

Replacement of Premature Loss of Primary Anterior Teeth by Anterior Fixed Functional Space Maintainer: A Case Report

Somnath Chakraborty¹, Preeti Dhawan², Pradeep Rastogi³

1- Post Graduate Student, Dept. of Pedodontics, Seema Dental College & Hospital, Rishikesh. 2- Professor, Dept. of Pedodontics, Seema Dental College & Hospital, Rishikesh. 3- Professor & HOD, Dept. of Pedodontics, Seema Dental College & Hospital, Rishikesh.

Correspondence to:
Dr. Somnath Chakraborty, Post Graduate Student, Dept. of Pedodontics, Seema Dental College & Hospital, Rishikesh.
Contact Us: www.ijohmr.com

ABSTRACT

Premature loss of primary anterior teeth in young children is mainly due to dental caries. Trauma and Early childhood caries might be other reasons for premature loss of both anterior and posterior teeth during toddler and infancy period. The reason behind this article is to describe the rehabilitation of primary anterior teeth in five and a half year old child using anterior fixed functional space maintainer. The appliance delivered to the patient was functional and aesthetically acceptable to the patient and the parents.

KEYWORDS: Nursing Bottle Caries, Fixed Space Maintainer, Early Childhood Caries, Premature Loss of Anterior Teeth

INTRODUCTION

In Indian population more than fifty percent of children are found to be suffering from early childhood caries. It is a serious public health problem seen in both the developing and industrialized countries, where malnutrition is common.¹ The reason behind the premature loss of both anterior and posterior teeth during the infancy and toddler period are dental trauma and Early childhood caries (ECC). Early loss of maxillary incisors due to caries is very common in young children. Early tooth loss in anterior incisal segment causes minimum space loss, linguo-distal inclination of the teeth which further results in the collapse of anteriors lingually. Moreover apart from collapse, change in midline shift, closure of space, development of abnormal oral habits followed by malocclusion is seen. The pronunciations of certain consonants like ("t," "d," "s," "sh," and "ch") and labial sounds like ("f" and "v") are altered during speech.² So to preserve the space, space maintainer is given depending upon the dental age of the patient. The space maintainer may be removable, fixed, semi fixed and functional or non-functional type. The best suitable space maintainer for children are fixed ones as they are easily acceptable, and it is not easy for paediatric patients to wear removable ones.^{1,2} The disadvantages with removable space maintainers are they cover a maximum area in the oral cavity which causes irritation and leads to ulceration.

CASE REPORT

A five and a half years old boy reported to Department of Pedodontics and Preventive Dentistry, Seema Dental College & Hospital, Rishikesh with missing primary anterior tooth which caused unpleasant look, under-

nourishment, and alteration in speech of the child. On clinical examination, it was found that 51,52,61,62 were missing, and there were decayed tooth i.r.t. 53,55, 63, 64, 65 and root stump i.r.t. 54 (Figure- 1). Child's mother



Figure 1: Preoperative maxillary palatal view

gave a history of night bottle feeding till 3 years, an improper diet with bad oral hygiene with no visit to the dentist for check-up. After thorough case evaluation and taking parental consent, root stump was extracted, a thorough diet counselling of the child was done. On next visit, orthodontic bands were adapted on partially erupted 16 and 26 followed by alginate impression for the preparation of working cast. Dental stone was used for pouring the cast. A (0.09) stainless steel wire framework was fabricated on the upper cast, which extended from one band to the other. The fabricated stainless wire was then soldered to the corresponding molar bands. The adult sized acrylic teeth were trimmed to the primary tooth sizes of 51, 52, and 61, 62. After the application of separating medium, cold cure acrylic resin was placed on the upper cast, the appliance after getting ready was then

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removed from the cast followed by trimming, finishing, polishing, and finally the appliance was cemented on 16 and 26 with luting glass ionomer cement (Figure -2 & 3). The patient was advised to maintain proper oral hygiene. The patient was instructed to visit for check-up after 24 hours and was advised to come for follow up after every 3 months. The child and parents both were satisfied and were advised to come back to the department in case of any problem, distortion or breakage of the space maintainer.



Figure 2: Postoperative maxillary palatal view



Figure 3: Postoperative occlusion view

DISCUSSION

The premature loss of primary anterior teeth usually gets mild clinical attention until there is a severe closure of space or developing abnormal oral habits are found along with aberrant speech problem. The premature loss of primary anterior teeth, the permanent teeth are found proclined along with arch perimeter increased. Northway in the year (1984) concluded in their study that maximum space loss was found in the first year of extraction than in successive years.⁶ In the year (2006) Kumari in her study found that the maximum space closure occurs during the first 4 months of the extraction.⁷

The most important functions of a primary tooth is to occupy the physiological space and to guide proper eruption of permanent successors. Hence before placing any space maintainer in the incisor segment correct decision should be taken during treatment planning. The best suitable space maintainer for children are fixed ones as they are easily acceptable.^{2,3} The disadvantages with

removable space maintainers are they cover a maximum area in the oral cavity which causes irritation and leads to ulceration. To satisfy patient compliance, an aesthetic fixed functional space maintainer is reliable.^{4,5}

In the present case fixed functional space maintainer was placed with less amount of palatal coverage causing mild or no irritation. Banding of molar is done instead of bonding because for good strength. The other limitations like neglecting proper oral hygiene measures, long follow up, appliance breakage can be decreased by motivating and giving proper education to the child and their parents.

CONCLUSION

The premature loss of a primary tooth is one of the most important factor behind malocclusion. So, early intervention can prevent the psychosocial problems because of premature loss of primary teeth. In the present case, the appliance showed the result more than satisfactory in relation to function and aesthetics and further gave a psychological relief for the child. Oral hygiene instructions were given to patients and his family, and the child had been instructed to visit the department for follow up after every 3 months in order to monitor issues regarding oral hygiene and eruption of permanent teeth.

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