

Building-up a New Smile in a 4-Year-Old Girl: A Case Report

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Abstract

Premature loss of teeth in children may lead to both functional and esthetic problems. Missing teeth in both anterior and posterior regions may cause malfunctions in mastication and proper pronunciation. Also, considering the sensitive nature of children, loss of teeth may cause the development of insecurities and low self-esteem problems.

A variety of esthetic restorative materials are available for restoring primary incisors and molars in pediatric dentistry. Furthermore, variety of therapeutic modalities, from removable partial dentures to conventional fixed space maintainer can be used for the replacement of traumatically missing or carious lost primary anterior teeth. Dentistry has advanced to a point where it is undesirable for children to be partially edentulous or to have unattractive anterior teeth. The introduction of new materials and adhesive systems in dentistry, offers a new reconstructive alternative for severely destroyed or lost primary anterior teeth.

This is a case report of a 4-year-old girl, attended my private pediatric dental clinic, with a chief complaint of pain in the upper anterior primary teeth, extracted upper primary canines on both sides and upper right first primary molar. The parents and the girl were concerned about the esthetics too, and asked for the replacement of extracted teeth. They were actually looking for a building up of a new smile.

Patient was treated under general anesthesia by doing pulpotomies and anterior Zirconia Crowns for the upper central and lateral primary incisors. The missing deciduous canines and premolar were replaced by fixed partial denture, which was actually a build up to her new smile. Badly decayed and lost anterior teeth can be physically and emotionally disturbing resulting in functional and esthetic damage. The appearance bothers the parents as well as the child, in addition to psychological problems affecting the child in relation to his teeth loss. The proper sequencing of treatment is important to achieve the desired functional and esthetic results. A build up to a new smile was achieved by combining restorative and fixed partial denture.

Introduction

Premature loss of teeth in children may lead to both functional and aesthetic problems. Missing teeth in both anterior and posterior regions may cause malfunctions in mastication and proper pronunciation. Also, considering the sensitive nature of children, loss

of teeth may cause the development of insecurities and low self-esteem problems.

Aesthetic treatment of severely decayed primary teeth is one of the greatest challenges for paediatric dentists. The use of aesthetic

restoration has become an important aspect of pediatric dentistry. Over the years, numerous techniques for restoring primary teeth have been attempted. Some techniques used for restoring complete crown coverage include polycarbonate crowns, acid etched crown, stainless steel crown (SSC), open-faced SSC with veneer placed on chair side, and commercially available preveneered SSC. The effective and efficient usage of these techniques is complicated due to technical, functional, or aesthetic hurdles [1]. Newly developed prefabricated zirconia crown (EZ-Pedo, Loomis, CA, USA; NuSmile ZR Primary Crowns, Houston, TX, USA; Hu-Friedy Mfg. Co., LLC, Chicago, IL, USA; Kinder Crowns, St. Louis Park, MN, USA; Cheng Crown, Exton, PA, USA; Zirkiz-Hass Corp. Korea) is an exceptionally strong ceramic crown and offers more esthetic and biocompatible full coverage for primary incisors and molars. They are anatomically contoured, metal free, completely bio-inert, and resistant to decay. Recently, the zirconium dioxide ceramic prefabricated crown has been used in the treatment of primary teeth [2].

Missing teeth in early age can lead to multiple problems like difficulty in chewing, problems in speech and compromise in aesthetics [3]. Variety of therapeutic modalities, from removable partial dentures to conventional fixed space maintainer can be used for the replacement of traumatically missing or carious lost primary anterior teeth especially in cases where anterior teeth are not present. This improves esthetics, masticatory forces and insecurity problems in comparison to those patients who have missing teeth and dentures were not provided [4].

Case Report

A 4-year-old girl, attended my private pediatric dental clinic in Irbid, Jordan, with a chief complaint of pain in the upper anterior primary teeth, extracted upper primary canines on both sides and upper right first primary molar. The parents and the girl were concerned about the esthetics too, and asked for the replacement of extracted teeth.

The girl's medical history revealed no specific problem. Her past dental history indicated extraction of maxillary deciduous canines (53,54,63) due to severe carious lesions and abscesses. The clinical examination revealed badly carious and destructed maxillary right and left central and lateral deciduous teeth (51,52,61,62). Also, Badly decayed maxillary and mandibular first and second deciduous molars (55,64,65,74,75,84,85).

Intraoral periapical radiograph were taken and revealed deep caries in relation to 51,52,61,62 pulp therapy was planned followed by anterior zirconia crowns. Furthermore, it revealed deep caries in relation to 55,64,65,74,75,84,85 for which pulpotomies and stainless steel crowns were planned to be treated.

Patient was treated under general anesthesia because of uncooperative behaviour and her young age. Pulpotomies and anterior Zirconia Crowns (NuSmile ZR Primary Crowns, Houston, TX, USA) were done as a treatment to the upper central and lateral primary incisors. Also, pulpotomies and stainless steel crowns (Hu-Friedy Mfg. Co., LLC, Chicago, IL, USA) were implied to treat maxillary and mandibular deciduous molars figure (1,2). An impression for the upper jaw was taken to construct a fixed partial denture replacing extracted deciduous canines and premolar.



Figure 1:



Figure 2:

On her next recall after two weeks, her fixed partial denture replacing the missing canines and molar which was constructed in the lab figure (3), and tried in the patient's mouth. It was fit but needed

some occlusal adjustments. A build up to a new smile was achieved by combining restorative tooth coloured crowns and fixed partial denture figure (4,5).

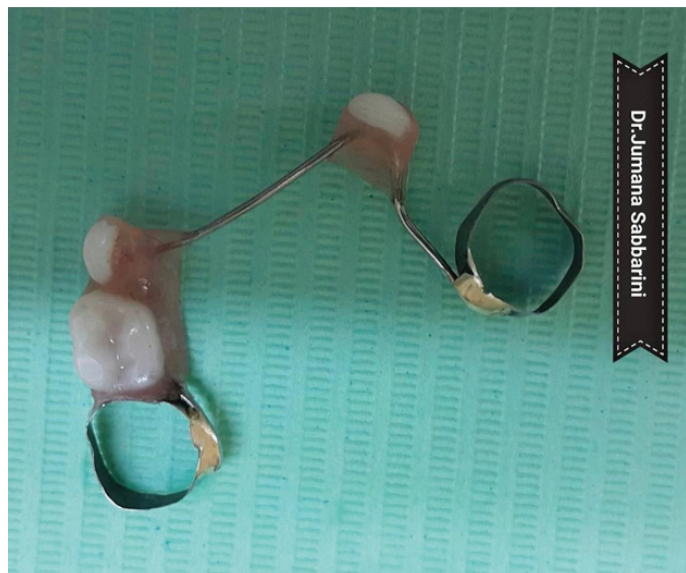


Figure 3:



Figure 4:



Figure 5:

Conclusion

Loss of an anterior tooth at younger age may result in psychological trauma to the child. The problem may become serious and deep seated and may result in an imbalanced emotional development of the child [5]. The strongest factor for the placement of an anterior aesthetic appliance is a parental desire. There is no strong evidence suggesting that the early loss of the maxillary incisors will cause undesirable effects on the growth and development of the child [6]. However, considerations have to be given regarding the speech problems, masticatory inefficiency, abnormal oral habits, an anaesthetic appearance, which follow the loss of anterior teeth at an early age. Dentistry has advanced to a point where it is undesirable for children to be partially edentulous or to have unattractive anterior teeth. The introduction of new materials and adhesive systems in dentistry, offers a new reconstructive alternative for severely destroyed or lost primary anterior teeth.

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