

# Partially Edentulous Reconstruction

## Lower Jaw

**Female Patient**

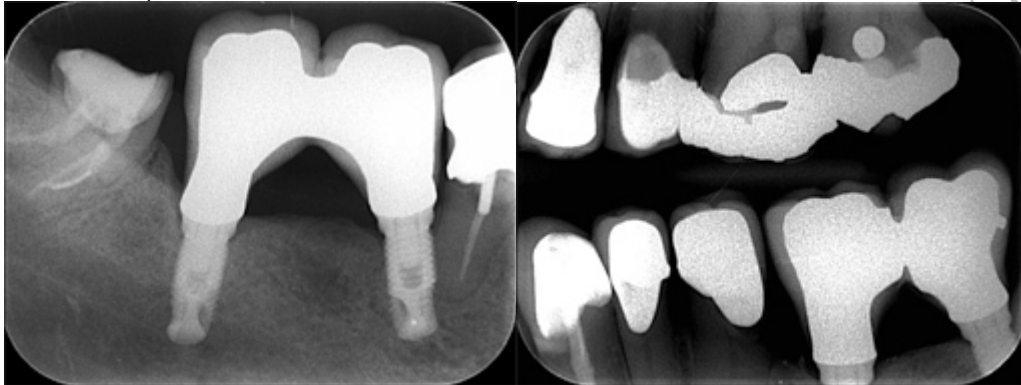
**Age at time of surgery: 67**

**Occupation: Medical Nurse**

### Medical History:

Non-smoker and taking hormone replacement therapy. Nothing else relevant.

Patient presented in August 2004 wearing an acrylic partial denture which had recently been issued as an immediate replacement for three lower incisor teeth.



As initial x-rays show, patient has had an extensive complex restorative history, with four non-Brånemark implants placed in the posterior mandible. Patient had been happy with the existing implant outcomes and could not stand wearing a lower denture.

The sole remaining lower incisor tooth presented with an after-crown placement root canal treatment and almost no mesial interproximal bone, rendering this tooth hopeless. Previous extractions in the anterior mandible were described by the patient as surgical extractions and the x-ray shows rendered significant vertical bone damage. Initial visual presentation of the site might reasonably discuss the possibility of augmentation of this surgically damaged site, with an autogenous (own bone), block onlay bone graft.



Both lower canines have VMK restorations and the left one has an after crown-placement root canal treatment, which looks sound periapically.

Also evidence by the patient's full coverage history is the significant concern for her personal appearance.

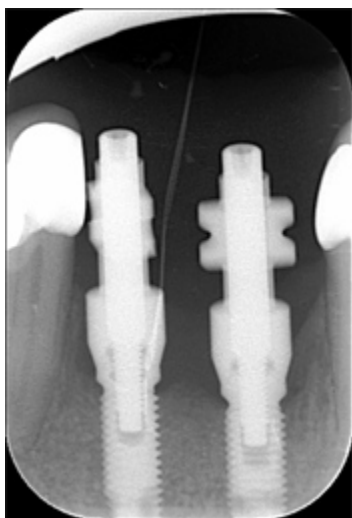
# Partially Edentulous Reconstruction

## Upper Jaw

### Treatment

The hopeless lower right lateral incisor was extracted in November 2004 in the same appointment as the placement of two Brånemark fixtures - 3.75mm x 13mm, Regular platform MkIII TiUnite as the right side fixture, and 3.75mm x 10mm, Regular platform standard machined fixture as the left side fixture. The right side fixture was in no way guided in placement by the residual socket of the lower right lateral incisor. The TiUnite surface was deliberately used due to its theoretical ability to attract bone synthetic cells faster. Both fixtures were machine locked at 50 Ncm insertion torque, and checked with a hand wrench. Nobel Biocare Osseoset surgical unit used for placement.

The prosthetic plan was for two fixtures and two custom Procera titanium abutments to support a four unit VMK (porcelain bonded to gold crowns) bridge, thereby replacing all four lower incisors.



Because of the minor but residual extraction socket existing at the surgical placement, this was done as a two stage procedure with four months healing time intervening.

At second stage in March 2005, resonance frequency analysis using a magnetic "smartpeg" screwed into the fixture, and pulsed by an electromagnetic induction probe as per Integration Diagnostics AB Gothenberg Sweden, was used as the now internationally accepted and calibrated test for implant stability. Calibrated on a 0 to 100 scale described as ISQ units (International Stability Quotient), Successful Osseo integration in the mandible should record between 60 to 80 ISQ units.

In this case, the left side fixture recorded 68 ISQ with a vertical probe, and 69 with the probe at right angles to the "smartpeg". The right side fixture recorded 64 and 67 respectively, ISQ units. X-ray shows bone up to throat one on both fixtures. The x-ray shows fixture level impression copings in place, with the follow-up x-ray showing two Procera custom titanium abutments tightened to 32 Ncm with the Nobel Biocare Osseocare unit.

# Partially Edentulous Reconstruction

## Upper Jaw



### Patient Outcome

Photograph shows the extent of the vertical bone damage relative to the gingival margin positioning of the bridge restoration. We took the Swedish approach which was to place the fixtures in primary bone, if sufficient primary bone is available, and thereby retain the over ninety-nine percent success rate in the anterior mandible. A block onlay bone graft may have enhanced the aesthetic gingival or gum line position, but risked a failure rate of up to twenty percent, usually resulting in further devastation to the site, if it failed, and risking implant failure rates in graft bone of fifteen to twenty percent also.

The lip line held in the photograph is an obvious exaggeration of normal lip posture, purely to demonstrate how low the gingival bridge margin is.



The second photograph is I believe, close to a maximum display of lower incisor teeth within the range of normal lip posture and more than satisfies any cosmetic concerns raised by the bone discrepancy.

Patient is a far-west nurse, and the only issue she raised following the cementation of the bridge, was a fax requesting further diagrammatic instruction regarding the use of superfloss i.e. a modest level of difficulty experienced in the "getting used to phase" hygiene routine, related to the depth of the restorative margin below the lip line. Should be okay with practise.

The issue raised by poor hygiene around the prosthetic connections of Brånemark System fixtures can be largely subdued by a study at the Gothenberg Clinic involving thirty five thousand implants, and only seventeen recorded failures due to peri-implantitis. This is essentially gum disease producing bone loss around dental implants. Obviously, patients are given visual hygiene instruction, as a routine requirement, and it is what is expected of them to maintain their prosthesis and supporting tissue margins in a healthy condition, in spite of the above statistics. The pontics or the teeth on the bridge, not directly supported by the implant, are the lower left two and the lower right one.

### Fees

Fees for this case were two separate payments of \$4,000.00 separated by the healing time of four months i.e. \$8,000.00.