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Commentary by Francesco Mannocci and Tim Watson

Mannocci F, Bertelli E, Sherriff M, Watson TF, Pitt Ford TR (2002) Three-year clinical comparison of survival of endodontically treated teeth restored with either full cast coverage or direct composite restoration. *Journal of Prosthetic Dentistry* 88, 297–301

This paper published more than 6 years ago was, to our knowledge, the first randomised controlled clinical trial produced on the survival of endodontically treated teeth. It was also the first clinical trial in which the ability of adhesive techniques to restore posterior teeth without crown coverage was tested.

The clinical success rate of endodontically treated premolars with Class II carious cavities, restored either with carbon fibre post/composite cores or with carbon fibre post/composite cores and crown coverage, was compared. At 3 years no difference was found between the two groups. This work raised considerable interest and was quoted in virtually every paper dealing with the subject in the following years. It was also reviewed twice in 'evidence-based' journals (Basrani & Matthews 2004, Bolla *et al.* 2007).

At present, randomised controlled clinical trials of endodontically treated teeth are scarce. In a recent systematic review of the literature, Bolla *et al.* (2007) attempted to assess the effectiveness of different post and core systems for the restoration of endodontically treated teeth by including studies with randomised or quasirandomised clinical trials (RCTs) to compare failures of endodontically treated teeth with different types of posts. They only found one more randomised prospective clinical trial on the subject, again by Mannocci *et al.* (2005). More randomised controlled trials appeared after the publication of this review (Ferrari *et al.* 2007, Cagidiaco *et al.* 2008). All of these studies have a design that is clearly inspired by our study of 2002, in which Tom Pitt Ford had a huge input.

A massive effort was put into the planning of this trial in order to control as many variables as possible; only teeth without previous endodontic treatment, with Class II carious lesions and preserved cusp structure were included. The selected teeth needed to be in occlusal function after restoration and were not used as abutments for fixed or removable partial dentures. Teeth selected did not display loss of periodontal attachment exceeding 40%. For the evaluation of the presence of gingival inflammation, the gingival index score was used. Subjects were excluded from the study if the gingiva bled spontaneously (gingival index score 3). All subjects received oral hygiene instruction from a dental hygienist. Subjects had to be healthy and willing to return at regular intervals for evaluation. It is fair to say that this study remains the best controlled amongst all the others that later appeared on the same subject.

Tom Pitt Ford, in his stubborn inimitable way, gave an extraordinary contribution to the design of the trial; he was the one that insisted on a prospective trial, with only one operator carrying out all the procedures. Tom had a strong biological and scientific background and always did his best to construct rigorous testing procedures for new materials and techniques; but this did not stop him from loving innovations. In this respect this study was no exception, Tom appreciated the potential advantages provided by new adhesive techniques and had a lucid vision of the progress that could be made with their use.

References

Basrani B, Matthews D (2004) Survival rates similar with full cast crowns and direct composite restorations. *Evidence-based Dentistry* **5**, 45.

Bolla M, Muller-Bolla M, Borg C, Lupi-Pegurier L, Laplanche O, Leforestier E (2007) Root canal posts for the restoration of root filled teeth. *Cochrane Database of Systematic Reviews* **1**, CD004623.

Cagidiaco MC, García-Godoy F, Vichi A, Grandini S, Goracci C, Ferrari M (2008) Placement of fiber prefabricated or custom-made posts affects the 3-year survival of endodontically treated premolars. *American Journal of Dentistry* **21**, 179–84.

Ferrari M, Cagidiaco MC, Grandini S, De Sanctis M, Goracci C (2007) Postplacement affects survival of endodontically treated premolars. *Journal of Dental Research* **86**, 729–34.

Mannocci F, Qualtrough AJ, Worthington HV, Watson TF, Pitt Ford TR (2005) Randomized clinical comparison of endodontically treated teeth restored with amalgam or with fiber posts and resin composite: five year results. *Operative Dentistry* **30**, 9–15.