

Assessment of Prevalence of Early Loss of Primary Molars In Children Aged 5-9 Years

Surbhi Agarwal^{1*} Neeraj Solanki² Abhishek Goel³ Priyanka Goel⁴

¹Reader, Department of Pedodontics and Preventive Dentistry, Teerthanker Mahaveer Dental College and Research Institute, Moradabad, UP, India.

²Professor, Department of Pedodontics & Prevention Dentistry, Kalka Dental College, Meerut, UP, India.

³Lecturer, Harsarn Das Dental College, Ghaziabad, UP, India.

⁴Lecturer, Harsarn Das Dental College, Ghaziabad, UP, India.

ABSTRACT

Background: The premature loss of primary teeth may reduce arch length. Arch length is required for the eruption of permanent tooth and, if space is not available it predisposes crowding, rotation and impaction of the permanent teeth. The present study was conducted to assess the prevalence of early loss of primary molars in children aged 5-9 years.

Material and methods: The present cross-sectional study was conducted among the 194 children aged between 5 and 9 years over the period of 6 months. All the relevant data such as age, gender, and missing teeth were recorded. The early loss was classified according to the chronological age table of eruption of the permanent teeth proposed by Kronfeld. The data was assessed using SPSS for windows release 21.0 (SPSS, Chicago, IL, USA).

Results: In the present study total sample size was 194 in which boys were 117 in number whereas 77 were girls. Maximum boys were of age group 7-8 yrs whereas maximum girls of 6-7 years age group. Overall maximum no. of children of age group 7-8 years. 1st primary molars were lost early than the 2nd primary molars. In boys both primary molars were lost more in no. than girls. Mandibular right primary molars were lost maximum in no. (35.05%) followed by mandibular left (22.16%).

Conclusion: Our study concluded that the prevalence of early loss of primary teeth was present in predominantly in boys when compared to girls. The most commonly affected teeth were the mandibular teeth, the most common tooth being the first molar.

Keywords: Premature, mandibular, maxillary, primary molars.

INTRODUCTION

Growth and development and drifting patterns of teeth are mutually supported. The primary dentition plays a very important role in the child's growth and development as it helps in chewing, speech, appearance, and prevention of deleterious oral habits, in the guidance and eruption of permanent teeth.¹ For the establishment of normal permanent occlusion maintenance of primary teeth is important.^{2,3} Primary teeth are lost due to dental

caries, trauma and premature root resorption.^{4,5} The early or premature loss is defined by the loss of a deciduous tooth before the time of its natural exfoliation.⁶ The premature loss of primary teeth is the chief cause that can cause malocclusion in the sagittal, transverse, and vertical planes.⁷ The premature loss of primary teeth is related to the reduction of the dental arch length and migration of the marginal and antagonist teeth which can lead to

Received: June. 17, 2019; Accepted: Sept. 3, 2019

*Correspondence Dr. Surbhi Agarwal.

Department of Pedodontics and Preventive Dentistry, Teerthanker Mahaveer Dental College and Research Institute, Moradabad, India.

Email: drgoelsurbhi@yahoo.co.in

rotation, crowding, and impaction of the permanent teeth.⁸⁻¹⁰ The dental arch length is reduced to greater extent in the mandible than in the maxilla^{11,12} if a primary second molar, rather than primary first molar, is lost.¹³ The present study was conducted to assess the prevalence of early loss of primary molars in children aged 5-9 years.

MATERIAL AND METHODS

The present cross-sectional study was conducted among the 194 children aged between 5 and 9 years over the period of 6 months. Before the commencement of study ethical approval was taken from the Ethical Committee of the institution. Written informed consent was signed by the parents. All the children of age between 5 to 9 years and the children whose parent or guardian agreeing to participate in the study were included in the study. The children who were medically comprised, children whose parent or guardian not willing to participate in the study, children with uncooperative behavior to receive a clinical examination. Dental examination was performed by a single examiner under sufficient artificial light. Gloves, masks, and ice cream sticks were utilized. . All the relevant data such as age, gender, and missing teeth were recorded. The early loss was classified according to the chronological age table of eruption of the permanent teeth proposed by Kronfeld.¹⁴ The data was assessed using SPSS for windows release 21.0 (SPSS, Chicago, IL, USA).

RESULTS

In the present study total sample size was 194 in which boys were 117 in number whereas 77 were girls. Maximum boys were of age group 7-8 yrs whereas maximum girls of 6-7 years age group.

Table 1: Distribution of early loss of primary teeth according to gender and age group.

Gender	Age (yrs)				Total
	5-6	6-7	7-8	8-9	
Boys	25	29	36	27	117
Girls	17	21	19	20	77
Total	42	50	55	47	194

Overall maximum no. of children of age group 7-8 years. 1st primary molars were lost early than the

2nd primary molars. In boys both primary molars were lost more in no. than girls. Mandibular right primary molars were lost maximum in no. (35.05%) followed by mandibular left (22.16%).

Table 2: Distribution of early loss of primary teeth according to dental group.

Dental group	Number of teeth lost	Boys	Girls
1 st molar	108	63	45
2 nd molar	86	54	32
Total	194	117	77

Table 3: Distribution of early loss of primary teeth based on arches and sides.

Arch involved	Number of teeth lost	Boys	Girls	%
Maxillary right	36	20	16	18.56%
Mandibular right	68	47	21	35.05%
Maxillary left	29	17	12	14.94%
Mandibular left	43	23	20	22.16%
Both	18	10	8	9.27%

DISCUSSION

Pedodontists have a major responsibility to provide active supervision to the developing dentition. Management of space problems is linked with the transitional stages from primary to permanent dentition as a routine part of pedodontic practice.¹⁵

A premature loss of deciduous teeth can cause an earlier eruption of permanent successors which can interfere with the harmony of adult dentition resulting in crowding caused by shifting and/or drifting of teeth toward the extraction space. It is considered as a predisposing factor for speech problems, especially the deciduous maxillary incisors with the delayed eruption of permanent premolars, mesial movement of permanent first molar, and accelerated eruption of permanent second molar following a premature loss of primary molars. A different kind of effects are seen on the

dental arch length, occlusion, and the eruption of first permanent molars following a premature loss of primary second molar causing vertical changes in unopposed maxillary molars without intercuspation with drifting toward the extraction space.¹⁶⁻¹⁹

In the present study total sample size was 194 in which boys were 117 in number whereas 77 were girls. Maximum boys were of age group 7-8 yrs whereas maximum girls of 6-7 years age group. Overall maximum no. of children of age group 7-8 years. 1st primary molars were lost early than the 2nd primary molars. In boys both primary molars were lost more in no. than girls. Mandibular right primary molars were lost maximum in no. (35.05%) followed by mandibular left (22.16%) which is in accordance with the study conducted by Alamoudi *et al.*² and Cavalcanti *et al.*²⁰

The primary teeth lost prematurely can cause problems due to loss of function and the increased possibility of migration of other teeth.⁷ The occurrence of space closure increases with the time that elapses from the moment of extraction.⁸

CONCLUSION

Our study concluded that the prevalence of early loss of primary teeth was present in predominantly in boys when compared to girls. The most commonly affected teeth were the mandibular teeth, the most common tooth being the first molar.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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