

## Restoration of a Crown-Root Fractured Teeth with Fiber Post and 12-Months Follow-Up

Merve Safa Mutluay<sup>1\*</sup> and Abidin Talha Mutluay<sup>2</sup>

<sup>1</sup>Department of Pediatric Dentistry, Kirikkale University, Faculty of Dentistry, Turkey

<sup>2</sup>Department of Restorative Dentistry, Kirikkale University, Faculty of Dentistry, Turkey

**\*Corresponding Author:** Merve Safa Mutluay, Department of Pediatric Dentistry, Kirikkale University, Faculty of Dentistry, Turkey.

**Received:** September 28, 2016; **Published:** October 04, 2016

### Abstract

Repeated traumatic injuries usually involve the anterior teeth of children and young patients. In the reported case, the patient who suffered from a crown - root fracture extending subgingivally rehabilitated with diode laser and a fiber - reinforced polymer post. At 12 month - follow-up examination, there were no signs or symptoms of pathology.

**Keywords:** Trauma; Injuries; Crown-Root; Fractured teeth; Clinical and radiological evaluation

### Introduction

Children and teenagers are accident - prone and affected with dental trauma multiple time [1]. Repeated dental trauma pose difficulties for dentists to decide proper treatment plans. These cases require both surgical and restorative dental treatment modalities [1,2]. Treatment plan of crown-root fractured tooth based on the level and line of fracture, prognosis of traumatized tooth and type of occlusion [3,4]. Fiber-reinforced posts have essential advantages to provide immediate, simple and conservative esthetics and functional rehabilitation of these teeth in young patients. This case report describes management of a crown-root fractured tooth with fiber post and 12 - months follow-up.

### Case Presentation and Intervention:

A healthy 19 - years-old male patient admitted to our clinic with pain and a horizontal crown-root fracture of the 41 at the coronal third (Figure 1). He gave a history of injury. It is indicated that root canal treatment and apical root resection was applied three years ago due to periapical lesion of 41 originated from dental trauma. Clinical and radiological evaluation revealed that the patient suffered a second trauma resulting in dislodgement and fracture of rehabilitated teeth and a crown-root fracture extending subgingivally. The periapical radiograph has showed that fracture line reached beneath the gingiva and recurrence of apical lesion (Figure 5). A decision was made to dislodgement of fractured part and place a fiber-reinforced polymer post into the root canal for retention.





**Figure 1-4:** Intraoral photographs showing clinical intervention.



**Figure 5:** Periapical radiograph showing fracture line.

Fractured part was removed and gingiva was opened through fracture line using diode laser (810 nm). Two weeks after surgical procedure, root filling of the tooth 41 was removed and re-treated. Post-space preparation was prepared (Figure 2 and 6) and a confirmed with a periapical radiograph. Proper glass-fiber post (Glassix Nordin, Chailly-Montreux, Switzerland) was chosen, another radiograph was taken to confirming the post length and placed into the canal. After making sure that inside of the canal was completely dry, the post was cemented with Panavia F2.0 (Kuraray, Osaka, Japan) adhesive cement. The excess of the fiber post was cut and the tooth was restored with composite strip crown (3M ESPE, USA and Filtek Supreme, 3M ESPE) (Figure 3). Contouring and finishing procedures were completed using abrasive discs (Sof-Lex, 3M ESPE). At 12 month-follow-up examination, no pain symptoms, color changes or mobility were observed on the restored tooth and the periodontium was found to be healthy (Figure 4 and 7). Clinical and radiological controls of the patient are currently continued.



**Figure 6:** Periapical radiograph showing retreatment and fiber post application.



**Figure 7:** Periapical radiograph taken at 12-month control.

### Conclusion

After dental trauma, treatment planning should be based on biologic considerations. Proper diagnosis, treatment planning and long-time follow-up are essential factors in the prognosis of crown root fractures. Multidisciplinary treatment approach provide desired esthetic and functional results in these teeth [3,4]. Also, the use of fiber post provides several clinical advantages including conservative, simple, adhesive and esthetics technique [5].

### Acknowledgement

The case was presented at 1st Online Scientific Congress of International Association of Endodontic Education, Research & Practice - November 30th December 29th 2015.

### Bibliography

1. Sharma D., *et al.* "Multidisciplinary approach to the rehabilitation of a tooth with two trauma episodes: systematic review and report of a case". *Dental Traumatology* 27.4 (2011): 321-326.
2. Bruschi-Alonso RC., *et al.* "Reattachment of anterior fractured teeth: effect of materials and techniques on impact strength". *Dental Traumatology* 26.4 (2010): 315-322.
3. Aggarwal V., *et al.* "Complicated crown fractures–management and treatment options". *International Endodontic Journal* 42.8 (2009): 740-753.
4. Villat C., *et al.* "Multidisciplinary approach to the immediate esthetic repair and long-term treatment of an oblique crown–root fracture". *Dental Traumatology* 20.1 (2004): 56-60.
5. Lamichhane A., *et al.* "Dental fiber-post resin base material: a review." *The journal of advanced prosthodontics* 6.1 (2014): 60-65.

**Volume 5 Issue 2 October 2016**

**© All rights reserved by Merve Safa Mutluay and Abidin Talha Mutluay.**