

CONCLUSION

From this study, we can conclude that

- Fibers certainly have the reinforcing effect on restoration of fractured anterior teeth. This might help to optimize properties of directly made composite in anterior teeth.
- The position of fiber is an important factor to determine the reinforcing effects of fibers.
- Polyethylene fiber (Ribbond) in the central palatal slot has a better effect on the distribution of stress and increases the strength of restoration. By using this technique, one can achieve strength almost equivalent to natural teeth.
- During restoration of fractured anterior teeth by preparing a single slot in addition to conventional beveled design, the load bearing capacity of tooth is also enhanced.

REFERENCES

1. Andreason JO, Andreason FM, et al. Textbook and color atlas of traumatic injuries to teeth; 2007; pp.217–243.
2. Thelen DS, Trovik TA, et al. Impact of traumatic dental injuries with unmet treatment need on the quality of daily life of adolescents, 16–19 years of age among adolescents—case control study. *Dent Traumatol* 2011;27:88–94.
3. Kovacs M, Pacurar M, et al. Fracture resistance of tooth fragments reattached with different techniques. An in vitro study. *Rom J Oral Rehab* 2012;4:36–41.
4. Demarco FF, Fay RM, et al. Fracture resistance of re-attached coronal fragments – influence of different adhesive materials and bevel preparation. *Dent Traumatol* 2004;20:157–163. DOI: 10.1111/j.1600-4469.2004.00221.x.
5. Sengun A, Ozer F, et al. Shear bond strength of tooth fragments reattached or restored. *J Oral Rehab* 2003;30:82–86.
6. Black JB, Retief DH, et al. Effect of cavity design on retention of class IV composite resin restorations. *J Am Dent Assoc* 1981;103:42–46.
7. Mitra SB, Wu D, et al. An application of nanotechnology in advanced dental materials. *J Am Dent Assoc* 2003;134:1382–1390.
8. Coelho-de-Souza FH, Camacho GB, et al. Influence of Restorative Technique, Beveling, and Aging on Composite Bonding to Sectioned Incisal Edges. *J Adhes Dent* 2008;10:113–117.
9. Shashidhar J, Shashidhar C. Evaluation and comparison of the effect of enamel preparation designs on fracture resistance of micro-filled and nano-filled composite resin: an in vitro study. *J Res Dent* 2013;1:43–48.
10. Davidson DF, Jordan RE, et al. Esthetic conservative incisal restoration of anterior teeth – Part I. *J Can Dent Assoc* 1994;60:301–304.
11. Munksgaard EC, Hoytved L, et al. Enamel-dentin crown fractures bonded with various bonding agents. *Endodont Dent Traumatol* 1991;7:73–77.
12. Davari A, Sadeghi M. Influence of different bonding agents and composite resins on fracture resistance of reattached incisal tooth fragment. *J Dent (Shiraz)* 2014;15(1):6–14.
13. Andreason FM, Flugge E, et al. Treatment of crown fractured incisors with laminate veneer restorations. An experimental study. *Endodont Dent Traumatol* 1992;8:30–35.
14. Vallittu PK. Survival rates of resin-bonded, glass fiber-reinforced composite fixed partial dentures with a mean follow-up of 42 months: a pilot study. *J Prosthet Dent* 2004;91:241–246. DOI: 10.1016/S0022391304000034.
15. Vallittu PK. Prosthodontic treatment with a glass fiber-reinforced resin-bonded partial denture: a clinical report. *J Prosthet Dent* 1999;82:132–135.
16. Edwards KL. An overview of technology of fibre-reinforced plastics for design purposes. *Mater Des* 1998;19:1–10.
17. Arhun N, Arman A. Fibre reinforced technology in multidisciplinary chairside approaches. *Indian J Dent Res* 2008;19:272–277.
18. Smales JR, Gerke DC. Clinical evaluation of four anterior composite resins over five years. *Dent Mater* 1992;14:34–36.
19. Duke ES, Robbins JW, et al. The clinical performance of a new adhesive resin system in class V and IV restorations. *Compendium* 1994;15:852–856.
20. Lassila LVJ, Tezvergil A, et al. Effects of glass fiber layering on the flexural strength of microfill and hybrid composites. *J Esthet Restor Dent* 2009;21:171–181. DOI: 10.1111/j.1708-8240.2009.00259.x.
21. Sharafeddin F, Alavi A, et al. Flexural strength of glass and polyethylene fiber combined with three different composites. *J Dent (Shiraz)* 2013;14(1):13–19.
22. Tezvergil A, Lassila LVJ, et al. Strength of adhesive-bonded fiber-reinforced composites to enamel and dentin substrates. *J Adhes Dent* 2003;5:301–311.
23. Ganesh M, Tandon S. Versatility of Ribbond in Contemporary Dental Practice. *Trends Biomater Artif Organs* 2006;20:53–58.
24. Garoushi SK, Ballo AM, et al. Fracture resistance of fragmented incisal edges restored with fiber-reinforced composite. *J Adhes Dent* 2006;8:91–95.
25. Sharafeddin F, Bahrani S. Load bearing capacity of fragmented incisal edges restored with two different positions of fiber reinforced composite restoration. *Shiraz Univ Dent J* 2011;11:23–28.
26. Eid H, White GE. Class IV preparations for fractured anterior teeth restored with composite resin restorations. *J Clin Pediatr Dent* 2003;27:201–211.
27. Farik B, Munksgaard EC, et al. Drying and rewetting anterior crown fragments prior to bonding. *Endodont Dent Traumatol* 1999;15:113–116.