation outside the traditional theatre, or hospital environment.[2] The classification is often used to evaluate the patient before sedation but it is only a clinical status evaluation; not a risk assessment, especially in the case of our obese patient.

Furthermore, what is the definition of an obese patient3? Weight alone unfortunately does not tell us the whole truth about obesity. In general, we use the Body Mass Index (BMI) to tell us whether a patient is obese. It gives us an indication as to what ASA classification applies. The BMI can be calculated by a specific formula: BMI = weight (kg)/ height (meter2).[4] Our problem, then, is what should the BMI be in order that we may be prepared to treat the patient in primary care under sedation?

Following is a suggestion of how we can decide in adults. It gives the BMI, obesity grade, and ASA classification.[5]

- BMI < 18.5, underweight
- BMI 18.5-25, normal weight
- BMI 26-29, overweight or pre-obese
- BMI 30-34, obesity class 1, ASA 1
- BMI 35-39, obesity class 2, ASA 11
- BMI > 40, obesity class 3, ASA 1115

Any patient with a BMI of 35-39.9 is seen as severely obese, BMI 40-44.9 as morbidly obese, and a BMI 45 – 50 as super obese. They should not be sedated in the dental surgery or in any primary care facility.

Some clinicians suggest a definition of obesity based on percentage of body fat:

- Men are obese if the percentage of body fat is greater than 25%
- Women, when the percentage of body fat is greater than 33%

The body fat percentage can be calculated from a person's BMI by using the following formula:
Adult Body Fat % = (1.20 x BMI) + (0.23 x Age) – (10.8 x gender) – 5.4, where values for "gender" are 0 if female, and 1 if male.

Obese patients present special challenges to the sedation provider, even when the provider is qualified and experienced. The biggest challenge is obstructive sleep apnoea (OSA) which is common in obese patients.[6] They must be monitored carefully during sedation as airway obstruction and hypoxaemia can compromise safety. Sedative/analgesic drugs can contribute to respiratory depression. The drugs must be carefully administered intravenously.

The obese patient must be carefully evaluated before sedation for any concomitant disease. A focused airway evaluation is mandatory. The sedation practitioner must

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ensure that all resuscitation and rescue equipment is available in the surgery. It is good policy to keep the reversal agents nearby: flumazenil for benzodiazepines and naloxone for opiates. Pharyngeal collapse is a serious complication during sedation in the obese - mask ventilation or rescue by endotracheal intubation may even be impossible.

The sedation technique used in an obese patient depends on the experience of the sedation practitioner. Transmucosal midazolam, inhalational sedation nitrous oxide/oxygen, or intravenous drugs may be used. Remember that extra large patients do not need extra large doses of sedative drugs; safe sedation always requires careful titration of drugs.

The obese patient should not be sedated in the head-down position. This may decrease the functional residual capacity and the patient's ability to cope with hypoventilation.

Obese patients often have restricted mouth opening, increased soft tissue due to fat deposition in their cheeks and pharynx and are therefore at higher risk for upper airway obstruction. Opening the airway with mild neck extension and chin elevation will decrease the risk of obstruction. The surgeon also plays an important role by not depressing the jaw while operating.

For analgesia, instead of using an opiate, consider using an alternative opioid such as Tramadol since it does not depress respiration. And do consider the use of the NSAID's and/or paracetamol. The patient must be carefully monitored, clinically and electronically by all the members of the sedation team.

Obese patients may be on appetite suppressants which may cause serious adverse events e.g. hypertension when a vasoconstrictor is used with the local anaesthetic. Appetite suppressants should be stopped two weeks before administering procedural sedation.

Pulmonary aspiration remains a threat in the obese patient. It is advised that a histamine (H^2) receptor antagonist be administered before sedation to reduce gastric volume and acidity. Fasting before sedation is a must in the obese.

Ensure that obese patients are fully recovered before discharge …and then only with an escort.

CONCLUSION

Procedural sedation for obese patients can be a great risk in a primary care facility. Risk stratification and classification of the patient's ASA status and obesity level according to the guidelines are keys to safe practice.

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