

## Praxisrelevante Aspekte für die Restauration endodontisch behandelter Zähne

# Adhäsive postendodontische Restaurationen

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## Literaturangabe

1. Adolphi G, Zehnder M, Bachmann LM, Gohring TN. Direct resin composite restorations in vital versus root-filled posterior teeth: a controlled comparative long-term follow-up. *Oper Dent* 2007;32:437-442.
2. Balbosh A, Kern M. Effect of surface treatment on retention of glass-fiber endodontic posts. *J Prosthet Dent* 2006;95:218-223.
3. Bateli M, Kern M, Wolkewitz M, Strub JR, Att W. A retrospective evaluation of teeth restored with zirconia ceramic posts: 10-year results. *Clin Oral Investig* 2014;18:1181-1187.
4. Bitter K, Aschendorff L, Neumann K, Blunck U, Sterzenbach G. Do chlorhexidine and ethanol improve bond strength and durability of adhesion of fiber posts inside the root canal? *Clin Oral Investig* 2014;18:927-934.
5. Bitter K, Meyer-Lueckel H, Fotiadis N, Blunck U, Neumann K, Kielbassa AM, et al. Influence of endodontic treatment, post insertion, and ceramic restoration on the fracture resistance of maxillary premolars. *Int Endod J* 2010;43:469-477.
6. Bitter K, Neumann K, Kielbassa AM. Effects of pre-treatment and thermocycling on bond strength of resin core materials to various fiber reinforced composite posts. *J Adhes Dent* 2008;in press.
7. Bitter K, Noetzel J, Neumann K, Kielbassa AM. Effect of silanization on bond strengths of fiber posts to various resin cements. *Quintessence Int* 2007;38:121-128.
8. Bitter K, Noetzel J, Stamm O, Vaudt J, Meyer-Lueckel H, Neumann K, et al. Randomized clinical trial comparing the effects of post placement on failure rate of postendodontic restorations: preliminary results of a mean period of 32 months. *J Endod* 2009;35:1477-1482.
9. Bitter K, Noetzel J, Volk C, Neumann K, Kielbassa AM. Bond strength of fiber posts after the application of erbium:yttrium-aluminum-garnet laser treatment and gaseous ozone to the root canal. *J Endod* 2008;34:306-309.
10. Bitter K, Paris S, Pfuertner C, Neumann K, Kielbassa AM. Morphological and bond strength evaluation of different resin cements to root dentin. *Eur J Oral Sci* 2009;117:326-333.
11. Bitter K, Perdigao J, Exner M, Neumann K, Kielbassa A, Sterzenbach G. Reliability of fiber post bonding to root canal dentin after simulated clinical function in vitro. *Oper Dent* 2012;37:397-405.
12. Bolla M, Muller-Bolla M, Borg C, Lupi-Pegorier L, Laplanche O, Leforstier E. Root canal posts for the restoration of root filled teeth. *Cochrane Database Syst Rev* 2007;1:CD004623.
13. Butz F, Lennon AM, Heydecke G, Strub JR. Survival rate and fracture strength of endodontically treated maxillary incisors with moderate defects restored with different post-and-core systems: an in vitro study. *Int J Prosthodont* 2001;14:58-64.
14. Dietschi D, Duc O, Krejci I, Sadan A. Biomechanical considerations for the restoration of endodontically treated teeth: a systematic review of the literature, Part II (Evaluation of fatigue behavior, interfaces, and in vivo studies). *Quintessence Int* 2008;39:117-129.
15. Ferrari M, Cagidiaco MC, Grandini S, De Sanctis M, Goracci C. Post placement affects survival of endodontically treated premolars. *J Dent Res* 2007;86:729-734.
16. Ferrari M, Vichi A, Fadda GM, Cagidiaco MC, Tay FR, Breschi L, et al. A randomized controlled trial of endodontically treated and restored premolars. *J Dent Res* 2012;91:725-785.
17. Goracci C, Ferrari M. Current perspectives on post systems: a literature review. *Aust Dent J* 2011;56 Suppl 1:77-83.
18. Harder S, Kern M, Mehl C. Behandlungsmöglichkeiten bei tief frakturierten Pfeilerzähnen. *Quintessenz* 2010;61:1485-1494.
19. Juloski J, Radovic I, Goracci C, Vulicevic ZR, Ferrari M. Ferrule effect: a literature review. *J Endod* 2012;38:11-19.
20. Kallio TT, Lastumaki TM, Vallittu PK. Bonding of restorative and veneering composite resin to some polymeric composites. *Dent Mater* 2001;17:80-86.
21. Kinney JH, Marshall SJ, Marshall GW. The mechanical properties of human dentin: a critical review and re-evaluation of the dental literature. *Crit Rev Oral Biol Med* 2003;14:13-29.

22. Krejci I, Duc O, Dietschi D, de Campos E. Marginal adaptation, retention and fracture resistance of adhesive composite restorations on devital teeth with and without posts. *Oper Dent* 2003;28:127-135.
23. Lang H, Korkmaz Y, Schneider K, Raab WH. Impact of endodontic treatments on the rigidity of the root. *J Dent Res* 2006;85:364-368.
24. Machado FW, Bossardi M, Ramos Tdos S, Valente LL, Munchow EA, Piva E. Application of resin adhesive on the surface of a silanized glass fiber-reinforced post and its effect on the retention to root dentin. *J Endod* 2015;41:106-110.
25. Mai S, Kim YK, Arola DD, Gu LS, Kim JR, Pashley DH, et al. Differential aggressiveness of ethylenediamine tetraacetic acid in causing canal wall erosion in the presence of sodium hypochlorite. *J Dent* 2010;38:201-206.
26. Marending M, Luder HU, Brunner TJ, Knecht S, Stark WJ, Zehnder M. Effect of sodium hypochlorite on human root dentine--mechanical, chemical and structural evaluation. *Int Endod J* 2007;40:786-793.
27. Mjör IA, Smith MR, Ferrari M, Mannocci F. The structure of dentine in the apical region of human teeth. *Int Endod J* 2001;34:346-353.
28. Mortazavi V, Fathi M, Katiraei N, Shahnasari S, Badrian H, Khalighinejad N. Fracture resistance of structurally compromised and normal endodontically treated teeth restored with different post systems: An in vitro study. *Dental research journal* 2012;9:185-191.
29. Naumann M, Koelpin M, Beuer F, Meyer-Lueckel H. 10-year survival evaluation for glass-fiber-supported post-endodontic restoration: a prospective observational clinical study. *J Endod* 2012;38:432-435.
30. Naumann M, Preuss A, Frankenberger R. Load capability of excessively flared teeth restored with fiber-reinforced composite posts and all-ceramic crowns. *Oper Dent* 2006;31:699-704.
31. Ng YL, Mann V, Gulabivala K. A prospective study of the factors affecting outcomes of nonsurgical root canal treatment: part 1: periapical health. *Int Endod J* 2011;44:583-609.
32. Papa J, Cain C, Messer HH. Moisture content of vital vs endodontically treated teeth. *Endod Dent Traumatol* 1994;10:91-93.
33. Perdigao J, Gomes G, Augusto V. The effect of dowel space on the bond strengths of fiber posts. *J Prosthodont* 2007;16:154-164.
34. Perdigao J, Gomes G, Lee IK. The effect of silane on the bond strengths of fiber posts. *Dent Mater* 2006;22:752-758.
35. Reeh ES, Messer HH, Douglas WH. Reduction in tooth stiffness as a result of endodontic and restorative procedures. *J Endod* 1989;15:512-516.
36. Santos AF, Meira JB, Tanaka CB, Xavier TA, Ballester RY, Lima RG, et al. Can fiber posts increase root stresses and reduce fracture? *J Dent Res* 2010;89:587-591.
37. Sarkis-Onofre R, Skupien J, Cenci M, de Moraes R, Pereira-Cenci T. The Role of Resin Cement on Bond Strength of Glass-fiber Posts (GFPs) Luted Into Root Canals: A Systematic Review and Meta-analysis of In Vitro Studies. *Oper Dent* 2013.
38. Saunders W, Saunders E. Coronal leakage as a cause of failure in root canal therapy: a review. *Endod Dent Traumatol* 1994;10:105-108.
39. Schwartz RS, Robbins JW. Post placement and restoration of endodontically treated teeth: a literature review. *J Endod* 2004;30:289-301.
40. Sedgley CM, Messer HH. Are endodontically treated teeth more brittle? *J Endod* 1992;18:332-335.
41. Shemesh H, Bier CAS, Wu M-K, Tanomaru-Filho M, Weeselink PR. The effects of canal preparation and filling on the incidence of dentinal defects. *Int End J* 2009;42:208-213.
42. Shetty PP, Meshramkar R, Patil KN, Nadiger RK. A finite element analysis for a comparative evaluation of stress with two commonly used esthetic posts. *European journal of dentistry* 2013;7:419-422.
43. Soares CJ, Soares PV, de Freitas Santos-Filho PC, Guimares Castro C, Magalhaes D, Versluis A. The influence of cavity design and glass fiber posts on biomechanical behavior of endodontically treated premolars. *J Endod* 2008;34:1015-1019.
44. Sorensen JA, Engelman MJ. Effect of post adaptation on fracture resistance of endodontically treated teeth. *J Prosthet Dent* 1990;64:419-424.
45. Sterzenbach G, Franke A, Naumann M. Rigid versus Flexible Dentine-like Endodontic Posts--Clinical Testing of a Biomechanical Concept: Seven-year Results of a Randomized Controlled Clinical Pilot Trial on Endodontically Treated Abutment Teeth with Severe Hard Tissue Loss. *J Endod* 2012;38:1557-1563.
46. Tay FR, Loushine RJ, Lambrechts P, Weller RN, Pashley DH. Geometric factors affecting dentin bonding in root canals: a theoretical modeling approach. *J Endod* 2005;31:584-589.
47. Tay FR, Pashley DH. Monoblocks in root canals: a hypothetical or a tangible goal. *J Endod* 2007;33:391-398.
48. Theodosopoulou JN, Chochlidakis KM. A systematic review of dowel (post) and core materials and systems. *J Prosthodont* 2009;18:464-472.
49. Watzke R, Blunck U, Frankenberger R, Naumann M. Interface homogeneity of adhesively luted glass fiber posts. *Dent Mater* 2008;24:1512-1517.
50. Zelic K, Vukicevic A, Jovicic G, Aleksandrovic S, Filipovic N, Djuric M. Mechanical weakening of devitalized teeth: three-dimensional Finite Element Analysis and prediction of tooth fracture. *Int Endod J* 2014.
51. Zicari F, De Munck J, Scotti R, Naert I, Van Meerbeek B. Factors affecting the cement-post interface. *Dent Mater* 2012;28:287-297.
52. Zicari F, Van Meerbeek B, Scotti R, Naert I. Effect of ferrule and post placement on fracture resistance of endodontically treated teeth after fatigue loading. *J Dent* 2013;41:207-215.