

Easy cementing with SoloCem® by COLTENE

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In a presented case, the titanium post, followed later by a PFM crown, were mounted on tooth 45 of a 58-year old female patient using SoloCem. This material is a dual-curing and self-adhesive composite cement manufactured by COLTENE.

The cementing of posts and crowns is a challenge for dentists where a number of parameters are crucial: the reconstruction with various surfaces should be anchored tightly on the tooth and root with long-term secure bonding. Application should be easy to avoid potential sources of errors - the fewer steps required, the better. In the case of translucent reconstructions, the colour shade also needs to be correct to achieve optimal aesthetics. SoloCem by COLTENE is a product which meets these requirements. Initial

situation for tooth 45: loss of retention of older screw abutment and crown with otherwise intact, periodontally reduced but sanitised teeth. Periodontal surgery was performed 17 years ago on tooth 45: «guided tissue regeneration» with Guidor®. The radiological findings from 17 years ago (Fig. 1) and the condition 15 years after surgery (Fig. 2) reveal a significant gain in attachment. There were no radiological findings apically. Based on the initial condition (Fig. 3) when the patient presented in the practice with a lost crown, the treatment plan included a new abutment with a Tenax titanium post and stump abutment with ParaCore, both by COLTENE, and a PFM crown with buccal ceramics. Due to the dark discolouration of the root it was decided to use a PFM instead of a translucent reconstruction.

The individual treatment steps are explained in detail in the following: preparation for the pin was performed mechanically with standard Tenax drills after applying a ROEKO Flexi-Dam non latex coffer dam by COLTENE to enable retentive holding of the post (Fig. 4). The adequate post size and seat were checked with a post analog, the Tenax One Office Visit + Casting Techniques burn-out post (Fig. 5) and also examined radiologically (Fig. 6). After try-in, the post was shortened so as not to protrude from the composite abutment (Figs. 7 + 8). After cleaning/disinfection with 3% sodium hypochlorite (Fig. 9) the channel was dried with oil-free compressed air and ROEKO paper tips. This was followed by a final try-in of the Tenax titanium post for seat and retention. SoloCem White Opaque was chosen for cementing the post for

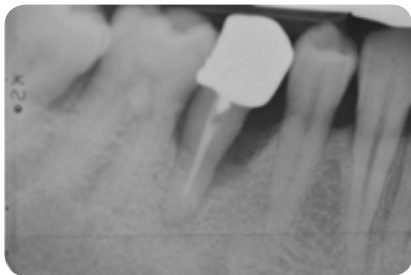


Fig. 1: Findings 17 years ago



Fig. 2: Findings two years ago



Fig. 3: Loss of crown



Fig. 4: Machine canal preparation with standard Tenax drills



Fig. 5: Checking post size

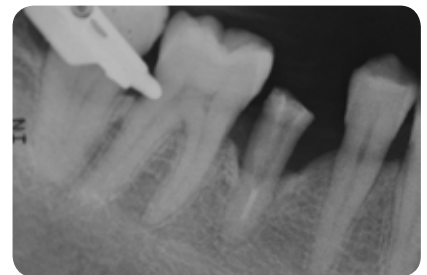


Fig. 6: Radiological follow-up

easier viewing and removability. The material was applied directly into the prepared root canal and onto the Tenax titanium post using the Root Canal Tip. First, a small amount of SoloCem was placed on a mixing block (Fig. 10) to ensure homogeneous mixing. Then the post was wetted with cement on the mixing block in the apical area (Fig. 11). A portion of the cement was inserted directly into the root canal using the 5ml Automix syringe and attached Root Canal Tip (Fig. 12). This thin cannula allows extremely easy application of the cement into the narrow root canals. The Tenax post was placed into its final position using the CPM (Fig. 13). The excess was cured briefly for 2 to 3 seconds with a polymerisation lamp (Coltolux LED by COLTENE) (Fig. 14) and could be removed quickly and conveniently with a scaler (Fig. 15). The cement was then end-cured for 30 seconds with the Coltolux LED (Fig. 16). The stump abutment was formed using the dual-curing ParaCore White material by COLTENE. White ParaCore was chosen to allow easy differentiation between the stump abutment

and dentine, also, the colour was covered by the PFM. After applying a cambered matrix (Fig. 17), the Non-rinse Conditioner was applied first to the dentine with a brush and then dispersed. Then the two-component bond was also applied with a brush and dispersed (ParaBond by COLTENE, Figs 18 + 19). After discarding a first portion (Fig. 20), ParaCore was applied with the syringe (Fig. 21) and light-cured (Fig. 22). Fig. 23 shows the abutment after removal of the matrix. A follow-up X-ray shows the Tenax titanium post with the composite stump abutment in situ (Fig. 24). This was followed by preparation with a chamfer of the PFM crown with fused stage (Fig. 25). Retraction cords (Comprecord by COLTENE) were placed using the double-layer technique. (Fig. 26). This was followed by impression-taking with an addition-linked silicone elastomer: AFFINIS PRECIOUS regular body as correction material and AFFINIS heavy body as tray material by COLTENE with a prefabricated single-use President tray. The stump was coated using the fine Oral Tip and an impression taken of the entire

mandible using the prefabricated single-use tray (Figs. 27 - 29).

After laboratory fabrication of the PFM crown with buccally fused stage (fig. 30) this was tried in clinically and the occlusion, articulation and interdental contacts checked. Following this procedure, the stump was cleaned with Tubulicid® to remove the smear layer, the tooth was dried using cotton rolls, and the crown mounted on the tooth.

For this purpose, a small amount of SoloCem Dentine was placed on a mixing block to ensure homogeneous mixing (Fig. 31). Then SoloCem was applied into the crown using the Mixing Tip brown short fine (Fig. 32), which was then pressed onto the tooth and checked for correct seating. After brief curing with the polymerisation lamp for 2 to 3 seconds (Fig. 33) the excess was easy to remove using a scaler and dental floss (fig. 34). With the finished reconstruction (Fig. 35) the patient has received a good replacement in terms of function and aesthetics



Fig. 7: Try-in of final post



Fig. 8: Shortening of post at head



Fig. 9: Cleaning of the canal



Fig. 10: Check of homogeneous mixing on the mixing block



Fig. 11: Wetting of the post in the apical region



Fig. 12: Filling the root canal

with a promising long-term prognosis at proper care. (Fig. 36) shows the final follow-up X-ray.

With this type of mounting, the dentist has the option of achieving a safe and stable long-term result in a simple manner. The error sources were reduced due to simplified handling when compared with multi-stage bonding systems. Using a single step without etching and primer avoids both errors and saves time.

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Fig. 13: Positioning of the post

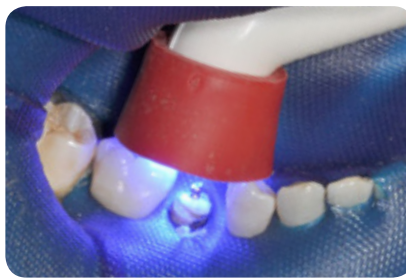


Fig. 14: Curing the excess



Fig. 15: Removing the excess with a scaler



Fig. 16: Final curing of the cement



Fig. 17: Application of a cambered matrix



Fig. 18: Application of bond



Fig. 19: Dispensing of bond



Fig. 20: Discarding of first portion



Fig. 21: Application of ParaCore



Fig. 22: Light-curing



Fig. 23: Abutment after removal of matrix

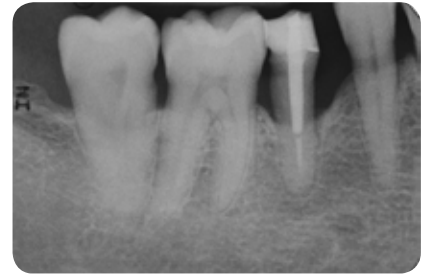


Fig. 24: Follow-up X-ray



Fig. 25: Preparation for the crown



Fig. 26: Placing the retraction cord



Fig. 27: Coating the stump



Fig. 28: Double mixed impression-taking with AFFINIS heavy body & PRECIOUS regular body



Fig. 29: Precise impression-taking



Fig. 30: PFM with buccally fused stage



Fig. 31: Discarding of first portion

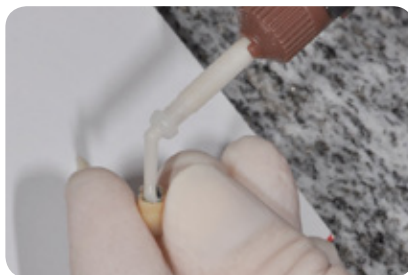


Fig. 32: Filling of the PFM



Fig. 33: Curing with polymerisation lamp



Fig. 34: Removing the excess



Fig. 35: Functional and aesthetic prosthesis



Fig. 36: Final follow-up X-ray