

A TECHNIQUE FOR RE-ATTACHMENT OF FRACTURED INCISOR TEETH FRAGMENTS: CASE REPORT

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Traumatic injuries in the incisor region are common, especially among children and adolescents. Reattachment of natural tooth fragments is an important technique for restoring fractured teeth and provides advantages over resin-composite restorations and crowns. These include better aesthetics, maintenance of original tooth form and colour, minimal tooth loss, increased wear resistance, and thus improved function, with a sense of belonging to the patient.

This report presents the use of composite resin materials for reattachment of fractured natural tooth fragments in maxillary and mandibular incisors. Modern technology has continued to improve the quality of composite resins and now they are increasingly being used in restorative dentistry. In spite of some drawbacks, such as polymerization shrinkage, incomplete conversion and cross-linking and water absorption, the survival rates of composite restorations have improved due to the improvements in the physical and chemical properties of the material.

A case history of a 22-year-old patient who accidentally injured his maxillary and mandibular right central and lateral incisors is presented. All four teeth were fractured from the cervical margins of the crowns. Except the upper central incisor, all other fractured fragments were intact at the time of presentation. The patient brought the fractured central incisor dipped in water. In the upper lateral and lower central incisors, fracture lines extended 2mm below the cervical margin, palatally. After separating all intact fractured segments pulpectomy and root canal therapy was carried out for all four teeth. After removing pulpal tissues the separated tooth fragments were stored in a refrigerator in normal saline.

After a three week of observation period an appointment was given for reattachment of the fragments. Gutta purcha was removed from coronal two thirds of the root canals. Suitable metal posts were selected and sandblasted. Root canal surfaces were etched with gel containing phosphoric acid (K-Etchant gel) for 10 seconds. After etching, adherent surfaces were washed and dried. ED primer was applied to the root canal surfaces and metal primer was applied to the metal posts and left for 60 seconds. Using a sponge excess primer was removed to prevent the primer from pooling inside the root canal. The primer was dried with a gentle flow of air. The mixed dual cure composite resin (PANAVIA F) was applied to the root canals and after applying a coat of mixed resin to the posts they were inserted into the canal quickly. Vibratory movements were used to prevent air entrapment during insertion of the posts. By using a small brush, excess resin was spread over the post head. It was subsequently cured for 20 seconds using a light source.

The same procedure was followed in application of resin to the adherent surfaces of the natural crowns after enlarging the pulp chamber area to take up the post. Then they were fixed to the posts and light cured for 20 seconds. 0.5mm thickness of enamel was removed from the labial surfaces along fracture lines and they were replaced with matching light cured composite.