

Ten-Year Clinical Study of Porcelain Veneers (9/04)

Peumans M, De Munck J, Fieuws S, Lambrechts P, Vanherle G, Van Meerbeek B. A prospective ten-year clinical trial of porcelain veneers. *J Adhes Dent* 2004;6:65-76.

The purpose of this study was to evaluate the clinical performance of porcelain veneers after 5 and 10 years of clinical service. Eighty-seven porcelain veneers were placed by a single operator in 25 patients in 1990 and 1991. The veneers were placed to improve esthetics by replacing worn and discolored composite restorations or veneers, or by correcting discolored, malformed, or malaligned maxillary anterior teeth. Two evaluators assessed clinical performance in terms of esthetics, marginal integrity, retention, clinical microleakage, caries recurrence, fracture, vitality, and patient satisfaction. Restorations were divided into clinically "acceptable" or "unacceptable". Unacceptable restorations were recorded either as "repairable" or "replacement needed". **Statistical analysis revealed that the percentage of veneers that remained clinically acceptable significantly decreased from an average of 92% at 5 years to 64% at 10 years. Large marginal defects and fractures were the main reasons for failure. Veneer margins ending on existing composite restorations often resulted in marginal discoloration and recurrent caries. Overall, only 4% of the veneers were not repairable and needed to be replaced at the 10-year recall.**



DIS Comment: The clinical performance of porcelain veneers has been reported by various medium- and long-term clinical studies with failure rates varying widely from 0 to 33%.¹⁻⁷ Specific clinical conditions appear to favor veneer success or failure. The authors recommend a minimal, homogeneous thickness of ceramic combined with a minimal thickness of luting resin cement. A mini-chamfer or butt-joint preparation on the palatal side is suggested to diminish the occurrence of crack lines and fractures. Enamel remains the best substrate to bond etched porcelain. Predisposing factors for the occurrence of fractures are partial adhesion to a dentin surface, presence of large composite restorations, bonding to endodontically-treated teeth, and heavy mechanical loading during occlusion. Veneer margins should not be ended on an existing composite restoration and veneers should not be placed on patients with high caries activity. After 10 years of clinical service, this study found that veneers represent a reliable, effective procedure for conservative treatment of unesthetic anterior teeth. In most cases small problems were successfully repaired. However, as with most highly-controlled university-based clinical studies, the results may represent the maximum success rate and not the typical outcome to be expected within a practice-based population of clinicians.

References

1. Aristidis GA, Dimitra B. Five-year clinical performance of porcelain laminate veneers. *Quintessence Int* 2002;33:185-189.
2. Dunne SM, Millar JA. A longitudinal study of the clinical performance of porcelain veneers. *Br Dent J* 1993;175:317-321.
3. Fradeani M. Six-year follow-up with Empress veneers. *Int J Periodont Rest Dent* 1998;18:216-225.
4. Magne P, Perroud R, Hodges JS, Belser UC. Clinical performance of novel-design porcelain veneers for the recovery of coronal volume and length. *Int J Periodont Rest Dent* 2000;20:441-457.
5. Shaini FU, Shortall ACC, Marquis PM. Clinical performance of porcelain laminate veneers. A retrospective evaluation over a period of 6.5 years. *J Oral Rehab* 1997;24:553-559.
6. Sieweke M, Salomon-Sieweke U, Zofel, SV. Longevity of oroincisor ceramic veneers on canines – a retrospective study. *J Adhes Dent* 2000;2:229-234.
7. Walls AWG. The use of adhesively retained all-porcelain veneers during the management of fractured and worn anterior teeth. Part II. Clinical results after 5-years follow-up. *Br Dent J* 1995;178:337-339.