

ENHANCING ESTHETICS OF EXTENSIVE MUTILATED TOOTH WITH FIBER POST

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ABSTRACT:

A 15 year old boy reported to the Department of Pediatric and Preventive dentistry, Sri Hasanamba Dental College, Hassan, Karnataka with a complaint of unesthetic tooth in upper right front tooth region since 6 months. Diagnosis of nonvital tooth with respect to 11 was done with fracture of tooth at cervical region. Root canal treatment followed by fibre post and an all ceramic restoration was planned and treated within a month. Carbon fibre composite post was selected because of its esthetic, better tensile strength and self adhesive properties compared with that of conventional metal post and core system. Patient was pleased with results and after six months follow up the results were stable.

Key words: Fibre Post, Esthetics, Metal Free

INTRODUCTION:

There is no consensus on the best procedure for restoring endodontic ally treated teeth.^[1]

The restoration of root canal treated teeth, because of the significant loss of tooth structure, is often achieved with post and core. However, post may generate stresses which lead to vertical root fracture and loss of the tooth. Since post design, material used and the post space preparation has significant influence on vertical fracture prevalence, broad investigation is in progress to find out the optimum procedure. During the last decade new prefabricated passive posts were introduced for postendodontic restorations, using carbon fiber posts. The

physical properties of carbon fiber posts and the composite core are very close to those of dentin.^[2]

The introduction of esthetic fiber reinforced composite posts, in the 1990s, challenged conventional treatment modalities in the same way posterior composites threatened amalgam alloy.^[3] This procedure seems to be a good alternative to traditional cast metal dowel/cores or metal prefabricated posts. This paper illustrates a technique for rehabilitation of an endodontic ally treated tooth with a carbon fiber composite post.^[4]

CASE DETAIL:

A 15 yr old boy reported to Department of Pediatric and Preventive dentistry, Sri

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Hasanamba Dental college and Hospital, Hassan, Karnataka, with a chief complaint of poor esthetics, due to broken anterior tooth following a fall six months before. There was no apparent trauma to the soft tissues in the extra oral and intraoral examination. Clinical and radiographic examination revealed that the crown was fractured at cervical third in relation to 11 (Figure 1). The medical history was non-relevant. Pulp vitality test (cold test) showed non vital 11

The different treatment options were explained to the patient. The patient expressed the desire to maintain tooth and restore it with a direct resin based composite restoration, due to the lower cost and better esthetics. Endodontic treatment was done three weeks before the post placement to assure the quality of seal, periapical space and root canal dimensions. With a suitable sized peeso reamer, a post space was prepared by carefully removing an obturating material from the two third of the canal. (Fig- 2)

A minimum of one mm collar on sound tooth structure is required for a ferrule design. Carbonite, a carbon fibre composite post of proper diameter was selected, tried into the root canal and cut at the required length with a diamond disc. The working field was isolated. The canal was rinsed thoroughly and dried with paper point. The canal walls and remaining tooth were coated with Primer for 1 min. which combines single step disinfecting, etching, priming and bonding with the help of micro brush. (Fig-3) The canal was carefully dried with paper point

followed by gentle stream of air to evaporate the volatiles. The surface appear glossy. Primer was also applied to the clean surface of the post for 30 sec and lightly dried, to achieve the gloss. (Fig-4). Equal part of base and catalyst paste of dual cure resin cement was mixed and applied over the surface of the post in a thin layer. The post was carefully seated into the canal using light pressure. The cement was light cured for 20 sec. Excess cement expressed out of the canal was used as a base for core buildup (Fig 5). Self-cure composite clear-fell core was used as a core material. (Fig-6). After setting, minimal preparation was carried out to finish the margins and rubber base putty and light bodied impression was taken to fabricate the all ceramic crown. All ceramic crown was cemented after three days with luting glass ionomer cement. (Fig-7) (Fig-8)

The restoration of endodontically treated teeth with fiber-reinforced post systems has been drawing the attention of a growing number of clinicians. The progress in the technology of fiber-reinforced materials addressing the structure, shape, and optical properties of the posts has led to the development of materials that have overcome some of the limitations of metallic posts (platinum, alloys, or titanium) concerning aesthetic appearance, mode of failure, and clinical performance.^[4]

Duret in 1990 introduced metal free carbon fiber reinforced epoxy resin posts. It showed promising long term clinical results, suggesting that this system can be

a viable alternative to metal post and core.^[4] This technique is single visit, easy to perform and safe for both patient and dentist. The metal post may cause root fracture due to excessive tooth removal and direct transmission of stresses from post to the tooth root. The metal free post possesses a modulus of elasticity identical to dentin, which increases the strength of the remaining tooth structure.^[5] It results in restoration with natural translucency without causing corrosion and discoloration with high biocompatibility. Post selection depends

on individual patient needs and dentist's preference.^[6] Ceramic posts are strongest but expensive.^[7] Metal post often fractures under load. Carbon posts are adequately strong, cost effective and have acceptable physical properties.^[5]

CONCLUSION:

This is a Single visit procedure, esthetic, self adhesive and similar tensile strength as that of dentine. Good acceptability and compliance from the patient with minimal post operative complications.

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FIGURES:



FIG: 1



FIG 2



FIG 3

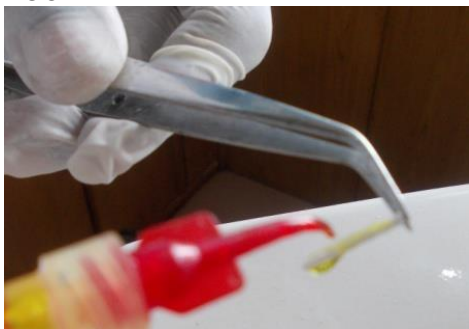


FIG 4



FIG 5



FIG 6



FIG 7



FIG 8