

Case Report

A Rare Case of Non Syndromic Oligodontia of Deciduous Teeth and its Correction Using Hollywood Bridge

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Abstract

Oligodontia is a rare genetic disorder which is either syndromic or occurs as a separate entity. Congenitally missing deciduous teeth are rare. Not replacing the deciduous teeth can result in compromised esthetics, speech, functional and occlusal harmony affecting the self esteem of the child. Early rehabilitation of the young patients with missing teeth is critical which depends on the age, number, condition of teeth present and the state of growth of the patient. This is a rare case report of a child with congenitally missing bilateral deciduous teeth involving both arches and its esthetic rehabilitation using a fixed retainer known as Hollywood bridge.

Keywords: Oligodontia; Deciduous dentition; Esthetic rehabilitation; Hollywood bridge

Introduction

Anodontia which is the congenital absence of teeth can be either total or partial. True partial anodontia (hypodontia/oligodontia) involves one or more teeth. Hypodontia is an inherited condition characterized by less than 6 developmentally missing teeth. Oligodontia is basically a genetic disorder which represents the congenital absence of more than six teeth in primary, permanent or both dentitions. It occurs either as a part of a syndromes like ectodermal dysplasia, Down syndrome, Van Der Woude syndrome etc, or rarely as a separate entity. MSX1 and PAX9 are the genes responsible for non syndromic oligodontia. It may result from one or multiple point mutations in a closely linked polygenic system, transmitted in an autosomal dominant pattern with incomplete penetrance [1].

Congenitally missing deciduous teeth are rare. The prevalence rate of hypodontia in primary dentition ranges from 0.4% to 4.6% [2], whereas for oligodontia it is less than 0.3% [3]. It affects females more often than males, in the ratio of 3:2 [4]. Maxillary arches are more commonly involved. Cases of oligodontia with bilaterally missing deciduous teeth in both the jaws simultaneously are hardly reported [5].

Children suffering from this condition face many problems like esthetic concerns, masticatory problems, speech disorders, deleterious oral habits negatively affecting the self esteem of the growing child.

Hence, treatment should be rendered to these necessitous children at the earliest. Various treatment modalities include removable partial dentures, fixed esthetic retainers, dental implants, tooth autotransplants etc.

The present report is of a 4 year old child with congenitally missing multiple deciduous teeth involving both arches and its esthetic rehabilitation using a fixed retainer known as Hollywood bridge.

Case Presentation

A 4 year old boy was brought to the clinic with a chief complaint of multiple missing teeth. His parents seemed to be normal and they denied any history of a similar condition in their respective families. Growth of the child was at a normal pace. On clinical examination, it was seen that the child had congenitally missing maxillary and mandibular deciduous central and lateral incisors along with missing deciduous maxillary first molars, which is a rare scenario (Figure 1 and 2). No other syndromic features were seen. A diagnosis of nonsyndromic oligodontia was made.

It was decided to esthetically rehabilitate the missing teeth with a fixed anterior esthetic retainer known as Hollywood bridge. Bands were adapted on maxillary and mandibular second deciduous molars and impressions were taken using alginate. A 19 gauge rigid stainless steel wire was adapted on the palatal portion of maxillary model and lingual surface of mandibular model and soldered onto the bands.



Figure 1: Mandibular arch showing bilateral missing deciduous teeth.

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Artificial primary anterior acrylic teeth were secured to the wire with the help of heat cure acrylic resin.

The bridge was then tried and cemented onto the deciduous second molars. This Hollywood bridge serves the purpose of both esthetic rehabilitation as well as space maintenance (Figures 3-5).

The first recall was made after 24 hrs, to check the comfort of the patient. Parents were informed that appliance would be removed when the child is around 6-7 years old to allow the uninterrupted eruption of permanent incisors. The child and parents were satisfied with the replacement of the missing teeth. Patient was kept on a follow up of 3 months.

Discussion

Children having hypodontia of the primary teeth are more prone to having a similar condition in permanent dentition. It is rare for the primary teeth to be missing in both maxillary and mandibular arches [6]. This condition usually involves maxillary lateral incisors followed by mandibular lateral incisors and mandibular cuspids. Oral rehabilitation of young patients with hypodontia is imperative to



Figure 2: Maxillary arch showing bilateral missing deciduous teeth.



Figure 3: Hollywood bridge in mandibular arch.



Figure 4: Hollywood bridge in maxillary arch.



Figure 5: Frontal view showing Hollywood Bridge in both arches.

establish esthetic and functional harmony which thus has a positive effect on the psychology of the child.

Etiology of oligodontia is believed to be either heredity, developmental anomalies, viral disease during pregnancy, metabolic imbalances or other environmental factors. It can also occur in association with various genetic syndromes like ectodermal dysplasia, Vander Woude syndrome, Down syndrome and Reiger syndrome or as an isolated nonsyndromic familial trait.

Oral rehabilitation of the young patients with missing teeth depends on the age, number, condition of present teeth, and the state of growth of the patient. Early rehabilitation is critical to prevent space loss, unesthetic appearance and development of deleterious habits in children. Placement of any space maintainer in the anterior region requires careful treatment planning and decision making. Various treatment modalities include prosthesis fabrication, maintaining the remaining dentition, accommodation of growth, and development and behavior management for long-term follow-up. A prosthesis or the space maintainer can be either a fixed or a removable one. Fixed is preferred over the removable one because removable space maintainers cover large areas of oral mucosa causing irritation and their results highly depend upon patient cooperation.

In the present case, Hollywood bridge, a fixed esthetic space maintainer in which molars are banded and acrylic teeth are secured with a stainless steel palatal wire was fabricated for the patient. Since there is minimal palatal coverage and the appliance is banded on to the second molars, it is more acceptable for the child to wear it. Another appliance of Jasmine and Groper in which plastic teeth were attached to metal cleats soldered to the palatal wire bar instead of being attached to acrylic as in Hollywood bridge is also a treatment alternative for oligodontia patients [7]. Although their appliance was superior in hygiene, it may pose the risk of space developing between the teeth and the alveolus, due to an improper anterior fit or reduction of ridge height. The appliance that we used has an acrylic flange design (modified ridge lap) and would not pose the above risk. The contact of the pontic with the underlying ridge is maintained only on the buccal aspect which allows proper sanitation [8,9].

Currently, there are no evidences that prosthetic appliances might restrict a child's oral growth [10]. Changes in arch length with tooth migration generally occur after the eruption of the first permanent molar. At that time, the fixed appliance may be removed because that is the time when incisors would normally be exfoliating.

Conclusion

Although placement of a Hollywood bridge is an elective procedure, which depends on the patient and their parent's desire, but it serves as an apt solution for the pediatric anterior edentulous

arches. It definitely boosts up the confidence of a child with compromised esthetics, speech, mastication along with maintaining the space and guiding the eruption of permanent successors.

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