Post or no post, that is especially a question of substance loss. A large amount of substance loss in the clinical crown area is an argument for anchoring and reinforcing the core build-up with a post. For small defects, anchoring the build-up on the surrounding tooth substance is often sufficient.

Post solutions made from different materials (metal, high strength ceramic, glass and quartz fibre) are available for the practitioner. Quartz and glass fibre posts are characterized by tooth-like elasticity modulus and thus limit the risk of root fracture from shear loads.

A system based on the adhesive technique facilitates a minimally invasive procedure which preserves tooth substance and benefits the adhesive bond.

In the case discussed here, the patient presented with considerable substance loss on 35 (figs 1–3). The barrel ring preparation necessary for a poured post build-up further weakened the tooth substance. A purely retentive post anchoring according to the traditional pattern appeared insufficient due to the anticipated stress to the core. Preference was therefore given here to the direct post build-up in the adhesive technique. A system based on the adhesive technique facilitates a minimally invasive procedure which preserves tooth substance and benefits the adhesive bond.

Marcelo Balsamo

achieves direct adhesive post luting and core build-up in one appointment.
invasive procedure, which preserves tooth substance and benefits the adhesive bond.

For this case, a post build-up system was chosen that provided an adhesive bond root-post cement-post-build-up material (Rebilda Post System, Voco). With this system, the build-up material simultaneously provides post luting, which allows post cementation and core build-up in one work step (fig 4). The system contains posts in three sizes as well as the matching bur and a reamer for pre-drilling (fig 5).

After removing the remainder of the old filling (fig 6), the length of the root canal was determined to establish the drilling depth. Care must be given so that ca. 4 mm of root canal filling remains apically (fig 7) to provide an apical seal.

A rubber dam or gingival barrier is used to isolate the tooth during the restoration (fig 8). The root canal filling material was removed to the determined depth with the bur and the canal thus concomitantly prepared to the correct diameter (fig 9). An X-ray was used to verify the fitting accuracy of the post. The post is clearly visible on the X-ray (fig 10). It was subsequently shortened to the required length with a diamond. Figure 11 shows the canal after preparation and before the bonding step.

As the next step, a self-etching, dual-curing bond (Futurabond DC, Voco) was applied on the adhesive surfaces around the canal access, but not yet light-cured (fig 12). This guarantees that excess material expelled from the canal during
Insertion of the post also provides a good adhesive bond to the tooth. The employed bond contains a special catalyst and can also be used for self or dual-curing composites (fig 12).

The application of the bond in the root canal (fig 13) was carried out with an endo-applicator (Endo Tim, Voco). The bond has still not been light-cured. The bond was then thoroughly dried with oil-free air (fig 14).

After silanising the post (fig 15), the core build-up material (Rebilda DC, Voco) was applied directly in the root canal (fig 16) with an endo-application tip for post luting.

The post was then inserted into the root canal with a light twisting motion immediately after application of the core build-up material (fig 17). Only now can the light-curing be carried out. The post is fixed in the core build-up material with this action (fig 18). This permits further build-up immediately afterwards, without having to wait for the duration of the setting time.

The core was then further constructed around the core with the direct application of Rebilda DC, Voco (fig 19) and light-cured (fig 20). The core build-up can be further processed immediately afterwards (fig 21).

The gingival barrier was removed at this point and the core ground. The core build-up material exhibited a surface hardness comparable to dentine. It can be ground precisely, especially in the areas that change over to dentine (fig 22). Figure 23 shows the finally completed crown core.

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**E-learning project**

The e-Den national e-learning initiative encompassing dentistry’s foundation years’ curriculum, is in its pilot phase and will be launched at The Royal College of Pathologists, London on October 15, 2009.

The e-Den project is the first major collaboration between the four dental faculties of the Royal Colleges of Surgeons of England, Edinburgh and Glasgow and health department. It is one of several programmes in different specialties that are being developed as part of the health department’s e-learning for healthcare initiative.

Registration for the launch is at 9.30am and the day will begin with a welcome from the chief dental officer for England, Barry Cockcroft. Presentations for the day will include an introduction to the programme itself from the e-Den clinical lead, Paul Brunton, a view from a trainee’s perspective and live demonstrations of e-learning sessions. The launch will conclude with comments from the health department e-LfH national director, Julia Moore.

The e-Den project will be available nationwide and free to all NHS trainees and all relevant staff with an NHS contract, and will offer educational support for the two years after graduation. e-Den will be a valuable tool for deaneries and VT/GPT schemes to use as part of supporting postgraduate training for dentistry and promoting a consistent standard of knowledge, skills and expertise across the country.

To attend the launch call 020 7869 6815/6814 or visit e-den@rcseng.ac.uk

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Fig 19: Further core build-up.
Fig 20: Light-curing the core build-up.
Fig 21: Core build-up before grinding.
Fig 22: Grinding the core build-up.
Fig 23: Prepared core.