Case Report

Esthetic Rehabilitation of Anterior Missing Teeth due to Early Childhood Caries

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Abstract

Esthetic rehabilitation is one of the greatest challenges in the child under the age of 5 years who has suffered multiple tooth loss subsequent due to early childhood caries. An anterior esthetic appliance may be used to replace lost teeth. The appearance of the child is affected due to missing of the anterior teeth and also led to the loss of space, masticatory function, and speech development along with the development of detrimental oral habits. This case report discussed the management of anterior missing teeth with the Hollywood bridge.

Keywords: Early childhood caries, Esthetic rehabilitation, Hollywood bridge, space loss, speech defect

Introduction

Early childhood caries (ECC), formerly referred to as nursing bottle caries and baby bottle tooth decay, remains a significant public health problem.[1] ECC is defined as the presence of one or more decayed (noncavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth in a child under the age of 6 years. The definition of severe ECC (S-ECC) is any sign of smooth-surface caries in a child younger than 3 years of age, and from ages 3 through 5, one or more cavitated, missing (due to caries), or filled smooth surfaces in primary maxillary anterior teeth or a decayed, missing, or filled score of ≥4 (age: 3 years), ≥5 (age: 4 years), or ≥6 (age: 5 years).[2] When considering the need for an anterior appliance to replace missing primary incisors, the following points should be discussed with the parents. First, the strongest factor for placing an anterior esthetic appliance is parental desire. While space maintenance, masticatory function, speech development, and tongue habits may be of some consideration, there is no strong evidence that early loss of maxillary incisors will have any significant, long-lasting effect on the growth and development of the child.[3] Premature tooth loss in anterior incisal segment usually causes minimum space loss and a distolingually inclination of the teeth, resulting in the collapse of anterior teeth lingually. Apart from this collapse, closure of the space and shift of midline can also occur.[4] In the present study, a 4½-year old male patient was treated with fixed functional space maintainer to restore esthetics, phonetics, function, and prevention from deleterious oral habits. The parents of the child demanded esthetic rehabilitation in order to boost the self-confidence of the child.

Case Report

A 4½-year-old male child was brought to the Department of Pedodontics and Preventive Dentistry, UCMS and GTB Hospital, New Delhi, with a chief complaint of missing teeth in the upper front region. The patient had a history of dental extraction with relation to 51, 52, 61, and 62 2 months back due to ECC. Now, the patient came again and wants to replace that space with artificial teeth. The parents were concern with the esthetic of the child. The parents also reported the speech defect and difficulty in eating to the child so they asked to replace the space with the artificial teeth [Figure 1]. Before performing any procedure, the consent/ assent was taken from the parents and

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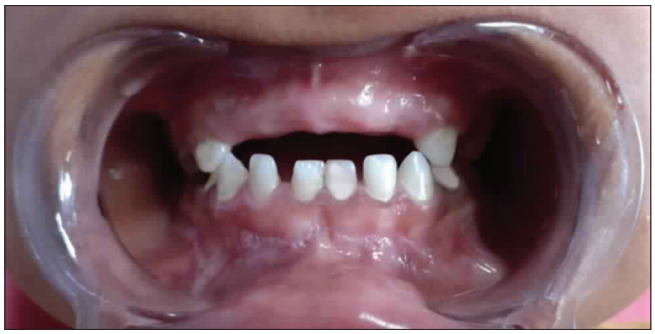

Figure 1: Preoperative picture – Missing upper four primary teeth.

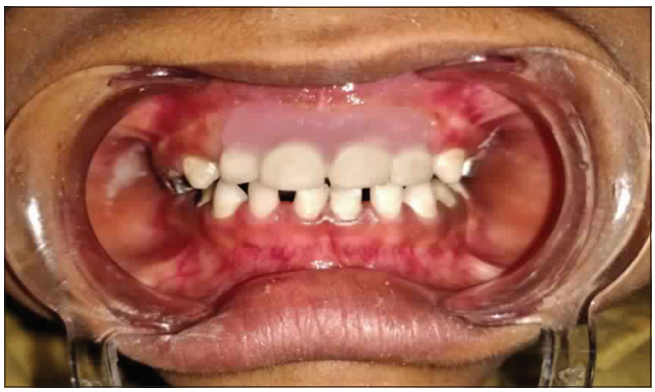

Figure 2: Postoperative picture – Hollywood bridge appliance in place of missing upper four front teeth.

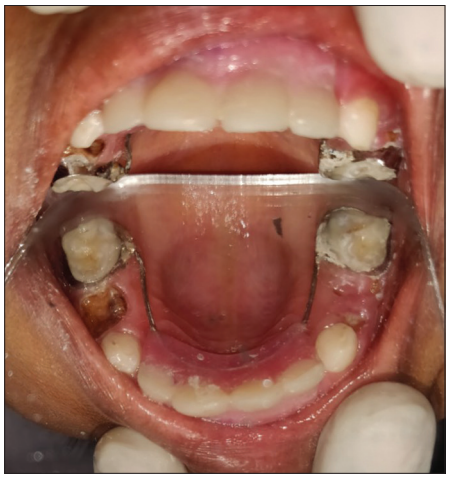

Figure 3: Occlusal view – With hollywood bridge appliance.

children. Banding with relation to 55 and 65 was done, and the upper and lower impression was made with the alginate and cast poured. The stainless steel wire of diameter 0.036" was used and adapted on the palate from 55 to 65. The wire was placed 2 mm below the gingival margin. Acrylic teeth were used with relation to 51, 52, 61, and 62 and attached to the stainless wire with the help of the cold cure [Figure 2]. The parents were satisfied with the appliance, and we asked the parents to come for regular follow-up.

Discussion

The greatest challenge in our specialty is to rehabilitate these patients esthetically and functionally to compensate for the psychological impact of both patients and parents. Parental desire is one of the main decisive factors for treating these types of clinical situations. Different types of appliance have been developed to manage the space in case of early loss of a primary maxillary anterior tooth. The choice can be either a removable or a fixed one, which can be functional or nonfunctional. The selection of the appliance depends on a number of factors including the child's stage of dental development, dental arch involved, tooth missing, and status of the teeth adjacent to the lost tooth. The best suitable space maintainer for a child patient is fixed ones as they are easily acceptable.[5] The lingual sides of anterior teeth, which are required by the tongue for certain phonation, may result in improper speech. The pronunciations of tongue-tip consonants ("t," "d," "s," "sh," and "ch") and labial sounds ("f" and "v") are affected. The development of abnormal tongue habits and hence subsequent malocclusion is also possible. Hence, space should be maintained functionally as well as esthetically by a suitable space maintainer depending on the dental age of the patient.[6] In the present case, the minimum amount of palatal coverage is done causing no or less irritation [Figure 3]. Banding of molars is done for improved strength instead of bonding. A similar appliance was mentioned by Jasmine and Groper, in which plastic teeth were attached to metal cleats that were soldered to the palatal wire bar instead of being attached to acrylic, as it was in our design.[7] Contraindications of inserting anterior fixed appliances may include children with seizure disorders; mental retardation; poor ability to be followed up; poor hygiene; immunocompromised patients' inappropriate feeding habits; and significant deep bite, overjet, or anterior crossbite.[8]

This study has offered the option for the dentist to replace the lost teeth due to trauma or ECC. Several other methods were also available, but this method was one of the easiest and best for the patient as the patient's cooperation should be considered. These appliances are almost always considered an elective appliance, and their placement is usually dictated by the wishes of the parent.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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