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RESEARCH ARTICLE

BIO POSTS: TOOTH FOR TOOTH.

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Abstract

The restoration of extensively damaged tooth is done using post and core. Although various post and core systems are available, but still the search for ideal material seems far. This case report describes the use of dentinal posts, which are sectioned from recently extracted canine. The post and core unit is fabricated in lab using indirect impression technique, and luted with resin based adhesive luting agent.

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Introduction:-

The restoration of fractured tooth can be achieved by various techniques, which have advanced over time, but still no material has been more effective than the properties of the natural dental structures themselves.^{2, 5, 8} In 2008 kaizer et al used dentinal posts to reconstruct the fractured tooth. The use of this technique is rational option as they are resilient, biocompatible and are amenable to adhesion.⁸ Various other authors have successfully used such biological posts to restore fractured tooth.^{1, 2, 11} However there are certain limitations, such as finding teeth with proper bulk, color, and patients refusal to treatment.^{2, 11} This case report describes the dentinal post made from natural extracted sterilized tooth for restoration of fractured anterior tooth.

Case report:-

A 45 year old male patient reported for restoration of fracture tooth. (Figure 1) Various treatment options were explained and patient gave consent to restore his fractured tooth with dentinal posts made from freshly extracted tooth.

1. After endodontic treatment was completed radicular preparation was done with peeso reamers (Mani, Prime dental products, Mumbai, Maharashtra), preserving 5mm of apical seal.
2. An indirect impression (Affinis, coltene) was made and cast (Denflo, Prevestdenpro) was procured. (figure 2)
3. A freshly extracted, intact maxillary canine tooth was chosen, cementum was removed and intraradicular contents were debrided, and placed in ultrasonic bath and then it was subjected to 134°C, 10 psi for 10 min.⁶
4. Mesio distal sectioning was done and thick section of dentin was shaped in to the post simulating the mock post. After verification on the cast, core build up (Magma NT, Prevestdenpro) was done on the cast at this stage. It was again subjected to 121°C, 15 lbs psi for 15minutes. (figure 3, 4)
5. In next appointment post and core thus fabricated was tried, and necessary adjustments were made. (figure 4) The bonding surfaces of post/core and inner portion of the canals were conditioned with 37% phosphoric for 15 seconds washed and dried. The self-cured resin cement (Self Comp, Prevestdenpro) was applied with the help

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of a lentulo spiral and also to the surface of the post, which was then inserted into the canal until completely polymerized. Necessary occlusal adjustments were done, and a full veneer crown was placed

Discussion:-

Dental posts or bio posts are the posts made from extracted tooth, the use of such posts is plausible as the structural architecture and biomechanical behavior of both the post and restored teeth is the same.^{3, 5, 8} physical properties such as modulus of elasticity, viscoelastic behavior,⁹ compressive strength,⁷ and thermal expansion closely resembles the dentin. As a result of the formation of homogeneous unit the fracture toughness of dentin has been found to be better than most of the current restorative materials.⁴ Furthermore the anisotropic nature and similar elasticity of both the post and the remaining dentin allows the flexion and transmits only the only a fraction of the stresses placed on the tooth to the dentinal walls.¹⁰ The success of this treatment is also dependent on the choice of luting agent as that will determine whether the resulting system is monoblock^{8, 9} In present case the intraradicular retention was necessary, which was achieved by the use of dental post and the adhesion was achieved with resin based adhesive agents. An indirect impression was used to make a cast. Dental post was fabricated using mock post and was confirmed on the cast. Additionally, core was fabricated on the same cast, which resulted in a better shaped core and reduced the chair side time. This technique offers excellent esthetic, and functional, results for extensively damaged teeth.

Conclusion:-

The dental post as an alternative to conventional post and core system is an acceptable technique which should be further researched to assess the long term behavior of this treatment.

Figure 1:



Figure 2:



Figure 3:

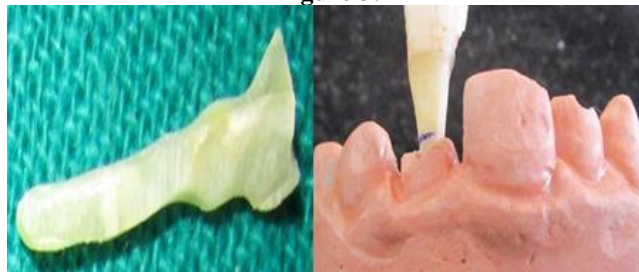


Figure 4:**References:-**

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