



VITAL GUIDE SERIES

Providing conscious sedation in primary care

10

- What is conscious sedation?
- When should conscious sedation be used?
- Which members of the dental team are involved in the provision of conscious sedation, and how?

VITAL GUIDE TO

Conscious sedation

Katherine Wilson¹ explains that it is the professional responsibility of all members of the dental team to adhere fully to recommended guidelines on providing conscious sedation to patients.

Introduction

The effective control of pain and anxiety is an essential part of dental practice. Dental anxiety affects both children and adults and can act as a major barrier to the receipt of dental care. In the UK adult dental health survey of 1998 up to 45% of adults claimed that fear was their reason for non-attendance at the dentist.¹ Of this number, it is estimated that one third are severely anxious (phobic) and two-thirds are moderately anxious.

Many patients can be managed with simple behavioural management techniques, however, where these have not been effective or are not felt to be appropriate the use of conscious sedation in many cases will provide a safe and effective management option.² The aim of this article is to highlight the important aspects of the provision of conscious sedation in primary care for all of the dental team.

Guidelines for the provision of conscious sedation

Clinical practice guidelines exist to promote safe and effective care and assist health professionals in achieving and maintaining high standards. The current guidance for the provision of conscious sedation in dental practice in the UK was published by the Standing Dental Advisory Committee (SDAC) for England and

Wales (2003)³ and the National Dental Advisory Committee (NDAC) of Scotland (2006).⁴ The main areas considered in the documents relate to:

- education and training in conscious sedation
- environment for conscious sedation
- patient assessment
- recommended conscious sedation techniques
- conscious sedation in children
- clinical governance.

It is a professional responsibility of all members of the dental team providing conscious sedation to adhere to the guidelines thus ensuring safe and effective care is provided.

Definition of conscious sedation

The definition of conscious sedation adopted in the UK, as stated in the national guidance is:

'A technique in which the use of a drug or drugs produces a state of depression of the central nervous system enabling treatment to be carried out, but during which verbal contact with the patient is maintained throughout the period of sedation. The drugs and techniques used to provide conscious sedation for dental treatment should carry a margin of safety wide enough to render loss of consciousness unlikely.'

The important aspects of this definition include the emphasis on maintaining verbal contact with the patient and ensuring a wide margin of safety to avoid loss of consciousness.



Blood pressure monitoring

Conscious sedation techniques

The standard techniques of inhalation sedation with nitrous oxide and oxygen and intravenous sedation with midazolam are effective for the majority of patients. The most appropriate technique must be selected for each individual patient to meet their needs. Both these forms of sedation will be briefly covered in a later section.

Indications and contraindications

Indications: The main indication for the use of conscious sedation is for the management

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Fig. 1a ASA classification

ASA I	Normal healthy patients
ASA II	Patients with mild systemic disease
ASA III	Patients with severe systemic disease that is limiting but not incapacitating
ASA IV	Patients with incapacitating disease which is a constant threat to life
ASA V	Moribund patients not expected to live more than 24 hours
ASA VI	A declared brain-dead patient whose organs are being removed for donor purposes

Fig. 1b Fitness for sedation

ASA Classification	Sedation Technique	Setting
ASA I	Inhalation and Intravenous	Primary Care
ASA II	Inhalation and Intravenous	Primary Care
ASA III	Inhalation	Primary Care
ASA IV	Intravenous	Day Stay Setting*
ASA V	Inhalation and Intravenous	Day Stay Setting*

*Day Stay Setting – hospital based facility led by a consultant anaesthetist

of dental anxiety. However, the technique is also useful for invasive procedures which may be unpleasant, for example extractions in children, minor surgical procedures and implants. Conscious sedation is also useful in some medically compromised patients where the stress of a dental procedure may exacerbate their systemic condition for example mild to moderate cardiovascular disease.

Contraindications: The contraindications for conscious sedation relate to specific techniques and will be dealt with later in this article.

Patient assessment

Prior to carrying out any form of conscious sedation a full patient assessment must be carried out to ensure the patient is fit for sedation and to decide on the most appropriate technique. The assessment should include:

- **Dental history**
 - nature of anxiety
 - attendance patterns
 - previous dental treatment
 - presenting complaint
 - what dental treatment is requested
- **Medical history**

A thorough medical history should be taken

to include presence of systemic conditions, current medication and history of sedation or general anaesthesia for procedures in the past

- **Social history**
 - patient age
 - occupation
 - family situation (eg children, dependants)
 - smoking and alcohol habits
 - availability of an escort
- **Vital signs**
 - blood pressure
 - oxygen saturation level
 - heart rate
 - respiration rate
 - weight and height (BMI).

All patients scheduled to receive conscious sedation must be assigned an ASA grade. The ASA classification (Figs 1a-b) is a system used to indicate the fitness of an individual for conscious sedation and general anaesthesia.⁵

For the purposes of this article the following information relates to patients being treated in primary care. Where patients are treated in a hospital facility local guidelines will generally exist.

Pre-operative instructions

It is essential that verbal and written pre- and post-operative instructions are given to the patient at the assessment visit. These should include:

- a light meal should be taken two hours prior to the appointment
- the patient should come with an adult escort and no children
- transport home must be arranged in a car or a taxi
- the patient should take all their routine medication as normal unless advised otherwise
- no alcohol should be consumed on the day of the visit
- if the patient develops a cold prior to the visit they should contact the clinic for advice
- children will need to be supervised by an adult for the rest of the day.

Consent

Written consent for the provision of sedation is essential for all patients and must be obtained prior to commencing treatment. All eventualities should be discussed as the treatment plan cannot be changed once the patient is sedated.

Staffing

All staff involved in providing conscious sedation must have ‘a high level of competence based on a solid foundation of theoretical and practical supervised training, progressive updating of skills and continuing experience’.³

A dentist wishing to carry out conscious sedation must have had both theoretical and practical training in the particular technique. The training should be provided by a recognised authority such as a postgraduate institute.

A second appropriately trained staff member must be available to assist the dentist providing the sedation. Ideally two assistants should be present: one to act as the chairside nurse and one as the monitoring nurse; however, it is appreciated that this is not always possible. Training for dental nurses may be on an in-house basis; however, the gold standard is the Certificate in Dental Sedation Nursing. Details of this qualification can be found on the National Examining Board for Dental Nurses website at www.nebdn.org.

Policies and procedures

All practices and departments carrying out conscious sedation should have written policies and procedures in line with the SDAC guidelines (2003).³ The policies should specify the necessary equipment, facilities, staff training, patient assessment/



Administration of inhalation sedation

management, documentation and risk analysis required to provide conscious sedation safely and effectively.

Inhalation sedation

Inhalation sedation with nitrous oxide and oxygen is the mainstay for paediatric dental sedation in the UK. It has a high success rate and safety profile.⁶ The technique is also being used increasingly in many adults where intravenous sedation is not indicated in primary care, for example some medically compromised patients. As with other forms of sedation the main indication for use is the management of dental anxiety. The technique can be defined as: 'A semi-hypnotic technique of conscious sedation in which nitrous oxide and oxygen are employed to produce physiological changes which enhance the patient's suggestibility. The patient should remain conscious and co-operative throughout with all vital reflexes intact'.

The technique involves the administration of a mixture of nitrous oxide and oxygen to the patient via a small nose mask. The gases are titrated against the patient's response and the end point is determined by the patient's willingness to proceed with treatment. The recovery is rapid following inhalation of 100% oxygen which clears most if not all the nitrous oxide from the patient's lungs.

One of the important aspects that distinguish this form of sedation from intravenous sedation is the semi-hypnotic nature of the technique. It is essential that the dentist and assisting dental nurse use good behavioural management and distraction methods throughout treatment to gain the greatest benefit from the sedative effect. The main benefits of inhalation sedation include:

- rapid onset and recovery
- easy to administer
- flexible duration of sedation
- titrated against the patient's response
- no injection required to administer sedation
- only clinical monitoring
- wide margin of safety.

Although inhalation sedation is successful for many patients it is not a panacea for all. Some absolute contraindications for its use include:

- upper respiratory track infection
- mouth breathers
- severe behavioural problems
- extreme anxiety and poor co-operation
- pregnancy.

Before electing to carry out treatment under inhalation sedation it is important that a thorough patient assessment is carried out and the patient is fully informed of how the sedation will help them and how it will make them feel.

Intravenous sedation

Intravenous sedation using a single drug technique is recommended for the majority of adult patients. The drug of choice is the benzodiazepine midazolam which has a very favourable pharmacology. It has a fast onset providing signs of sedation within one to two minutes. With a relatively short half life the recovery period is not prolonged and the patient can usually leave the surgery an hour to an hour and a half after the final increment of midazolam is titrated. The safety of this technique relies on several factors:



Administration of midazolam

- the dentist has appropriate theoretical/practical training
- appropriate equipment/facilities are available
- an indwelling cannula is used to administer the drug
- the drug is titrated slowly to the desired end point
- the patient is monitored throughout with a pulse oximeter/BP device
- a second appropriately trained person is available to assist/monitor
- the procedure is fully documented
- all staff are conversant with how to manage an emergency situation.

The main contraindications to the use of intravenous midazolam sedation in primary care include:

- severe needle phobia
- patients classified as ASA III
- patients with a Body Mass Index (BMI) over 35 (some practitioners may choose to use 30 as their cut off)
- patients with severe learning disability or behaviour problems.

Used appropriately in well selected patients this technique brings great advantages to the provision of pain and anxiety control to adult dental patients.

Intravenous sedation in children (under the age of 16 years) is not generally recommended and the reader is directed to the SDAC guidelines (2003) for further advice.

Role of the DCP

The provision of safe and effective conscious sedation in primary care relies on the entire dental team and the dental nurse plays an integral part. The main responsibilities of the dental nurse include:

- Assisting at the patient assessment stage:
 - measuring patient vital signs
 - providing information to the patient
 - answering patient queries
- Assisting at the treatment visit:
 - carrying out equipment checks
 - ensuring the patient is prepared
 - assisting with dental treatment
 - patient monitoring during treatment/recovery
 - acting as a chaperone
 - assisting in an emergency.

The dental nurse should be actively encouraged to become involved in the overall management of the patient as this will help to increase their knowledge and skills and will promote a safe and efficient environment for providing patient care.

Summary

The dental profession has a duty to provide effective pain and anxiety management to all patients. Conscious sedation is a fundamental aspect of this as is clearly stated in the SDAC guidelines:³ 'Competently provided conscious sedation is safe, valuable and effective'. In order to ensure a high standard of care the dentist carrying out the procedure must have received training in the techniques being used and be supported at all times by an appropriately trained assistant. The importance of a team approach when delivering conscious sedation cannot be overemphasised and all staff should be encouraged to develop their skills and knowledge in this field of dentistry. In the words of Henry Ford: 'If everyone is moving forward together, then success takes care of itself'.

1. Kelly M, Steele J *et al.* Adult Dental Health Survey: Oral health in the United Kingdom 1998. Office for National Statistics, 1998.
2. Donaldson L, Wild R. *A conscious decision.* pp 1-46. London: Department of Health, 2000.
3. Standing Dental Advisory Committee (SDAC). *Conscious sedation in the provision of dental care.* pp 1-36. London: Department of Health, 2003.
4. National Dental Advisory Committee of Scotland (NDAC). *Conscious Sedation in Dentistry.* Dental Clinical Guidelines. 2006.
5. Malamed S F. *Sedation: a guide to patient management.* St Louis, Missouri: Mosby, 1995.
6. Girdler N M, Wilson K E, Booth E J. A prospective study of complications and outcomes associated with conscious sedation for the anxious patient. *J Dishabil Oral Health* 2005; **6**: 25-30.

CPD answers

Answers to the CPD questions in the spring 2008 issue of *Vital*.

Vital guide to orthodontics

Q1. B

Q2. B

Q3. D

Q4. C

Congratulations to the first three entries drawn from the spring issue, **Susannah Wilson, Debbie Whyte** and **Zeliha Baran** who all win a copy of *Management of medical emergencies for the dental team*.

CPD questions on this article can be found on page 55.



HOTSPOT



Name: Ashleigh Currie

Age: 24

Town: Blackpool

Loves: My two Siamese cats, shopping, cosy nights in with an Indian takeaway, holidays in the sun.

Hates: Food shopping on a Saturday afternoon, people with bad attitudes, winter months.

Hobbies: Singing at charity events, gym, dance and exercise classes.

What is your job? I work part-time for the Northwestern Deanery as a Dental Development Facilitator and part-time as a dental nurse in general practice.

How did you get your job? A flyer was posted to my practice advertising the job for a dental development facilitator which I retrieved out of the bin. For the interview I was required to do a five minute presentation on 'CPD and Lifelong Learning'. I researched the subject but was terrified by the time of the interview. I managed to push my nerves aside and got through it, and at the end the interviewer couldn't believe that it was my first ever presentation! I was offered the position two days later.

How did you end up working in dentistry? It was back in 2003 when I originally applied for the role as a receptionist in a very small practice. One morning I arrived to find that the dental nurse had called in sick. As I was the only other member of staff I was required to cover both reception and nurse (possibly the worse day of my career to date!). I loved dental nursing immediately and began the NVQ3. I have since attended courses for conscious sedation, implantology and numerous events such as the BDA and ADI conferences.

What do you enjoy most about your job? I love the fact I get to meet many other people in my profession and learn about the different ways each practice works. I also gain great satisfaction in helping DCPs to identify their goals and training needs which I can then help them achieve. As a dental nurse I very much enjoy the patient care side and find nothing more rewarding than when a patient requests me personally as their nurse. A lot of patients now even request to talk to me when they ring for appointments – not always ideal but still satisfying.

What is the most challenging part of your job? Having to keep up-to-date with all the new legislation and guidelines so that I can give correct advice. Another challenge is persuading other DCPs of the benefits of registration and the need for CPD and personal development plans. I'm getting there ... slowly.

If you weren't working in dentistry, what would you be doing? I would probably be a singing teacher or perhaps in a trade as I'm a dab hand at all aspects of DIY and joinery. When I was little I wanted to be a singer at one of the Walt Disney resorts!

Would you recommend a career in dentistry? Definitely. Dentistry has moved on so much in the last few years. It's an exciting time for us dental nurses, now we are finally recognised as professionals we can only continue to become the best possible. I'm looking forward to the extended duties (topical fluoride application, impression taking and suture removal).

What three things could you not live without? That's an easy question: my cats, my family and my passport!

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