Original Research Paper

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Management of severely mutilated primary anterior teeth - report of a case.

Dental Science

KEYWORDS:

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ABSTRACT

Early childhood caries mainly occurs in primary maxillary anterior teeth and if untreated can lead to pulpal involvement and destruction of coronal tooth structure. These teeth are difficult to restore and poses serious challenge for a pediatric dentist. Post and core system has been introduced for restoration of grossly decayed teeth. There are various post and core systems available but they have their pros and cons. This case report describes a simplified technique of using omega post as it is inexpensive, less time consuming and efficient method for very young children.

Introduction:

As it is well known that children commonly get affected by early childhood caries which primarily affects the primary maxillary incisors immediately after the eruption of teeth and infects other primary teeth quickly causing severely damaged anterior teeth which in turn causes early tooth loss leading to reduced masticatory efficiency, loss of vertical dimension, tongue thrusting, speech problems, malocclusion, space loss, and psychological problems [1]. Restoration of the severely damaged primary anterior teeth poses a serious challenge for a pediatric dentist. A carious tooth esthetically and efficiently can be restored using various material like strip crowns, polycarbonate crowns, veneered stainless steel crowns, and art glass crown etc [2-5].But these materials alone will not be able to withstand occlusal forces in severely damaged teeth. Hence post and core systems were introduced to provide additional support to the restorations. Different types of post and core systems being used are Omega shaped orthodontic wires, biological posts, glass reinforced fiber composites (GFRC), polyethylene ribbon fibers but all having their own pros and cons [6-9].

This case report describes use of omega post as it is inexpensive, less time consuming and efficient method for very young children.

Case report:

Parents of three and a half year old male child reported with chief complaint of decayed front teeth and difficulty in speaking because of decayed teeth. No relevant medical and dental history was found. Intraoral examination revealed 51,52,61,62 -deep dental caries, 81 - natal tooth, 63- moderate dental caries (FIG 1). After obtaining detailed investigations and parental consent pulpectomy with respect to 51,52,61,62 and restoration with respect to 63 was planned. Seven day diet chart was obtained from the parents and diet counseling was done. Early morning appointment was given and pulpectomy procedure was performed under local anesthesia and rubber dam isolation .Canals were obturated with zinc oxide eugenol, temporary filling was given and patient recalled after seven days for permanent restoration. On the next visit patient was evaluated for any symptoms of pain after which placement of omega post followed by composite restoration using strip crown was planned. Stainless steel wire (0.7mm) was used to make omega loops and for the preparation of post space 4 mm of zinc oxide eugenol from the canals was removed and sealed with glass ionomer cement. The free end of omega loops was released inside the canal to provide anchorage and flowable composite was inserted inside the canal and light cured for better adhesion and stability. The incisal end of the loop of the wire projected 2 to 3 mm above the remaining tooth structure to provide better mechanical retention and support for the restorative material **(FIG 2).** Then over the incisal end of omega loops composite strip crown was placed and occlusion checked for any interference **(FIG 3).**

DISCUSION: Inspite of having discovered newer materials and techniques esthetic restoration of severely mutilated primary anterior teeth has been a challenge for pedodontist because the children who require such restorations are usually among the youngest and least manageable group of patient [10]. Thus the main aim of pedodontist lies in achieving functional requirement of the child with good esthetics**.** Early childhood caries is a severe form of caries occurring in children and causes partial or total loss of crown structure. Loss of tooth structures affects the longevity of the restoration, especially in the anterior primary teeth. This might cause esthetic, speech, orthodontic, and psychological problems. Thus after endodontic therapy use of post and core or intracanal retainer is advised .An ideal post and core should be resorbable and should provide adequate retention and resistance. One of the factors governing the retention of the restoration is the adaptation of the post and core to the inner dentinal wall which is in turn governed by adhesive and cohesive forces [11].Custom-made post and crown, which are commonly used in permanent teeth, cannot be used in primary teeth as it interferes with physiologic root resorption and creates internal stress leading to root fracture [12]. Building resin composite post is another method to obtain intracanal retention. The disadvantage of this technique is that composite posts have poor loading strength [13].Fiber posts and GFRC showed promising results but are expensive [14,15]. More esthetic options are achieved using biological posts but Lack of availability of tooth banks, lack of secure methods of sterilization and storage to ensure the safety of teeth are some of the disadvantages of biological post [16,17].

Thus looking towards our main aim of achieving functional requirements with good esthetics while maintaining patient co-operation we planned to give omega wire post which is a simpler and effective method for least manageable group patients. Omega loops were introduced by Mortada and King. In this technique omega loops wire extensions are placed at the depth of around 3-4 mm inside the root canal the projected portion of the loop is used for retention of the coronal restoration. This technique requires less chair side time and is inexpensive [18].

After the treatment we were able to achieve good esthetics along with functional requirement of the patient such as speech and mastication. Patient was recalled on follow up at 1 month 3 month and 6 month interval and restorations were found to be intact with improved speech.

Conclusion: Pediatric dentist plays a major role in managing young children with severely mutilated teeth .A restorative technique that provides functional, long lasting restorations yet simple to perform and inexpensive would enhance the management of severely mutilated primary teeth .This would help to ensure the child's cooperation thus reducing the anxiety associated with restorative treatment. Omega wire post followed by composite strip crowns presented in this case report fulfills all above said criteria as it provides good esthetics, functions with improved speech .Also whole procedure proved to be inexpensive, simple and easy to perform. However further research needs to carry out to evaluate its long term success and its effectiveness in children with parafucntional habits.

Figures:

Fig 1- Pre-operative intraoral view

Fig 2: Intra-operative intra oral view

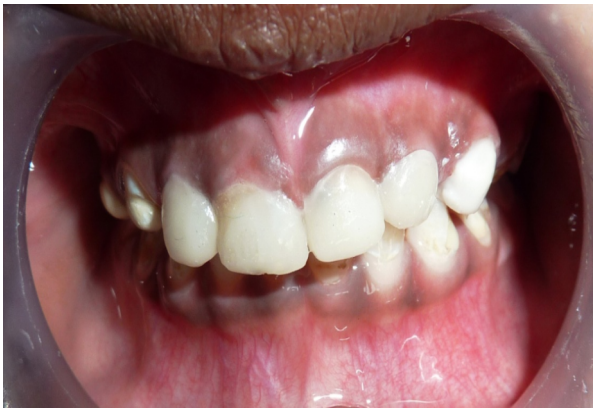

Fig 3- Post operative intraoral view

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