CASE REPORT

FRAC TURE REATTACHMENT WITH FIBRE POST: A CASE REPORT

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ABSTRACT

Coronal fracture of the maxillary central incisor is one of the common types of dental injuries which affect the aesthetics. This article reports a case of a coronal fracture of maxillary permanent central incisor using fracture segment reattachment by fibre-reinforced post system.

Key words: Coronal Fracture; Fracture Reattachment; Fiber Post; Resin Composite.

Introduction

Coronal fractures of the anterior teeth cause physical disfiguring and psychological impact on the general wellbeing of the individual.1 Crown fractures present almost 92% of all traumatic injuries of the permanent teeth.2 The anterior incisors are the most often affected (80% central incisors and 16% lateral incisors) because of the anterior position of the maxilla and tooth protrusion.3 Previously such cases were treated with jacket crown, orthodontic bands, pin retained resin and composite resin.1,2 However, no restorative material can replicate the aesthetic characteristic of the natural tooth structure.3 Therefore, an aesthetic and minimally invasive restorative alternative for the fractured anterior tooth is reattachment of fractured tooth segment. This article reports management of cases of coronal fracture of maxillary permanent central incisor using fracture segment reattachment by fibre-reinforced post system.

Case Report

A 22-year-old boy reported to the department of conservative dentistry and endodontics, Sharad Pawar Dental College, Sawangi, Wardha with the chief complaint of poor aesthetics. Patient had also given history of vehicular accident one month back. Clinical examination revealed horizontal fracture in cervical third of left maxillary central incisor. Crown was loosely attached (Figure 1). Radiographic examination confirmed that there was a horizontal fracture in the cervical third of left maxillary central incisor involving enamel, dentin and pulp (Figure 2). Complete treatment plan was explained to the patient and consent was obtained. The fractured crown portion was removed atraumatically. Trough was prepared on the crown portion and stored in saline. Palatal flap was reflected to expose the fracture line. Complete cleaning and shaping was done with left maxillary central incisor using crown down technique and sectional obturation was done using resin sealer. Fibre post and crown segment were together luted with tooth using dual cure composite resin. The flaps were then sutured back, post operative radiograph was taken (Figure 3, Figure 4).

Discussion

Coronal fractures of the anterior teeth are a common form of dental trauma that mainly affects children and adolescents.4-7 Anterior tooth fracture may be most traumatic for young patients and it has been found that there is positive emotional and social response from the patient to the preservation of natural tooth fragment.8 The concepts of reattachment began in 1964 when Chosack and Eidelman used cast post and conventional cement for reattachment of fracture. Tannery was the first to report the fracture reattachment using acid-etch technique.3,9 Dentist plays an important role in the management of injury and hence dentist has to take into consideration every possibility of saving a traumatized tooth. Reattachment of fracture segment is no longer a provisional restoration but rather has become a restorative treatment offering favourable prognosis.10 This is made possible due to remarkable advancements in adhesive systems and resin composites.4 Composite resins are most commonly used for reattachment cases but due to their poor abrasion and mechanical resistance various approaches are developed to reinforce it like tooth coloured fibre post. Tooth coloured fibre post was introduced in 1990’s.10,11 Reattachment provides with better aesthetics and life like translucency, incisal edge wear at the similar rate like adjacent teeth, less time consuming, positive social and emotional response.12 When more than 50% of the coronal structure is missing, then the use of post and core foundation is recommended prior to restoration.10,13 In the recent studies it has become clear that the use of post do not strengthen the treated teeth and their use is justified only for retention of the coronal restoration.13,14 Post provides base for core build-up. Use of fibre post and core reduces chances of fracture as less tooth preparation is required. Also fibre post possesses similar modulus of elasticity as dentin. Use of fibre post and composite core with recent advances in adhesive techniques and materials can create a monobloc, a multilayered structure with no inherent weak interlayer interference.15

In the present case as the fracture segment was available, reattachment was possible. Use of the natural tooth fragment along with advanced adhesive materials clearly eliminated the problem of differential wear of restorative material, unmatched shades and difficulty in contour and texture reproduction associated with other restorative techniques.1,6

Conclusion

In conclusion the reattachment of fractured segment is a viable technique that restores function and aesthetics with a very conservative approach.
References

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