

# Case Preferences In Choosing Conscious Sedation Versus General Anesthesia Amongst Pediatric Dentists: A Research Survey

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## ABSTRACT

**Aim:** Purpose of our research was to assess the preference of pediatric dentists to carry out treatment with either conscious sedation or with general anesthesia.

**Methodology:** 50 children were selected for your study who did not have any previous medical conditions. Patients requiring complete dental treatment were treated under GA, those requiring one or two procedures were under conscious sedation. The two groups of patients were evaluated in terms of vital signs, duration of the treatment procedure, patient behavior, recovery time and comfort experienced by the dentists and the anesthesiologists.

**Results:** Dentists in sedation group were anxious, uncomfortable and restless during implementation of dental treatment. During dental procedure under sedation, some interruption has been noted in few cases such as vomiting during the procedure (3 cases). Those who vomited, during the procedure, their heads were turned to one side, the procedure was discontinued immediately (to prevent aspiration), and the patients were referred for treatment under GA.

**Conclusion:** Dental treatment under CS can be successful with little or no complications if the cases are well selected by qualified trained dentist.

**Keywords** Dental Treatment; Sedation; General Anaesthesia

## 1. INTRODUCTION

It is essential to possess a various armamentarium of behavior management techniques when providing attention to the pediatric population. Many of those techniques are aimed towards the management of pre-cooperative children or children with special medical considerations. Commonly used basic behavior management techniques include tell-show-do, nitrous oxide-

oxygen inhalation, and voice control, while advanced techniques include protective stabilization, moderate sedation, and anesthesia.<sup>1-4</sup> general anaesthesia and moderate sedation are advanced pharmacological behavior management techniques that are often utilized to manage pre-cooperative patients, treat children when basic behavior management modalities are unsuccessful, and reduce medical risks.<sup>2,3</sup>

Moderate sedation is defined as a decreased state of consciousness induced by a pharmacologic agent. Patients reply to verbal commands with no or light tactile stimulation, are able to maintain their airway independently, and don't require intervention to help with ventilation. During moderate sedation, patients have normal cardiovascular function.<sup>5-7</sup>

Moderate sedation will be accustomed diagnose and treat fearful or anxious patients when basic behavior guidance techniques are unsuccessful. Patients requiring moderate sedation often exhibit lack of psychological or emotional maturity to cooperate within the dental setting. they will even have mental, physical, or medical disabilities necessitating advanced pharmacological behavior management. Moderate sedation is also utilized to safeguard the developing psyche of kids. Treatment goals of moderate sedation include, protecting the patient's safety and welfare, decreasing the pain and discomfort experienced, maximizing the likelihood of amnesia, and controlling the anxiety, movement, and behavior of the patient. Conscious sedation will be tired a dental clinic equipped the right monitoring and equipment.<sup>2</sup>

General anesthesia may be a state of unconsciousness induced by a pharmacologic agent. Patients don't seem to be arousable by painful sensations and sometimes require assistance with ventilation and maintaining their airway.<sup>5</sup> general anaesthesia may be wont to diagnose and treat dental ailments in fearful, anxious, or medically compromised children and youngsters with special healthcare needs. Treatment goals of a patient undergoing anesthesia include protecting the patient's psyche, welfare, and safety and eliminating the anxiety, movement and pain response. anaesthesia is performed in an exceedingly hospital setting or an ambulatory clinic with proper administration, monitoring and reversal equipment available.<sup>2,6-8</sup> anaesthesia during a pediatric dental patient is usually provided by a dental or medical anesthesiologist, or qualified medical professional (i.e. oral surgeon or nurse anesthetist).

While the American Academy of Pediatric Dentistry states that general anaesthesia and moderate sedation are safe and effective procedures (with proper case selection), adverse events have still been documented.<sup>5,8,9</sup>

## **2. AIM OF THE STUDY**

Purpose of our research was to assess the preference of pediatric dentists to hold out treatment with either conscious sedation or with anaesthesia.

## **3. METHODOLOGY**

50 children weren't known to own any medical problems (ASA 1) reported to our institution. All patients were un-cooperative or very young who refused to receive dental treatment with behavioral management and native anesthesia. Age of patients range between 2.5 to 12 (mean age 6) years. Thirty- one in every of the cases were males and 29 were females. another method like treatment under CS or GA to manage their behavior were offered to the parents/guardians. Once the choice was made to refer the kid for dental treatment under CS or GA, the kind and action of either method was explained carefully to the oldsters /guardians; this includes indication and contra-indication with possible consequences of every form of treatment. the oldsters signed written consent for the procedure.

Physical assessment and vital signs of the patients are checked carefully. *viva voce* and oral radiographs (whenever possible) were obtained. Initial dental treatment plan was discussed with the foyeys. All patients who need long dental procedures were referred for full dental rehabilitation under GA while those that require short procedures like few dental fillings or extractions of primary teeth were referred for dental treatment under CS. Blood extraction for descent screening is finished for all patients. Physical assessment was completed by the anesthesia physician to approve or disapprove the case per the final health condition of every patient.

All patients received dental treatment within the day case surgery where GA or CS was administered only by the anesthesiologists. All sedation children had IV line for drug administration (even those that received oral medication like midazolam, an IV cannula was placed for immediate interaction if necessary). Fasting time was the identical (6 - 8 hours) for both groups. Most of the sedative drugs were cocktail of midazolam with ketamine, or midazolam with propofol. Some children had sevoflurane with oxygen for induction of CS to insert cannula in needle phobic or screaming children.

Following completion of the treatment (both groups), patients rest within the hospital room with parents and being watched by the recovery nurses until the patient returns to an honest level of consciousness. The 2 groups of patients were evaluated in terms of significant signs, duration of the treatment procedure, patient behavior, recovery time and luxury experienced by the dentists and also the anesthesiologists.

#### **4. RESULTS**

All patients who need long dental procedures received full dental rehabilitation under GA (19 patients) while patients who required short procedures (few dental fillings or extractions of primary teeth) received dental treatment under CS (31 patients). Difficulties during treatment under CS were noted by the dentists and therefore the anesthesiologists. (Table 1)

Nevertheless, older children were tougher to manage their behavior during sedation. However, there was no difference in behavior between males and females children. During medical procedure under sedation, some interruption has been noted in few cases like vomiting during the procedure (3 cases). people who vomited, during the procedure, their heads were turned to at least one side, the procedure was discontinued immediately (to prevent aspiration), and therefore the patients were referred for treatment under GA. Furthermore, suction was in use for both groups, although, there have been difficulties or struggling experienced in some patients of the sedation group to stay the airway reflex clear as all patients were treated in supine position. When the treating dentist experienced such difficulties, the anesthesiologists rushed the dentist to complete the procedure quickly. Moreover, the oxygen saturation level was somewhat compromised in the sedation group compared with the GA group.

Dentists in sedation group were anxious, uncomfortable and restless during implementation of dental treatment. They were responsive to patient's vital signs, viewing the patients eyes, face and body movement further as getting worried about airway while within the GA group, they were concentrating on dental treatment while the anesthesiologists took care of the patients' general vital signs. Dentists and anesthesiologists failed to experience nervousness related to duration of the procedure during treatment under GA, and that they managed to comfortably conduct the procedure whereas during CS, they were worried from any complications which will occur during the procedure and rushed to end the treatment. Children treated under CS were noted to be agitated on recovery. However, patients who were treated under GA experienced a calmer phase during recovery.

It was observed that dentist were more comfortable in carrying out their work when GA was given ( $p=0.031$ ), when the anaesthesiologist shared their burden in handling uncooperative children, for them even the use of GA was comfortable and the child patient was not aware of the procedure being carried out, so in turn comfortability was also observed. Oxygen saturation was better in case of GA group of patients ( $p=0.03$ ) and was adequately controlled by adequate measures carried out by anaesthesiologist. (Table 2)

Table 1- Comparison regarding the usage of GA vs CS as observed amongst patients who required dental treatment.

Variables	Conscious sedation (CS)	General anesthesia (GA)
Number of patients	31	19
Recovery time	2 hours	4-6 hours
Complications	Vomiting (7%), post-operative infection (2%)	Dizziness (1%), vomiting (1%)
Dentist and anaesthesiologist's comfort	Dentists were strained	More comfortable
Procedure type/length	Less	More
Comfort of patient	Less (24%), Normal (76%)	Less (5%), Normal (95%)
Oxygen saturation level	Normal (89%), low (11%)	Normal (96%), Low (4%)

Table 2- Data recorded in the present study

Variables	Conscious sedation (CS) (mean $\pm$ SD)	P value (chi test)	General anesthesia (GA) (mean $\pm$ SD)	P value (chi test)
Recovery time	1.36 $\pm$ 0.6	0.043	1.67 $\pm$ 0.66	1.49
Complications	2.43 $\pm$ 1.4	1.213	2.77 $\pm$ 1.91	3.45
Dentist and anaesthesiologist's comfort	2.11 $\pm$ 0.27	0.072	0.73 $\pm$ 0.22	0.031
Procedure type/length	3.56 $\pm$ 2.1	2.38	2.66 $\pm$ 1.36	1.89
Comfort of patient	1.41 $\pm$ 0.1	0.069	1.99 $\pm$ 0.55	0.01
Oxygen saturation level	2.56 $\pm$ 1.44	1.16	1.04 $\pm$ 0.78	0.03

\*SD= Standard deviation,  $p < 0.05$  is significant

## 5. DISCUSSION

When confronting a defiant or pre-co-operative young patient with extensive dental decay the dentist must decide between treatment under conscious sedation with passive restraint or anesthesia. Although some practitioners favor to attempt and exhaust sedative techniques in most cases and use anaesthesia as a final resort, many others don't mandate that alternate approaches first be attempted before treating under anesthesia and routinely recommend it as their first choice.

The use of sedation for dental treatment in young children has attracted considerable interest since the publication of the govt paper 'A conscious decision'.<sup>10</sup> a significant consequence of this was the change within the arrangements for anesthesia (GA) for dentistry. This has led to a welcome shift in commission provision from GA to sedation. additionally, the sedation to be used by the operator-sedationist is now widely brought up as conscious sedation.<sup>11</sup>

This falls within this government guidelines highlighting the importance of reducing the employment of GA. However, the technique of inhalation sedation isn't successful for youngsters who cannot use the nasal mask correctly. this can be because the technique requires some co-operation from the patient.<sup>10</sup>

Children requiring over 2 appointments are often not qualified for CS and will be recommended to possess treatment completed under GA. Dental treatment completed under GA are tired 1 appointment but it requires plenty of pre-anaesthetic check-ups which increases the burden of appointments additionally.

The present study has similar results to it reported by Silay., et al.<sup>12</sup> Dental cases that need multiple dental procedures, CS method wasn't effective and not another thanks to GA. Patients with pre-existing medical conditions, young children and therefore the elderly are at more risk with sedation because the balance in sedation will be easily shifted from CS to deep sedation.<sup>13,14</sup> As a consequences, this might cause over-sedation and respiratory depression which can lead to death or permanent neurologic damage.

However, no medical authority would disagree that anaesthesia involves a particular element of risk and major complications may occur, even life-threatening complications like aversions and bronchospasms. there's an increased risk for paediatric patients.<sup>13-16</sup> Studies conducted regarding this issue have shown surprisingly different results than one would expect. The results of those studies support the view that conscious sedation with physical restraint doesn't affect the long run dental behaviour of kids in an exceedingly negative manner.<sup>17-19</sup> Parents' misconception of restraint is embedded so deep in their minds that although much evidence is also dropped at justify its use they still may prefer the GA option. However, the dentist may play a task within the decision-making process.

## 6. CONCLUSION

Dental treatment under CS are often successful with little or no complications if the cases are well selected by qualified trained dentist. Treatment under GA is favorable than CS for both dentists and anesthesiologists but it's not an alternate to dental treatment on dental chair with behavior management.

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