

Outcomes of Odontoplasty of Caries Performed under General Anesthesia in the Pediatric Patient



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INTRODUCTION

- Odontoplasty, also referred to as “disking” or interproximal grinding, is an alternative approach to treat carious lesions in the affected primary dentition.
- Odontoplasty is a treatment consideration where filling retention can not be created, if tooth exfoliation is close in time, or if a child’s behavior will not permit other conventional treatment options.¹
- The overall failure rate for dental treatment performed under general anesthesia in pediatric patients is 6.59%. The lowest failure rates were amongst SSCs, pulp therapies, fissure sealants and amalgam restorations³
- Although an article published in 2018 suggests that odontoplasty of carious lesions in primary teeth is a technique that is employed by a multitude of dentists, the success rate of this procedure has not been well established⁶

PURPOSE

The objective of this research study is to determine the outcomes of carious teeth treated with odontoplasty under general anesthesia in the pediatric patient.

METHODS

- Electronic chart records of children 1-14 years of age who had odontoplasty performed under general anesthesia from 01/01/2015 to 11/31/2020 at El Rio Community Health Center were examined
- Chart notes were reviewed and data collected including age at the time of treatment and whether additional treatment was indicated following odontoplasty.
- Comparisons of the outcomes were done by a two-sample t-test for continuous variables and Chi-square test for categorical variables.

RESULTS

- A total of 165 teeth from 115 patients were included.
- The mean age was 4.6 years with 47.8% (55 patients) being male and 52.2% (60 patients) being female.
- Out of the 115 patients, 3.5% (4 patients) developed future treatment needs. Of the patients treated, one patient was treated with silver diamine fluoride applications, one patient was treated with a composite restoration and two patients were treated with a stainless steel crown.
- There was no statistically significant difference ($P > 0.05$) between gender or age at the time of treatment or gender, with whether additional treatment was indicated following odontoplasty.

CONCLUSIONS

Odontoplasty may be a useful treatment option in primary teeth treated under General Anesthesia with low probability of needing future treatment intervention.

REFERENCES

¹Hallonsten AL, Magnusson BO, Rølling I. Operative dentistry, prosthetics. In: Magnusson BO, editor. Pedodontics – a systematic approach. Copenhagen, Denmark: Munksgaard; 1981. p. 197–232.

²Ingers G. Modifierad kariesterapi på barn med växelbett [Modified therapy for dental caries in children with mixed dentition]. Tandlakartidningen. 1972 Apr 1;64(7):255-8. Swedish. PMID: 4502969.

³Khodadadi E, Mohammadpour M, Motamedian SR, Kouhestani F. Failure Rate of Pediatric Dental Treatment under General Anesthesia. *Dent J (Basel)*. 2018;6(3):25. Published 2018 Jun 22. doi:10.3390/dj6030025

⁴Lee PY, Chou MY, Chen YL, Chen LP, Wang CJ, Huang WH. Comprehensive dental treatment under general anesthesia in healthy and disabled children. *Chang Gung Med J*. 2009 Nov-Dec;32(6):636-42. PMID: 20035643.

⁵Tate AR, Ng MW, Needleman HL, Acs G. (2002) Failure rates of restorative procedures following dental rehabilitation under general anesthesia. *Pediatr Dent*. Jan-Feb;24(1):69-71. PMID: 11874065

⁶Granath J, Asztély A, Lundgren T. Interproximal grinding (disking) of caries in primary molars, attitudes and the extent utilized in a Swedish County. *Acta Odontol Scand*. 2018 Aug;76(6):394-400. doi: 10.1080/0016357.2018.1465995. Epub 2018 Apr 30. PMID: 29707990.