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### Case Report

# REATTACHMENT OF FRACTURED FRAGMENT OF TOOTH: CONSERVATION WHAT IS NATURAL! - A CASE REPORT

Saraf Adish<sup>1</sup>, Medha Ashish<sup>2</sup>, Jain Deepak<sup>3</sup>, Mattigatti Sudha<sup>3</sup>, Pawar Sagar<sup>4\*</sup>, Makandar Saleem<sup>3</sup>, Mahaparale Rushikesh<sup>1</sup>

<sup>1</sup>Senior Lecturer, Department of Conservative Dentistry and Endodontics SDS, Karad, India

<sup>2</sup>Professor and HOD, Department of Conservative Dentistry and Endodontics SDS, Karad, India

<sup>3</sup>Reader, Department of Conservative Dentistry and Endodontics SDS, Karad, India

<sup>4</sup>Post Graduate Student, Department of Conservative Dentistry and Endodontics SDS, Karad, India

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\*Corresponding Author: **Dr. Sagar Pawar**

Final year post graduate SDS, Karad.KIMSUDU Campus, Karad.415110,India Contact number: 7588060553

Mailing address: 443/5 SHIVARAJ Bunglow Shaniwar peth, Karad, 415110, India

## ABSTRACT

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, Crown Fracture, Maxillary Central Incisor, Reattachment, Trauma.

## INTRODUCTION

Trauma to the anterior teeth is a common occurrence and many dentists are confronted with different types of trauma on a regular basis in their clinical practice<sup>1</sup>. A fracture involving enamel, dentin and pulp is classified by Ellis as Class III<sup>2</sup>. 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<sup>3</sup>.

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<sup>4</sup>.

## CASE REPORT

A 16 year old male presented with an oblique crown fracture of the tooth reported to the Department of Conservative Dentistry and Endodontics SDS, Karad(Figure 1).On examination Ellis Class III fracture was diagnosed with 11. The fragment was retrieved (Figure 2) and the tooth was

treated with single visit root canal treatment (Figure 3,4). The fractured fragment was carefully stored in saline solution. After the completion of root canal treatment the fractured fragment was thoroughly cleaned. It was placed back to see the alignment and was etched with 37% phosphoric acid and bonding agent (Tetric N Bond, Ivoclar ) was applied and cured (Figure 5,6). Now with torpedo bur(mani) chamfer was prepared over the fracture line on the buccal surface of the tooth (figure 7,8). Surface over the chamfer created, was etched bonded and composite composite resin (Tetric N Ceram, Ivoclar ) was used around the chamfer created over the fracture line to increase fracture strength, and make it esthetically acceptable, (Figure 9,10,11). Finishing and polishing was carried out using Super snap polishing kit (Shofu).The ultimate result obtained was satisfactory (figure 12)



Figure 1



Figure 2



Figure 3

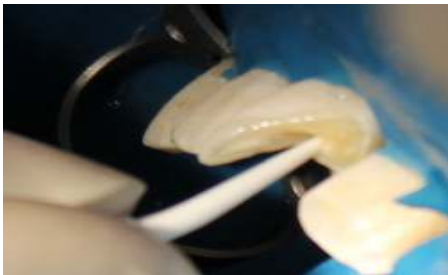


Figure 4



Figure 5



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11



Figure 12

## 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<sup>5</sup>. 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<sup>6</sup>. 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<sup>7</sup>. 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 rebonding of fractured fragment was carried out followed by placement of chamfer over the fracture line so as the tooth acquires maximum retention along with good esthetics. Also, this procedure is relatively simple, atraumatic and inexpensive.

Several case reports show that even subgingival tooth fractures can be restored successfully<sup>8</sup>. 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<sup>9</sup>.

In this case reattachment technique of the autogenous tooth fragment to the crown, followed by external chamfer has been done. Although its use does not mechanically strengthen the endodontically treated teeth, but it helps in retention of the coronal restoration and esthetics<sup>7</sup>.

## 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.

## REFERENCES

1. Andreasen JO and Andreasen FM, Textbook and Color Atlas of Traumatic Injuries To the Teeth, Munksgaard Denmark, Copenhagen, Denmark, 3rd edition, 1993.
2. Ellis GE and Davey KW, The Classification and Treatment of Injuries To the Teeth of Children, Year Book Medical, Chicago, Ill, USA, 5th edition, 1970.
3. Surya Kumari NB, Sujana V, Ram Sunil CH, Reddy PS. Reattachment of complicated tooth fracture: An alternative approach. *Contemp Clin Dent* 2012; 3: 242-4.
4. Andreasen FM, Norén JG, Andreasen JO, Engelhardt S, Lindh-Strömberg U. Long-term survival of fragment bonding in the treatment of fractured crowns: a multicenter clinical study. *Quintessence Int.*, 1995; 26(10): 669-681.
5. Olsburgh s, Jacoby T, Krejci I, Crown fractures in the permanent dentition: pulpal and restorative considerations. *Dent Traumatol.* 2002; 18: 3:103-15
6. Alvares I, Sensi L G, Araujo E, "Silicone index: an alternative approach for tooth fragment reattachment. *J Esthet Restor Dent* 2007; 19: 5: 2 40-5.
7. Reis A, Francci C, Loguercio AD, Carrilho MR, RodriquesFilho LE. Re-attachment of anterior fractured teeth: fracture strength using different techniques. *Oper Dent* 2001; 26: 3: 287-94.
8. Giachetti L, Bertini F, Rotundo R, Crown-root reattachment of a severe subgingival tooth fracture: a 15-month periodontal evaluation. *Int J Periodontics Restorative Dent.* 2010; 30(4): 393-399.
9. Murchison DF, Burke FJ, Worthington RB, Incisal edge reattachment: indications for use and clinical technique. *Br Dent J.* 1999; 186 (12): 614-9.

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