

Endodontic Management of an Anxious Patient – A Conscious Approach

Aditi Jain*, Mani Prabha and Vireshwar Anukul

Sr. lecturer, Department of Conservative Dentistry and Endodontics, Maitri College of Dentistry and Research Center Durg, India

*Corresponding author

Aditi Jain, MDS, Sr. lecturer, Department of Conservative Dentistry and Endodontics, Maitri College of Dentistry and Research Center Durg, India, E-mail: aditijain300789@gmail.com

Submitted: 06 Nov 2018; Accepted: 16 Nov 2018; Published: 26 Nov 2018

Introduction

There has been relatively a little research into dental management for anxious and uncooperative patients. The only alternative treatments for such patients are general anesthesia or sedation. However, inhalation of nitrous oxide remains a viable dental care and represents the only treatment alternative to general anesthesia. The use of conscious sedation with nitro oxide sedation has withstood the test of time with an excellent safety record. It reduces anxiety, pain and memory of the treatment experienced. It is found to be efficacious, reliable and cost effective than general anesthesia. The main factor related to fear and anxiety about dental treatment is fear of pain, needles, noise and sedation induced by use of hand pieces. Fear of needles and pain were responsible for upto 28% and 21% of adult patients respectively not visiting the dentist.

Anxiety and fear experienced by dental patients range from mild anxiety to phobic fear and represent a barrier to care. The main indication for nitrous oxide conscious sedation is to reduce pain, fear and anxiety in anxious and fearful patients, including those who are phobic and respective to other techniques and for whom the only other alternative maybe general anesthesia.

Case Report

An 18 year old female patient reported to the department of dental with the chief complaint of pain in lower right back tooth region. Clinical examination revealed radiolucency involving pulp in relation to 46. According to clinical and radiographic examination, root canal treatment in relation to 46 was indicated and patient was informed regarding endodontic treatment. Patient was very apprehensive and anxious regarding the treatment. Effort was made to convince the patient to get treatment under local anesthesia but patient was very uncooperative and unwilling for local anesthetic procedure. Endodontic treatment under conscious sedation was opted for this patient. Informed consent regarding treatment was taken to administer sedation. Prior to nitrous oxide sedation, the patient was screened, health and risk assessment was made, vital signs measured to check whether they are within normal range and airway evaluated. Patient was seated in the operatory chair and a moderate percentage of nitrous oxide given and patient was sedated. Endodontic treatment was initiated when patient achieved desired level of sedation under adequate rubber dam isolation. Desired level of sedation is maintained throughout the procedure. Endodontic

treatment is completed according to the protocol and pure oxygen is administered for 3-5 minutes and sedation is terminated. Patient was completely normal and patient discharged with written instructions.



Figure 1: Preoperative IOPA

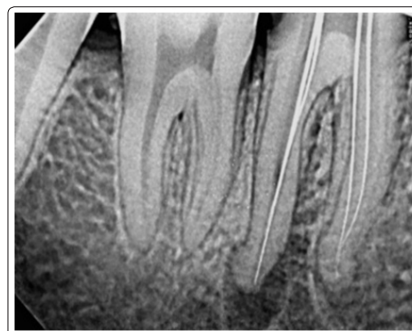


Figure 2: Working length determination



Figure 3: Master Cone IOPA



Figure 4: Obturation with 36



Figure 5: 6 months follow up IOPA

Discussion

Sedation is state of drowsiness and sleep from which a subject can be roused, whereas anesthesia is an unrousable state in which vital respiratory reflexes may be lost. Sedation drugs cause prolong and deep sedation and are unpredictable. However, sedation by inhalation of nitrous oxide/ oxygen premix SPO₂ remains a viable dental care strategy and represents the only alternative to general anesthesia. Induction of sedation and recovery are both very quick, gas metabolism is negligible and almost eliminated through drugs. Cooperation and compliance are both decision making factors in treatment planning. Stress and anxiety are omnipresent during endodontic treatment regardless of age. In such situations achieving desirable endodontic outcome remains a challenge.

The main objectives of conscious sedation – reduction or elimination of anxiety, reduce outward movement and reaction to dental treatment, enhance communication and patient co-operation, raise the patient reaction threshold, increase tolerance for longer appointments, aid in treatment of mentally/ physically compromised patients, reduce gagging, potentiate the effect of sedatives. Indication for the use of nitrous oxide - fearful or anxious patients, patients with special health care needs, a patient whose gag reflex interfere the dental care, a patient for whom profound local anesthesia cannot be achieved, Co-operative patient undergoing lengthy dental procedure.

A study of Changpong, et al. in 2005 evaluated patients demand for sedation or anesthesia to various procedures. Results stated that the percentage of patients demand for sedation includes 2% for oral prophylaxis, extraction 40%, endodontic therapy 55% and periodontal therapy 68% which indicates probability of fear and apprehension for and during endodontic therapy is quite high. This case report highlights the endodontic management of an anxious patient using nitrous oxide sedation.

Conclusion

Although few contraindications and disadvantages of nitrous oxide sedation exists, managing apprehensive patients with nitrous oxide

inhalation holds primary treatment option compared to general anesthesia. Further research and studies are necessary in this regard [1-19].

References

1. Clark MS (2010) Contemporary issues surrounding nitrous oxide. In: Malamed SF, ed. Sedation: A Guide to Patient Management. 5th ed. St. Louis, Mo: Mosby Elsevier 256.
2. Duncan GH, Moore P (1984) Nitrous oxide and the dental patient: A review of adverse reactions. J Am Dent Assoc 108: 213-219.
3. Fleming P, Walker PO, Priest JR (1988) Bleomycin therapy: A contraindication to the use of nitrous oxide-oxygen psychosedation in the dental office. Pediatr Dent 10: 345-346.
4. Moss E, McDowall DG (1979) ICP increase with 50% nitrous oxide in oxygen in severe head injuries during controlled ventilation. Br J Anaesth 51: 757-761.
5. Levering NJ, Welie JVM (2011) Current status of nitrous oxide as a behavior management practice routine in pediatric dentistry. J Dent Child 78: 24-30.
6. Stach DJ (1995) Nitrous oxide sedation: Understanding the benefit and risks. Am J Dent 8: 47-50.
7. Foley J (2005) A prospective study of the use of nitrous oxide inhalation sedation for dental treatment in anxious children. Eur J Paediatr Dent 6: 21-27.
8. Lyratzopoulos G, Blain KM (2003) Inhalation sedation with nitrous oxide as an alternative to dental general anesthesia for children. J Public Health Med 25: 303-312.
9. Hosey MT (2002) UK National Clinical Guidelines in Pediatric Dentistry. Managing anxious children: The use of conscious sedation in paediatric dentistry. Int J Paediatr Dent 12: 359-372.
10. Donaldson D, Meechan JG (1995) The hazards of chronic exposure to nitrous oxide: An update. Br Dent J 178: 95-100.
11. Luhmann JD, Kennedy RM (2000) Nitrous oxide in the pediatric emergency department. Clin Pediatr Emerg Med 1: 285-289.
12. Emmanouil DE, Quock RM (2007) Advances in understanding the actions of nitrous oxide. Anesth Prog 54: 9-18.
13. Malamed SF (2010) Sedation: A Guide to Patient Management. 5th ed. St. Louis, MO: Mosby Elsevier 248-259.
14. Klein U, Robinson TJ, Allshouse A (2011) End-expired nitrous oxide concentrations compared to flowmeter settings during operative dental treatment in children. Pediatr Dent 33: 56-62.
15. Paterson SA, Tahmassebi JF (2003) Pediatric dentistry in the new millennium: Use of inhalation sedation in pediatric dentistry. Dent Update 30: 350-356, 358.
16. Malamed SF, Clark MS (2003) Nitrous oxide-oxygen: A new look at a very old technique. J Calif Dent Assoc 31: 397-403.
17. American Academy of Pediatric Dentistry (2013) Policy on minimizing occupational health hazards associated with nitrous oxide. Pediatr Dent 35: 80-81.
18. Holyroyd I (2008) Conscious sedation in pediatric dentistry: A short review of the current UK guidelines and the technique of inhalational sedation with nitrous oxide. Paediatr Anaesth 18: 13-17.
19. Sanders RDB, Weimann J, Maze M (2008) Biologic effects of nitrous oxide: A mechanistic and toxicologic review. Anesthesiology 109: 707-722.

Copyright: ©2018 Aditi Jain, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.