Case Report

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Fragment Reattachment: Conservative Approach to a Complicated Case - A Case Report

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ABSTRACT

Background: Fracture of anterior teeth is a common occurrence in young children and adolescents. Due to advancements in adhesive technology reattaching the patient's own fragment is gaining popularity. Tooth fragment reattachment not only takes care of original tooth anatomy but also the shade selection part. It is definitely a conservative approach which does not need tooth reduction to the extent of full coverage crowns and a cost effective treatment to a complicated problem. In this article a case is presented where post was used along with flowable resin to reattach the tooth.

Keywords: Acid etching, Tooth, Trauma.

INTRODUCTION

Trauma to the anterior teeth is a common occurance and many dentists are confronted with different types of trauma on a regular basis in their clinical practice[1]. A fracture involving enamel, dentin and pulp is classified by Ellis as class 3[2]. Traditionally these cases were treated by root canal treatment followed by placement of post and core and subsequently a crown. With the developments in the adhesive technology tooth fragment reattachment has become popular. Tooth fragment reattachment may offer following advantages[3].

1. Most rapid and conservative management.
2. Better esthetics
3. Wear of incisal edge similar to that of adjacent tooth
4. A positive emotional and social response from the patient.

Tooth fragment reattachment is a conservative, cost effective treatment that maintains esthetics and thus it can be carried out as an effective alternative to full coverage crowns[4].

CASE REPORT

A 16 year old male presented with an oblique crown root fracture of the tooth. The fragment was retrieved (Figure 1) and the tooth was treated with single visit root canal treatment. Post space was prepared using no. 3 Peeso reamer (Mani, Japan) (Figure 2) and prefabricated post was cemented into the tooth using zinc phosphate cement (Figure 3). The fractured fragment was carefully stored in saline solution. After the completion of root canal treatment and post placement the fractured fragment was thoroughly cleaned and access cavity was prepared to roughly correspond the post. It was placed back to see the alignment and was etched with 37% phosphoric

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Fig 1: Retrieval of Fragment.

Fig 2: Post space preparation.

Fig 3: Post Inserted.

Fig 4: Etching of fragments.

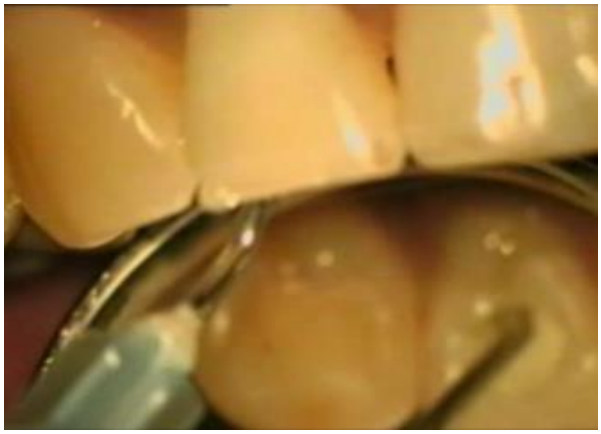

Fig 5: Placement of flowable composite.

Fig 6: Post Operative Photograph.

acid and bonding agent was applied and cured (Figure 4). The root portion of the tooth was also etched and bonded (Tetric N Bond, Ivoclar.) similarly. Flowable composite (Tetric Flow, Ivoclar.) was placed around the post and fragment was placed back with finger pressure. Now keeping the pressure intact the flowable composite was placed inside the access cavity (Figure 5) and it was cured. Flowable composite was also flown in the thin fracture line around the tooth to make it esthetically acceptable (Figure 6).

DISCUSSION

Esthetic and biologic restoration of the fractured incisors often presents a daunting clinical challenge. Various treatment approaches have been indicated for fractured teeth including, fragment removal followed by restoration[5]. In spite of various advances in the adhesive material there is no restorative material that will restore the perfect esthetics and functionality as much as natural dental structures[6]. Reattachment of the crown fragment to a fractured tooth influences esthetic by retaining natural translucency and surface texture and is the first choice for crown fractures of anterior teeth. Once the original fragment is reattached, the natural appearance will be restored instantly.

Many different techniques have been advocated for fragment reattachment[7]. Some of them are:

1. Placement of circumferential bevel at fracture line
2. Placement of external chamfer at fracture line
3. Use of V shaped enamel notch.
4. Placement of internal groove
5. Superficial overcontouring of restorative material.

In this case post placement was done because it was a crown root fracture and tooth required retention. Also, this procedure is relatively simple, atraumatic and inexpensive.

Several case reports show that even subgingival tooth fractures can be restored successfully[8]. Studies have shown that in 85% of traumatized incisors, fracture line runs obliquely from labial to lingual aspect with the fracture line proceeding in an apical direction. Hence, such type of unfavorable fracture restoration would have low resistance to labially applied forces, like the traumatic force itself, but may have higher resistance to horizontal forces which occur with incising or tearing food [9].

In this case reattachment technique of the autogenous tooth fragment to the crown, with prefabricated post has been used. Although the use of pre-fabricated post does not mechanically strengthen the endodontically treated teeth, it helps in retention of the coronal restoration[10].

CONCLUSION

The reattachment of a tooth fragment is a viable, conservative technique that restores function and esthetics and clinicians should consider it when treating patients with coronal fractures of the anterior teeth.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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