CASE REPORT

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Rehabilitation of the traumatic anterior teeth with fiber post

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ABSTRACT

The aim of this study is to benefit from fiber post restorative applications made with the support of the root canal in teeth that had suffered the loss of excess material. After the clinical and radiological evaluation of the 21-year-old male patient, canal treatment and crowns were made as prosthetic to his 21st tooth (according to Fédération Dentaire Internationale system). As a result of a severe blow, his tooth was broken from the crown part, and his fixed prosthesis was displaced. The canal treatment of the patient's 21st tooth was evaluated and was decided to apply fiber post.

Key words: Post core, esthetic, crown fractures, fiber post

INTRODUCTION

The loss of tooth tissue is mostly result from trauma and bruises. In the treatment of the teeth with the loss of excess material, direct composite restorations, indirect restorations, and post-core systems are preferred.[1-2]

In this study, it was aimed to treat the post-trauma broken crown on anterior teeth with fiber post. In this case, glass fiber post was prefered not to cause esthetic color mismatches because of the different refractive rate on the anterior region.

CASE REPORT

As a result of a severe blow to his anterior teeth, the patient consulted to our clinic to be unpleasant with esthetic appearance of his teeth and for his broken tooth, then he was treated intraorally and was decided to apply fiber post to crown fracture on the 21st tooth and instead of the crown previously done.

The patient was given the necessary information about treatment options. Then, the patient was decided to be treated with fiber post after assessing the patient's expectations as well as considering the economic conditions.

2/3 of the root canal filling in the upper central tooth of the patient was emptied with the help of drills which corresponds to the diameter of the fiber post systems. Fiber post was adapted into the root canal following the manufacturer's instructions. After the post having been cemented into the canal, the crown of the tooth was restored. Finally, rubber finishers and polishing process were completed using disc sanders [Table 1 and Figure 1].

DISCUSSION

Nowadays, post core is widely recommended in the restoration of teeth with excessive crowns damage.[1-3]

Fiber post contains fiber bundles embedded in a special composite material. Fibers are found in these bundles placed as multiaxially and reinforced with epoxy resin.[4] Light permeable fiber posts enable resin composites in apical area to be better polymerized.[5,6] According to some opinions, fiber post is suggested to be applied in the session with the root canal filling.[7] Because minimal distortions are claimed to occur in operations before pat freezes on the gutta-percha pat or dentin pat contact surfaces.[7] However, some researchers approved to prepare post-clearance after 48 h to avoid deterioration of the apical plug.[8,9] The use of light-transmitting ceramic or fiber post is prefered instead of metal posts on anterior parts where esthetic is very important.

To remove esthetic problems formed in gum by metal posts, carbon fiber post systems, and prefabricated resin posts reinforced with glass fibers are used.[10-12]

The restoration of endodontically treated teeth is often difficult. This operation is a bit more complicated especially in teeth going through a trauma or with excessive crown destruction. Therefore, selection of appropriate materials requires knowledge and care.

CONCLUSION

Fiber-reinforced posts and direct composite crown are implemented successfully in patients having difficulty in selecting more comprehensive treatments in terms of economy.

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Table 1: Materials used in this study

Material Name	Manufacturer	Material type	Matrix type	Filler content	Filler ratio (%)
Estelite® Sigma Quick	Tokuyama Tokyo, Japan	Submicron filled composite resin	Bis-GMA, TEGDMA	Spherical silica-zirconia filler and silica-zirconia prepolimerized fillers	82
Estelite® Flow Quick	Tokuyama Tokyo, Japan	Low viscosity, medium flow, light cured, radiopaque composite resin	Bisphenol A polyethoxy Methacrylate (Bis-MPEPP), TEGDMA, UDMA	Silica- zirconia filler and silica-titania filler	71
Tokuyama Bond Force	Tokuyama Dental, Japan	3D-SR monomer, TEGDMA, Bis-GMA, HEMA, Glass fillers, Isopropyl alcohol, Photo-initiator, Water	-	-	-
Curing Light Lamp	Woodpecker, USA	Dental Wireless LED	-	-	-
The Phosphoric Acid Gel of %37	Etching Gel, Kerr, USA	-	-	-	-
The Finishing Discs	3M ESPE Sof-Lex, USA	-	-	-	-
Transparent Matrix Band	Kerr Hawe Stop strip, China	-	-	-	-
Relyx Fiber Post	3M ESPE USA	Glass fibers embedded in a composite resin matrix	-	-	-

Figure 1: Pre-treatment and post-treatment images of the patient's teeth

An important advantage of the technique is that it can be implemented without requiring a special process or needing a technician.

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