

A quick solution for impressions



Dr. Akit Patel,
Specialist in
Prosthodontics

Akit Patel presents the outcomes and performance of two cases that used innovative impression materials

This article details two cases where the use of innovative impression materials helped ensure an accurate outcome for the patients.

Case one: crown placement on an implant

A patient was referred to the practice to replace their missing upper right first premolar (UR4). They had moderately restored dentition with a stable occlusion, despite a shortened left-hand side to the second premolars.

The periodontal health was stable and oral hygiene was of a good standard. UR4 exhibited some loss of the buccal bone and a thin gingival biotype.

The placement of a single implant at UR4 was planned. Impressions were taken for a diagnostic preview and surgical template. A Straumann bone level tapered 4.1mm Regular Crossfit connection (RC) implant was placed with simultaneous bone augmentation (Bio-Oss and Bio-Gide by Geistlich). The implant was left to heal non-submerged for three months.

For the restorative phase, an impression was taken using a closed-tray impression technique and Impregum Penta Super Quick polyether impression material from 3M Oral Care. Metal rimlock trays were used to help ensure accuracy. The patient's jaw registration was recorded in maximum intercuspation using shimstock.

A porcelain-fused-to-metal (PFM) screw-retained crown was made and cemented indirectly onto a Straumann Variobase abutment. This was fitted, torqued into place to 35Ncm and restored with composite.

A porcelain-fused-to-metal (PFM) screw-retained crown was made and cemented indirectly onto a Straumann Variobase abutment



Fig. 1: Case one – preoperative, anterior view



Fig. 2: Case one – Straumann bone level implant ready for restoration, lateral view



Fig. 3: Case one – Straumann bone level implant ready for restoration, occlusal view



Fig. 4: Case one – Straumann bone level closed-tray impression, post in situ



Fig. 5: Case one – intraoral syringing Impregum Super Quick monophase impression material



Fig. 6: Case one – intraoral Impregum Super Quick

Occlusion checks were carried out with articulating foil and shimstock. A mutually-protected implant occlusion was chosen. The patient was given oral hygiene instructions with interproximal cleaning aids.

A postoperative periapical radiograph was taken to confirm fit and record the baseline bone levels.

The Impregum Penta Super Quick polyether impression material was very useful in this case as it offered both the speed and rigidity needed for an efficient workflow.

The product demonstrates all the strength

of the original Impregum Penta material, with the added bonus of constant flowability throughout its working time. Its shorter setting time of less than two minutes was useful to maintain patient comfort and the rigidity helped ensure accuracy.

Case two: referral following endodontic treatment

A patient was referred following endodontic treatment on the upper left first molar (UL6). During the initial treatment in 2016, a new Fuji IX GP Extra core by GC had been placed, and a Protemp Crown was relined with a

Prottemp 4 from 3M Oral Care and was fitted.

The crown was placed as a temporary solution to prevent any tooth breakage during the endodontic healing phase. This would ensure any dental pain had been fully resolved before the placement of a permanent crown.

The patient had a moderately restored dentition, normal periodontal health and a stable occlusion.

For the final restorative phase, a final preparation for a PFM crown with a buccal sandwich was made. The gingiva was retracted with a double cord technique using size 00 Gingikit+ and size 2 Gingibraide+ retraction cords by Kerr. Additional homeostasis was achieved using Astringent Retraction Paste, from 3M Oral Care, to ensure the gums were fully retracted, ready for a precise impression.

Working impressions were taken using Impregum Penta Super Quick polyether impression material and Imprint 4 Preliminary Penta (for the opposing arch) alginate substitute silicone material in metal rimlock impression trays.

A final PFM crown was cemented in place. Occlusion checks were carried out with



Fig. 7: Case one – monophase Impregum Super Quick polyether transfer impression



Fig. 8: Case one – porcelain-fused-to-metal crown in place, occlusal view



Fig. 9: Case one – PFM crown in place, lateral view



Fig. 10: Case one – final result, front view



Fig. 11: Case one – periapical post-fit Straumann bone level implant and PFM crown



Fig. 12: Case two – periapical UL6 post-endodontic treatment with temporary Prottemp crown



Fig. 13: Case two – temporary Prottemp crown, lateral View



Fig. 14: Case two – tooth prepared and tissues retracted using double retraction cord



Fig. 15: Case two – tissue management using double retraction cord and Astrigent Retraction Paste



Fig. 16: Case two – monophase Impregum Super Quick polyether impression



Fig. 17: Case two – Intaglio PFM crown



Fig. 18: Case two – PFM crown in place, occlusal view



Fig. 19: Case two – final result, lateral view

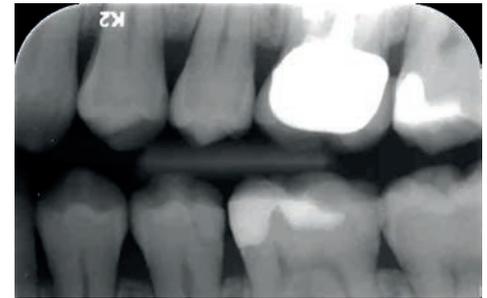


Fig. 20: Case two – bitewing post-fit final crown

articulating foil and shimstock. The patient was given oral hygiene instructions with interproximal cleaning aids.

Final thoughts

In both cases, the Impregum Super Quick polyether impression material was invaluable in terms of performance, great flow behaviour, accuracy and reliability of a polyether – it provided a fast way to capture detail.

Both cases involved a monophase

technique, which kept impression taking simple, quick and straightforward to achieve predictable results. This also helps to lower costs for single units.

Retraction cord should be mandatory in cases when margins are subgingival or equigingival and complementing this method with Astrigent Retraction Paste as an adjunct is also recommended if there is space available.

The double cord retraction method, as

demonstrated in the second case, is highly useful when subgingival margins need to be exposed – though a single cord and Astrigent Retraction Paste is also a good method when there is limited space and bleeding persists.

The Protemp crown was chosen, as it provides excellent strength and ease of use over the duration of a long-term application. As the crown is customizable, it also allows dental professionals to ensure it provides good function and fit until it is time for the permanent crown to be fitted. ■

STRIVING FOR PERFECTION AND ACHIEVING EXCELLENCE

CERTIFIED LABORATORY IN THE FOLLOWING

<ul style="list-style-type: none"> ● Nobel Biocare Implants ● Nobel Biocare CAD/CAM ● Straumann Implants ● 3Shape CAD/CAM Digital Impression 	<ul style="list-style-type: none"> ● Captek ● Ivoclar Empress & E-max ● Laser Welding ● Graduate of Misch International Implant Institute
--	---

Incisal Edge Dental Laboratory – Thomas Kitsos, RDT, Owner and Principal

124 Merton St., Suite #302, Toronto, ON M4S 2Z2

T: 416.489.6533 TF: 1.877.INCISAL Fax: 416.489.6541

E-mail: incisaledge@on.aibn.com Website: www.incisaledge.ca