

## Clinical Treatment Planning • Case 48

*Treating Clinicians: Drs. Jung Nam, Scott G. Cohen and Soo Jin Kim*



Initial facial view

*Initial Presentation: January 2004*

*Age at Presentation: 59*

*Initial Records Made: January 2004*

### **Introduction and Background**

The patient was referred to the Graduate Prosthodontics clinic at the University of Washington for comprehensive treatment. His chief complaint was, "I think my teeth are worn down and I would like to have my smile back." He wanted to improve the appearance of his anterior teeth, replace lost tooth structure, and restore his missing teeth.



Initial smile



Initial occlusal views of the maxillary and mandibular arches





## FMX-2004

### Medical History

- Hypertension diagnosed in 1970.
- Medications: Monopril 20 mg/d, Diltiazem 60mg/d.
- No known drug allergies.
- ASA II.

### Diagnostic Findings

#### Extraoral/Facial:

- Minimal facial asymmetry.
- The dental midline is not coincident with the facial midline. It is deviated 4 mm to the left as compared to the facial midline.
- Reverse occlusal plane.
- No display of the maxillary incisors at rest. The incisal edges of the maxillary central incisors are 4 mm short of the border of the upper lip.
- No gingival display at maximum smile.

#### TMJ/Mandibular Range of Motion and Muscles of Mastication/Facial Expression:

- Within normal limits.
- No history of pain.
- No pain or tenderness on palpation.
- No clicking or crepitus.

#### Intraoral:

##### Dental:

- Missing teeth #'s 1, 17, 18, 19, 20 & 32.
- Rotated teeth #'s 4, 5 & 12.
- Buccally tipped teeth #'s 27 & 28.
- Impacted tooth # 16.
- Extensive dental treatment to both the maxillary and the mandibular posterior dentition including: amalgam restorations on teeth #'s 2, 4, 5 & 12-15; composite-resin restorations on teeth #'s 6-12 & 27; and metal-ceramic crowns on teeth #'s 3, 21, 22 & 28-31.
- Carious lesions teeth #'s 2 & 15.
- Fractured restorations and/or secondary caries on teeth #'s 21, 30 & 31.
- Moderate tooth wear and erosions on the maxillary and mandibular incisors.
- Compensatory supraeruption of the mandibular anterior dentition.
- Maxillary and mandibular midlines are not coincident, with mandibular midline deviating 3 mm to the right.
- Multiple diastemas.

##### Periodontal:

- Fair plaque control.
- Generalized bleeding on probings.
- Generalized 3 mm probing depths with localized 4-7 mm probing depths.
- Localized recessions teeth #'s 5 & 21.



## ***Occlusal Notes***

- CR (centric relation) = MIP (maximal intercuspal position).
- Posterior cross-bite on the left side.
- Vertical overlap: 0 mm.
- Horizontal overlap: 0 mm.
- Group function right working contacts with teeth #'s 3, 4, 5, 6, 7, 8/#'s 25, 26, 27, 28, 29 & 30.
- Left nonworking contacts on teeth #'s 12/21.
- Left working contacts on teeth #'s 10/22.
- Protrusive contacts on teeth #'s 6/27, with protrusive interference on teeth #'s 2/31.
- Angle Class I malocclusion related to the canines on the left side.
- Angle Class II malocclusion related to the canines and molars on the right side.

## ***Diagnosis and Prognosis***

- AAP Type II – Generalized mild gingivitis and localized mild to moderate chronic periodontitis.
- Partial edentulism.
- Recurrent caries.
- Attrition.
- Erosion.
- Left non-working and protrusive interferences.
- Posterior cross-bite on the left side.
- Prognosis with treatment:
  - Periodontally good.
  - Functionally good.
  - Aesthetically good.

## ***Radiographic Review***

- Peripheral areas/pathosis: None.
- Periapical pathosis: None.
- PDL: generally within normal limits.
- Root form/shape:
  - Molars: tapered roots with normal length root trunk.
  - Premolars, canines, and incisors: tapered root form.
- Root proximity: None.
- Crown-root ratio: 1:1 to 1:1.5.
- Horizontal bone loss: Localized on #'s 21, 22, 27, 28, 29 & 30.
- Vertical bone loss: None.

## ***Summary of Concerns***

- What would be the best way to restore anterior teeth and posterior teeth to satisfy aesthetics and function?
- How to obtain normal vertical and horizontal relationships between the maxillary and mandibular anterior teeth with adequate anterior guidance?
- Given the patient's history of moderate teeth wear, interferences in excursive movements, migration of teeth and missing teeth, what is the best occlusal scheme?
- Would a combination of surgical and orthodontic treatment be beneficial for achieving aesthetics and function of this patient?
- Would implant-supported restorations be the optimal treatment for restoring missing teeth?
- How to determine a new vertical dimension of occlusion?
- Is it beneficial to bodily move tooth # 27 to a proper position orthodontically to provide Angle Class I occlusal relationship?
- Is it beneficial to correct the midline discrepancy between maxillary and mandibular incisors?
- How to correct the cross-bite on the left side?

***Stop! Time to Outline Goals/Objectives of Treatment and Treatment Plan***

# Proposed Treatment Plan • Case 48

## Phase I: Initial Therapy

1. Comprehensive oral and facial exam with full-mouth radiographs.
2. Oral hygiene instructions.
3. Evaluate TMJ and muscles of head and neck.
4. Periodontal prophylaxis, localized scaling and root planing and review of home care techniques, followed by a reevaluation.
5. Caries control on teeth #'s 2 & 15 on the buccal aspect.
6. Remove restoration on tooth # 22 and evaluate.

## Phase II: Diagnostic Therapy

7. Diagnostic impressions, extra and intra oral photographs, facebow transfer and centric relation record.
8. Dento-facial evaluation and diagnostic wax-ups (including initial restorative and orthodontic set-up).
9. Orthodontic consultation: Repositioning of teeth #'s 27 & 28, and retraction and intrusion of the mandibular anterior dentition.
10. Periodontal consultation: Teeth #'s 19, 20 & 22 for implant placements, and aesthetic clinical crown lengthening procedures on teeth #'s 6-12.

## Phase III: Initial Surgical Therapy

11. Place endosseous implants in sites 19 & 20 for orthodontic anchorage.
12. Extract nonrestorable tooth # 22.

## Phase IV: Orthodontic Therapy

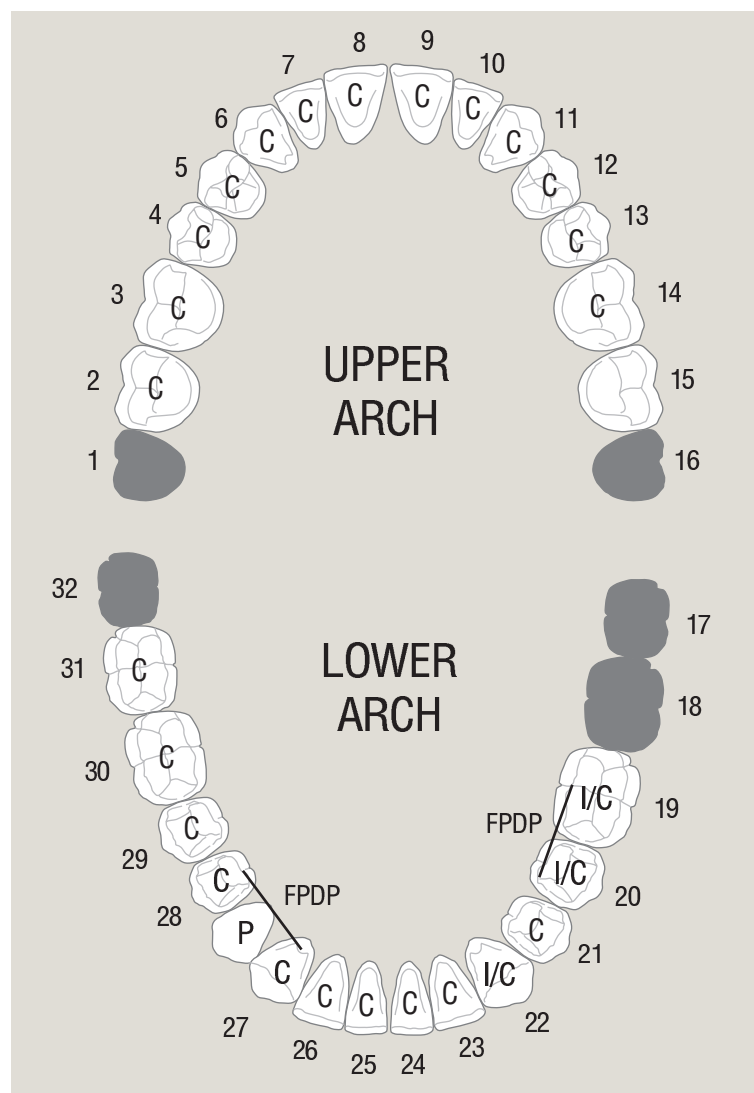
13. Move tooth # 27 mesially, and intrude and retract teeth #'s 23-26.
14. Place provisional restorations on implants 19 & 20 for orthodontic anchorage.

## Phase V: Second Surgical Therapy

15. Clinical crown lengthening on the facial aspect of teeth #'s 6-11 to enhance resistance and retention form as well as aesthetics.
16. Place implant in area of extracted tooth # 22.
17. Crown lengthening procedures on teeth #'s 29-31.

## Phase VI: Provisional Restorative Therapy

18. Provisional complete-coverage restorations on teeth #'s 2-14.
19. Provisional complete-coverage restorations on #'s 19-31 with utilization of endosseous implants on #'s 19, 20, 22.



FPDP = fixed partial denture prosthesis I/C = implant supported crown C = crown P = pontic

## Phase VII: Definitive Restorative Therapy

20. Gold crowns for teeth #'s 2 & 31. Metal-ceramic crowns for teeth #'s 3-14, 21, 22i, 23-26, 29-30. Metal-ceramic fixed partial denture prostheses for teeth #'s 19i-20i, 27-p-28.
21. Mandibular occlusal guard (also for retention).

## Phase VIII: Re-evaluation and Maintenance

22. Patient will be placed on a 6-month periodic recall for maintenance and prosthodontics check up.

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