

Anatomic fiber post in maxillary central incisor with ovoid-shaped and flared root canal using an indirect technique: A clinical report

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Objective: This clinical report describes treatment sequence and laboratory techniques for indirect anatomic fiber post fabrication in patient with ovoid-shaped and flared root canal.

Materials and Methods: A 32-year old Thai male was indicated for endodontic treatment followed by post, core and crown for his maxillary right central incisor. Flared and ovoid-shaped canal was detected in this tooth and no prefabricated fiber post could satisfactorily adapted to the canal's entire length. Therefore, indirect anatomic fiber post was chosen to be the restorative technique. Impression of the post space and surrounding tooth structure was performed and working model with the canal replica was established. Composite resin was incrementally relined on to the post into the shape of the replicated canal, and the composite core was formed. Anatomic fiber post was transferred into the maxillary right central incisor's canal and fixed with resin cement. Porcelain-fused metal crowns were fabricated and placed onto both maxillary central incisors.

Results: Indirect anatomic fiber post was found to be radiographically adapted to the root canal's entire length, creating a uniform and thin layer of resin cement without any voids detected. The patient was able to function normally and was satisfied with the final results.

Conclusions: Indirect anatomic fiber post is one possible restoration technique to be used in cases of flared and ovoid root canals. This technique ensures good post adaptation to the root canal wall which could be beneficial in terms of reduction in cement layer thickness and reduction in the polymerization shrinkage of the resin cement.

Keywords: anatomic fiber post, composite resin, flared canal, indirect technique, prefabricated fiber post

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Introduction

Restorations of root canal treated teeth with excessive loss of internal structures can be challenging and complicated. These widened and flared canals with thin dentinal wall can be seen in various circumstances. They could be found in necrotic young permanent teeth, dental caries extended into the radicular dentine, recurrent caries into the root dentin around the post, over-preparation and instrumentation of the root

canal, internal root resorption, and fusion or germination [1]. Due to the thin dentinal wall, flared root canals are weakened under normal masticatory forces and, therefore, are more susceptible to fractures [1, 2]. Their wide and tapered internal canal morphology also pose risks of creating a bulky luting cement layer, which could generate a potentially weak spot in the restoration and can further complicate the restorative procedures [3].

In addition to the flared canal, elliptical or oval-shaped canal also raised similar difficulties in both endodontic treatment and prosthodontic

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