Mandibular full-arch restoration using the Trefoil™ system

Case description:
Mandibular edentulism

Patient:
Male, 77 years old
Hypertension
Atrial fibrillation
Medication - Warfarin

Clinical situation:
Failing lower dentition

Surgical solution:
Restorative solution includes a temporary maxillary denture and the Trefoil protocol for the mandible.

Restorative solution:
New maxillary denture, Trefoil Bar

Surgery date(s):
August 24, 2017

Total treatment time:
24 hours

“The Trefoil system provides an outstanding option for the edentulous patient and will provide an affordable, quality solution”

Dr Glen Liddelow, Australia

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Laboratory procedures
Initial clinical situation

Edentulous patient with maxillary and mandibular dentures.

Mandibular residual ridge.
Treatment planning

Pre-treatment panoramic radiograph.
Site preparation

Marking for the bone reduction.

Ridge reduction to allow 22 mm of prosthetic space.
Site preparation

The Guide Template fits between the mental foramen nerve loops and verifies sufficient width of the ridge.

Verification of vertical height and implant position.
Implant placement

Verification that bone reduction is sufficient for prosthetic space

The Evaluation Template is used for the initial 2 mm Twist Drill.
Implant placement

Preparation of the central implant site.

The central implant is inserted using the Positioning template.
Implant placement

The central implant is in position.

Fixation of the V-Template to the central implant with the Temporary Screw Implant and held down in the distal with Guide Pins.
Implant placement

Additional fixation using the 2.0 mm Twist Drill and placing stabilizing screws.

V-Template and stabilizing screws are in place.
Implant placement

Preparation of the two distal implant sites using the V-Template and Template for Drills according to drill protocol.

Placement of the distal implant.
Verification of implant placement

All three Trefoil Implants CC RP with 4.5 mm collar are in place.

The Trefoil Bar is tried in to check the fit and space of the prosthesis.
Impression for verification index

The Transfer Abutments and a Temporary Abutment Non-Engaging CC are placed to construct the verification index.

The Transfer Abutments are luted with light-cured resin to fix the verification index.
Tissue site preparation

Placement of the healing abutments. The site is sutured.
Laboratory procedure

Master cast construction from verification index.

Verifying the fit of the Trefoil bar.
Laboratory procedure

Fixation of the retentive mechanism can be either laser welding or resin. The bar shown here is laser welded.

Articulation of the bar to the opposing arch may be done in a traditional way using a wax rim on the bar or with a cut out duplicate denture prosthetic guide.
Laboratory procedure

Conventional wax-up and processing for a wrap-around hybrid acrylic/titanium fixed prosthesis.

Final prosthesis.
Completed prosthesis with polished rounded intaglio surface to facilitate cleaning.
Final restoration

Delivery of the final bridge on the day of surgery. Occlusion is checked for even contact and anterior guidance. Accessibility for cleaning is verified and screws are tightened to 35 Ncm. Access holes are sealed with teflon and composite.

Occlusal view of final prosthesis.
Final restoration

Post-op radiograph.

Happy patient after the treatment.