



AMERICAN BOARD OF GENERAL DENTISTRY

Example Case

STANDARDIZED TREATMENT PLANNING ORAL EXAMINATION

Courtesy of Nicholas B. DuVall, DDS, MS, ABGD, MAGD

Example Case Information

Chief Complaint:

"I have a gummy smile, my teeth look short."

"I would like some of my back teeth replaced."

Medical History:

The patient is a 51 year old female who reports a past medical history of hypertension (HTN), transient ischemic attack (TIA) due to thrombosis (2015), and gastroesophageal reflux disease (GERD). Past surgical history non-contributory. No known drug allergies (NKDA), but patient reports nausea/vomiting to codeine. Patient states a 40+ pack-year history of tobacco smoking and no alcohol consumption.

Medications:

- Metoprolol 50mg
- Lisinopril 10mg
- Cimetidine 200mg
- Aspirin 81mg

Example Case Information

Vital Signs:

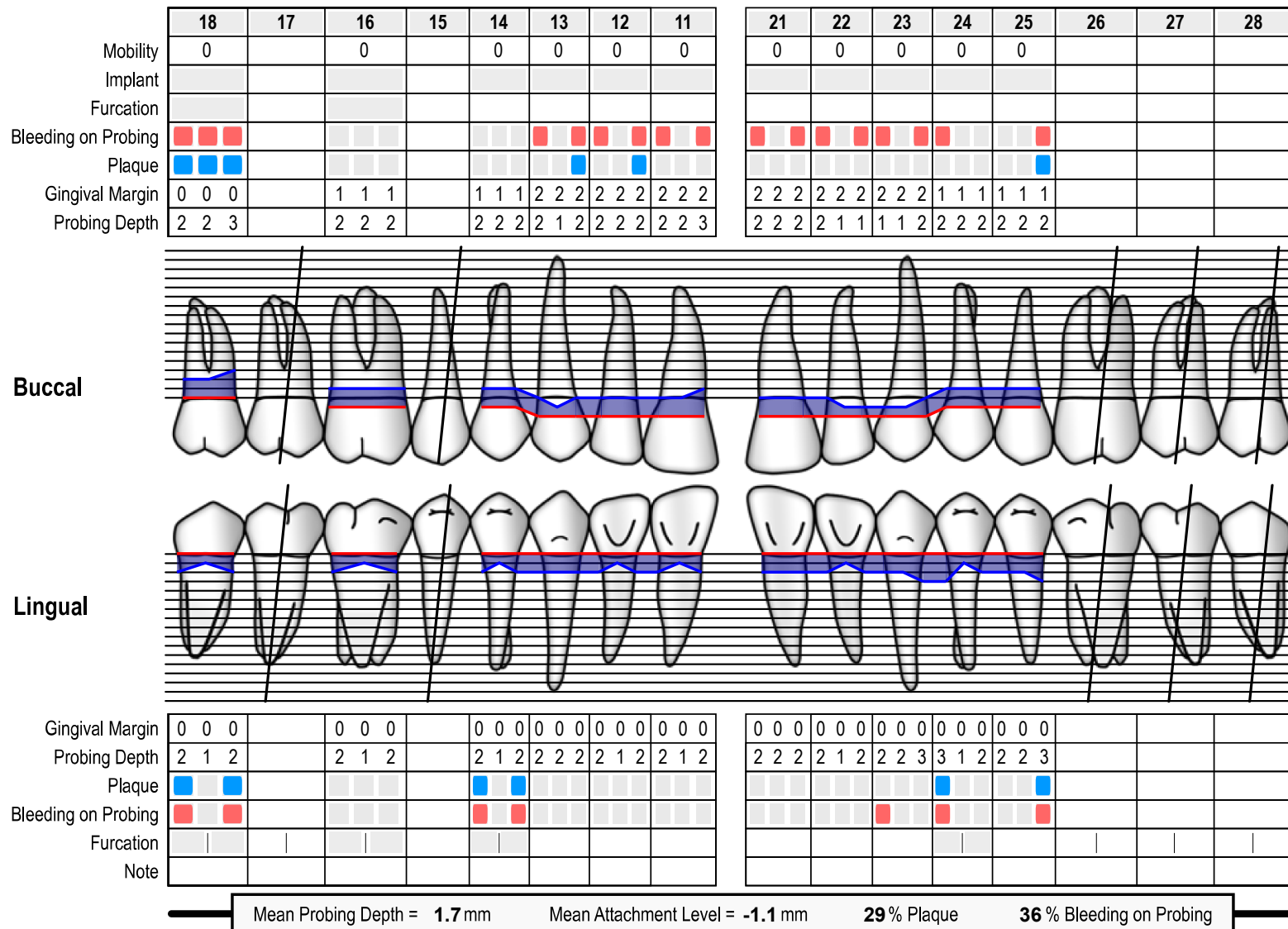
BP: 142/82 Pulse: 72 Respiration: 14 Temperature: 97.6°F BMI: 31.5%

Dental History:

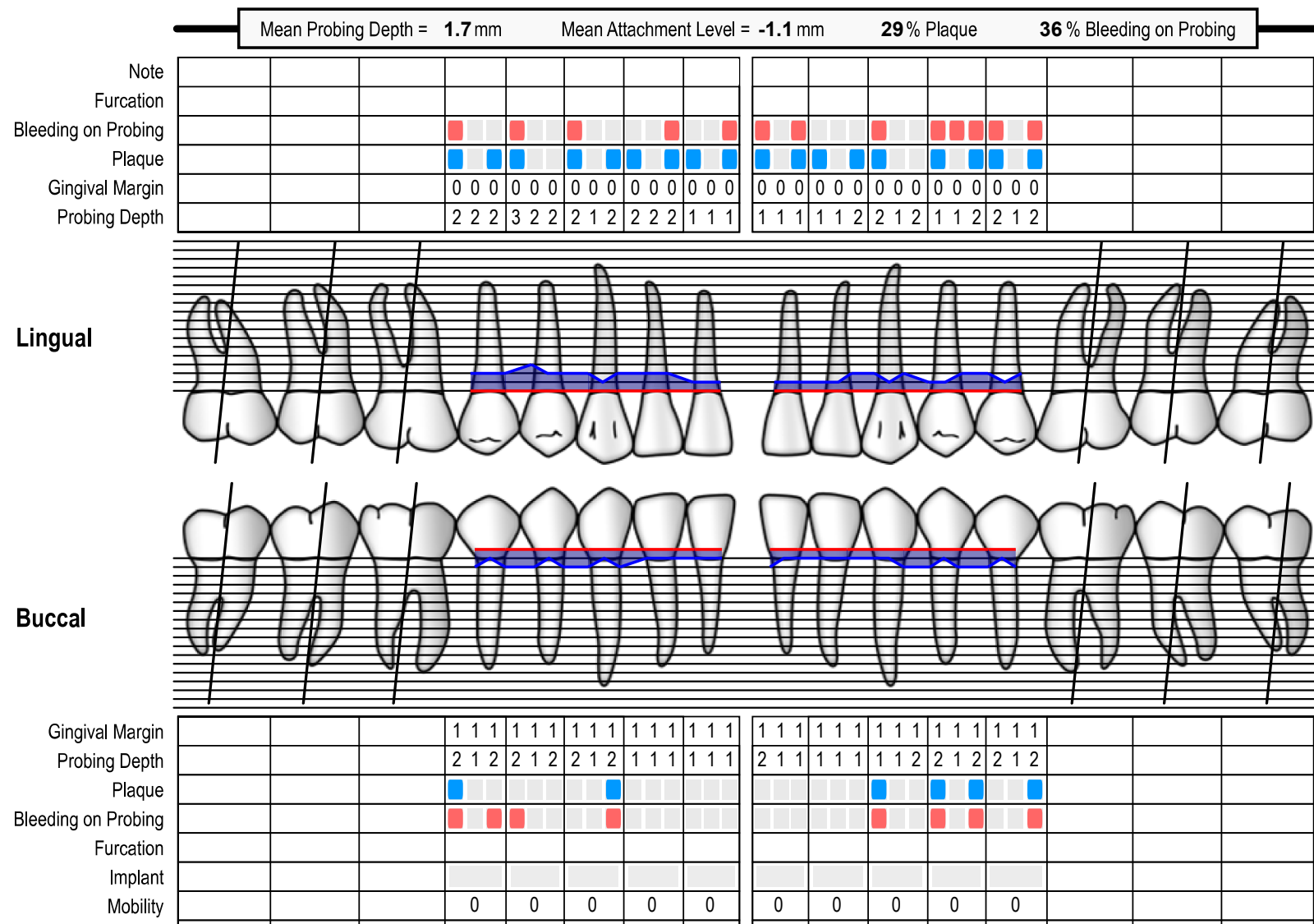
Inconsistent and primarily episodic dental treatment the past 25 years consisting of dental extractions. However, the patient has available finances for comprehensive dental treatment. The patient desires treatment with the best long-term prognosis.

Clinical Conditions:

- Brushes 2x/day with a soft toothbrush, irregular flossing, no rinsing.
- No TMD; normal range of motion with maximal incisal opening 45mm.
- Articulation and occlusion: CR is not coincident with MIP; bilateral group function with anterior disclusion.
- Upper lip length = 22mm
- Lip mobility = 8mm
- Cold response negative #12 with no percussion or palpation sensitivity



Maxillary Periodontal Charting



Mandibular Periodontal Charting



FULL FACIAL/SMILE



PROFILE



SMILE



Frontal View



Maxillary Occlusal View



Mandibular Occlusal View



Right Side in Occlusion



Left Side in Occlusion



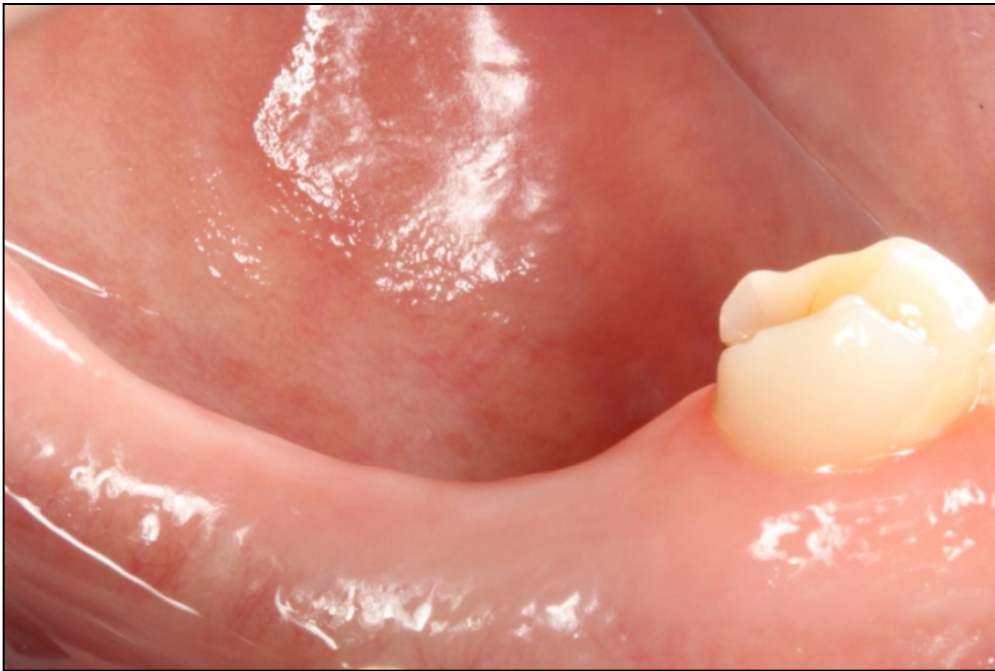
Maxillary Right Palatal View



Max Anterior Palatal View



Maxillary Left Palatal View



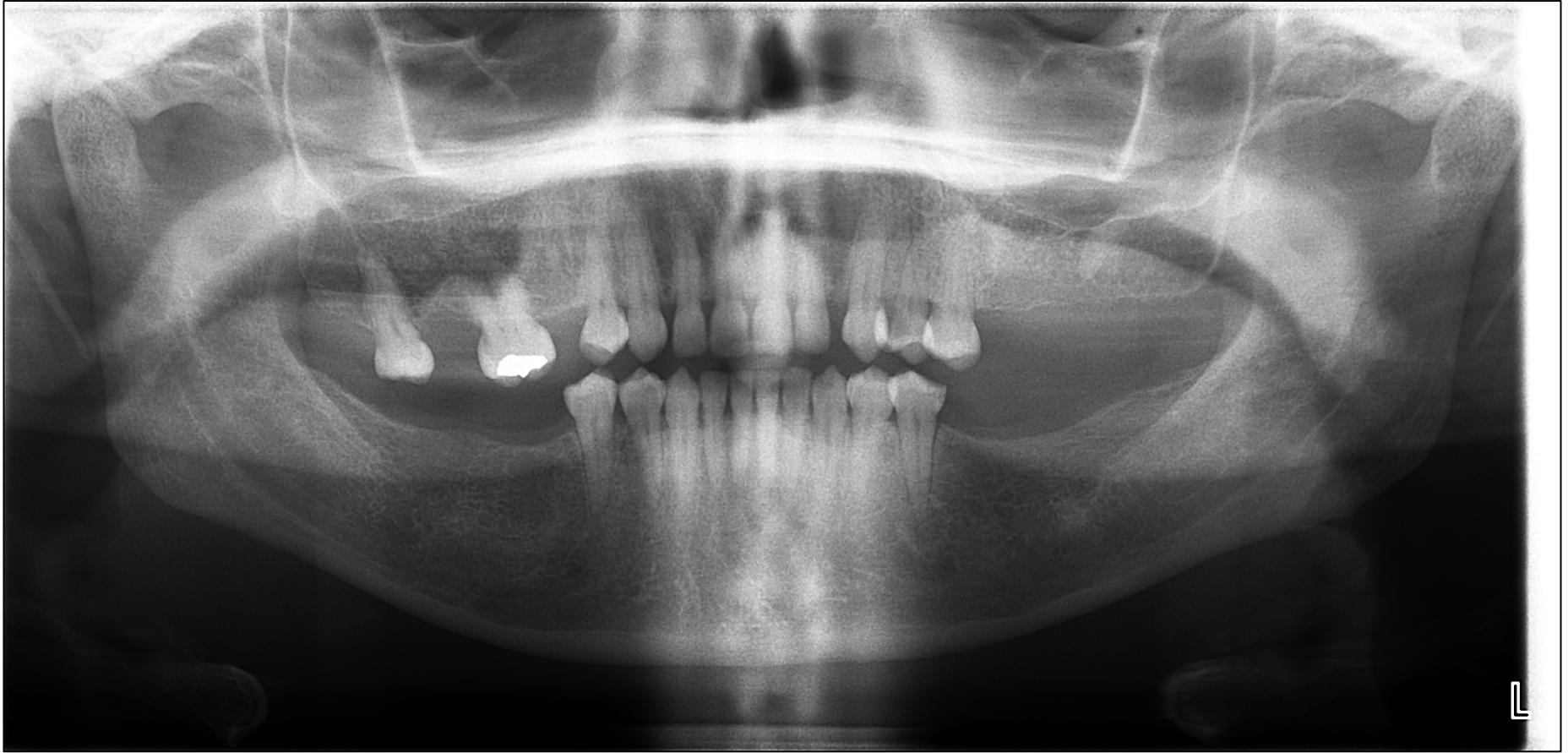
Mandibular Left Lingual View



Man Anterior Lingual View



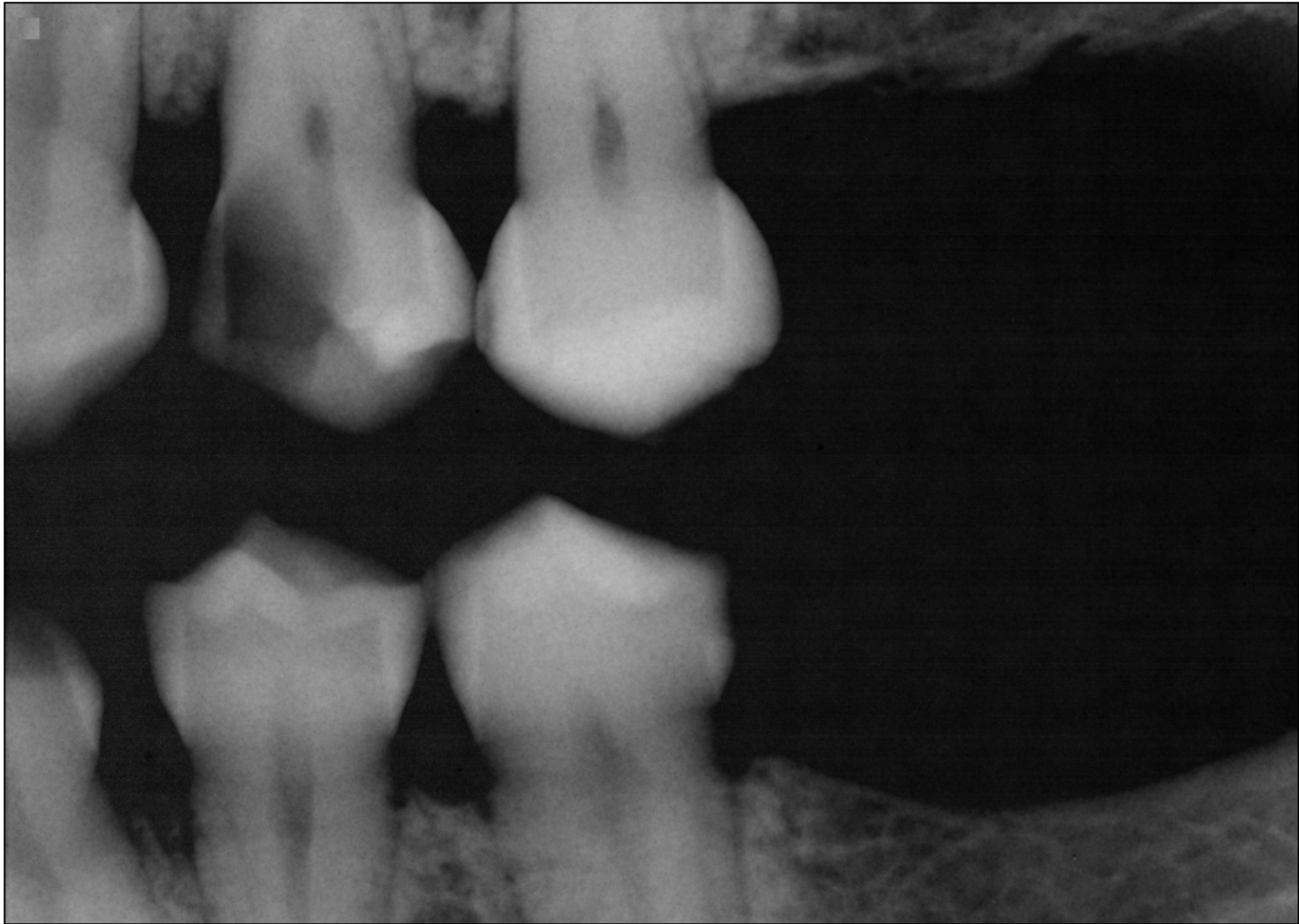
Mandibular Right Lingual View



PANORAMIC



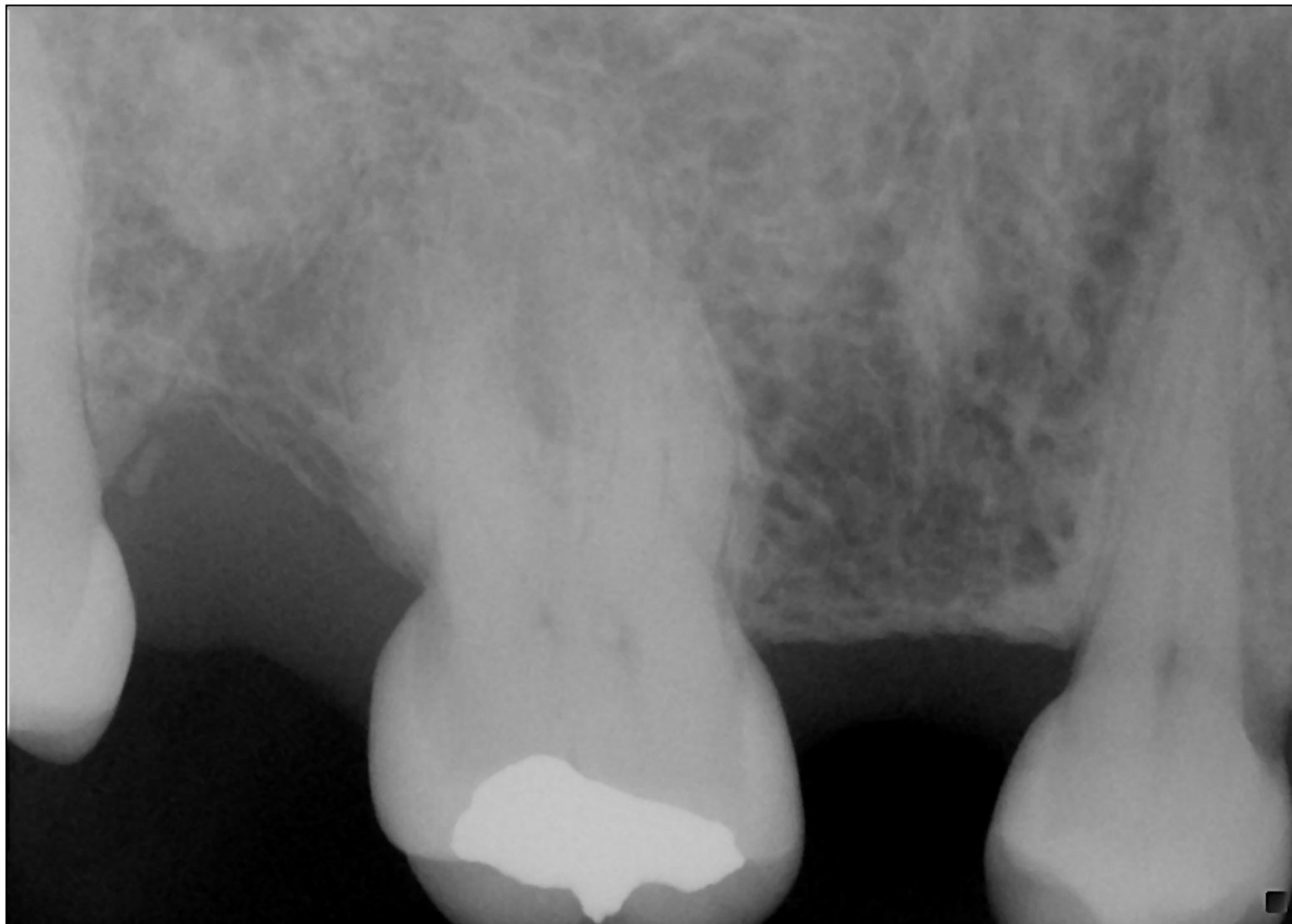
RIGHT SIDE



LEFT SIDE



MAXILLARY RIGHT



MAXILLARY RIGHT



MAXILLARY ANTERIOR



MAXILLARY ANTERIOR



MAXILLARY ANTERIOR



MAXILLARY LEFT



MANDIBULAR LEFT



MANDIBULAR ANTERIOR



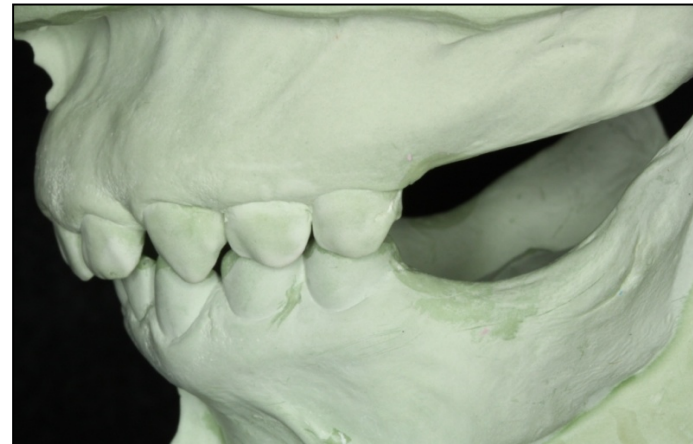
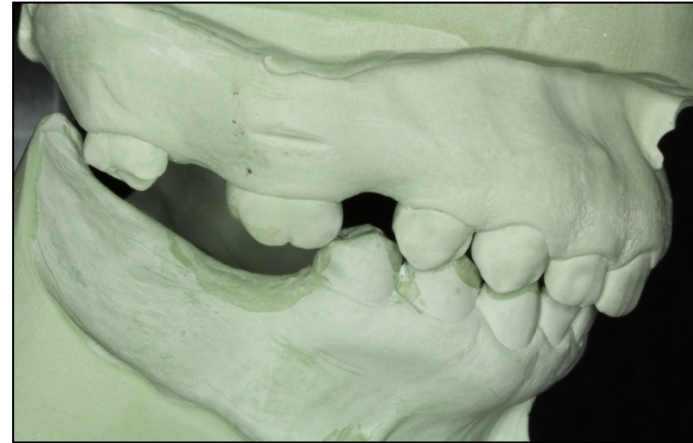
MANDIBULAR ANTERIOR



MANDIBULAR ANTERIOR

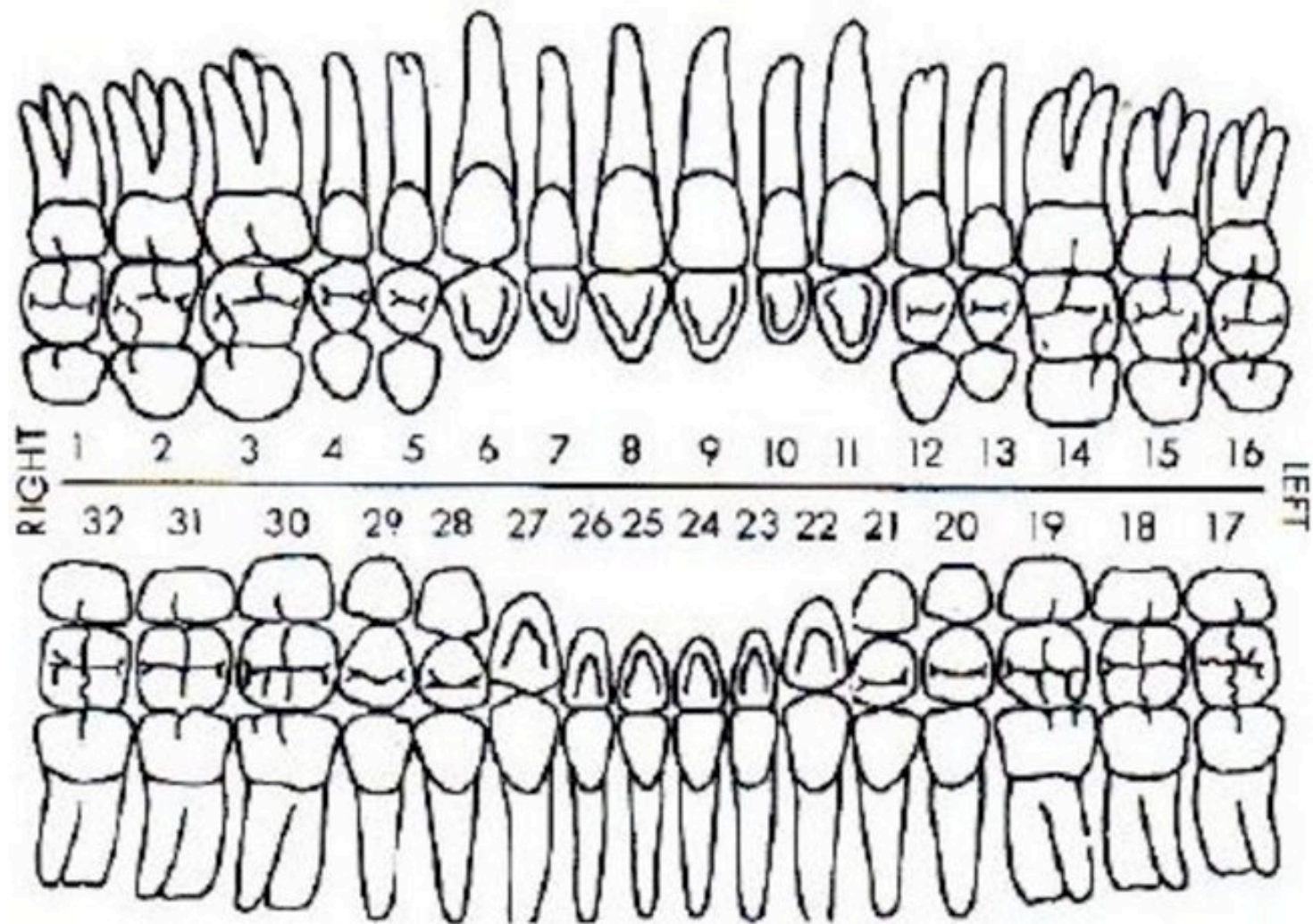


MANDIBULAR RIGHT



CAST IMAGES

1 set of mounted and 1 set of unmounted casts will be available during the review and examination



ODONTOGRAM

Must complete and submit to examiners following 1 hour case review; available during examination
Expected to represent an overview of comprehensive treatment plan



AMERICAN BOARD OF GENERAL DENTISTRY

Example Case Sequenced Treatment Plan

Standardized Treatment Planning Oral Examination

I. PROBLEMS/FINDINGS LIST AND DIAGNOSES

A. CHIEF COMPLAINT

- Pt presents with a primary chief complaint of “I have a gummy smile, my teeth look short.”
- Pt also states “I would like some of my back teeth replaced.”

B. MEDICAL/SYSTEMIC

- ASA II
- BP 142/82; Pulse 72; Respiration 14; Temp. 97.6°; BMI 31.5%
- Dx HTN
- Hx TIA 2015 due to thrombosis
- Dx GERD
- N/V sensitivity to codeine
- NKDA
- Medications:
 - Metoprolol 50mg
 - Lisinopril 10mg
 - Cimetidine 200mg
 - Aspirin 81mg
- 40+ pack-year tobacco smoking
- No alcohol consumption

C. ORAL PATHOLOGY

- 4x4mm well-circumscribed radiopacity #2 edentulous area with apparent normal trabeculation
 - DiffDx: idiopathic osteosclerosis, condensing osteitis, retained root
- 3x8mm well-circumscribed radiopacity resembling a retained root #15 edentulous area
 - DiffDx: Retained root, idiopathic osteosclerosis, condensing osteitis
- 1x2mm well-circumscribed radiopacity #1 mesial alveolar crest
 - DiffDx: Bony spicule/sequestrum, retained root
- Multiple, brown pigmented macules on the hard palate midline and posterior hard palate
 - DiffDx: Racial pigmentation, oral melanotic macule
- Well-defined mixed radiopaque/radiolucent lesion #20 periapical area with apparent cortical rim
 - DiffDx: Focal osseous dysplasia, condensing osteitis, aberrant trabeculation

D. RESTORATIVE

- Moderate caries risk
- Fair OH
- Apparent normal salivary flow and quality
- Generalized, mild, max and man spacing/open contacts with max anterior diastemata
- Open contact #28-29
- Incisal edge fracture #9
- #12 unsupported tooth structure and questionable restorability
- Dx: Carious dentition #1-O, #3-OL, #5-B, #12-MOL, #20-DO, #29-D

E. ENDODONTICS

- No current RCT
- #12 negative cold test (EndoIce®), no percussion sensitivity, no palpation sensitivity
- #12 caries near pulp
- Remaining dentition normal cold tests and no percussion sensitivity
- No periapical lesions
- Dx: #12 pulpal necrosis, normal apical tissues

F. PERIODONTICS

- Fair OH, pt states brushing 2x/day and irregular flossing
- Initial Modified O'Leary plaque index score = 71%
- Initial bleeding index/BOP = 36%
- Gen. mild plaque accumulation with mild interproximal calculus accumulation
- No probing depths >3mm
- No gingival recession
- Subgingival CEJ
- Mean CAL = -1.1
- Open contact #28-29 with food impaction
- Seibert Class I #4 edentulous area and maxillary left posterior area
- Seibert Class III bilateral mandibular posterior area
- Excessive gingival display max anterior
- Potential unesthetic or non-ideal gingival contours bilateral max posterior
- Potential biologic width/dentogingival complex compromise #12 mesial
- Dx: Generalized plaque-induced gingivitis
- Dx: Excessive gingival display max anterior due to altered passive eruption

G. OCCLUSION AND TMJ

- No TMJ issues or range of motion limitations
- CR not coincident with MIP
- Apparent bilateral group function occlusion in lateral excursive movements with anterior disclusion
- Supraeruption #1, 3 with #1 nearly occluding on man alveolar ridge
- MIO=45mm
- Decreased interarch space right posterior
- Bilateral posterior mild occlusal attrition with wear facets

H. ORAL SURGERY

- #1 no apical proximity to max sinus nor root anomalies
- #12 no apical proximity to max sinus, two roots
- Apparent adequate alveolar bone height max bilateral edentulous posterior area with no max sinus proximity
- Apparent adequate alveolar bone height man bilateral edentulous posterior area with no IAN proximity

I. ORTHODONTICS

- Angle Class I bilateral canine, no molar occlusion
- Anteriorly divergent profile with acute nasolabial angle
- Vertical facial third lengths approximately equivalent
- Generalized, mild, max and man spacing
- Overjet=2.5-3mm, Overbite=50%
- Max midline to right 1mm from facial midline
- Man midline to left 2mm from max midline
- Supraeruption #1, 3
- Mesial angulation #3

J. PROSTHODONTICS

- CR not coincident with MIP
- Apparent bilateral group function occlusion in lateral excursive movements with anterior disclusion
- Decreased interarch space right posterior
- Inadequate posterior occlusion, no molar occlusion
- Inadequate interarch space bilaterally for 2nd molar occlusion
- No posterior molar abutments max left and man bilateral
- Seibert Class I #4 edentulous area and maxillary left posterior area
- Seibert Class III bilateral mandibular posterior area
- Adequate vertical stops on premolars
- Good crown:root ratio of remaining dentition
- Good abutments #3, 5, 11, 13, 20, 29 for potential fixed or removable prosthesis
- Supraeruption #3 into occlusal plane
- Mesial inclination #3 with loss of space #4 edentulous area
- Undermined tooth structure #12 and questionable restorability
- Decreased clinical crown height max anterior with esthetic concerns
- No tori or exostoses
- Restore/replace # 4, 12, 14, 19, and 30 with a prostheses and/or implants

K. ESTHETICS

- Pt desires decreased gingival display max anterior upon smiling
- Generalized mild, max and man spacing/open contacts with max anterior diastemata
- Slight reverse smile right posterior due to supraeruption #3
- High smile line with 2-3mm exposed gingival tissue
- Normal lip length
- Normal lip mobility
- Height:Width ratio max central incisors approximately 0.9:1
- Dx: Excessive gingival display max anterior due to altered passive eruption

II. TREATMENT OBJECTIVE OVERVIEW

- The patient is ASA II with no significant contraindications to dental treatment
- Monitor the patient's HTN control throughout dental treatment
- Treatment will be provided utilizing evidence-based dentistry principles to restore the patient to optimal oral health, function, comfort, and esthetics
- A diagnostic mounting and waxing in CR will be completed to evaluate and provide a guide for the dental treatment plan – beginning with the end in mind
- The dental treatment plan will address the patient's chief complaint of excessive maxillary gingival display with an esthetic crown lengthening procedure
- The dental treatment plan will also address the patient's chief complaint of inadequate posterior occlusion with implant-supported crowns restored to first molar occlusion
- The patient will be restored in CR/CO with a mutually protected articulation occlusal scheme
- Discuss OHI and nutritional/dietary counseling to ensure patient understands etiology of disease and prevention of disease recurrence
- Eval the OH status via the Modified O'Leary plaque index
- Oral prophylaxis and operative treatment to eliminate sources of infection and caries
- Evaluate and determine restorability #12; Assuming #12 non-restorable plan to extract with ridge preservation
- The patient will then be re-evaluated to assess the progression of the treatment plan according to the patient's chief complaint, desire to continue with proposed treatment plan, and response to preparatory/diagnostic/disease control phase
- Obtain CBCT with radiographic guides to evaluate potential implant sites #4, 12, 14, 19, 30 and need for bone grafts
- Limited orthodontic treatment including temporary anchorage devices (TADs) to intrude and rotate/translate #3 distally to achieve adequate restorative space for implant-supported crowns #4, 30
- Esthetic crown lengthening of the maxillary arch due to altered passive eruption
- Placement of endosseous implants #4, 12, 14, 19, 30
- Equilibration to CR following occlusal device therapy
- Direct composite restorations #9 ILF for enamel fracture, #10-11 for diastema closure, and #29 M for closure of open contact to prevent food impaction
- Delivery of implant-supported POM crowns with custom abutments #4, 12, 14, 19, 30
- Fabricate occlusal device in CR
- Oral prophylaxis, implant, pathology, and occlusal device recalls/maintenance

III. SEQUENCED TREATMENT PLAN WITH RATIONALE

A. EMERGENT PHASE

| Treatment | Rationale |
|-------------------------|------------------|
| -No treatment indicated | -N/A |

B. SYSTEMIC/MEDICAL PHASE

| Treatment | Rationale |
|---|--|
| -Monitor the patient's BP; avoid long-term NSAID therapy | -Dx HTN controlled with medication, monitor HTN control and refer to physician as needed -Long-term NSAID therapy potential antagonist to HTN control and ASA therapy |
| -Limit dose/eval response to opioids | -Hx N/V to codeine, sensitivity to opioids |
| -Avoid 2 nd generation cephalosporin antibiotics, limit dose/eval response to penicillin-type and 1 st generation cephalosporins | -Hx N/V to Ceftin, sensitivity to 2 nd generation cephalosporins; 1-7% crossreactivity between penicillin-type antibiotics and cephalosporins |
| -Evaluate the multiple, brown pigmented macules on the hard palate midline/posterior hard palate for changes, the radiopacities in #2, 15 edentulous areas for changes, and the mixed radiopaque/radiolucent lesion #20 apical area for changes on a regular basis throughout the treatment | -DiffDx of pathology noted is not significant and no tx is indicated other than regular follow-up and eval for changes |

C. PREPARATORY/DIAGNOSTIC/DISEASE CONTROL PHASE

| Treatment | Rationale |
|--|--|
| -Comprehensive oral eval; periodontal charting | -Documentation of existing restorations, defective restorations, caries, periodontal status of dentition, oral cancer screening, and additional findings to develop problem list |
| -Max/man diagnostic alginate impressions; duplicate x 3; pour master casts in Type V dental stone and duplicates in Type IV dental stone | -Alginate: aqueous hydrocolloid; inexpensive, readily available, ease of use, good accuracy, sets quickly, hydrophilic, compatible with gypsum -Type V dental stone: excellent compressive strength -Type IV dental stone: less expansion (0.09%) than Type V, good compressive strength -Diagnostic casts used for diagnosis and tx planning, diagnostic waxing, radiographic guides/surgical stents, record bases |
| -CR record and protrusive record | -CR record made using leaf gauge and tongue to posterior palatal position technique: easy to adjust leaf gauge; objective evaluation of OVD; physiologic, repeatable, consistent, comfortable; deprogram neuromuscular apparatus -Protrusive record can be used to program condylar guidance/inclination on a Celenza Class 3b, Arcon, semi-adjustable articulator; safer record resulting in less steep/more shallow condylar inclination -Regisil PB used to make CR record and protrusive record due to accuracy, quick set, strength, not restrictive to mandibular movement, and ability to be trimmed/adjusted |
| -Facebow transfer | -Records and transfers the position of the maxillary arch relative to the cranial base and horizontal axis of rotation to an articulator |
| -Intraoral and extraoral clinical photos | -Documentation of pre-treatment oral status and to develop problem list; adjunct to develop tx plan |
| -Full-mouth series digital radiographs; panoramic digital radiograph; lateral cephalometric radiograph | -Documentation of hard tissue status, existing restorations, defective restorations, caries, periodontal status of dentition, endodontic status of dentition, pathology -Lateral cephalometric radiograph to eval skeletal and dental relationships prior to orthodontic tx |

| | |
|---|---|
| <p>-Diagnostic mounting in CR on Celenza Class 3b, Arcon, semi-adjustable articulator (Whip-Mix); program articulator with the protrusive record</p> | <p>-Diagnostic mounting used for simulation of jaw movements, analysis of occlusal plane, analysis of occlusion/disclusion, visualization of anatomy and restorations, analysis of abutment length/angulation, diagnostic preparations, analysis of restorative space, morphology of tissue and edentulous ridges, and analysis of edentulous spans</p> <p>-Simulates physiologic mandibular movement substituting mechanical equivalents for anatomic parts</p> <p>-Accepts facebow transfer and 80% of records where 75% of population is within 6mm of true horizontal hinge axis of rotation; protrusive record used to set condylar guidance/inclination using an average of 7 for Bennett angle/laterotrusion</p> <p>-Displays none-minimal arc of closure error in CR (condylar inclination and max occlusal plane angle remains the same with change in OVD)</p> <p>-Used for fixed and removable prostheses fabrication</p> |
| <p>-3-piece cast analysis</p> | <p>-Allows for analysis of instant equilibration, eval of anterior-posterior coupling, eval of mutually-protected articulation, and reasonableness of restoring in CR</p> <p>-Diagnostic equilibration to CR</p> |
| <p>-Diagnostic waxing in CR</p> | <p>-Evaluate occlusal plane and occlusion/disclusion of proposed tx plan</p> <p>-Evaluate anatomic contours of proposed tx plan</p> <p>-CR with a mutually-protected occlusal scheme eliminates eccentric interferences, decreases trauma from occlusion (attrition/cusp fractures), develops class 3 lever where anterior disclusion is anterior to muscles generating less force, stabilizes occlusion, interrupts potentially destructive forces to TMJ, and is a repeatable position</p> |
| <p>-Present and review the treatment plan with patient</p> | <p>- Gains patient acceptance and understanding according to the their chief complaint and desires</p> |
| <p>-Oral prophylaxis with supragingival scaling; fluoride treatment with 5% NaF varnish; continue to eval the OH status via the Modified O'Leary plaque index and assess bleeding index; discuss OHI and nutritional/dietary counseling; Rx: Prevident 5000 Plus dentifrice, brush teeth bid with pea-sized amount, expectorate</p> | <p>-Ensure patient understands etiology of disease process and prevention of disease reoccurrence</p> <p>-Removal of plaque/calculus to reduce oral bacterial load and the reservoir/niche for oral bacteria and/or toxins</p> <p>-Modified O'Leary plaque index to ensure patient displays adequate plaque removal, goal $\geq 80\%$</p> <p>-Assess bleeding index, $<10\%$ considered gingival health</p> <p>-Ensure low and infrequent carbohydrate/refined sugar consumption</p> <p>-Fluoride treatment with Vanish 5% NaF varnish; ease of handling, slowly dissolved by saliva, high-dose fluoride (22,500ppm), inhibits bacterial metabolism, inhibits demineralization, enhances remineralization</p> <p>-Fluoride treatment with Prevident 5000 Plus dentifrice; ease of use, consistent fluoride exposure (5000ppm), inhibits bacterial metabolism, inhibits demineralization, enhances remineralization</p> |

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|---|--|
| -Operative tx #3 OL amalgam | -#3 recurrent caries -Valiant Ph.D amalgam: admixture of lathe-cut and single composition spherical; high copper amalgam nearly eliminating Gamma 2 phase; contains palladium for early strength and reinforce gamma 1 phase; fine particle size for a dense set; ease of use and condensability |
| -Operative tx #5 B composite | -#5 carious lesion -Optibond FL DBA: 4 th generation, 3 step Etch and Rinse; 97% retention at 13 yrs, gold-standard for DBA; separate primer and adhesive; 48% filled with good bond strengths and less microleakage; radiopaque; use 37.5% phosphoric acid etch -Filtek Supreme Ultra composite: nanocomposite; 78% filled by weight; good strength, good wear resistance, and good esthetics/polishability; universal use for both anterior and posterior restorations; nanoclusters wear similar to adjacent resin matrix and are smaller than microfilled formed silica -Cure using a 3 rd generation LED dual-emission spectrum light; ease of use, efficient light, longevity; reportedly able to cure camphorquinone, PPD, and TPO photoinitiators |
| -Operative tx #20 DO amalgam, M pit composite | -#20 carious lesions -Amalgam, DBA, and composite as previously noted |
| -Operative tx #29 D composite | -#29 carious lesion -DBA and composite as previously noted |
| -Eval restorability #12; Extraction #12 with ridge preservation | -Extraction #12 due to following reasons: biologic width/dentogingival complex compromise (<3mm) on mesial resulting in a 1:1 crown root ratio post crown lengthening; insufficient tooth structure for ferrule (1-2mm) resulting in less retention for indirect restoration -Ridge preservation recommended for alveolar bone width post extraction <2mm to maintain ridge width -Bio-Oss Collagen bone graft: bovine bone combined with 10% porcine collagen; osteoconductive, ease of use, does not require membrane, does not require 2 nd surgical site; allow 6 months prior to implant placement -Rx: 500mg Amoxicillin q8h for 7 days; recommend systemic antibiotic to prevent infection of bone graft |
| -2% lidocaine with 1:100,000 epi local anesthetic | -Good efficacy, low allergic reaction, 60-90min pulpal and 3-4hrs soft tissue anesthesia -Use for routine and invasive/surgical procedures |
| -0.5% bupivacaine with 1:200,000 epi local anesthetic | -Good efficacy, high lipid solubility and protein binding resulting in 90-180 pulpal and 8hrs soft tissue anesthesia -Use for routine and invasive/surgical procedures where longer anesthesia is desired |
| -Rubber dam | -Isolation improves access, moisture control, reduces contamination, retraction of tissue, and color contrast -Use for operative procedures |
| -Rx: Ibuprofen 600mg q8h for 3-5 days prn pain | -Anti-inflammatory, decreased prostaglandin production, analgesic, good efficacy for oral pain -Rx for more invasive/surgical dental treatment procedures |

| | |
|---|--|
| -Rx: 0.12% chlorhexidine rinse bid for 2 weeks, expectorate | -Antimicrobial rinse, binds to bacterial cell wall and disrupts osmotic balance, decreases plaque accumulation -Recommend antimicrobial agent and plaque reduction of implant surgical site until epithelial healing has occurred -Rx for use following invasive/surgical procedures |
| -Rx: 500mg amoxicillin q8h for 7 days | -Inhibits bacterial cell wall synthesis, extended spectrum to include gram negative and/or mixed infections of oral origin, attains high plasma levels -Recommend systemic antibiotic to prevent infection of bone graft -Rx following bone graft procedures |
| -Rx: 2g amoxicillin 1 hr prior to procedure | -As previously noted -Rx as prophylactic antibiotic for primary endosseous implant placement |

D. RE-EVALUATION PHASE

| Treatment | Rationale |
|--|---|
| -Evaluate the OH status via the Modified O'Leary plaque index; discuss OHI and dietary counseling | -Ensure patient is maintaining good OH to eliminate and prevent the disease process |
| -Evaluate the corrective/restorative treatment plan following the preparatory/diagnostic/disease control phase | -Evaluate the patient response to the preparatory/diagnostic/disease control phase and ensure is conducive to the corrective/restorative treatment plan -Ensure the patient desires to continue with the proposed treatment plan |

E. CORRECTIVE/RESTORATIVE PHASE

| Treatment | Rationale |
|--|---|
| -Mountings completed in CR on Celenza Class 3b, Arcon, semi-adjustable articulator (Whip-Mix) | -As previously noted |
| -Obtain CBCT for potential implant sites #4, 12, 14, 19, 30 with radiographic guide in place -Evaluate 3-dimensional osseous structure relative to proposed implant site angulation and restoration; evaluate adequate bone present and need for bone graft | -Radiographic guide fabricated based on dx waxing -CBCT in iCAT with following settings: 16cm x 6cm, 0.2 voxel, 14.7sec – higher resolution, smaller FOV, less radiation exposure |
| -Limited orthodontic tx /TAD placement #3 | -Place band on #3 and B/L buttons on #1 -Mondeal Lomas Quattro 1.5x7mm TADs to provide sufficient anchorage to move #3 distally and intrude -Utilize #1 as additional anchorage to move #3 distally |
| -Orthodontic follow-up appointments q 2-4 weeks for 6 months; max essix-type retainer | -Change closed powerchains q2-4 weeks to maintain consistent, low force/pressure -Monitor movement #3 -Fabricate 2mm thick essix-type retainer to maintain position #3 until implant-supported crowns delivered |

| | |
|---|---|
| -Stage I endosseous implant placement #19 with bone graft/membrane | <ul style="list-style-type: none"> -Biomet3i, Full Osseotite Certain 4x11.5mm implant: titanium alloy, dual acid-etched surface (HCl, H2SO4) promotes osseointegration to implant platform, internal hex, internal anti-rotation -Autogenous bone graft: osteogenic, osteoinductive, osteoconductive; placed adjacent to implant -Bio-Oss bone graft: bovine bone graft; osteoconductive; placed adjacent to autogenous bone graft; ease of use, maintains space well, does not require 2nd surgical site -OsseoGuard membrane: resorbable bovine collagen membrane, resorption in approximately 26-38 weeks -Bone graft/membrane necessary for minimal 1-2mm thickness buccal bone adjacent to implant -Use surgical stent converted from radiographic guide to place implant at correct angulation and position determined from dx waxing -Place implant platform approximately 3-4mm apical to adjacent teeth buccal CEJ to allow for normal emergence profile and esthetics |
| -Stage I endosseous implant placement #30 | <ul style="list-style-type: none"> -Biomet3i, Full Osseotite Certain 4x11.5mm implant: titanium alloy, dual acid-etched surface (HCl, H2SO4) promotes osseointegration to implant platform, internal hex, internal anti-rotation -Use surgical stent converted from radiographic guide to place implant at correct angulation and position determined from dx waxing -Place implant platform approximately 3-4mm apical to adjacent teeth buccal CEJ to allow for normal emergence profile and esthetics |
| -#5-11 esthetic crown lengthening | <ul style="list-style-type: none"> -Excessive gingival display due to altered passive eruption -Position the gingival margin #5-11 in a more apical position at the CEJ -Osteoplasty and ostectomy to achieve 3mm between CEJ and coronal position of alveolar bone -#5-11 buccal/facial flap reflection only preserving lingual papilla to decrease risk of post-op recession and formation of black triangles |
| -1, 2, 4, 8 week POT for #5-11 esthetic crown lengthening | -Evaluate for normal healing and plaque removal |
| -Stage I endosseous implant placement #4; crown lengthening #3; extraction #1 | <ul style="list-style-type: none"> -Biomet3i, Full Osseotite Certain 4x11.5mm implant: titanium alloy, dual acid-etched surface (HCl, H2SO4) promotes osseointegration to implant platform, internal hex, internal anti-rotation -Use surgical stent converted from radiographic guide to place implant at correct angulation and position determined from dx waxing -Place implant platform approximately 3-4mm apical to adjacent teeth buccal CEJ to allow for normal emergence profile and esthetics |

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|--|--|
| -Stage I endosseous implant placement #12 and 14; crown lengthening #13 | -#12 Biomet3i, Full Osseotite Certain 4x11.5mm and #14 Biomet3i, Full Osseotite Certain 5x11.5mm implants: titanium alloy, dual acid-etched surface (HCl, H2SO4) promotes osseointegration to implant platform, internal hex, internal anti-rotation -Use surgical stent converted from radiographic guide to place implant at correct angulation and position determined from dx waxing -Place implant platform approximately 3-4mm apical to adjacent teeth buccal CEJ to allow for normal emergence profile and esthetics |
| -1, 2, 4, 8 week POT for stage I implant placements | -Evaluate for normal healing and plaque removal |
| -Max/man alginate impressions; occlusal device record; fabricate occlusal device in CR | -Fabricate max occlusal device using Ortho-Jet PMMA acrylic in CR and adjust to achieve mutually-protected articulation -Occlusal device record made in CR position open 2-3mm for adequate thickness of acrylic -Regisil PB used to make occlusal device record as previously noted |
| -Occlusal device therapy for CR equilibration | -Use of occlusal device therapy in CR to evaluate patient response to new mandibular position; evaluate patient comfort and function in CR position prior to irreversible CR equilibration -Allows for reversible treatment to a CR position with mutually-protected articulation |
| -CR equilibration following occlusal device therapy | -CR with a mutually-protected occlusal scheme eliminates eccentric interferences, decreases trauma from occlusion (attrition/cusp fractures), develops class 3 lever where anterior disclusion is anterior to muscles generating less force, stabilizes occlusion, interrupts potentially destructive forces to TMJ, and is a repeatable position -Complete CR equilibration of dentition following occlusal device therapy |
| -Operative tx #9 ILF | -#9 ILF enamel fracture -DBA and composite as previously noted |
| -Operative tx #10 DLF, 11 MLF | -#10-11 diastema, previously unrestored dentition, minimally invasive treatment ideal -DBA and composite as previously noted |
| -Operative tx #29 M interproximal | -#28-29 open contact with symptomatic food impaction, previously minimally restored dentition, minimally invasive treatment ideal -DBA and composite as previously noted |
| -Stage II implant surgery for healing abutment placement #4, 12, 14, 19, 30 | -#4, 12, 19, 30 Biomet3i Encode 4.1/5/4mm and #14 Biomet3i Encode 5/6/4mm healing abutments -Verified healing abutment seating via radiographs -Placement of healing abutments with slightly wider emergence profile -Position gingival margins with minimal 2mm band/collar of keratinized gingival tissue around healing abutment |
| -1, 2, 4 week POT for stage II implant surgery | -Evaluate for normal healing and plaque removal |

| | |
|---|--|
| -Implant level impression #4, 12, 14, 19, 30 | <ul style="list-style-type: none"> -Extrude VPS impression material: addition silicone; no by-product and therefore very dimensionally stable, good accuracy, improved wettability, thixotropic properties, compatible with gypsum -Open tray impression technique: allows impression coping to remain in impression material, less potential for error -Verified impression coping seating via radiographs -Allows for accurate reproduction of implant position relative to adjacent dentition |
| -Custom abutment try-in #4, 12, 14, 19, 30; CR record | <ul style="list-style-type: none"> -Jelenko Firmilay II type III gold custom abutments (73% Au) -Verified custom abutment seating via radiographs -Gold custom abutments allow for customization of emergence profile and margin location -Gold custom abutments result in a more pleasant, warm tone to underlying gingival tissue -Regisil PB used to make CR record as previously noted |
| -Delivery of custom abutments and implant-supported POM crowns #4, 12, 14, 19, 30 | <ul style="list-style-type: none"> -Biomet 3i Certain Gold-Tite hexed screw torqued to 20N-cm -Verified custom abutment seating via radiographs -Abutment access sealed with 0.12% CHX-soaked pellet and composite as previously noted -Cement using RelyX Luting Plus: RMGI cement; good tensile and compressive strength, ease of use, low microleakage, low solubility, low film thickness -POM crown fabricated from Olympia high noble metal (51.5% Au, 38.5% Pd) and IPS InLine PoM ceramic (leucite-reinforced); POM ceramic uses lost-wax technique with improved ability to control occlusion and contours |
| -Max/man alginate impressions; occlusal device in CR; fabricate occlusal device in CR | <ul style="list-style-type: none"> -Alginate impressions as previously noted -Fabricate max occlusal device using Eclipse resin-type material: less volumetric shrinkage than PMMA acrylics (3% vs 7%), ease of use, handles like wax, improved ability to control occlusion -Regisil PB used to make occlusal device record as previously noted |
| -Delivery max occlusal device in CR | -Occlusal device in CR as previously noted |

F. MAINTENANCE PHASE

| Treatment | Rationale |
|--|--|
| -Oral prophylaxis q 6 months; fluoride treatment with 5% NaF varnish; continue to eval the OH status via the Modified O'Leary plaque index and assess bleeding index; discuss OHI and nutritional/dietary counseling | -As previously noted |
| -Implant maintenance/recall and oral pathology recall q 12 months | -Evaluate gingival health/response and osseous structure/bone levels of implant; evaluate crown and abutment integrity -Evaluate/monitor changes of previously noted oral pathology lesions |
| -Occlusal device recall q 6 months | -Evaluate fit and occlusion/disclusion to ensure a mutually-protected articulation occlusal scheme is maintained |

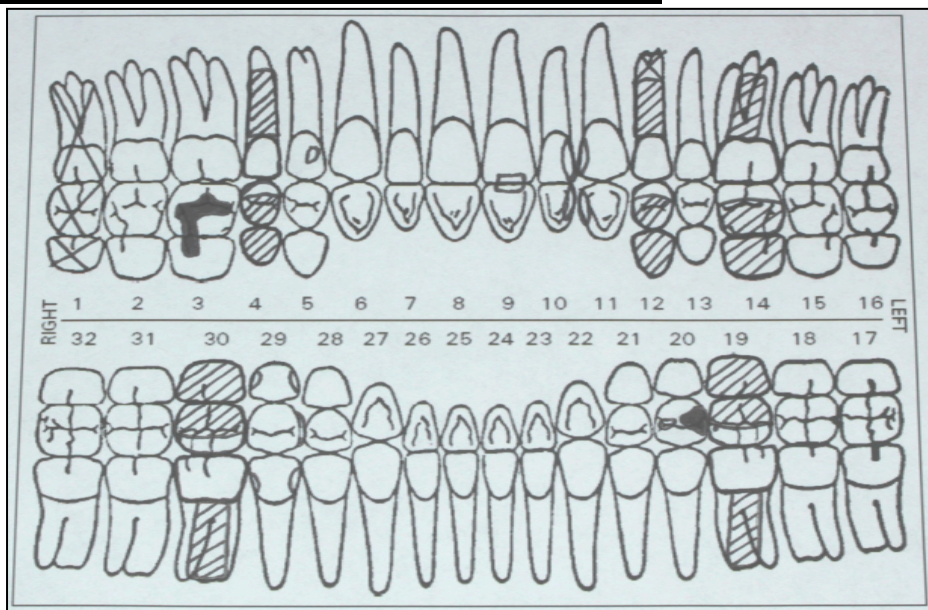
IV. PROGNOSIS

- Periodontal prognosis is good
- Restorative prognosis is good
- Esthetic prognosis is good with the ability to apically position the maxillary gingival margin via esthetic crown lengthening, closing the diastemata with direct composite restorations, and replacing the missing maxillary teeth with implant-supported crowns
- Prosthetic/occlusal prognosis is good with the ability to attain first molar occlusion with implant-supported crowns in CR with mutually-protected articulation and use of an occlusal device

V. MEDICAL/SPECIALTY CONSULTS

- N/A

VI. ODONTOGRAM OF TREATMENT PLAN



#5-11, 13 esthetic crn lengthening
#3 orthodontic tx with TADs