

# TREATMENT OF A SEVERLY WORN DENTITION UTILIZING A UNIQUE PROSTHODONTIC MODALITY

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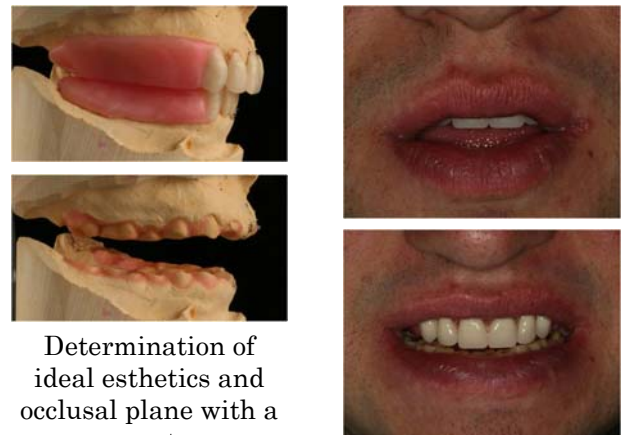
This case report demonstrates treatment of a 27-year old patient with an unrestorable dentition due to caries and severe wear, related to pharmacologic induced bruxism from anti-psychotropic medications. The patient had been treated with a metal based maxillary splint by another practitioner to slow the wear progression. This treatment had failed due to caries under the splint from both high sugar intake and lack of home care, as well as wear of the opposing dentition from the splint.

The maxillary arch was edentulated due to the extent of caries, alveoplasty per a surgical guide, and six Straumann Bone Level dental implants were immediately placed. A low-profile milled titanium alloy bar was fabricated via a CAD-CAM process, with four threaded overdenture attachments contained by the bar. The arch was restored with a cobalt-chromium based overdenture prosthesis with metal occlusion, entirely supported and retained by the milled bar and attachments. A maxillary bar was provided due to high risk for implant overload. The mandibular teeth were unrestorable with conventional measures due to severe wear, but by-in-large not affected critically by caries, and were able to be retained. Elective extractions of the mandibular canines were preformed, with immediate placement of two Straumann Bone Level implants in these sites. The arch was restored with a removable prosthesis of similar design to the maxillary arch, but supported by the remaining teeth, and retained by the two single implants with overdenture attachments. Deep implant placement was performed on mandible to allow for alveoplasty and bar placement, should failure of lower dentition occur in the future. Occlusal scheme was developed as follows: no anterior vertical overlap, shallow cusp angles, lateral group function, canine protrusion. Dietary counseling was provided, and nightly fluoride gel regiment was prescribed for the mandibular teeth. A processed acrylic splint was provided for nocturnal use, to minimize wear of the prostheses.

## Initial Presentation

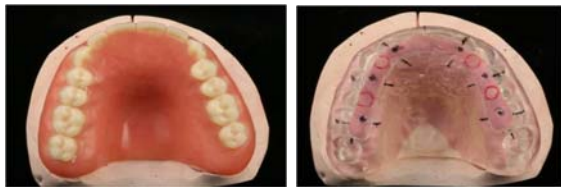


## Pre-Surgical Workup



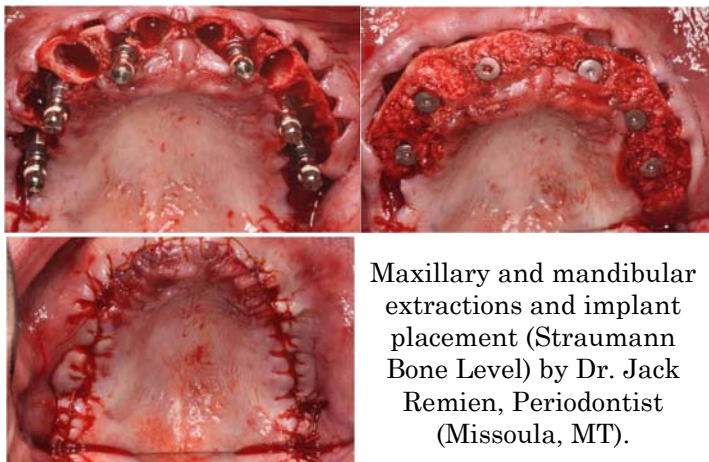
Determination of ideal esthetics and occlusal plane with a wax setup.

**TREATMENT OF A SEVERLY WORN DENTITION (CONTINUED FROM PREVIOUS PAGE)**



Immediate maxillary "Healing Denture" and surgical template to guide alveoplasty and implant placement with respect to projected future tooth position.

**Surgical Treatment and Immediate Denture Delivery**



Maxillary and mandibular extractions and implant placement (Straumann Bone Level) by Dr. Jack Remien, Periodontist (Missoula, MT).



Fixture level (open tray) impression posts were placed in maxillary implants and splinted with a wire and light cured resin. Final Locator abutments were

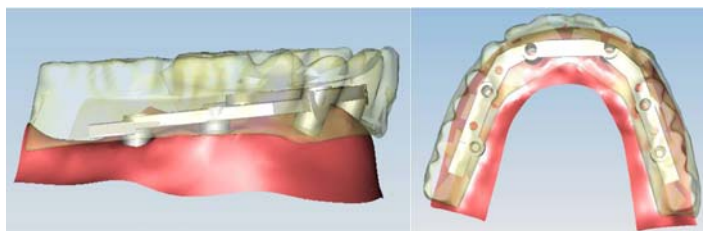
placed in mandibular implants, and impression copings placed. VPS impressions were made.



Wax setup indicating final esthetics and occlusal scheme was verified



Immediate maxillary denture delivery with tissue conditioner.



**Restorative Treatment**



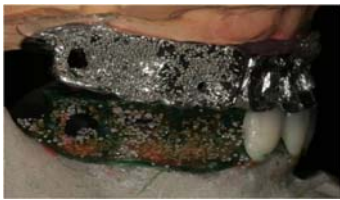
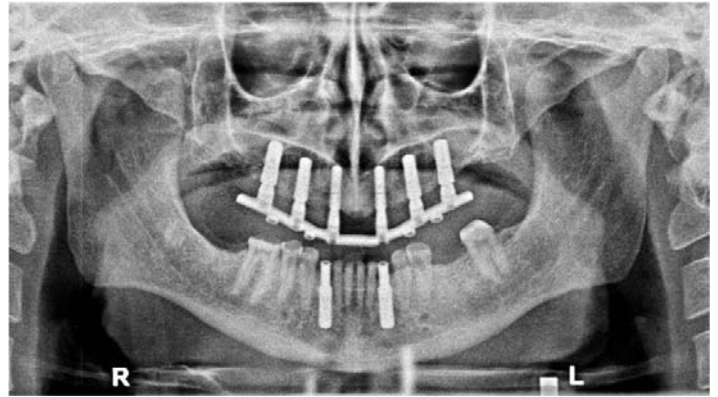
Maxillary and mandibular arches after uncovering and full healing (4 months).



A "virtual" bar design was generated by CAD (Computer Aided Design) using the master cast and wax setup utilizing a double scan technique. A grade V titanium alloy bar was fabricated via a CAM (Computer Aided Milling) process.



Case was sent to lab for fabrication. Indices of master casts allowed accurate transfer of teeth from wax setup to refractory models for predictable framework design.



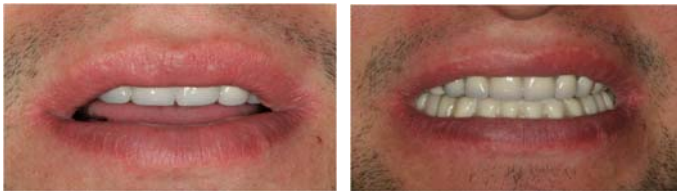
**Post-Treatment Photos**



Milled bar with "tapped" Zest Locator attachments and mandibular Locator abutments in place.



Nocturnal occlusal guard for bruxism, fabricated at the same vertical dimension of occlusion (VDO) as the maxillary prosthesis.



Final prostheses in place



Final prostheses in place

