

## Hollywood Bridge for Enhanced Esthetics: A Case Report

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### Abstract

Dentists face great challenges in the aesthetic rehabilitation of these young children who has suffered multiple tooth loss subsequent to rampant early childhood caries. Caries in the mandibular region is rare, restorative solutions for mandibular incisors are needed. The present case report discusses about the fabrication and placement of a fixed type of an anterior esthetic appliance for mandible. It constituted a design, whereby the mandibular primary second molars were used to support the appliance through bands and a wire that contained an acrylic flange bearing trimmed acrylic teeth, anteriorly. The appliance was functionally and esthetically compliant.

**Key Words:** Early Childhood Caries, Primary Teeth, Anterior Restoration, Esthetics, Fixed Functional Appliance

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### I. Introduction

Dental caries is a localized destruction of the susceptible dental hard tissues by acidic by-products from the bacterial fermentation of the dietary carbohydrates. This condition refers to a continuum of disease states of increasing severity and tooth destruction that ranges from subsurface clinical changes to lesions with dentin involvement either with an intact surface or cavitations.<sup>1</sup> In the pediatric dental practice, the most common lesions in the anterior teeth are due to early childhood caries. It is a unique pattern of caries in very young children due to prolonged or improper feeding and eating habits. The decreased salivary secretion during sleep, tooth cleaning neglect coupled with unrestricted nocturnal breast feeding increases the risk of acquiring caries. These lesions occur beginning on the labial surface of all anteriors, and they progress rapidly as a diffuse demineralization leading to the gross destruction of all anterior primary teeth. Loss of anterior teeth in children has a far reaching impact on the psyche of the children. When these teeth are lost, replacement, and prosthetic management is very important to restore all functions including esthetics of the child. The replacement should be such that it should not interfere with the eruption process of the underlying successor. Various esthetic options are available which include removable or fixed partial dentures.<sup>2</sup>

### II. Case Report

A 4- year- old boy reported to the Department of Pedodontics and Preventive dentistry with the chief complaint of pain in the left lower back tooth region for past 10 days. The parents were more concerned about the esthetics of the child, and they wanted an anesthetic replacement of the anterior teeth. Intraoral examination revealed caries in 51, 52, 53, 54, 61, 63, 64, 71, 72, 73, 74, 75, 81, 82, 83, 84, 85 with abscess in relation to 75. There was a gross destruction of the crown of mandibular anteriors [Figures 1- 3].



**Figure 1:** Profile picture of the 4-year-old patient



**Figure 2:** Preoperative front, right lateral and left lateral view showing caries in 51, 52, 53, 54, 71, 72, 73, 81, 82, 83



**Figure 3:** Preoperative picture showing occlusal caries in 54, 55, 74, 75 and 84. Root stumps of 71, 72, 73, 81, 82, 83

***Radiographic evaluation***

The intraoral periapical radiographs revealed deep carious lesions in relation to 54, 74, 75. Pulp therapy was planned for the 54, 75 followed by stainless steel crowns (SSC) in 54 and composite restoration in 75. Pulpotomy was planned for 74 followed by SSCs. Root stumps in relation to 71, 72, 73, 81, 82, 83 were planned for pulp therapy and followed GIC restoration to act as a natural space maintainers. Full coverage restoration was planned for 84 to restore tooth structure.

***Hollywood bridge***

Composite restorations were done in 51, 52, 53, 55, 61 and 63. 54, 74 received SSCs following pulpectomy. 84 received full coverage (SSC) restoration for multisurface caries. It was decided to esthetically rehabilitate the missing teeth with a fixed anterior esthetic retainer known as Hollywood bridge. Bands were adapted on mandibular second deciduous molars and primary impression was made with irreversible hydrocolloid material - Alginate. A 19 gauge rigid stainless steel wire was adapted on the lingual surface of mandibular model and soldered onto the bands. Acrylic teeth were fabricated by using primary dentition mould. The teeth were placed directly on the alveolar crest with gingival colored acrylic component extension into the labial and lingual vestibule. 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 4-6]. The first call was made after 24 hours to check on the patient's comfort. Parents were advised that appliance would be removed when the child was about 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.



**Figure 4:** Functional lingual arch appliance replacing the missing 71, 72, 73, 81, 82, 83



**Figure 5:** Postoperative front view of appliance replacing the missing 71, 72, 73, 81, 82, 83



**Figure 6:** Postoperative picture showing lingual appliance given in the mandibular arch irt 71, 72, 73, 81, 82, and 83. Stainless steel crowns in 54, 74 and 84. Composite restorations in 51, 52, 53, 55, 75 and 85

### **III. Discussion**

The strongest factor for the placement of an anterior esthetic appliance is a parental desire.<sup>3</sup> There is no strong evidence suggesting that the early loss of the incisors will cause undesirable effects on the growth and development of the child.<sup>3</sup> However, considerations have to be given regarding the speech problems, masticatory inefficiency, abnormal oral habits, unaesthetic appearance, which follow the loss of anterior teeth at an early age. Another consideration is the child's speech development following crown structure loss of primary anteriors. The sounds most frequently in error are the labiolingual and labiodental sounds. Consonant 'Th' is representative of the linguodental group of sounds. Dental sounds are made with the tip of the tongue extending slightly between the upper and lower anterior teeth. The chief concern is the S, CH, J and Z sound.<sup>4</sup> These sounds need a near contact of the upper and lower teeth so that the air stream is allowed to pass. This is because the maxillary and mandibular incisors should approach end to end but not touch and inappropriate speech compensations can develop if the teeth are missing.<sup>5</sup> A study by Riekman and Badrawy reported that the loss of primary anterior teeth before the age of 3 years resulted in speech problems.<sup>6</sup> One of the most considerable and valid reasons for replacing missing anteriors are to restore an esthetic appearance and thus promote a normal psychological development in the child.

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.<sup>7</sup>

When taking all the factors into consideration, if the parents have a desire to replace their child's missing anterior teeth, their wish should not be discouraged. This appliance offers several advantages in terms of esthetics, restoration of masticatory and speech efficiency, and prevention of abnormal oral habit development. The main disadvantage is the accumulation of food debris and plaque. Hence, parents have to be instructed to supervise the maintenance of proper oral hygiene in their child. This paper has offered many considerations for a pediatric dentist when considering replacement of missing primary anterior teeth at an early age.

### **IV. Conclusion**

Early childhood caries of an anterior tooth at younger age may result in psychological trauma to the child. So, restoration of anterior aesthetics with this appliance gave an essential psychological improvement for the child and his parents. In addition to improving facial aesthetics, it helps to develop proper expression, preventing any untoward oral habits from emerging, thereby supporting the child's sound development during the years of foundation.

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