LiSi Press monolithic crowns

Karyn M. Halpern[1] and Bill Marais[2]

Case background – Lisa

Lisa was referred to my practice by my office manager Michele. She was very nervous, having not been to a dentist in many years, and described having poor experiences with her previous dentist.

Lisa was 49 years old at the time and otherwise healthy. Her initial clinical and radiographic examination revealed that every tooth in her mouth was in need of some sort of restorative treatment.

It was determined the etiology of Lisa's caries and periodontal disease was a combination of a history of eating candy daily, occasional smoking, poor oral hygiene, and iatrogenic dentistry.

Fortunately for Lisa, she was not in any pain or discomfort. This allowed for us to prioritise her treatment and develop a plan that could be executed in stages using a team approach amongst the periodontist, endodontist, hygienist, lab technician and myself.

Lisa's treatment began with a full mouth debridement and referral to our periodontist. The periodontist performed extractions and socket preservation of hopeless retained roots #'s 14 & 30. Removal of failing ill-fitting PFM crowns with severe recurrent decay on teeth #'s 15, 19, & 31 was completed and milled nano ceramic resin crowns were placed as long term provisionals. The endodontist then completed root canal retreatments on both #'s 19 & 30.

Lisa was educated on proper diet, hygiene, and placed on Carifree toothpaste and CTX3 rinse. She then underwent full mouth scaling and root planing therapy. She was educated on the importance of prevention and maintenance.

After seeing much improvement in her hygiene and periodontal health, it was decided to proceed with creating our blueprint for her full mouth rehabilitation. This was achieved with diagnostic impressions, diagnostic photos, occlusal analysis of mounted casts, and completion of full mouth diagnostic wax up of all teeth to receive indirect restorations.

After consulting with Lisa, it was decided to proceed with the next phase of restoring her maxillary arch with all ceramic crowns.

Lisa's maxillary anterior teeth had a history of a mosaic of multiple failing resin fillings per tooth as well as root canal treatments on teeth #'s 7,8 & 9.

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Case study and technique

[2] Bill Marais
Laboratory technician

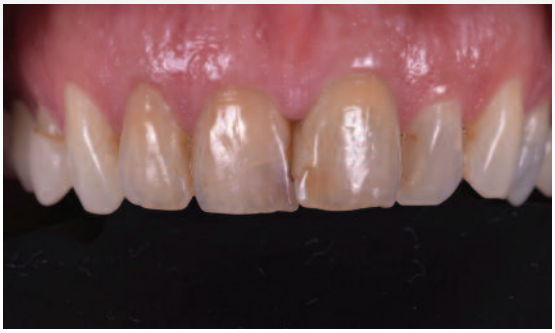

Figure 1. Before.

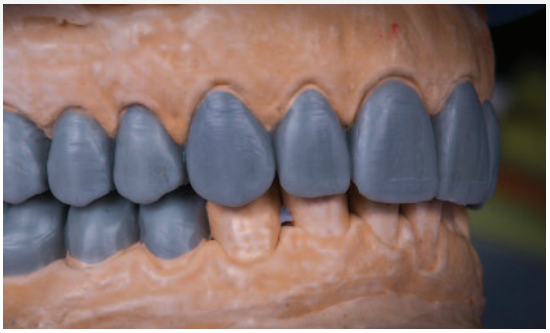

Figure 2. Diagnostic wax up.

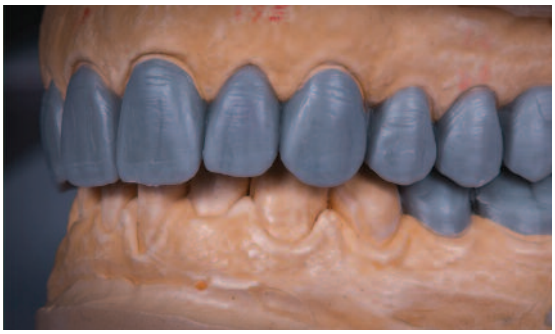

Figure 3. Diagnostic wax up.

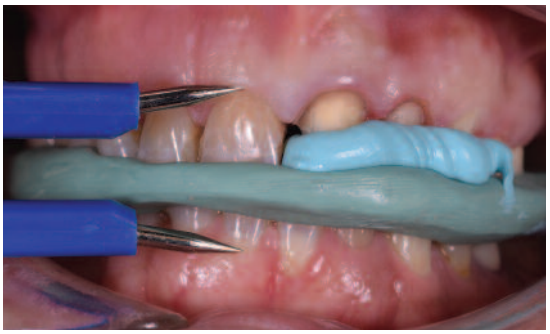

Figure 4. Bite registration

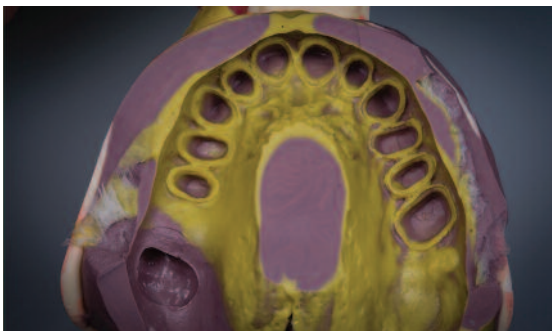

Figure 5. Final PVS impression.

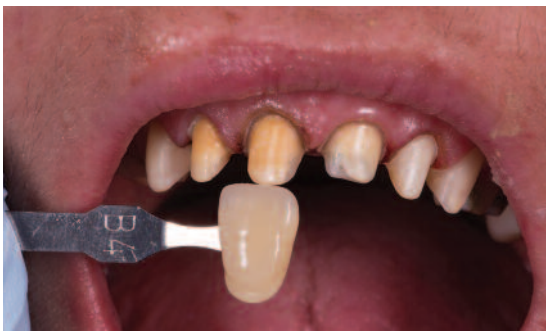

Figure 6. Stump shade selection.

She presented for excavation, preparation, core build ups, and provisionalisation of teeth #'s 3–13 without complaints. Upon removal of failing resin restorations and recurrent caries on teeth #'s 7,8 & 9, it was discovered that cotton pellets were left under the existing resin restorations. The caries extended into the pulp chamber and a foul odour was expressed upon removal. Lisa was advised of the findings and referred to the endodontist for the retreatment of root canals on teeth #'s 7,8 & 9 prior to final crowns delivery.

Technique

Diagnostic impressions and photos were taken and sent to my technician Bill Marais for a full mouth diagnostic wax up.

All pre-existing composite and amalgam restorations were removed and all caries excavated. Core buildups were completed with a combination of direct composite on the anterior preps and core paste on the posterior teeth.

A gingivectomy was performed using a diode laser on teeth #'s 8 & 10 to correct her gingival asymmetries and

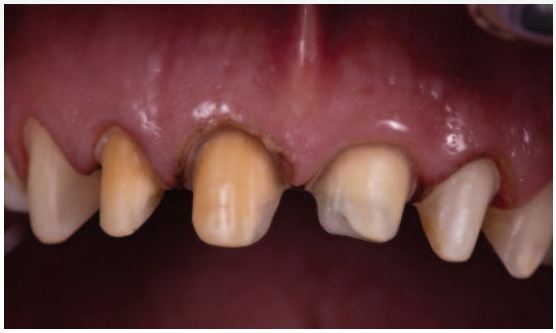

Figure 7. Preparations with core build up and gingivectomy.

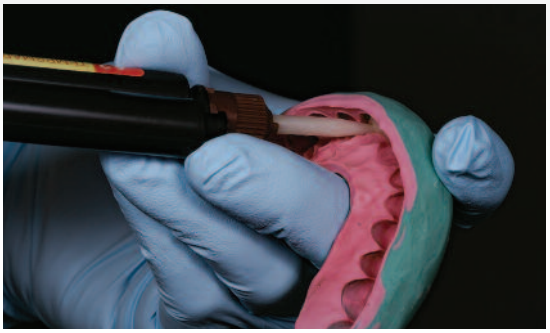

Figure 8. Temporisation with GC Tempsmart.

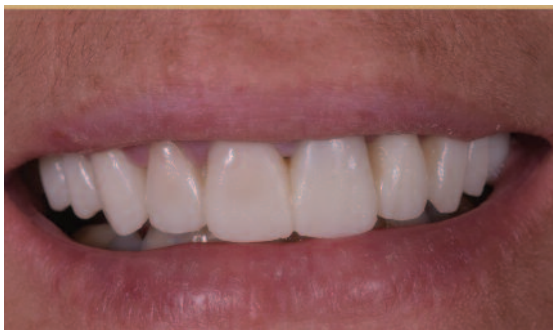

Figure 9. Temporaries.

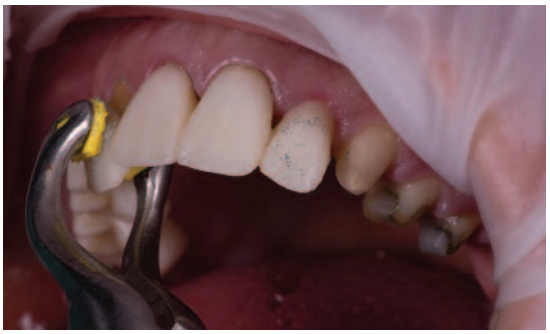

Figure 10. Removal of temporaries.

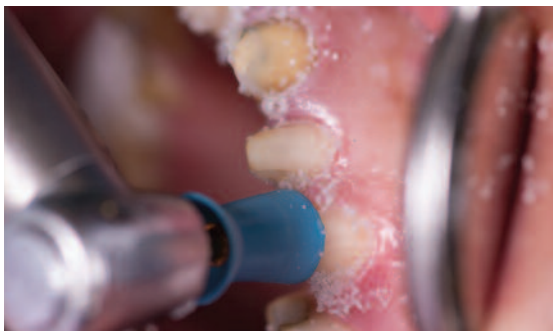

Figure 11. Cleaning preparations with pumice.

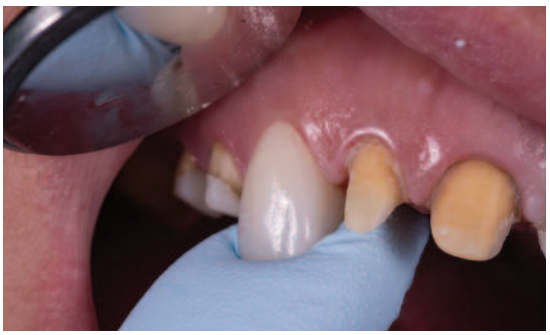

Figure 12. Try in.

mimic the diagnostic wax up.

The VDO was recorded and maintained using a PVS bite shim that was relined in sections using PVS bite registration material.

A final PVS impression was taken using a single cord technique and a combination of light and heavy body materials, a habitual PVS bite registration, and bite registration with a Kois dental facial analyser.

Photos of the preparations against chosen shade tabs were taken for the technician to evaluate the prep shades.

Provisionals were fabricated using GC Tempsmart™ injection technique into the putty index of the diagnostic wax up. The gingival embrasures were left widened in the provisionals to allow for proper hygiene and prevent gingival inflammation.

Provisionals were cemented with translucent provisional resin cement in 3 segments: #'s 3–6, 7–10, 11–13.

Photos were taken of the provisionals and sent to the lab technician.

The lab technician fabricated LiSi Press monolithic crowns with GC lustre paste stain & glaze for teeth #'s 3, 4, 5, 6, 11, 12, 13 and Lisi Press layered crowns with GC Initial™

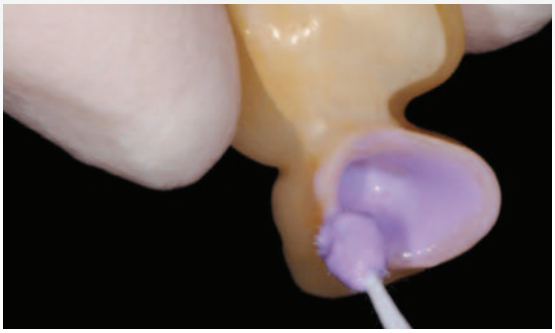

Figure 13. Cleaning final restorations.

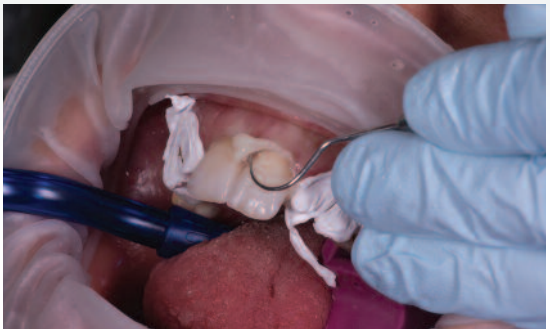

Figure 14. Cementation, removing excess cement.

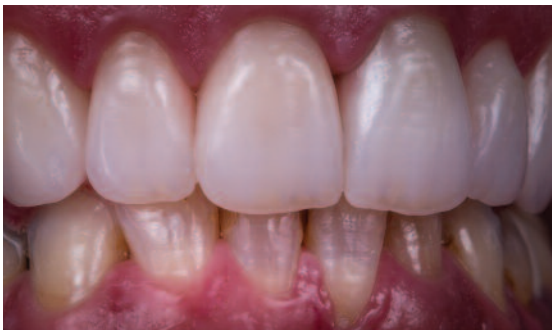

Figure 15. Final, front view.

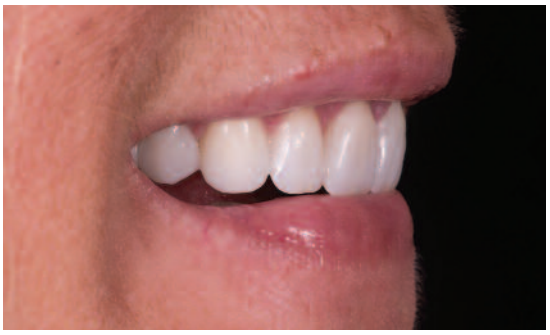

Figure 16. Final, side view.

LiSi ceramic on #'s 7, 8, 9, 10.

The patient returned for delivery of the final restorations. The provisionals were removed. The crowns were tried in individually and then together to check marginal fit and contacts.

The teeth were then prepared for total adhesive bonding : pumice, 4% chlorohexidine scrub, gluma placed on vital preps.

The teeth were isolated with both an optragate and Teflon tape. The crowns were treated with ivoclean and bonding adhesive. The crowns were then seated two at a time starting with the centrals and moving distally.

Care was taken to remove all of the excess resin cement and the occlusion was then adjusted and verified in centric and excursions.

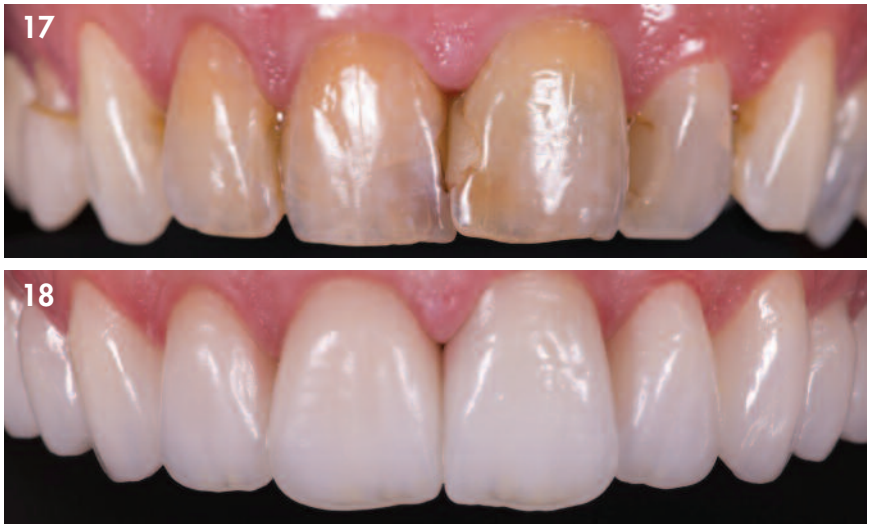

Figure 17. Before.
Figure 18. After.