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A case Report on treatment of childhood Grossly caries Primary Incisors Using modified Omega wire technique

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ABSTRACT

Early childhood caries mainly affects maxillary primary anterior teeth and it can lead to early pulpal involvement and destruction of coronal tooth structure. These teeth are always difficult to restore. This case report deals with the successful use of omega loops and strip crowns to restore maxillary primary teeth affected by early childhood caries.

Key words: - Early Childhood Caries, Omega Loops, Strip Crowns.

INTRODUCTION

ECC is a common chronic childhood disease defined as the presence of one or more decayed non cavitated or cavitated lesions, missing due to caries or filled tooth surfaces in any primary tooth in a child seventy one months of age or younger.[1] The prevalence of ECC is 1-12% in developed countries and 70%, while in India a prevalence of 44 % has been reported for caries in 8 to 48 months old.[2]

Early Childhood Caries effects the neck in maxillary primary anterior teeth which makes them weak and more prone to fracture. If left untreated it can lead to pulpal involvement and destruction of coronal tooth structure leaving behind the root portion. Where in often extraction is the only option left for manegment.[3]

Early loss of these teeth may have deleterious effects like space loss, speech problems, chances of developing tongue thrusting habit, and can also have psychological effects.[4] To restore such severely damaged teeth with pulpal involvement is always a challenging task for the dentist. Root canal treatment followed by crown placement is often the treatment of choice in such kind of cases. Crown placement is not easy as in most of the cases coronal portion is severely destroyed. Metal posts, fiber-posts, composite restorations has been tried.[5, 6]

Omega loop is one of the traditional methods of restoring grossly decayed primary incisors which provide's a quick, inexpensive and efficient option, showing good results with long term durability. [7] Two cases are presented wherein omega loop's were used to restore the incisor's to function.

CASE REPORT 1

A 4 year old male child reported to the Department of pediatric dentistry multiple decayed teeth with decayed. Intra oral examination revealed carious lesions in tooth number 51, 61, 64, 65, 74, 75, 85.

Coronal portions of 51 was grossly damaged which with only root portion remaining. Had a draining sinus associated with 61 (Figure 1)

Figure 1: - Pre-operative View

Treatment plan was formulated after doing routine detailed investigations and radiographic evaluation for this case, it was decided to restore 64, 65, 74, 75, 85 using restorative glass-ionomer cement as not only it provide good adhesion but it also have the property of fluoride release, which is beneficial for caries prevention action, root canal treatment was planned for pulpally involved teeth followed by strip crowns over them.

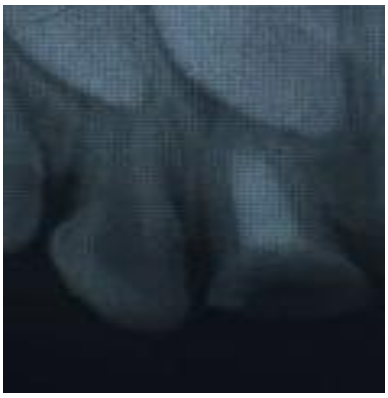

Figure 2: - Pulpectomy of 51

Pulpectomy was performed on 51, 61 under local anaesthesia. As there was very little coronal tooth structure left to build strip crowns, it was decided to use omega loops as post followed by composite strip crowns fabrication. In order to place omega loops in the canals approximately 4 mm of metapex was removed from the coronal end and sealed with glass-ionomer cement within the canal space.

A 22 gauge (0.7mm K.C. Smith $ Co.) stainless steel wire was used to make omega loops, and the free end of the omega loops was pressed and released inside the canal to provide anchorage, GIC (Type I G C Gold label) was also inserted inside the canal foradhesion and stability. (Figure 3)

Figure 3: - Insertion of Omega Loop

Then over the incisal end of omega loops composite strip crown was placed and occlusion checked for any interferences and polished using composite finishing strips. (Figure 4)

Figure 4: - Crown build-up.

CASE REPORT 2

A 2 year old female child reported to the Department of pediatric dentistry with decayed. Intra oral examination revealed carious lesions in tooth number 51, 61.

Coronal portions of 51, 61 were severly damaged and only root portion was remaining. (fig 5)

Figure 5: - Pre-operative View

Pulpectomy was performed on 51, 61 under local anaesthesia, rubber dam isolation was done. Post space was created in the canal about 4 mm and omega loop was inserted.

Then omega loops composite strip crown was placed over the incisal end and occlusion checked for any interference.(fig 6)

Figure 6: - Crown build-up.

DISCUSSION

Restoration of deciduous anterior teeth with severe loss of coronal structure is a challenging task for the dentists. The main aim is to avoid extraction of these teeth and restore them so that child is able perform normal masticatory function and also good esthetics is maintained .To provide good restoration is not always easy as in most of the cases there is very minimal tooth structure left, and also due to the fact that adhesion of bonding agent to primary teeth is not very satisfactory.

Many studies advocate the use of non-metallic posts such as ceramic post , polyethylene glass-fibers, carbon fibers etc[8], but in such kind of cases but it has some disadvantages like, technique sensitive, time consuming , multiple steps and expensive. Most post system developed for permanent teeth.

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The biggest advantage of using omega loop is that wire does not cause any internal stresses in the root canal as it is incorporated in the restorative material mainly and it can be done with minimal chair side time.[9] As they are custom made, they can be preformed of various sizes and kept for other patients which saves chair side time.

The technique of placing Omega loops is quiet simple, it involves the placement of an omega shaped stainless steel wire extension into the entrance of the root canal prior to restoring the crown with a composite.

In this case report, a simple and effective method for reconstruction of severely destroyed primary anterior teeth has been used. This technique can be done directly in mouth and does not involve any laboratory procedures. The complete procedure can be completed in one appointment and easy for the paediatric patient. As the core length of the omega loop which is placed intra-canal is around 3mm thus occupies only the cervical one-third of the canal and does not interferes with deciduous tooth root resorption and permanent tooth eruption.

Omega loop technique can be an easier, simpler and inexpensive treatment of choice for severely damaged primary anterior teeth.

CONCLUSION

The omega loops presented in this case report's provided good esthetics and masticatory function to the child and whole procedure proved to be simple and easy to perform. However, its long time success, and its durability in children having para-fucntional habits like bruxism, deep bite etc. is a matter of further research.

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