

Partially Edentulous Reconstruction

Upper Jaw

Female Patient

Age at time of surgery: 66

Occupation: Part Time Teacher

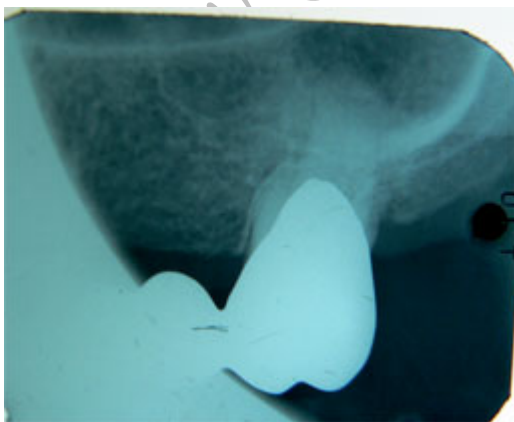
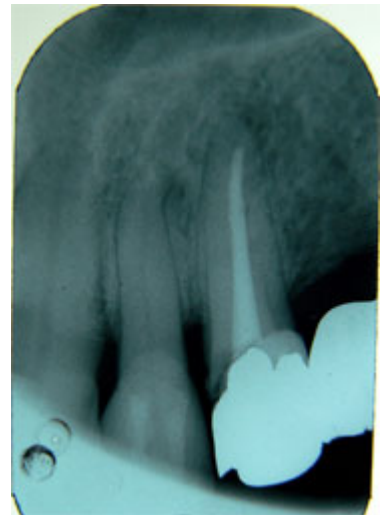


Medical History:

Non-smoker. Hormone replacement therapy. Otherwise nil relevant.

Patient was a long term patient who has had previous implant treatment in the left posterior mandible. The patient's upper left quadrant had a long term VMK - gold bridge extending from the upper left canine to the upper left first molar with two pontics. The patient presented in July 2003 with a root canal infection in the upper left canine.

The periapical infection resolved successfully and it was decided at the time to restore the access cavity in the crown with direct restoration. In July 2004, the residual tooth core of the upper left canine fractured off above the crown margin. The bridge was removed leaving only the posterior gold crown intact and repolished after the removal of the pontics. A pin retained composite resin crown was constructed to restore the upper left canine.



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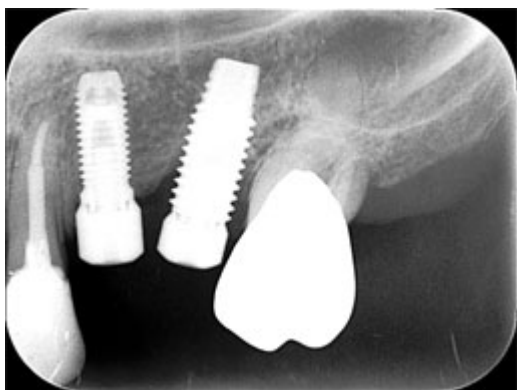
Upper Jaw

Treatment

Patient opted to have two Brånemark Fixtures placed in the upper left pre-molars, and fortuitously, there was sufficient space below the maxillary sinus even though the teeth had been absent for a very, very long time. In the position of the upper left first pre-molar we placed a 4mm x 10mm Regular Platform standard machined fixture, and in the position of the upper left second pre-molar we placed a Langer fixture, a regular platform 5mm x 12mm standard machined fixture.

As a nice demonstration of bone variability between adjacent bone sites in the one individual, the first pre-molar site presented as type two to three bone, but of sufficient strength to stop the surgical motor on 30 Ncm insertion torque. The second pre-molar site presented as type three to four bones, much softer and a site that did not achieve primary stability with a 4mm fixture, but accepted a longer, wider fixture as a rescue fixture. The advantage of rescuing a soft bone site with a 5mm fixture, but with a regular platform head, meant that in a case with a tight prosthetic space, the restoration space required by the 5mm fixture was the same as the 4mm fixture. If we had used a 5mm fixture with a wide platform hex, this would have required another 2mm of inline space.

The visible convergence of the fixtures was created by the surgical requirement presented by mesial flare of the existing gold crown, and the mesial bulge of the mesiobuccal molar root.

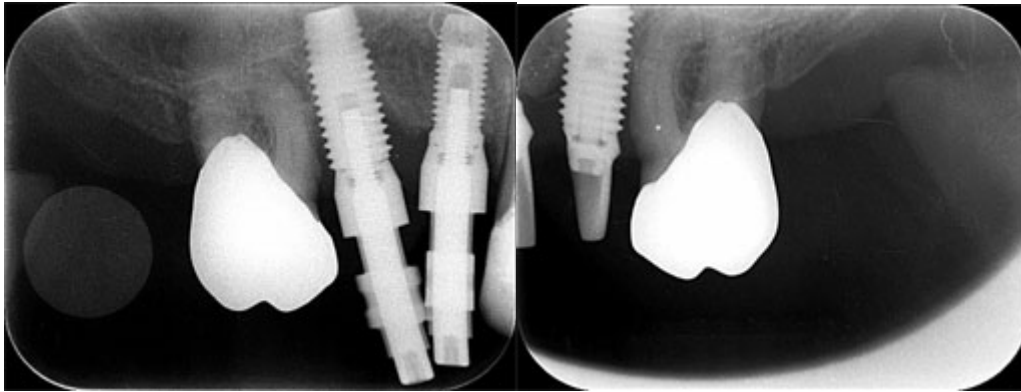


Because of the soft bone in one site, and the fact that we had three buccal threads exposed on the 5mm fixture, which we covered with bone collected in a filter, we extended the healing time to eight months.

At second stage, the graft had been unsuccessful and the three threads had remained exposed, but both fixtures had integrated successfully. The exposure of three titanium threads in the final result is not seen as an issue of any consequence, our objective is always to insert all the threads of each titanium screw in bone. This site was a soft bone site with resorptive potential. The fixture in any event, integrated successfully and recorded an above average Resonance

Frequency measurement for the maxilla, and especially the posterior maxilla where we expect softer bone. A 5mm x 12mm fixture presents a very significant surface area of titanium for bone integration. Three machined titanium threads should essentially be cleansable and not highly retentive of dental plaque as many roughened surfaces are.

Resonance Frequency on the 4mm fixture was 80 ISQ units measured vertically, and 81 ISQ units measured at right angles. Resonance Frequency for the 5mm fixture was 74 ISQ units vertically and 73 ISQ units measured at right angles. Acceptable ISQ range for the maxilla is 50 to 70 units.



The case was successfully restored with two custom Procera titanium abutments, supporting a cemented VMK bridge. We routinely use zinc phosphate cement on all cemented implant cases. Abutment screws were tightened to 32 Ncm.

We are yet to address a longer term option for the restoration of the upper left canine, but our experience with pin retained anterior resin crowns, is broadly favourable, and this is where direct resin in significant build-ups can last quite a long time.



Fees

- Anterior resin crown \$320.00.
- Temporary partial acrylic denture \$490.00.
- Two equal implant fees of \$3,750.00 separated by the healing time of eight months i.e. \$7,500.00.