



DIFFERENT TREATMENT APPROACHES FOR ESTHETIC REHABILITATION IN PRIMARY DENTITION.

Dentistry

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ABSTRACT

The partial or complete loss of coronal tooth structure may occur due to dental caries or physical trauma. Even though dentistry currently emphasizes oral health promotion, there still are children with many carious lesion and traumatic injuries. Restoration of severely mutilated teeth is a clinical challenge in Pediatric Dentistry. The treatment should be based on the clinical judgment of the pediatric dentists according to the need of the individual. The purpose of this paper is to describe the rehabilitation of primary anterior teeth in three different cases of early childhood caries.

KEYWORDS

ECC, Pulpectomy, Deciduous teeth, esthetics

INTRODUCTION:

Primary maxillary anterior teeth dominate the physical appearance and their structural loss affects not only esthetics but also leads to compromised mastication, poor phonetics, development of aberrant habits, neuromuscular imbalance, and difficulty in social and psychological adjustment of the child.(1) Many options exist to repair carious primary incisors. Operator preferences, esthetic demands by parents, the child's behavior and professional ability are variables which affect the decision and ultimate outcome of whatever restorative outcome is chosen.(2) This paper deals with different approaches to restore esthetics based on the clinical presentation and cooperation level of the child.

Case 1 : Use Of Omega Wire As An Intra-canal Post

A 3 year old male patient reported to the department of Pedodontics and Preventive Dentistry with the chief complaint of decayed teeth and unesthetic appearance.

Investigation:

Clinical examination and radiograph revealed the presence of multiple carious lesions in maxillary and mandibular arch.(Fig 1a, 1b). 51, 52, 61, 62 were grossly decayed with only the root stumps present. Clinically the root stumps of 51, 52, 61, 62 were found to be firm, with an extension of the remaining crown of less than 1mm above the gingival margin.



Fig 1a And 1b: Pre- operative clinical and radiographic view.

Treatment:

Root canal therapy were performed in all the teeth with provision of crowns. For 51, 52, 61, 62 modified omega shaped wire framework was constructed and cemented in the canal with help of flowable

composite.(Fig 1c) After cementation of wire framework, core buildup was done with help of composite resin. (Fig 1d)

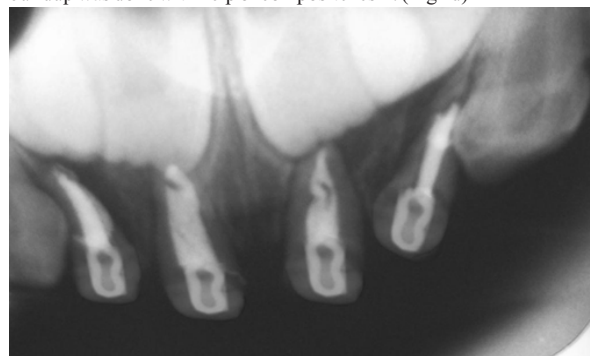


Fig 1c: Placement Of Omega- Shaped Intra- Canal Retainer



Fig 1d: Post- Operative View

Case 2: Fixed Functional Space Maintainer

2 and half old year male patient reported to the department of Pedodontics and Preventive Dentistry with the chief complaint of decayed teeth and unesthetic appearance. Clinical examination revealed the presence of multiple carious lesions in maxillary and mandibular arch. (Fig 2a)



Fig 2a: Pre- operative intra- oral view

Treatment:

Root canal therapy were performed in the carious teeth. Stainless steel crown were adapted on 55 and 65 and an impression was made.(Fig 2b) The SSC crowns were then transferred to the impression which was poured with dental stone. When the model was obtained then a stainless steel wire was adapted on the cast, extending from 55 to 65. In the anterior region the wire extended to the edentulous area of 51, 52, 61, 62. The wire was soldered to the SSCs. To restore the missing teeth, acrylic teeth were selected according to the size, and they attached to the wire framework with help of self- cure acrylic. On the next visit, the appliance was cemented in the oral cavity. (Fig 2c,2d)



Fig 2b: Adaptation Of Stainless Steel Crowns



Fig 2c And 2d: Post- Operative View With Appliance

Case 3: Removable Functional Space Maintainer.

5 and half year old female patient reported to the department of Pedodontics and Preventive Dentistry with the chief complaint unesthetic appearance and difficulty in mastication because of decayed teeth.

Investigation:

Clinical examination and radiograph evaluation revealed the presence of multiple carious lesions in maxillary and mandibular arch.(Fig 3a, 3b) In relation to 51, 52, 53, 61, 62, 63 only root stumps were present.

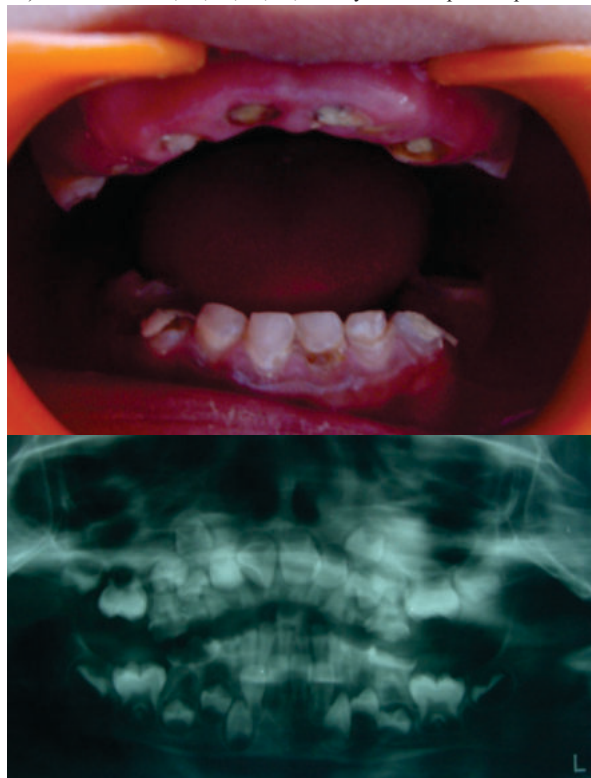


Fig 3a And 3b: Pre- Operative Clinical And Radiographic View.



Fig 3c And 3d: Post- Operative View With The Appliance.

Treatment:

Endodontic therapy was performed in 52, 53, 62, 63, while 51, 61 were

extracted because of external root resorption. After root canal therapy in 52, 53, 62, 63, omega shaped wire was used as an intracanal retainer over which core build was done with composite resin. For the replacement of 51 and 61 removable functional space maintainer was fabricated.(Fig 3c, 3d) This appliance was given as the compliance of the patient was good and succedaneous tooth will erupt in about 1-2 years.

Outcome And Follow-Up:

Parents were advised for a regular dental visit so that the permanent dentition could be assessed and appropriate treatment could be provided.

DISCUSSION

The parents concern about the early loss of primary teeth is the reason for seeking treatment, not only because of esthetics, but also due to loss of masticatory function, interference in speech development, establishment of tongue habits, as well as concern about space maintenance.(3) Many different sounds are made with the tongue touching the lingual side of the maxillary incisors and inappropriate speech compensations can develop if the teeth are missing.(4)

With the high infliction of early childhood caries, the number of children seeking treatment for grossly broken down anterior teeth is quite large as compared to the providers and besides there exist no standardized techniques of restoration of such teeth.(5)

In the first case report, omega shaped wire was used as an intra-canal post. Mortada and King suggested the use of an omega- shaped intracanal retainer followed by resin restoration of the crown.(6) This design has been modified by Aminabadi NA and Farahani RMZ, and they concluded that that the modified omega loop is an efficient technique for the restoration of the severely damaged anterior teeth. The ease of manipulation and short chair- side time are further advantages of the technique.(7)

Other modalities may include use of glass fiber post and dentinal posts. Subramaniam P et al used glass fiber post as an intracanal retainer and concluded that it had better retention and marginal adaptation than omega shaped stainless steel wire posts.(8) But cost of the fiber post may be limiting factor in its use as it was in our case. Ana et al used the natural crowns for the rehabilitation of grossly decayed primary anteriors teeth and coined the term 'biologic restorations' for such rehabilitations.(9) Biologic crowns though well accepted, do suffer from limitations on account of not being readily available; require pre-operative preparation such as sterilization. Moreover some parents may find the technique objectionable and may not readily accept it. (5) In the second case report fixed functional space maintainer was used to restore the missing incisors. It is an effective treatment alternative to removable acrylic plate with dual advantage of esthetics as well as space maintenance It does not rely on patient compliance for its use. It is patient friendly, as young child is unaware of its existence during regular day-to-day wear.(5) The age of the child and compliance were the main factor for selection of fixed appliance.

Removable functional space maintainer was used in the third case to restore the missing teeth. According to Orsi et al when there is a loss of one or more primary teeth, a removable space maintainer is the first option- causing no interference to tooth and arch development processes.(10) The compliance of the patient was good in this case thus the removable plate was selected, moreover it was temporary appliance required for the next 1 year till the eruption of the permanent incisors. Follow-up is recommended until the eruption of the permanent succeeding teeth.

Learning Points:

1. Children are among the least manageable group of the patients. Therefore, it is necessary to minimize the chair- side time.
2. The selection of the appliance should be based on individual needs and not on a standardized protocol.
3. The techniques described above for the esthetic rehabilitation provided extremely favorable esthetics and successfully recovered function.

Competing Interest: None

Patient Consent: Not Obtained

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