

Post cementation, core build up and crown cementation with ParaCore automix 5ml

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The definitive restoration of a tooth that has had root canal treatment with a post, tooth abutment and crown covers a number of complex stages and materials.

The practising dentist is interested in improving the efficiency of the restoration and ensuring for a fixed interface between the post, tooth abutment and crown. This means that the procedure must be simplified so that the treatment takes less time and is less prone to error.

The following clinical case describes a patient with endodontic root canal therapy on tooth 11 after an accident, which was restored using a metal post and a

composite core abutment. The unacceptable shade of the composite abutment, the visible metal post, the multiple horizontal and vertical cracks in the enamel accentuated the dark discoloration of the tooth. This meant that a new restoration using a crown with an abutment was indicated. The x-ray examination also showed that a revision of the unsatisfactory root canal filling would be indicated. This part of the treatment however was not shown in this clinical case.

At the start of the treatment, the shade was selected with a moist tooth under varying light conditions using a standardised shade guide. After removal of the old filling with DIATECH diamond

burs and by chipping away the residue of the filling with a Heidemann spatula, the metal post was exposed and removed using a pliers with a rotary motion. After preparation of the root canal with Para Post Taper Lux drills, the ParaPost Taper Lux post size 5.5 was trial seated. The easy application and effectiveness of the ParaBond Non-Rinse Conditioner in the root canal and on the complete contact area (for the subsequent core build up) took only 30 s. The excess Non-Rinse Conditioner was then removed from the root canal using a paper point and root canal. The contact area was then dried with air for 2 s. The 1:1 mixed A + B ParaBond Adhesive must be applied onto the same area in which the Non-Rinse Conditioner



Fig. 1: Initial situation for tooth 11



Fig. 2: Shade selection using a standardised shade guide



Fig. 3: Root canal without post



Fig. 4: Preparation of the root canal with ParaPost Taper Lux drills – recognisable due to their wide colored marker ring



Fig. 5: Trial fit of the ParaPost Taper Lux post using size 5.5



Fig. 6: Application of the Non-Rinse Conditioner for 30 s

was applied to allow for a smooth workflow with the endodontic post immediately after cementing the post. The ParaBond Adhesive in combination with ParaCore offers high Adhesive retention for reliable and permanent restorations. This ensures effective sealing and an excellent marginal fit. The risk of postoperative complications is significantly minimised. The root canal tip can be used to apply ParaCore directly into the root canal. The ParaPost Taper Lux post is first measured for length and then positioned into the canal with the cement cured using blue light. The optimum consistency of the material allows it to be shaped into the approximate shape of a core abutment during application.

ParaPost Taper Lux provides an alternative to metal posts, if aesthetically demanding or non-metallic restorations are desired. ParaPost Taper Lux is a translucent glass fibre material in a tooth shade, which prevents the formation of shad-

ows at the gingival margin. With its light-transmitting properties, the post can be secured into place using composite cement and a polymerisation lamp. Six different diameters make it easy to prepare the canal safely and atraumatically. The optimum structure of the parallel glass fibre bundles surrounded by a hard fibre matrix provide the post with a module elasticity similar to that of natural dentine. The matching mechanical properties between the post and tooth structure reduce tension and guarantee long-term success of the treatment. To ensure that the essential requirements of increased stability against the apposing occlusion and the amount of insurance reimbursement coverage are met, it is suggested to use a PFM crown.

The stable consistency of ParaCore make it possible to shape the core free-hand. Additional light polymerisation accelerates the curing process and enables continual processing almost immediately.

The transition between the dentine and the endodontic post is not detectable during preparation. This prevents unnecessary formation of grooves during the preparation of the core build up, which result in time consuming repairs.

The endodontic post was prepared using DIATECH diamond burs. After placement of the retraction cord, the double mix impression was taken using the combination of AFFINIS regular body and AFFINIS putty soft. JET BLUE BITE was ideal for the bite registration, since it can be removed from the mouth quickly and easily. This is easier for both the patient and dentist. After revision of the root canal filling and fixation of a prefabricated protective crown as a temporary, the first stage of the treatment was complete.

After removal of the temporary denture and simple cleaning of the abutment, the final restoration was trial fitted during the next appointment. Finally, the same



Fig. 7: Air dry Non-Rinse Conditioner for 2 s



Fig. 8: Apply 1:1 mixed Adhesive A+B directly into the root canal and onto the contact areas



Fig. 9: Remove excess Adhesive in the root in canal with a paper point



Fig. 10: Air dry the Adhesive for 2 s



Fig. 11: ParaCore automix 5ml can be applied directly into the root canal using the Root Canal Tip



Fig. 12: Positioned post

Adhesive technique as previously used for cementation of the post was used – this standard routine minimises the risk of errors during treatment. The definitive restoration can now be directly filled using ParaCore and cemented into position. Excess cement is removed using suitable instrumentation and then the chemical cure is complete after only four minutes of waiting time – light-curing is not possible with this metal ceramic crown.

Conclusion

Cementing without bonding? In recent years, self-Adhesive composite cements have become well-established. This is

certainly understandable from the users' point of view, since they can achieve good results in fewer steps. However, many products demonstrate low Adhesive values and an inadequate marginal fit between the tooth and cement. Good adhesion and a permanent seal on the tooth surface guarantee for a successful and long-term restoration. ParaCore as a dual cure glass-reinforced composite cement is the ideal choice for the monoblock technique (Adhesive post cementation, core build up abutment and cementation of the crown). This guarantees for an optimum monoblock bond interface between the post, cement and crown. This

provides the restoration with outstanding strength and durability. Due to the two practical mixing tips – one tip with a larger orifice and one with a root canal tip – ParaCore can be applied anywhere – even deeply into the root canal.

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Fig. 13: Light cure post to accelerate the polymerisation process



Fig. 14: The color coded ring is being removed before cementation



Fig. 15: Freehand modelling of the core abutment using the root canal oral tip



Fig. 16: Light polymerisation accelerates the curing process so that the user can continue working almost immediately



Fig. 17: Preparation of the endodontic post using DIATECH diamond burs



Fig. 18: Prepared core abutment



Fig. 19: Placement of the roeko Comprecord retraction cord



Fig. 20: Syringing of the preparation using correction material



Fig. 21: Impression in the mouth with AFFINIS putty soft tray material

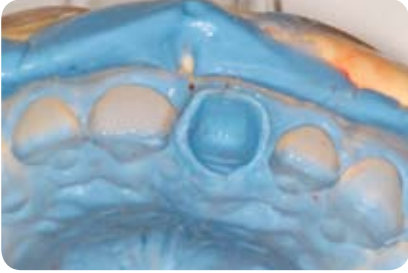


Fig. 22: Double mix impression material



Fig. 23: Applying JET BLUE BITE fast



Fig. 24: JET BLUE BITE fast in situ



Fig. 25: Bite registration with JET BLUE BITE fast



Fig. 26: Selection of the prefabricated polycarbonate temporary denture and lining using Cool Temp Natural



Fig. 27: Temporary denture cemented-in using TempoSIL 2



Fig. 28: Before



Fig. 29: After



Fig. 30: Simple removal of the temporary denture and easy cleaning of the abutment



Fig. 31: Abutment is prepared for the final restoration



Fig. 32: Trial fit of the final restoration



Fig. 33: Cleaning the restoration and abutment using alcohol



Fig. 34: Application of the Non-Rinse Conditioner for 30 s



Fig. 35: Air dry using a gentle stream of air for 2 s



Fig. 36: Apply the 1:1 mixed Adhesive A+B



Fig. 37: Air dry using a gentle stream of air for 2 s



Fig. 38: Direct filling of the restoration using the ParaCore oral tip



Fig. 39: Placement of the final restoration with ParaCore dentin shade



Fig. 40: Removal of the excess cement and chemical cure after 4 minutes, since this is a PFM crown. Otherwise it is also possible to cure with light polymerisation



Fig. 41: Final situation