

# Retrospective Study of Indirect Pulp Treatment on Cavitated Primary Teeth

Sun Ha Kim, DDS; Kyounga Cheon, DMD, MS  
UAB School of Dentistry, Department of Pediatric Dentistry

## Introduction

This retrospective study was conducted to assess the clinical and radiographic success of indirect pulp treatment (IPT) on primary teeth, and to compare the influence of restorative materials on the success of IPT.

IPT is indicated for asymptomatic teeth with extensive carious lesions approximating to the pulp. IPT is performed by leaving the deepest carious lesion proximal to the pulp tissue in order to avoid pulp exposure. The affected tooth surfaces are restored with resin modified glass ionomer, stainless steel crown, resin composite, or amalgam.

The efficacy of the IPT in primary teeth will be evaluated for prediction of the optimum treatment option for preserving primary teeth until physiological tooth exfoliation.

The current retrospective study based on the patient data from UAB School of Dentistry will increase the knowledge of understanding the prognosis of the indirect pulp treatment in primary teeth.

## Purpose

To evaluate the prognosis of indirect pulp treatment (IPT) on primary teeth from the pediatric patients at UAB Pediatric Dentistry Finn Clinic.

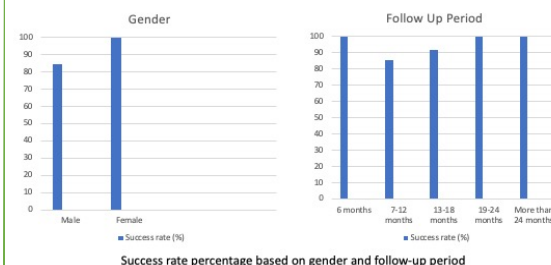
## Methodology

- The Institutional Review Board (IRB) was approved for collecting electronic dental records from the UAB School of Dentistry Salud System.
- A retrospective review completed on the patients treated with indirect pulp treatment at UAB School of Dentistry from 2011 through 2021.
- Collected data: Date of the treatment; patient demographics including tooth number, patient age at the time of the treatment, gender, type of restoration placed after IPT; clinical examinations, and radiographic images at pre and post follow up treatments; and the need for further treatment (i.e. extraction).

## Methodology

- Inclusion criteria: Returning for at least one six month recall with appropriate radiographs to assess the tooth.
- The treatment was considered successful if patient remained asymptomatic and there was no sign of pathosis present radiographically.
- The patients were followed up clinically and radiographically for a time ranging between 6 months to 36 months.

## Results



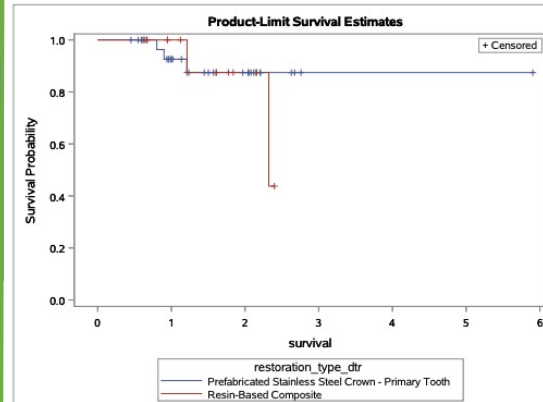
Post-op clinical findings (Success/Failure)				
success_failure	Frequency	Percent	Cumulative Frequency	Cumulative Percent
F	5	10.87	5	10.87
S	41	89.13	46	100.00

## Recommendations

Indirect pulp treatment should be considered as an alternative pulp treatment option for primary teeth with dental caries.

## Results

Table of restoration_type_dtr by success_failure			
restoration_type_dtr	success_failure(Post-op clinical findings (Success/Failure))		
	F	S	Total
Prefabricated Stainless Steel Crown - Primary Tooth	3 9.38	29 90.63	32
Resin-Based Composite	2 14.29	12 85.71	14
Total	5	41	46



## Conclusion

The present retrospective study demonstrated that the indirect pulp treatment (IPT) is a successful treatment option for primary teeth with dental caries proximal to the pulp tissue. IPT can be a viable treatment option to potentially prolong the life of the tooth until normal exfoliation. Thus, indirect pulp treatment should be considered as an alternative pulp treatment in managing primary teeth with extensive dental caries. Although the current data showed that restoring the primary teeth with stainless steel crown had a longer survival probability compared to that of the resin-based composite restorations, the difference was not statistically significant (P-value = 0.66) due to the small sample size. Additional studies are needed to further confirm the effect of restorative materials on the success of IPT. In conclusion, the current study demonstrated that IPT is a successful technique that will prolong the life of the primary teeth until physiological tooth exfoliation.

## References

- Al-Zayer, M. A., Straffon, L. H., Feigal, R. J., & Welch, K. B. (2003). Indirect pulp treatment of primary posterior teeth: a retrospective study. *Pediatric dentistry*, 25(1), 29–36.
- Maqbool, M., Noorani, T. Y., Samsudin, N. A., Awang Nawi, M. A., Rossi-Fedele, G., Karobari, M. I., Messina, P., & Scardina, G. A. (2021). Association of Vital Pulp Therapy Outcomes with Tooth Type, Arch Location, Treatment Type, and Number of Surfaces Destroyed in Deciduous Teeth: A Retrospective Study. *International journal of environmental research and public health*, 18(15), 7970.
- Smail-Faugeron, V., Porot, A., Muller-Bolla, M., & Courson, F. (2016). Indirect pulp capping versus pulpotomy for treating deep carious lesions approaching the pulp in primary teeth: a systematic review. *European journal of paediatric dentistry*, 17(2), 107–112.