

Anaesthesia and sedation

Anterior epistaxis and sedation

Sir, inhalational sedation (IS), while having an excellent safety record and non-invasive technique, can be associated with relatively minor complications such as nausea, vomiting, headaches, and lethargy, although otalgia and hiccough have also been reported.¹

A very rare complication of IS with nitrous oxide/oxygen may include anterior epistaxis with risk factors including trauma, drying and/or irritation of the nasal mucosa, anticoagulation, and hypertension.^{1,2,3,4} Several mechanisms have been suggested such as anxiety,³ drying/irritation of the nasal cavity^{2,4} (eg through lengthy sedation treatment²), previous injury to the nose,⁴ excessive and/or aggressive nose breathing (causing rupture of vessels),² re-inflation of the reservoir bag using the O₂ flush button during treatment (causing potential intranasal trauma and drying of the mucosa),² self-inflicted trauma (from the nasal hood or on removal)² and hypertension in dentally anxious patients associated with white coat syndrome.²

Nitrous oxide is not known to irritate mucosal membranes,⁵ but oxygen therapy does,⁶ and it is common to administer 3–5 minutes of oxygen at the end of IS to avoid diffusion hypoxia, as well as during dental treatment under IS with nitrous oxide. The likely cause may be due to a combination of the potential mechanisms mentioned rather than a single determinant.

Simple preventative measures for patients at higher risk may include moisturising the nasal cavity prior to treatment, screening for hypertension, reducing treatment time under sedation, avoiding trauma to the nasal anatomy, correct nasal hood size and placement, and asking patients to avoid aggressive and excessive nose breathing.²

Most cases should respond to local measures of compression of the nasal alae while having the patient sit forward with their mouth open for 10–15 minutes. Applying ice cubes intraorally to reduce intranasal blood flow may also help prevent epistaxis.⁷ However, in certain special care patients (eg patients taking anticoagulants or with bleeding disorders), an urgent referral to ENT may

be required.² Dentists should consider warning high-risk patient groups about the potential rare complication of anterior epistaxis associated with IS with nitrous oxide/oxygen sedation.

I. Khan, West Midlands, UK

References

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Occupational health

Sound level meter app

Sir, I read with interest a recent publication in the *BDJ* entitled ‘The sound of dentistry’.¹ Researchers at the NIOSH, in collaboration with EA LAB, have developed the NIOSH Sound Level Meter App.²

This app is available for any iOS device and integrates the best features from noise dosimeters and professional quality sound level meters into a simplified tool.² The purpose of the app is to enable people to conduct workplace noise testing, prevent hearing loss due to occupational factors and ensure informed decision-making on noise exposure.²

The app has been developed by hearing loss experts and acoustics engineers, is freely available for downloads, is validated and tested, gives accurate measurements, provides the user with relevant metrics similar to the ones available in professional sound instruments, has screens with information on conducting measurements, hazardous levels of noise, guidelines on hearing loss as well as selection of appropriate hearing protectors.² The app is also enabled to connect with NIOSH hearing experts for technical assistance.²

The data can be shared and reported, and the app is also capable of calibrating both an external and internal microphone.² It encompasses numerous metrics important for proper measurements of noise in an occupational setting in accordance with the OSHA and NIOSH standards (90 dBA permissible exposure limit and 85 decibels recommended exposure limits for an eight-hour average respectively).²

Professional quality sound level meters are mandated to comply with a number of international and national standards. The NIOSH SLM app meets the IEC 61672:3 standard when used with a calibrated external microphone.² It can be utilised to create awareness in workers and as a research tool.

V. Sahni, New Delhi, India

References

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Dental education

Shared care learning

Sir, K. F. Marshall in a letter titled ‘Team working training’¹ kindly invites correspondence with regards to dental student training with dental nurses. We are happy to oblige in relation to Peninsula Dental School, University of Plymouth.

We agree absolutely with K. F. Marshall when it comes to the necessity of utilising team members’ full skill set in order to optimise outcomes for patients. With this in mind, student colleagues at Peninsula Dental School have a thorough induction into many clinical dental nursing matters, supported by a team of outstanding, qualified dental nurses. The students then nurse for each other when they see their first patients in the first year of their Bachelor of Dental Surgery (BDS) and Dental Therapy (DTH) training. They are mentored in the nursing component of their training by an experienced dental nurse registrant, and they develop a myriad of skills from a nursing perspective such as cross infection, mixing materials, appropriate equipment selection and generally keeping their colleague calm!²