

**Camera Equipment Used:**

Nikon D100 digital SLR camera  
Nikkor 105mm Macro lens  
Nikon SB 28 Ring flash

**Manual Settings:**

ISO 200  
Aperture: f32  
Shutter: 1/200<sup>th</sup> sec  
White balance: Flash

**Presenting Complaint:**

Poor upper anterior aesthetics associated with older porcelain fused to metal crowns and misaligned central incisors. The patient requested that the central incisors be treated with a more conservative, non-invasive approach.

A diagnostic wax-up was presented to the patient for approval prior to the commencement of treatment.

**Treatment Outline:**

1. In office tooth whitening to establish 'baseline' colour of the natural dentition
2. Crown lengthening to improve aesthetic proportions and gingival symmetry
3. Replace existing porcelain fused to metal crowns with bonded all ceramic crowns
4. Composite veneers to re-align the central incisors

**Treatment (Indirect Restorations):**

1. Bone sounding was performed to establish how much soft tissue could be removed without invading biologic width. The existing porcelain fused to metal crowns were removed and the crown preparations refined. The margins were kept slightly supra-gingival to aid impression taking and future cementation.
2. A 'tray and wash' impression technique was utilised (Stand-Out, Kerr).
3. The prepared teeth were disinfected using Cavity Cleanser (Bisco) before placing Luxatemp (DMG) provisional restorations. The provisional restorations were fabricated to represent the likely final result.
4. The provisional restorations were re-contoured until the patient was satisfied with the aesthetics and occlusal comfort. An alginate impression was taken for the ceramist to duplicate.

**Ceramist:**

Allan Simm at Dental Design (Panmure)

**Information Provided to the Ceramist:**

1. Study models (unaltered)
2. Model of the provisional restorations in place
3. Diagnostic wax-up
4. Impression

5. 'Stick bite' for horizontal and midline reference
6. Photographs (pre-treatment, with the stump shade tab, and with colour shade tab(s))
7. Detailed colour map
8. Laboratory prescription form
  - a. Final shape of the restorations should resemble that of the provisional restorations
  - b. Since the margins were supra-gingival the ceramist was asked to blend the gingival area to the stump shade
  - c. It was also pointed out that the central incisors would be restored using composite at the time the new crowns were to be placed

**Cementation:**

1. The provisional restorations were removed and the teeth disinfected with a slurry mix of pumice and Cavity Cleanser (Bisco). Care was taken not to disturb the gingival tissue and cause unwanted bleeding
2. Rubber dam was placed using a modified split dam technique
3. A standard bonding protocol was used (Optibond Solo Plus, Kerr) and a rapid cementation technique employed (Translucent Veneer Cement, 3M Espe) to place the crowns
4. Excess cementation was removed with brushes and floss prior to final curing to minimize the amount of post polymerisation clean up

**Finishing/Polishing:**

1. Remaining cement was removed using a No. 12 Bard Parker blade and fine diamond polishing strips (Brasseler). Final interproximal polishing was achieved with Epitex strips (GC)
2. Facial/Lingual surfaces are carefully polished with Enhance (Dentsply) to remove any surface adherent cement

**Treatment (Direct Composite Veneers):**

1. Colour mapping was performed following placement of the crowns
2. Test buttons were utilised to establish the correct composite shades to be used
3. Surface preparation with coarse tapered diamond bur
4. To prevent teeth from being bonded together Teflon tape was used as separating medium
5. Basic materials
  - a. Optibond Solo Plus (Kerr)
  - b. Renamel Microfill (Cosmedent)
6. Vernier callipers were used to ensure that the correct tooth proportions were established

**Finishing/Polishing:**

1. Interproximal... overhangs were removed using a No.12 Bard Parker blade and fine diamond polishing strips (Brasseler). Final interproximal polishing was achieved with Epitex strips (GC)
2. Facial/Lingual... polished with a series of progressively finer grit Optidisc (Kerr) to remove all visible scratches. The 'edge' of an Enhance (Dentsply) polishing cup was used to create surface texture which is lost following the use

of polishing discs. Horizontal striations were created using a new Dialite (Komet) polishing disc

3. Lustre & final polish with Flexibuff disc (Cosmedent) & Enamelize paste (Cosmedent)





