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ESTHETIC AND CONSERVATIVE MANAGEMENT OF FRACTURED ANTERIOR TEETH

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ABSTRACT

The present article describes esthetic and conservative management of fractured right maxillary incisors using detached fragments reinforced by fiber reinforced composite posts and resin bonding.

KEY WORDS: Esthetic bonding, Fragment bonding, Fiber reinforced composite bonding. .

INTRODUCTION

Dental trauma is a major cause of loss of sound tooth structure especially in young and middle aged patients. It has long been estimated that at least more than 25% of those under the age of 40years will present with at -least one fractured anterior tooth as a result of trauma.[1]

The technique of bonding fragments in fractured anterior teeth is to restore their morphologic, functional and esthetic characteristic has been proposed as a more conservative alternative to composite resin restoration.[2] This technique can be considered one of the treatment options, permitting immediate treatment of the injured tooth, while avoiding wear on the remaining structure affording greater durability by preserving the natural teeth wear resistance and maintaining shape, function and surface texture.[3-5] This method does not eliminate the possibility of color change, it requires continues monitoring and the fragment may de bond in a short time.

This article describes restoration of fractured right maxillary incisors teeth by using fiber reinforced composite posts (FRC) and fractured natural teeth fragments.

Case report

A 39 year old female patient reported, complaining of fractured upper front teeth and wants restoration of the same. Her dental history revealed road traffic accident, resulting in trauma to upper lip and fracture of right maxillary incisor teeth **(Fig.1)**.

Intra-oral examination revealed fractured maxillary right central and lateral incisors with pulp exposure **(Fig.2)**. She brought the fractured teeth fragments placed in a container of water **(Fig.3)**.

Clinical and radiographic evaluation revealed that the crown fractured involved enamel, dentine and pulp. Root and remaining tooth structure is intact in the socket without any abnormality. Neither of the teeth fragments showed color difference with the natural teeth and they were to the correct approximation to the remaining natural teeth. Given the excellent state of the dental fragments, a decision was made to use the bonding procedures. Both the fractured teeth with pulpal involvement were treated with single visit endodontic therapy.

To reinforce the bonding of teeth fragments to the remaining natural teeth, a fiber reinforced composite posts were used. Post space was prepared by using rotary reamer (Ivoclar Vivadent AG Liechtenstein) provided by the manufacturer **(Fig.4)**. A 5 mm. radicular Gutta-percha filling was left intact to maintain the apical seal. FRC post were cemented into prepared radicular space using resin luting agent. (Multilink Automix System, Ivoclar vivadent AG Liechtenstein) as per manufacturer instructions. Teeth fragments were

Fig.1. Photograph showing trauma to upper lip and fracture of 11.

Fig.2. Photograph showing the pulp exposure of 11,12.

Fig.3. Fractured teeth fragments

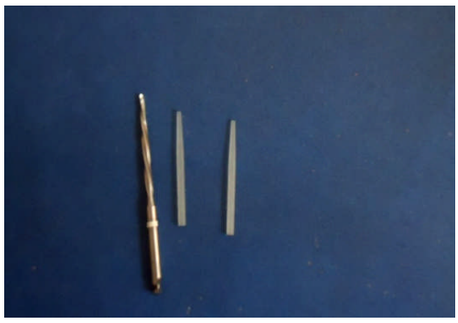

Fig.4. Rotatory reamers for preparation Of post space

Fig.5. Fibre reinforced posts in place

Fig.6. post operative photograph

prepared to accommodate the coronal extensions of the posts, without disturbing the margins of the fragments **(Fig.5)**. Teeth fragments were bonded to posts and remaining natural teeth by using acid etch technique and visible light polymerizing resin luting agent. Polishing and finishing was done to remove the excess cement to achieve smooth surface and continuity. Final result was satisfactory **(Fig.6)**.

Discussion

A clinical out come of restoration utilizing teeth fragments, in terms of retention, is still primarily depen dent on durable enamel bonding. Only enamel and dentine bonding provides sufficient bond strength to hold the smaller sized teeth fragments.[6] But in present clinical situation 2/3rd coronal tooth structure was fractured, to retain such a large size fragments, additional reinforcement is required along with enamel and dentin bonding.[4] Using esthetically dependable and bondable FRC post facilitates affective bonding of large coronal fragments to remaining natural teeth.[7,8] This technique facilitates conservation of tooth structure by eliminating necessity of full veneer crowns.

CONCLUSION

Bonding fractured anterior teeth using FRC post is fast, simple, retentive, conservative, cost effective and highly esthetic treatment. It should therefore be the first choice in restoration of fractured anterior teeth when the fragment is available.

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