

Prevalence of Early Loss of Primary Molars among Children Aged 5-10 Years in Darbhanga Town: A Cross-Sectional Study

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ABSTRACT

Background: The present study was designed to determine the prevalence of premature loss of primary molars in 5-10 year children in Darbhanga town. **Methods:** This is an observational, cross-sectional study that include 100 children of aged 5-10 year (50 male & 50 female child). The examination was done under sufficient artificial light. Data including patient age and missing teeth were collected. **Results:** The result showed that 46% had early loss of primary molar teeth with boys showing an increased prevalence rate (60.8%) as compared to female (39.1%). Also, mandibular arch are more commonly affected. **Conclusion:** The prevalence rate of premature loss of primary teeth was found to high. Educational and preventive programs must be implemented in order to maintain healthy primary dentition which eventually prevents the disturbances in normal occlusion.

Keywords: Premature tooth loss, Trauma, Caries, Primary teeth

INTRODUCTION

Maintenance of primary teeth is very essential for establishment of normal occlusion. The loss of primary teeth before the natural exfoliation time is termed as "PREMATURE LOSS OF DECIDUOUS TEETH". Premature loss of deciduous teeth are more likely due to caries, trauma, inappropriate oral hygiene measures.^[1] Dental caries are considered to be the most important causative factors for early loss of teeth.^[2]

Trauma to the deciduous teeth will lead to avulsion, premature exfoliation or extraction which can be either due to complication or poor prognosis. This will affects the esthetics in case anterior teeth is lost and speech difficulty. Due to early loss of primary teeth, the successor teeth either erupt earlier or had a delayed eruption. Due to this the pediatric patient will experience different problems such as dental rotation, crowding, development of habits, impaction of permanent teeth leading to the reduction of dental arch length.^[3]

In primary teeth root resorption is affected by various factors such as environmental, hereditary, nutritional and endocrine factor whereas in

permanent teeth it remains undisturbed. Moreover, the local factors such as decay, pulp necrosis and pulpotomy increased the rate of root resorption and hastened the exfoliation of deciduous teeth.^[4]

In addition, if primary first molar is lost, the dental arch length reduction will be greater in mandible as compared to that of maxilla.^[5] This effect is also obvious if loss of tooth occur at very early age and if it occurs in crowded or spaced dentition.^[6,7] Early loss of primary second molar in maxillary arch will result in mesial migration of permanent first molar.

If deciduous molars are extracted prematurely, it will results in increased incidence of space closure. Due to the movement of teeth posterior to the extraction site, the rate and amount of closure in maxillary region is higher than the mandible in which closure occur distally to the extraction site by the teeth present anteriorly. The affected teeth should be restore as soon as possible otherwise it will lead to malocclusion or indulgement of some deleterious habits.^[8] Most of the dentists prefer to extract the primary teeth rather than restore due to many reasons such as total coronal destruction or grossly decayed teeth.^[9] it could either be due to lack of knowledge among parents about restoring deciduous teeth and the consequences of early loss of primary teeth.^[10]

MATERIALS & METHODS

The cross-sectional study was undertaken in Darbhanga town. Total 100 students aged 5-10 years

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of which 54 were male child and 46 were female child were assess for the presence of early loss of primary molar teeth. All the clinical examination was performed under sufficient artificial light. The data were recorded according to age, gender and missing teeth. Parents and caregivers of children were informed about the study and the related examination. Prior to examination, written consent was taken from their respected guardian.

Inclusion Criteria

- a) 5-10 years old children
- b) Parents agreed to participate in the study

Exclusion Criteria

- a) Medically compromised
- b) Parents not willing for the study
- c) Un-cooperative child

The data was collected and was analyzed for the prevalence of early loss of primary molar teeth.

RESULTS

Table 1: Distribution of Early Loss of Primary Molar Teeth among Various Age Groups and Gender

	AGE (Years)					Total
	5-6	6-7	7-8	8-9	9-10	
Boys	5	5	9	6	3	28(60.8%)
Girls	3	3	7	3	2	18(39.1%)
Total	8	8	16	9	5	46

Table 2: Distribution of Early Loss of Primary Teeth According To Dental Groups

Dental Group	Number Of Teeth Lost	Boys	Girls
1st molar	32(69.56%)	22	10
2nd molar	14(30.43%)	9	5
Total	46	31	15

Table 3: Distribution Of Early Loss Of Primary Teeth Based On Dental Arches

Arch Involved	Number Of Teeth Lost	Percentage
Maxillary	16	34.7%
Mandibular	30	65.21%
Both	46	

In our study 100 children of different background were participated. In among 100 children, prevalence of early loss of primary molar teeth was found to be 46%. Also, the increased prevalence rate was found in boys. The Prevalence rate was found to be higher in children belonging to low socioeconomic status.

DISCUSSION

The prevalence of early loss of primary teeth has been previously established during research in many areas around the world. The present study comprises 100 children of which 50 were boys and 50 were

girls. It has been seen that the prevalence of early loss of teeth was found in 46 children of which 28 (60.8%) was among boys and 18 (39.1%) was among girls. These findings were similar to those found by Jayachandar D et al where the prevalence rate was 54.46% in male and 45.35% in female.^[11] Also this finding were found to be similar by Alessandro Leite Cavalcanti et al.^[12] The higher prevalence rate might be due to the fact that dental practitioners opt to extract carious primary teeth rather than to save the primary teeth.⁹ Additionally the parents do not care about primary teeth and think that it will be replaced.^[13] The children are mostly affected by the untreated early childhood caries which is the major causative factors for early loss.^[14] Also, lack of oral hygiene measures among the mothers are one of the factor which is the basic need for oral health.^[15]

In the present study it was found that male children have higher prevalence of early loss (60.8%) as compared to female children (39.1%). It might be due to the longer feeding period in male children due to preference of sons irrespective of their socioeconomic status such as diet, geographic location, and cultural differences due to priority of male children.^[16]

The prevalence was found to be higher in first molar (69.5%) as compared to second molar (30.4%). This finding coincide with the Najlaa Alamoudi et al.^[9] It might be due to the difference in eruption timing where first molar erupt earlier and had to present in oral cavity for longer period. In order to maintain the space the dental practitioner prefer to restore deciduous second molar till the eruption of first permanent molar. This is the reason why deciduous first molar are extracted as compared to second deciduous molar leading to frequent early loss of the primary first molars.^[17]

Also, in present study, the larger prevalence was seen in mandibular arch as compared to maxillary arch. The finding was found to be similar to that of the finding of Alessandro Leite Cavalcanti et al.^[12] It might be due to greater plaque accumulation and food lodgment in the mandibular posterior region as compared to the relative abundance of saliva and its anti-caries effect in maxillary molar teeth.^[9]

In studies conducted by Terlage et al,^[18] and Alexander SA et al,^[19] indicate a decrease in class I molar relationship when there is a premature loss of primary molars. The study conducted by Alexander et al,^[20] reveal that the relationship between permanent first molar occlusion and facial form of the child influences the space loss following earlier exfoliation of primary teeth.

After the completion of screening oral hygiene instruction was given to parents and the child and awareness was made regarding early exfoliation of primary teeth and the importance of restoring teeth. Also, parents/guardian were educated regarding importance of primary teeth in the eruption of

permanent teeth as they serves as a space maintainer for permanent teeth.

CONCLUSION

From the above study done, following conclusion can be drawn-

1. Prevalence of early loss of primary molar teeth was found to be 46%
2. Prevalence rate was higher in male (60.8%) and in female (39.1%)
3. Prevalence was found to be higher at the age of 8-9years.
4. Most commonly first deciduous molar followed by deciduous second molar.
5. Also, mandibular arch was affected more commonly as compared to maxillary arch.

REFERENCES

1. Cavalcanti AL, Barros de Alencar CR, Medeiros Bezerra PK, Granville-Garcia AF. Prevalence of early loss of primary molars in school children in Campina Grande, Brazil. *Pak Oral Dent J* 2008;28:113-6.
2. Holan G, Needleman HL. Premature loss of primary anterior teeth due to trauma-potential short-and long term sequelae. *Dent Traumatol* 2014;30:100-6.
3. Borum Mk, Andreason JO. Sequelae of trauma to primary maxillary incisors I. Complications in the primary dentition. *Endod Dent Traumatol* 1998;14:31-44.
4. Ahamed SS, Reddy VN, Krishnakumar R, Mohan MG, Sugumaran DK, Rao AP. Prevalence of early loss of primary teeth in 5-10 year old children in Chindambaram town. *Comtemp Clin Dent* 2012;3:27-30.
5. Lin YT, Chang LC. Space changes after premature loss of the mandibular primary first molar. A longitudinal study. *J Clin Pediatr Dent* 1998;22:311-6
6. Law CS. Management of premature primary tooth loss in the child patient. *J Calif Dent Assoc* 2013;41:612-8
7. Alnahawi HH, Donly KJ, Contreras CI. Space loss following premature loss of primary second molars. *Gen Dent* 2015;63:e1-4
8. Sleichter GG. The influence of premature loss of deciduous molars and the eruption of their successors. *Angle Orthod* 196;33:279-83.
9. Alamoudi N, Salako N, Masoud I. Prevalence and distribution of caries in the primary dentition in a cosmopolitan Saudi population. *Saudi Dent J* 1995;7:23-8.
10. Saravanam S, Kalyni V, Vijayarani Mp, Jayakodi P, Felix J, Arunmozhi P, et al. Caries prevalence and treatment needs of rural school children in Chidambaram Taluk, Tamil Nadu, South India. *Indian J dent Res* 2008;19:186-90.
11. Jayachandar D, Gurunathan D, Jeevanandan G. Prevalence of early loss of primary molars among children aged 5-10 years in Chennai: A cross sectional study. *J Indian Soc Pedod Prev Dent* 2019;37:115-9.
12. Leite Cavalcanti A, Menezes SA, Granville-Garcia AF, Correia-Fontes LB. Prevalence of early loss of primary molars: Study retrospective. *Acta Sci Health Sci* 2008;30:139-43.
13. Cardoso L, Zemruski C, Fernandes DS, Broff I, Pessin A. Evaluation of prevalence of precocious loss of deciduous molars. *Braz Res Pediatr Dent Integr Clin* 2005;5:17-22.
14. Moses j, Rangeeth BN, Gurunathan D. Prevalence of dental caries, socio-economic status and treatment needs among 5 to 15 year old school going children of Chidambaram. *J Clin Diagn Res* 2011;5:156-61.

15. Aishwary AS, Gurunathan D. Oral health maintenance in children with self brushing and parents guidance: A Pilot study. *Int J Pharm Biol Sci* 2015;6:535-43.
16. Mahejabeen R, Sudha P, Kulkarni SS, Anegundi R. Dental caries prevalence among preschool children of Hubli: Dharwad city. *J Indian Soc Pedod Prev Dent* 2006;24:19-22.
17. Mansour Ockell N, Bagesund M. Reasons for extractions, and treatment preceding caries-related extractions in 3-8 year old children. *Eur Arch Pediatr Dent* 2010;11:122-30.
18. Saloom HF. Early loss of deciduous teeth and occlusion. *Iraqi Orthod J* 2005;1:36-9.
19. Terlaje RD, Donly KJ. Treatment planning for space maintenance in the primary and mixed dentition. *ASDC J Dent Child* 2001;68:109-14,80.
20. Alexander SA, Askari M, Lewis P. The premature loss of primary first molars: Space loss to molar occlusal relationships and facial patterns. *Angle Orthod* 2015;85:218-23.

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