

## BRING BACK THE SMILE AND SELF ESTEEM IN 5 YEAR OLD CHILD: A CASE REPORT

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<b>Article Info</b> <i>Received 15/03/2016</i> <i>Revised 27/04/2016</i> <i>Accepted 02/05/2016</i>  <b>Key words:</b> Anterior aesthetics, Space maintainer, Fixed, functional	<b>ABSTRACT</b> A number of conditions can lead to aesthetically unacceptable primary dentitions like dental caries, discoloration, trauma, early loss of teeth, mal-alignment and any abnormality of shape and size. Sequence of not replacing these teeth can affect speech, aesthetics and self-esteem of the patient. The present paper describes full mouth rehabilitation including aesthetic rehabilitation of a 5 year old patient with grossly carious deciduous maxillary anterior teeth. The treatment modality improved anterior aesthetics, speech and self-confidence of the patient.
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### INTRODUCTION

Early childhood caries (ECC) and dental trauma are the main reasons for premature loss of both anterior and posterior teeth during the infancy and toddler period. Early loss of maxillary incisors due to caries is very common in young children [1]. Premature tooth loss in anterior incisal segment usually causes minimum space loss and a linguodistal 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 (Barber) [2]. It can also lead to parafunctional habits as well as altered behavior pattern including depression and increased shyness of a child, which leads to less friendly and non-acceptable daily lifestyle. These negative effects of anterior tooth loss affects the patient's quality of life and reduces level of confidence [3]. Reasons for replacement with a prosthetic device are often based on concerns about space maintenance, esthetics, and speech development. Poor dietary habits also develop due to child's inability to chew and eat well, following dental extractions [3]. In recent times, however, parental pressure for esthetics has become the most common reason for

fabrication of partial dentures in children. Parents who express concerns about their child's appearance may request prostheses to improve self-esteem and enhance socialization with other children, particularly as they prepare for kindergarten [1].

In the present paper, a patient of 5 years was treated with fixed functional space maintainer to restore aesthetics, phonetics, function and prevention from deleterious oral habits. The parents of the child demanded aesthetic rehabilitation in order to boost the self confidence of the child.

### CASE REPORT

A 5-year-old girl reported to our hospital along with her parents with a complaint of missing anterior teeth. The history revealed that the four teeth 51, 52, 61 and 62 were extracted due to failed endodontic treatment. During the clinical dental examination, the child was found to be shy but cooperative. All The maxillary and mandibular primary molars had preformed stainless steel crowns. She



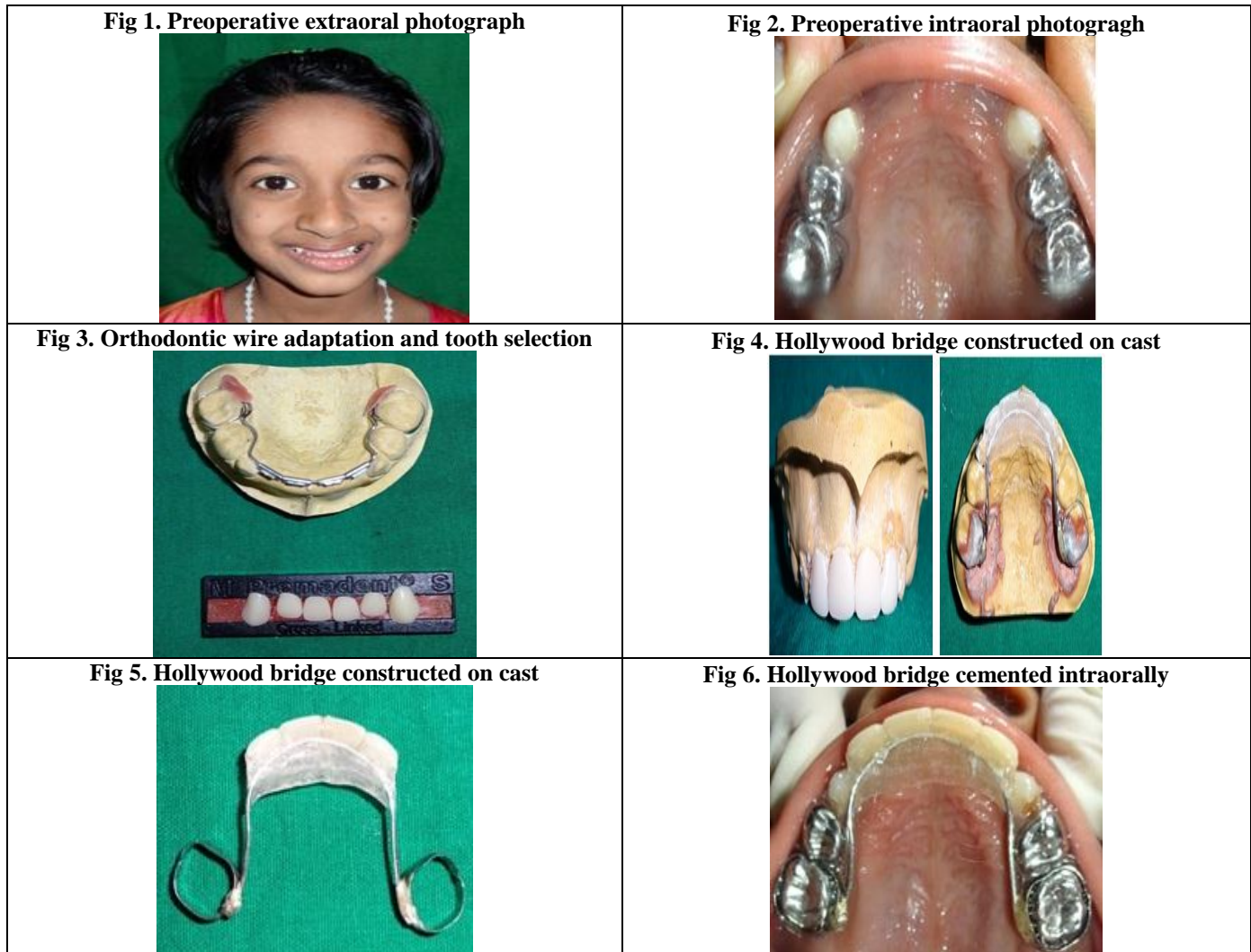
had normal overjet and overbite (figure1, 2). After assessing the present case, the following treatment was planned for the child.

Appropriate preformed orthodontic band (0.005-inch thickness and 0.180-inch width) were adapted on 55 and 65. The appropriate shade selection for the teeth was performed under natural light. This entire clinical procedure lasted for 15 min (figure 3). On the upper cast, a stainless steel wire (0.9 mm) framework was made, spanning from one band to the other. The anterior segment of the wire incorporated begg brackets to reinforce the acrylic segment with teeth. The free ends of the wire were then soldered to the corresponding molar bands. In the anterior region of the upper cast, a trial wax up was done with trimmed acrylic teeth (A2 shade). The acrylic teeth were originally of adult size, which had to be trimmed to the primary tooth sizes of 51, 52, and 61, 62. After cold mould seal application and cold cure acrylic resin insertion, the appliance was then removed from the cast (fig 4, 5). After trimming, finishing, and polishing, the appliance was cemented on 55 and 65 with luting glass

ionomer cement (Fuji I) and occlusion was checked for any premature contact. The patient and her parents were educated about the care of the appliance. This included vigorous rinsing after every meal and that the food to be chewed only on the molars. Cutting/incising was to be avoided as this appliance had only the cemented molar bands for resistance and stability.

First recall of patient was done after 24 h followed by check up every 3 months. The child and parent were satisfied with the replacement of his lost teeth. The parent was informed that the appliance will be removed around the age of 6-8 years, to prevent interference of erupting permanent successors. (fig 6).

The child was very cheerful and had a big smile on her face with improved personality (fig 7). She had maintained good oral hygiene. The case was kept in follow up until the maxillary incisors were erupted. At 6<sup>1/2</sup> years the mandibular incisors were erupted with the appliance intact (figures 8,9). The appliance will be removed after the eruption of maxillary incisors.



**Fig 7. Hollywood bridge cemented intraorally**



**Fig 8. Postoperative extraoral smile with Hollywood bridge**



**Fig 9. Follow up after 2 year with lower incisors erupted**



**Fig 10. Follow up after 2 year with lower incisors erupted**



## DISCUSSION

The aesthetic rehabilitation of primary anterior teeth has a vital psychological impact on recovery of patient's self-esteem (Slack and Jones) [4]. The progress of children in school and their psychological well being can be adversely influenced by the condition of their anterior teeth. Space created by the early loss of tooth in the dental arch can be decreased by the drift of adjacent teeth. Northway (1984) stated that more space was lost in the first year of extraction than in successive years [5]. Kumari (2006) found that the greatest space closure occurs during the first 4 months of the extraction [6].

The premature loss of primary incisors is usually given little clinical attention unless severe closure of the space is noticed or there is evidence of an aberrant speech pattern and oral habits developing as a result [3]. Careful consideration should be taken during treatment planning or decision making for placement of any space maintainer in incisor segment. One of the important functions of the primary tooth is to occupy the physiological space and guide the eruption of its permanent successor [7].

Fixed space maintainers are always acceptable in children as they have less desire to wear removable ones. The removable space maintainers cover large area of oral tissue causing irritation to ulceration. To improve patient acceptance, aesthetic functional fixed appliance is reliable [3].

In the present case, minimum amount of palatal coverage is done causing no or less irritation. 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 [8]. Although their appliance would be 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 acrylic flange design (modified ridge lap) and would not pose the above risk; lack of hygiene under the inaccessible acrylic flange may result in mucosal inflammatory disease. This is the most commonly used pontic design; the contact of the pontic with the underlying ridge is maintained only on the buccal aspect of the ridge. This limited contact in only one plane allows proper sanitation [9]. This type of pontic fulfils most of the needs of the restorative dentist in cases involving ideal edentulous ridges. However, if it happens, the appliance can be temporarily demanded until the tissue heals.

## CONCLUSION

Aesthetic space maintainer is a solution to pediatric anterior edentulous arches with compromised speech, aesthetic, and behavior of the child including poor social acceptance. Successful placement of fixed functional space maintainer was performed with one and half year follow-up, which improved the overall performance of the girl in school and the smile and self confidence, was indirectly boosted by this appliance.



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