

Occurrence of Approximal Lesions Following General Anesthesia Treatment on Primary Canines and Molars



Richard Cattron, DMD and Amanda Pinder, DDS
NYU Langone Hospitals-Advanced Education in Pediatric Dentistry, Tucson, AZ
Department of Plastic Surgery

NYU Langone Dental Postdoctoral
Residency Programs

INTRODUCTION

The American Academy of Pediatric Dentistry (AAPD) recognizes full mouth dental rehabilitation under general anesthesia as an effective technique to treat extensive dental disease, behavioral disorders and medically compromised patients.¹

One of the goals of providing full mouth dental rehabilitation under general anesthesia is to prevent future caries.

Previous studies showed a higher number of carious lesions following dental treatment under general anesthesia compared to a control population.²

A retrospective study demonstrated nearly 50% of 261 general anesthesia dental patients needed restorations within 24 months and 71% by 48 months.³

This increased caries occurrence causes education and prevention techniques to be of even greater value before and after dental treatment.

PURPOSE

The purpose of this study was to complete a retrospective chart review of caries occurrence on untreated approximal surfaces of primary canines and molars.

These teeth were reviewed at six month recall exams for a period of 48 months following treatment under general anesthesia.

METHODS

An electronic chart review was conducted to include records that met the following inclusion criteria:

1. Children ages 3 to 6 years old at time of treatment under general anesthesia
2. General anesthesia completed between January 01, 2014 to December 31, 2017
3. Untreated approximal surfaces on primary molars or canines
4. Completion of two 6-month recall exams with radiographs within 48 months post-general anesthesia.

All patients were seen at El Rio Community Health Center in Tucson, Arizona.

Charts were reviewed to determine if patients developed carious lesions extending beyond 50% of dentinoenamel junction (DEJ) on bitewing radiographs and if restorations were planned or completed.

FIGURES



RESULTS

Results:
87 total patients: 42 males (49.4%)
43 females (50.6%)
4.2 years mean age

Combined totals: 276 canines
56 first molars
88 second molars

Results by age: 3-year-old group: 150 teeth total, 66 developed caries resulting in 44 restorations.
4-year-old group: 150 teeth total, 33 developed caries resulting in 16 restorations.
5-year-old group: 89 teeth total, 23 developed caries resulting in 14 restorations.
6-year-old group: 31 teeth total, 10 developed caries resulting in 6 restorations.

CONCLUSIONS

Based on this study's results, the following conclusion can be made:

The three-year old group exhibited the greatest number of caries and additional restorations over the 48 months post-treatment.

In all four age groups, the canines exhibited lowest caries and restoration occurrence rates while first and second primary molar caries rate were nearly equal. However, 50% or greater of these caries occurrences still did not require restorations.

Even within a high caries risk, low socio-economic status patient population, the practice approach of conservative and individual patient-based need for treatment should be the standard of care.

REFERENCES

1. "Clinical guidance on monitoring and management of pediatric patients during and after sedation for diagnostic and therapeutic procedures." *American Academy of Pediatric Dentistry Reference Manual*. 2015-2016; 37(6): 211-227. .
2. Galganny Almeida DDS DScD, Anna et al. "Future caries susceptibility in children with Early Childhood Caries following treatment under general anesthesia." *Pediatric Dentistry*. 2000; 22(4): 302-306.
3. Goldberg, Jeremy: Long-term caries relapse following treatment under General Anesthesia. <https://hdl.handle.net/1807/98031>. Nov2019