

Need of Spacemaintainer in Cases of Premature Primary Teeth Extraction

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Abstract: *The premature loss of primary teeth is commonly associated with tooth decay and its complications, as well as with traumas. The aim of this study is to find the need of space maintainers in order to save enough space for the future permanent teeth. We examined 90 children with premature primary teeth loss in both lower and upper jaw, divided into three groups according to the severity of the orthodontic deformation. The statistical analysis were made using T-test, ANOVA and P-value. The use of space maintainers must be considered according to the time of the loss more than according to the tooth position in the jaws. The time as a factor of space loss is more significant than the lack or the presence of malocclusions. It means that no matter the jaw of the premature extraction the space maintainer should be used less than 2 month after tooth extraction. This will maintain the correct occlusal relationships*

Keywords: space maintainers, premature extraction, prophylactics, deciduous teeth

1. Introduction

The premature loss of primary teeth is commonly associated with tooth decay and its complications, as well as with traumas. In some cases (less than 1%) the premature teeth loss is connected with systemic diseases. (3)

Early tooth extraction leads to healing process, lack of subjective symptoms like pain and the patients and their parents are no longer motivated to continue the treatment and prevent complications. The lack of information leads to underestimation of the problem by the parents. This is how the patients lose their chances for primary orthodontic prophylactics, which is very important for the correct teeth alignment, dental arches formation and occlusion

Aim

The aim of this study is to find the need of space maintainers in order to save enough space for the future permanent teeth.

2. Materials and Methods

We examined 90 children with premature primary teeth loss in both lower and upper jaw. The children were divided into three groups according to the severity of the orthodontic deformation. Petrunov's classification was used for this purpose. (2).

- 1) Patients with one or more teeth lost less than 2 month before the examination, without any orthodontic problems. (1 group)
- 2) Patients with premature teeth loss more than 6 month before the examination and without severe orthodontic problems. (2 group)
- 3) Patients with premature teeth loss more than 6 month before the examination with severe orthodontic problems (II and III class according to Angle). (3 group)

Biometric examination was done by analyzing dental casts

taken from each patient. We found medial and distal displacement of the distal teeth according to the contralateral side. In order to do the examination perpendicular lines from corresponding contralateral teeth points medial and distal to the defect were drawn. We found medial and distal movement of some teeth adjustment to the extraction site according to the contralateral control side, as well as medio-distal disalignment in cases of bilateral loss of symmetrical lateral teeth (1).

The statistical analysis were made using T-test, ANOVA and P-value.

3. Results and Discussion

The results show that in the first group (patients with teeth extraction no longer than 2 month before visit) there is an insignificant loss of space 0.03 mm. In the second group the loss of space is more than 2,2 mm, and in the third group is 3,16 mm (fig. 1)

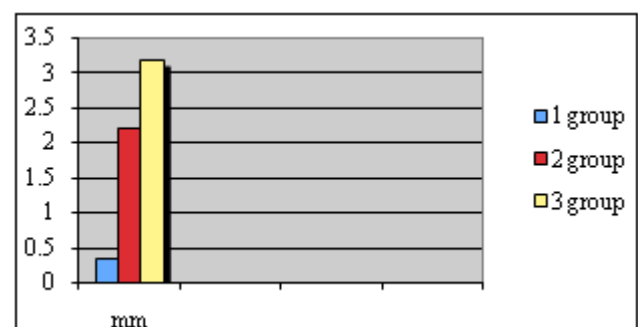


Figure 1: Space loss disturbance among the three groups with premature extraction shown in mm.

The difference between the three groups is statistically significant (table 1). The results show that there is a significant loss of space six and more months after the premature extraction of primary teeth, if any adequate measures are not taken. It means that the usage of spacemaintainers is obligatory. The aim is keeping enough

place for the eruption of the permanent teeth and to prevent malocclusions.

Table 1: The deviation after premature primary teeth extraction between the tree groups shown in mm

Groups		Mean Difference (I-J)	Std. Error	Sig. ^a	95% Confidence Interval for Difference ^a	
					Lower Bound	Upper Bound
group 1	Related to group 2	-2,167*	,303	,000	-2,907	-1,427
	Related to group 3	-3,133*	,303	,000	-3,873	-2,393
Group 2	Related to group 1	2,167*	,303	,000	1,427	2,907
	Related to group 3	-,967*	,303	,006	-1,707	-,227
Group 3	Related to group 1	3,133*	,303	,000	2,393	3,873
	Related to group 2	,967*	,303	,006	,227	1,707

There is a statistically significant difference in the space loss between the first group related to the second and the third group. The difference between the second and the third group is smaller but statistically significant. It means that the time as a factor of space loss is more significant than the lack or the presence of malocclusions. Our results are similar to Park's and all in 2009 (7) and differ from Kumari and all (4) and Lin (5) studies.

We study the differences in the loss of space between the upper and the lower jaw. There was no statistically significant space loss difference between upper and lower jaws.(tabl. 2)

Table 2: Space loss in the upper and lower jaw.

Jaw	Mean	N	Std. Deviation
Upper jaw	,7500	16	1,23828
Lower Jaw	,8571	14	1,23146
Total	,8000	30	1,21485

This data shows that in spite of the difference of bone structure, the movement of the teeth towards the extraction site is similar in the both jaws. This makes us consider that time factor is more significant than the bone type. Some authors think that the loss of space in the upper jaw is bigger (6,7), others think that in the space loss is bigger in the lower jaw(5,8). This can be due to the methods of examination.

4. Conclusion

This analysis leads to the conclusion that the use of space maintainers must be considered according to the time of the loss more than according to the tooth position in the jaws.It means that no matter the jaw of the premature extraction the space maintainer should be used less than 2 month after tooth extraction. This will maintain the correct occlusalrelationships .

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