

OBESITY

We invite sedation providers to study the following case report and answer the questions at the end of article:

A 58- year old obese, male patient visits the dentist for extraction of a tooth. He is very anxious, has pain, is hypertensive on examination, but not on any medication. He is reluctant to have the tooth removed under local anaesthesia only.

After careful evaluation as to fitness for sedation using the ASA classification by the dentist, the following options are offered to the patient,

- administration of an oral or transmucosal sedative drug 30min pre-operatively, or
- nitrous oxide/oxygen inhalational sedation,
- or general anaesthesia in secondary care or
- intravenous conscious sedation in the dental surgery.

After careful consideration and discussion of the options available the patient chooses conscious sedation with intravenous administration of sedative drugs.

For us as sedation practitioners we need to carefully consider the possible problems facing us in the obese patient for conscious sedation in primary care.

Answer

Questions that need to be answered when conscious sedation is planned for the obese patient include:

- Does the patient qualify for conscious sedation in the dental surgery in primary care; this is a crucial question and probably the most important one.

We are aware that all sedation guidelines say that only ASA 1 and 11 patients can be done under conscious sedation in primary care.

- What is the definition of an obese patient, in fact when is a patient obese.
- Is the patient taking any medication, if so, what sort of medication and for what purpose.
- Which technique, if any, would be the best, including the drugs that we plan to use.
- Is there any evidence of concomitant disease e.g. hypertension, sleep apnoea, coronary heart disease, or diabetes mellitus.
- Is there any evidence of a possible “difficult airway” – this needs to be assessed at the pre-operative evaluation and is crucial in our treatment of this patient.
- Can the sedation be done by a operator sedationist or must a dedicated sedationist be involved.

According to the ASA classification (American Society of Anesthesiologists classification of clinical status), only patients with an ASA I (normal, healthy) or ASA II classification (patient with mild systemic disease, controlled) qualify for conscious sedation outside the traditional theatre or outside the operating room. We are aware that the above classification is often used to evaluate the patient before sedation but this is only a clinical status evaluation; not a risk assessment as is the case in our obese patient.

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 the patient is obese, and the severity of obesity. This will give us an indication as to what the ASA classification should be. The BMI can be calculated by a specific formula: $BMI = \text{weight (kg)} / \text{height (meter}^2\text{)}$.

The question is what should the BMI be for us to be prepared to do the patient in primary care under conscious sedation.

The following is a suggestion of how we can decide in adults. It gives the BMI, obesity grade, and ASA classification.

- BMI < 20, patient underweight
- BMI 20-25, normal weight
- BMI 26-30, overweight
- BMI 31-34, obesity grade 1, ASA 11
- BMI 35-40, obesity grade 2, ASA 111

- BMI > 40, obesity grade 3, ASA 1V

Any patient with a BMI of 35-40 is seen as severe obesity, BMI 40-44.9 as morbid obesity, and a BMI 45 – 50 as super obese.

Some clinicians advocate a definition of obesity based on percentage of body fat, as follows:

- 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:

Body fat percentage = $1.2 \times \text{BMI} + 0.23 \times \text{age} - 5.4 - 10.8 \times \text{gender}$ where gender is 0 if female and 1 if male. Most researchers have used > 25% in men, and > 30% in women, as cut-points to define obesity.

Obese patients present special challenges to the sedation practitioner, even when qualified and experienced. Our biggest challenge is that the obese patient may suffer from obstructive sleep apnoea (OSA) which is usually the case. They must be monitored carefully during sedation as airway obstruction and hypoxaemia is possible. This may develop rapidly.

Sedative/analgesic drugs can contribute to respiratory depression and should be titrated to effect.

We need to remember that all sedative drugs depress the central nervous system, and by giving them we take the patient from maintaining their own airway to dependence on us.

Obese patients may also suffer from concomitant disease e.g. hypertension, diabetes mellitus, coronary heart disease that may complicate sedation further.

The obese patient must be carefully assessed before sedation. A focused airway evaluation is mandatory. The sedation practitioner must see that all equipment necessary for resuscitation must be available in the surgery. It is a good policy to keep the reversal agents for drugs that may be used e.g. benzodiazepines (flumazenil) and opiates (naloxone), nearby. Pharyngeal collapse

is a serious complication during sedation in the obese – mask ventilation or rescue may even be impossible.

The sedation technique used in an obese patient depends on the experience of the sedation practitioner. A single drug or combinations of drugs can be used. If the patient qualifies for conscious sedation in a day clinic setting or surgery, either transmucosal drugs with a sedative e.g. midazolam, nitrous oxide/oxygen inhalational sedation or intravenous sedation with drugs could be used. We need to remember extra large patients do not need extra large doses of sedative drugs; safe sedation for the obese means titration of drugs at all times.

For analgesia, instead of using an opiate, use an alternative such as Tramadol since there is no respiratory depression. And do consider the use of the NSAID's. The patient must be carefully monitored, clinically and with the use of electronic monitoring devices 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 2 weeks before administering conscious sedation.

Pulmonary aspiration remains a threat in the obese patient. It is advised that a histamine (H₂) receptor antagonist be administered before sedation to reduce gastric volume and acidity. Fasting is advised in the obese.

See that they are fully recovered before discharge with an escort.

To earn 1 CPD point, answer the following questions here

