

Introduction

Dental caries remains the most common chronic disease in the pediatric population, with the highest prevalence in low socioeconomic and minority groups.¹ Carious lesions can lead to difficulties with eating, sleep disturbances, missed school days, decrease in academic performance, and frequent emergency room visits. These consequences can severely impact a child's quality of life.²

Although most children may be able to cooperate with chairside treatment through appropriate behavior guidance techniques, treatment of dental caries can be challenging.⁴ Alternative methods such as oral conscious sedation or general anesthesia may be considered to accommodate individual behavior or complex needs.⁵ Oral conscious sedation, or moderate sedation, involves the oral administration of drugs, leading to a depression of consciousness where patients may still have the capability to respond to verbal commands and tactile stimulation.⁶ Depending on the extent of treatment, more than one visit may be required. Under general anesthesia, or deep sedation, drugs are administered intravenously in a surgical setting, such as a hospital operating room. Children undergo a full loss of consciousness, allowing for all treatment to be completed in 1 visit.

According to AAPD Guidelines, a 1-week postoperative follow-up visit and periodic examinations every 3 months are recommended for children with a high caries risk assessment.⁸ A recent study investigating patients who completed comprehensive dental care prior to COVID-19 found that patients who received oral conscious sedation were more likely to return for their recall visit within one year as compared to those who received general anesthesia.⁹

Children who undergo full mouth rehabilitation under general anesthesia and oral conscious sedation are high caries risk and require more frequent interventions.¹⁰ Currently there is little information as to whether these treatment modalities would modify a parent's behavior to focus more on preventative measures such as frequent recall visits and improving oral hygiene, particularly after the height of the COVID-19 pandemic.

This study aims to elucidate whether parents are compliant with recall visits after their child receive full mouth rehabilitation under general anesthesia and oral sedation.

Objective

The objective of this study is to evaluate the compliance of recall visits of pediatric patients within one year of receiving comprehensive dental treatment under general anesthesia as compared to oral sedation.

Study Design and Methods

This study was a retrospective chart review of electronic dental records from Montefiore Medical Center's Division of Pediatric Dentistry. Study subjects were patients 12 years of age and under who received full mouth rehabilitation either through general anesthesia (GA) or oral sedation (OCS) within the one year period of January 1 to December 31, 2021 with recall visits until December 31, 2022.

A single reviewer collected data from the electronic dental records of study subjects treated in the Operating Room at Montefiore Moses Hospital and the Montefiore Pediatric Dentistry clinic where oral sedations were performed. Recall visits were completed at one of four Montefiore Pediatric Dentistry Clinics in Bronx, NY. Patient records were retrieved from QSI Dental® Clinical Product Suite (CPS). The following data information was collected: patient age at the time of treatment, gender, general anesthesia and sedation procedure codes, and periodic exam codes.

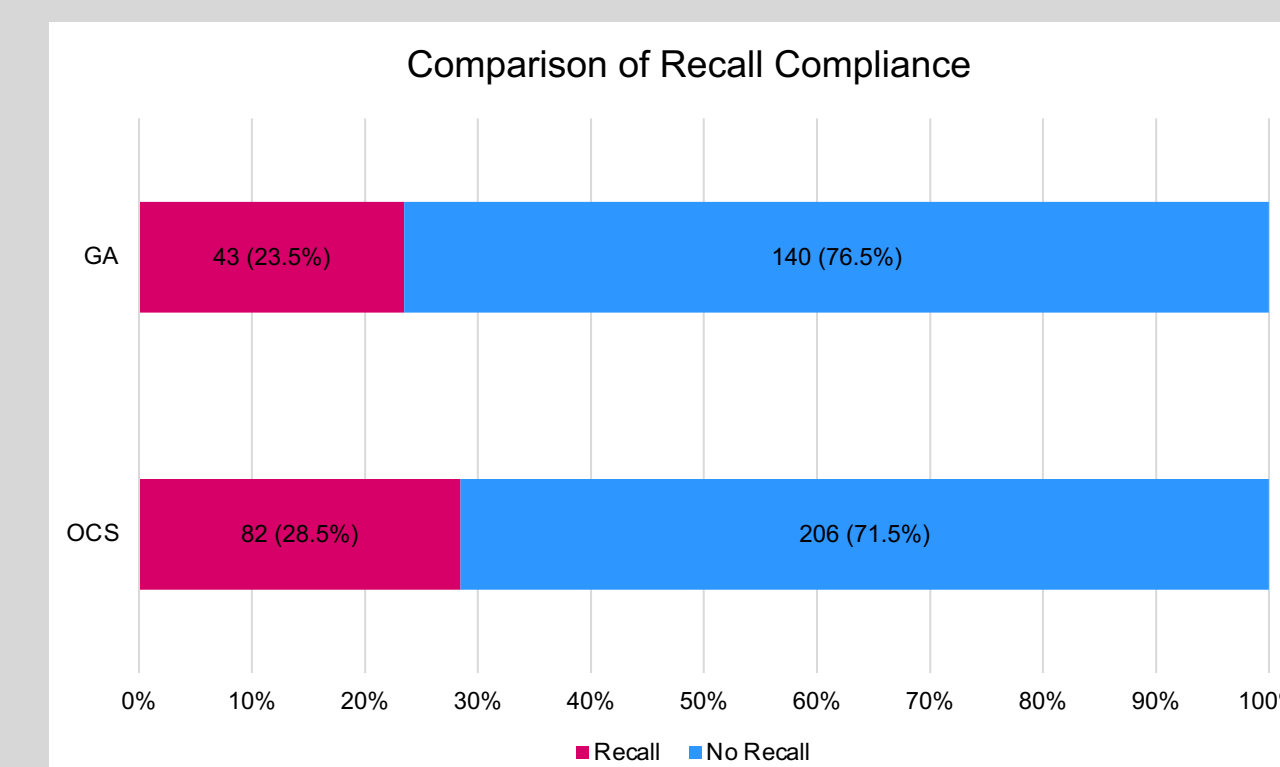
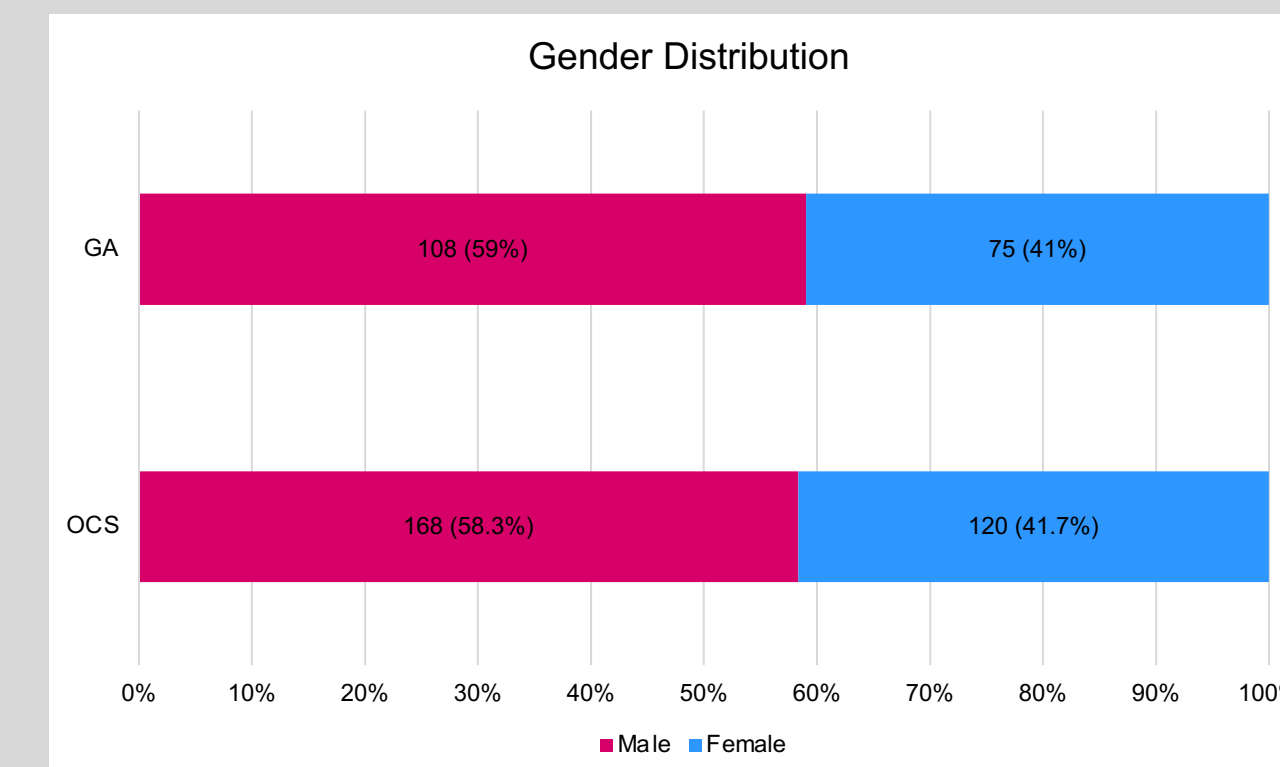
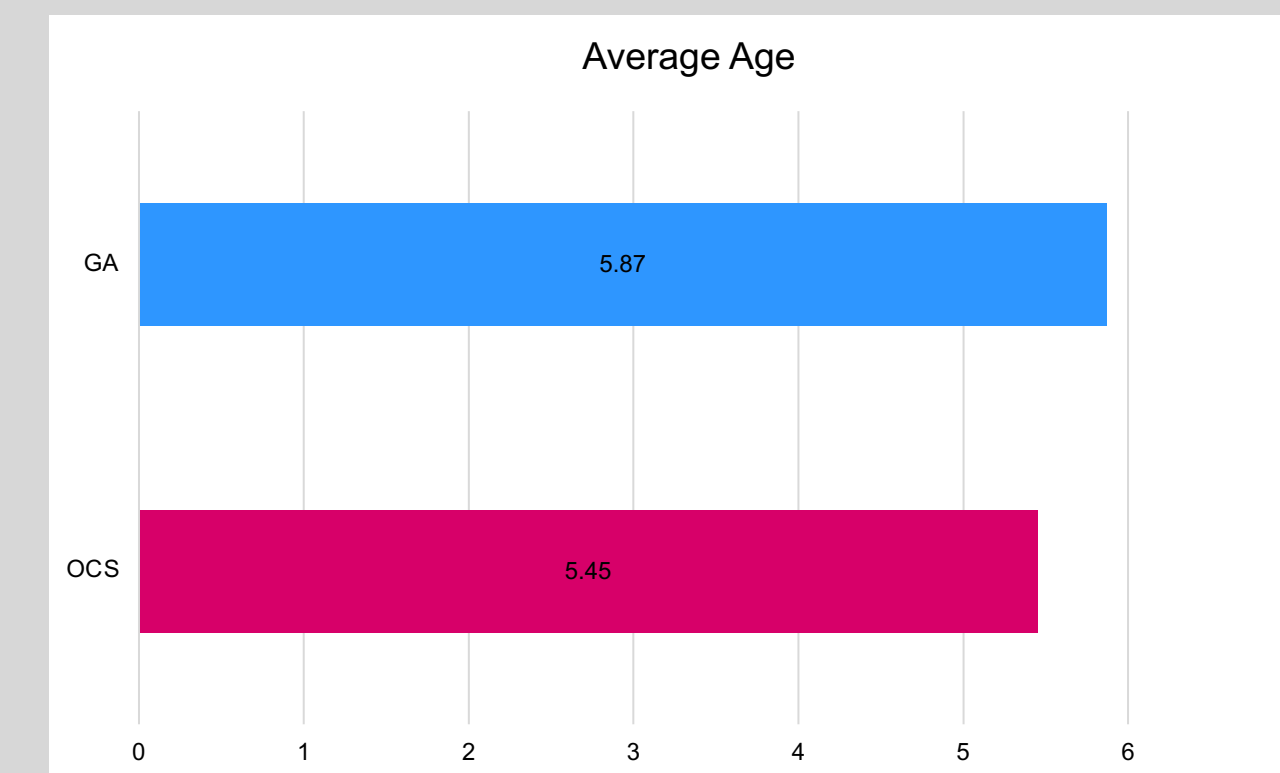
Patients who were referred to our clinics from an outside provider were excluded since they may have returned to the referring dentist for recall visits.

Results

A total of 506 patient records were reviewed: 189 patients received full mouth oral rehabilitation through general anesthesia and 317 patients received treatment through oral conscious sedation. All patients who received OCS were age 12 and under, whereas 3 GA patients were older than 12. These patients were excluded as they did not meet the inclusion criteria. 3 additional GA patients were also excluded as they were referred to our clinic from a private practice and may have returned to their primary dental provider for recall visits. 29 OCS patients completed their sedation in two visits. Therefore, only one visit was recorded, and duplicate patients were removed. Of the total dental records reviewed, only 471 patients remained after exclusions: 288 patients in the OCS group and 183 patients in the GA group.

The average age of all patients was 5.61 years (SD 1.34) with comparable mean ages in each group: 5.45 (SD 1.34) and 5.87 (SD 1.94) for OCS and GA, respectively. There were more males than females in each group as the OCS group comprised of 168 (58.3%) males and 120 (41.7%) females, while the GA group had 108 (59.0%) males and 75 (41.0%) females. Results of this study showed that in the OCS group, 82 (28.5%) patients returned for a recall visit within one year of receiving full mouth rehabilitation and 206 (71.5%) patients did not return during that time frame. In the GA group, only 43 patients (23.5%) were compliant in completing a recall visit within one year and 140 (76.5%) patients were not. There was a total of 125 (26.5%) recall patients and 346 (33.5%) without a recall within one year of the rehabilitation across both groups.

Results



Discussion

Although our study population comprised of patients with high caries risk, the number of preventative visits attended after undergoing oral sedation or general anesthesia was relatively low. This may be due to a parental misconception that caries are less likely to recur once full mouth treatment is completed.⁸ When comparing the OCS group and the GA group, the OCS group was slightly more compliant with recall visits. These findings align with the research by Jamieson et al which revealed recall rates after general anesthesia for dental treatment at a hospital are low and the rate of new or recurrent caries was very high.¹¹ Parents who are not compliant with bringing their children for recall visits are more likely to return with multiple carious lesions requiring emergency visits or even repeat treatment under GA or OCS.⁹ Therefore, it is important to educate the parents and emphasize the importance of preventative care. Additionally, establishing a dental home helps to provide continuous and comprehensive care.

Compared to previous studies investigating subjects prior to COVID-19, this study shows similar results in that there was a higher compliance to recall visits in the OCS than the GA group. Our study showed an overall lower recall rate for both groups, suggesting that the recall attendance of patients after OCS and GA may have been negatively impacted by COVID-19. A possible confounding factor could have been limited scheduling availability due to social distancing protocols.

Limitations of this study include a relatively small sample size and a disproportionate number of patients in the general anesthesia and oral sedation group. Further research could involve a greater sample size and survey parents to identify the reasons why recall compliance is low in this population.

Conclusion

There was a greater recall compliance in children receiving full mouth rehabilitation through oral sedation than general anesthesia. However, overall compliance with preventive visits after extensive treatment needs to be improved by motivating change, educating the parents, and establishing a dental home.

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