

**NEW YORK CITY COLLEGE OF
TECHNOLOGY
DEPARTMENT OF DENTAL HYGIENE
DEN 2300 CASE PRESENTATION**

Angel Lee

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Patient Profile

- Mr. L is a 68 year old Asian male and was presented for an initial exam at the NYCCT Dental Hygiene Clinic.
- He is currently married and has recently retired. He has dental insurance and is financially covered to receive oral hygiene services every 6 months.
- His last oral hygiene appointment was in March 2018 but his last visit to the dental office was in August 2018 for an implant. He believes that 4 bitewings were taken at this time. However, his radiographs were not presented during his visit at NYCCT.
- Patient reports that he brushes 2x day with a soft manual toothbrush and with Colgate Total toothpaste. He uses an interdental brush occasionally because his dentist gave him one to clean his open contacts.



Chief Complaint

- CC: “I just want my teeth cleaned.”
- Patient can see supragingival calculus on his mandibular anterior teeth and would like them removed along with his generalized yellow stains.



Health History Overview

- Initial Vitals: BP 125/79 Pulse 102
- ASA II
- Medical Conditions: Patient was diagnosed with hypertension and hyperlipidemia by his primary care physician
- Current Medications:
 - Atenolol (for hypertension) 25 mg 1 tab per day
 - Atorvastatin calcium (for hyperlipidemia) 20 mg 1 tab per day
 - Patient reports that he has been consuming these drugs for more than 10 years
- Dental Complications: Patient also presents with three implants (#19, 21, 30)

Explanation of Hypertension

❖ What is Hypertension?

- Blood pressure is defined as the force of one's blood pushing against the walls of his/her blood vessels. ¹
- Hypertension or high blood pressure means that the blood pressure is consistently too high. ²

❖ What are the Signs and Symptoms?

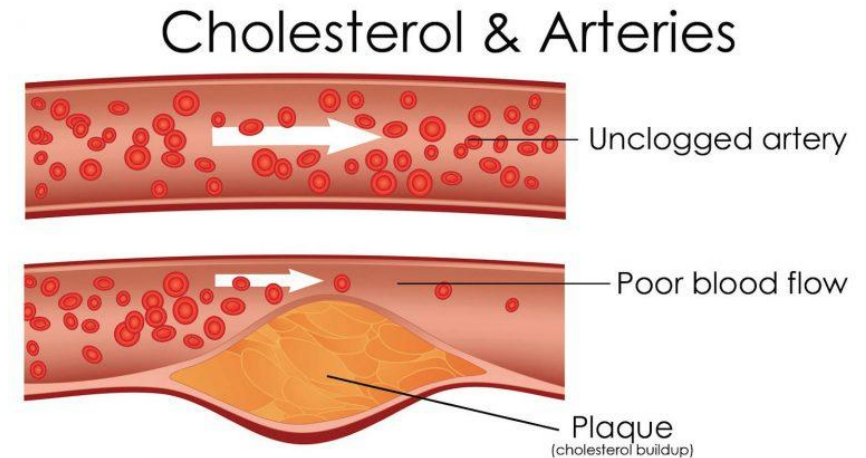
- “Silent Killer” = often no warning signs or symptoms. ³
- Rarely, hypertension can cause headache and vomiting symptoms. ³

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120 – 129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130 – 139	or	80 – 89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

Explanation of Hyperlipidemia

❖ What is Hyperlipidemia?

- Cholesterol is a “waxy substance” and is needed to build cells in the body. ⁴
- Comes from two sources⁴:
 - The liver
 - Ingested foods
- Cholesterol matters because it circulates in the blood.
 - \uparrow Cholesterol = \uparrow Health Risk
- Cholesterol can combine with other substances to form a thick, hard deposit in the arteries called plaque. ⁵
- Atherosclerosis \rightarrow heart attack or stroke



❖ Behaviors that Negatively Affect Cholesterol Levels⁶:

- Unhealthy diet
- Lack of exercise
- Smoking/tobacco
- Excess weight

How are Hypertension and Hyperlipidemia managed?

❖ **The prevention, treatment, and management of both conditions are quite similar:**

- Eating a heart-healthy diet: more fruits, vegetables, whole grains, poultry, fish, and nuts – instead of sugary foods and beverages⁷
 - Hypertension can be managed by reducing sodium intake⁷
 - Hyperlipidemia can be managed by increasing fiber intake⁸ and pick good fats over bad fats⁹
- Becoming more physically active and exercise
- Quit smoking
- Losing weight if already overweight or obese
- Drugs and medications



How does Mr. L manage his conditions?

❖ Mr. L manages his conditions by:

- Eating as healthy as possible – limiting sodium intake and using limited amount of oils while cooking
- Monitoring his blood pressure every morning
- Take medications:
 - Atenolol (for hypertension) 25mg 1 tab per day
 - Atorvastatin calcium (for hyperlipidemia) 20mg 1 tab per day



Drug Effects on Dental Treatment¹⁰:


❖ Atenolol:

- Cardioselective beta-blocker
- Can be safely used with local anesthetic containing vasoconstrictor

❖ Atorvastatin Calcium:

- Antilipemic agent, HMG-CoA reductase inhibitor
- Can induce myopathy
- May impede on toothbrushing ability

Dental Hygiene Management for Hypertensive Patients

- Monitor patient's blood pressure reading at every new and recare visits.
 - In NYCCT dental hygiene clinic, the patient's BP must be taken at every revisit if s/he is known to be a hypertensive or had an elevated reading at the initial visit.
 - Readings at or above 180/110 are contraindications for treatment. ¹¹ 
- New guidelines suggest recommendations for how health professionals should take BP, stress the importance of using validated devices, allow patients to rest for five minutes prior to taking their BP, and be aware of “white-coat hypertension” ¹² – elevated BP due to having anxiety at a clinical setting.
- Be aware of the potential dental effects of anti-hypertensive drugs.
- Educate patient on the importance of monitoring his/her BP and the impact it can have on his/her systemic health. ¹³

Dental Hygiene Management for Patients with Hyperlipidemia

- ❖ Oral Effects: People with high cholesterol have too much lipids in their blood. However, there are no oral effects of high cholesterol. ¹⁴
- ❖ Dental Management: Some drugs used to treat hyperlipidemia may cause patient to feel faint after getting up from the dental chair. ¹⁴ Therefore, adjusting the chair position slowly is recommended.
- ❖ Dental Implications: Side effects of antihyperlipidemics have little impact on dental hygiene management, but some may have potential drug interactions with certain antimicrobials.
 - For example, erythromycin and ketoconazole should be avoided as they may elevate the serum levels of statins → increase risk for myopathy and possible hepatotoxicity. ¹⁵
 - Statins may cause increased levels of liver enzymes. ¹⁶

Comprehensive Assessments

Summary of Clinical Findings

- Extraoral/Intraoral Examination: Patient presents with coated, fissured, and bilaterally scalloped tongue. He also had mild bilateral cheek biting.
- Occlusion: Bilateral class I occlusion, overbite 20%, overjet 5mm.
- Deposits:
 - Generalized subgingival calculus at interproximal areas.
 - Localized supragingival calculus at the mandibular anterior lingual.
 - Generalized visible plaque.



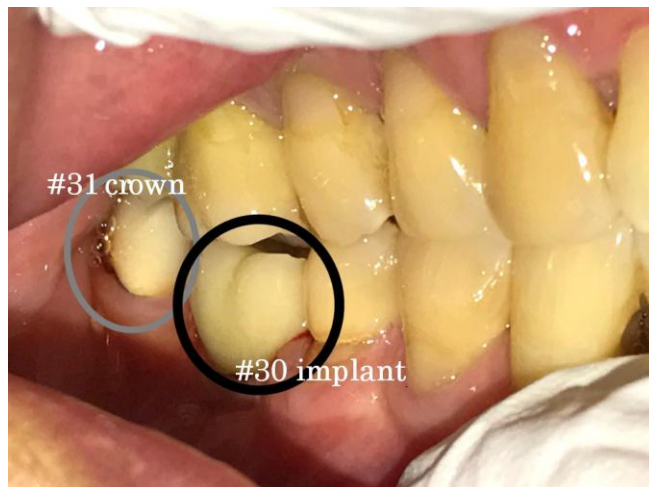
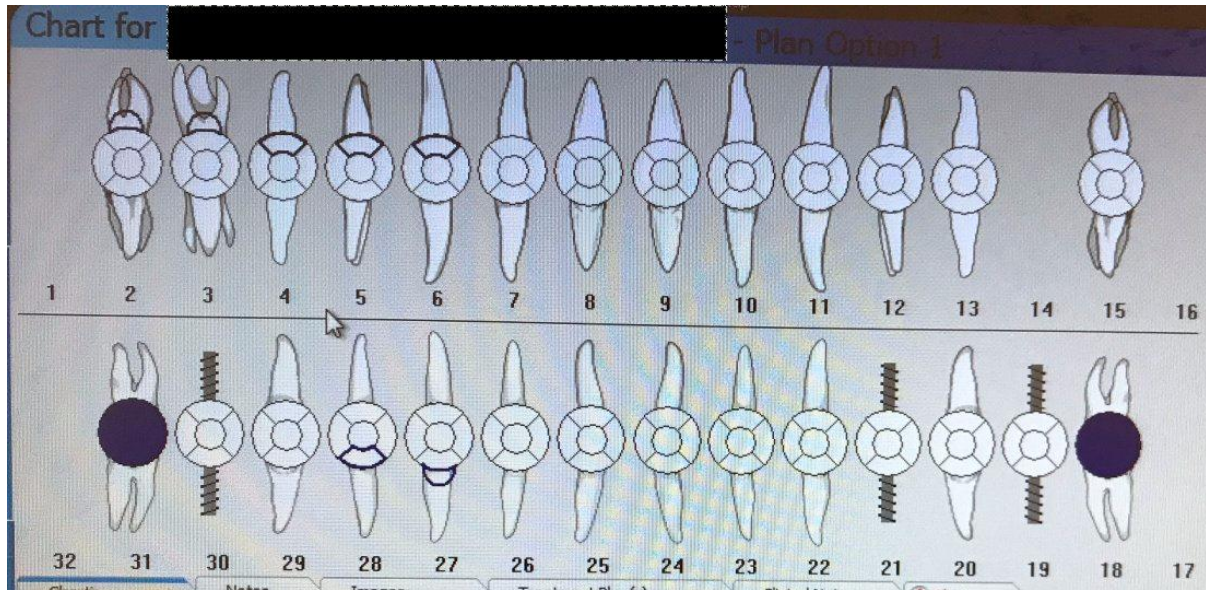
Summary of Clinical Findings

➤Dental:

- #14 is missing.
- #1, 16, 17, 32 are not clinically present (radiographs are not available to confirm).
- Class V composite restorations on the buccals of #2, 3, 4, 5, 6, 27, 28.
- Porcelain-infused crowns on #18 and 31.
- Implants are #19, 21, 30.
- Localized moderate attrition on #8, 9, 22 – 27.
- Note: Patient was fully aware of the locations of his implants and crowns. However, if the patient was unsure, then radiographs were definitely needed to verify those locations.



Dental Charting and More Intraoral Photos



Caries Risk Assessment

ADA American Dental Association®
America's leading advocate for oral health

Caries Risk Assessment Form (Age >6)

Patient Name: [REDACTED]

Birth Date: [REDACTED] Date: [REDACTED]

Age: [REDACTED] Initials: [REDACTED]

		Low Risk	Moderate Risk	High Risk
Contributing Conditions		Check or Circle the conditions that apply		
I.	Fluoride Exposure (through drinking water, supplements, professional applications, toothpaste)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
II.	Sugary Foods or Drinks (including juice, carbonated or non-carbonated soft drinks, energy drinks, medicinal syrups)	Primarily at mealtimes <input checked="" type="checkbox"/>		Frequent or prolonged meal exposures/day <input type="checkbox"/>
III.	Caries Experience of Mother, Caregiver and/or other Siblings (for patients ages 6-14)	No carious lesions in last 24 months <input type="checkbox"/>	Carious lesions in last 7-23 months <input type="checkbox"/>	Carious lesions in last 6 months <input type="checkbox"/>
IV.	Dental Home: established patient of record, receiving regular dental care in a dental office	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
General Health Conditions		Check or Circle the conditions that apply		
I.	Special Health Care Needs (developmental, physical, medical or mental disabilities that prevent or limit performance of adequate oral health care by themselves or caregivers)	<input checked="" type="checkbox"/> No	Yes (over age 14) <input type="checkbox"/>	Yes (ages 6-14) <input type="checkbox"/>
II.	Chemo/Radiation Therapy	<input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes
III.	Eating Disorders	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	
IV.	Medications that Reduce Salivary Flow	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	
V.	Drug/Alcohol Abuse	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	
Clinical Conditions		Check or Circle the conditions that apply		
I.	Cavitated or Non-Cavitated (incipient) Carious Lesions or Restorations (visually or radiographically evident)	No new carious lesions or restorations in last 36 months <input checked="" type="checkbox"/>	1 or 2 new carious lesions or restorations in last 36 months <input type="checkbox"/>	3 or more carious lesions or restorations in last 36 months <input type="checkbox"/>
II.	Teeth Missing Due to Caries in past 36 months	<input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes
III.	Visible Plaque	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	
IV.	Unusual Tooth Morphology that compromises oral hygiene	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	
V.	Interproximal Restorations - 1 or more	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	
VI.	Exposed Root Surfaces Present	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	
VII.	Restorations with Overhangs and/or Open Margins; Open Contacts with Food Impaction	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	
VIII.	Dental/Orthodontic Appliances (fixed or removable)	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	
IX.	Severe Dry Mouth (Xerostomia)	<input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes
Overall assessment of dental caries risk:		<input type="checkbox"/> Low	<input type="checkbox"/> Moderate	<input checked="" type="checkbox"/> High
Patient Instructions: - 1.1% NaF toothpaste 2x day Optional 0.2% NaF rinse daily - OTC 0.05% NaF 2x day				

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There is no clinical or radiographic evidence of caries present. However, there are many risk factors contributing to caries.

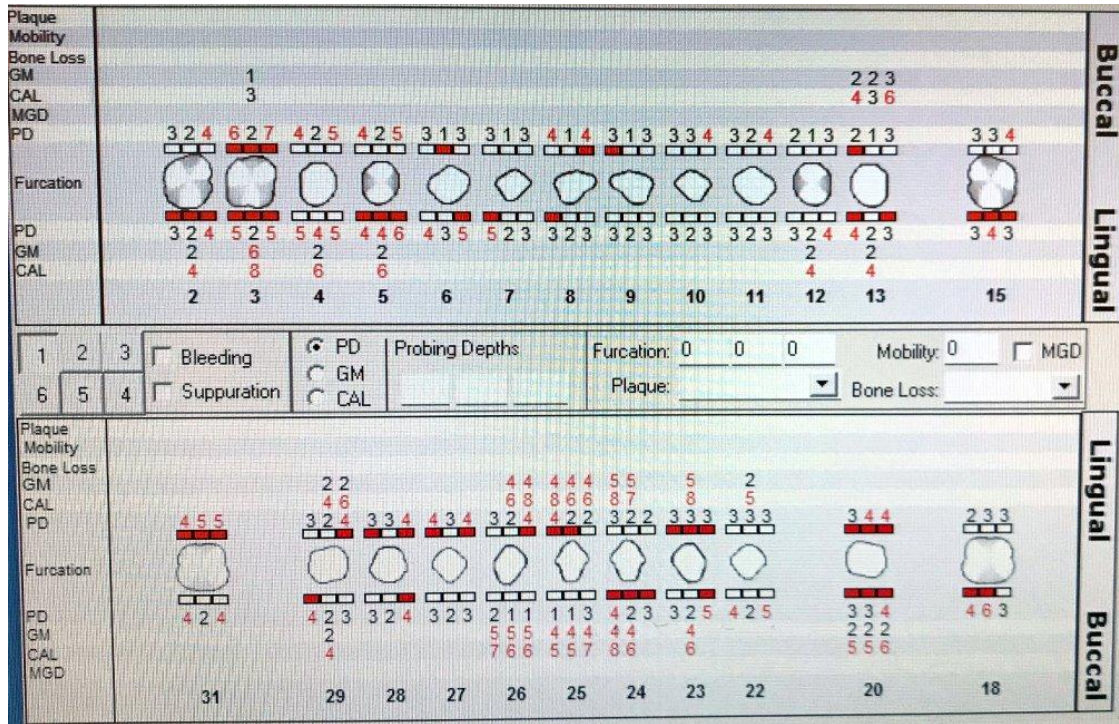
Gingival Description and Periodontal Status

- Gingival Description: Gingiva is generalized pink with erythematous margins. The shape is margin is generalized slightly rounded with localized rolled edge on the mandibular linguals. The shape of papilla fills the interproximal areas of the maxillary and mandibular posteriors with localized blunted papilla at the maxillary and mandibular anteriors. The texture of gingiva is generalized smooth and shiny and consistency is leathery.
- Patient was classified as perio type III.
- Generalized chronic moderate periodontitis.
- Generalized mild BOP.
- Generalized recession.
- Localized 6-8mm CAL at #22 – 26
- with some mobility involvement.



Periodontal Charting

Note: Implants of #19, 21, 30 do not display on the periodontal chart. #19 was placed in Aug 2018, so it was not assessed but #21 and 30 were assessed with a plastic probe – only buccal and lingual surfaces were probed due to them being placed for over 1 year. All probed sites were 1mm.



All implants were palpated, assessed for mobility, and for calculus/cement. Results are within normal range and tissue is well adapted. However, it would have been better if radiographs were available to evaluate any potential bone loss and location of implant compared to height of bone. Therefore, patient was recommended to see general dentist to have periodic exams of his implants.



Dental Hygiene Diagnosis

- Risk for Caries: Patient is at **high risk for caries** due to having multiple risk factors outweighing protective factors. The risk factors include having xerostomia, visible plaque, and exposed root surfaces.
- Periodontal Diagnosis: **Type III active periodontitis** due to having generalized moderate CAL of 4-7 mm, moderate BOP, and clinical evidence of moderate bone loss especially at the mandibular anterior teeth.



Dental Hygiene Care Plan

- Patient Management: Monitor patient's BP at the beginning of every visit because he is a known hypertensive.
- Appointment Scheduling: Patient is only available within a two week time-frame, so visits will be relatively consecutive.
- Dietary Guidance: Patient reports he has dry mouth and stated that he seldom drinks water. I would advise him to drink more water to see if it can alleviate his dry mouth.
- Oral Self-Care: Patient reports that he used to scrub his teeth as evident from his Class V restorations. Therefore, I would recommend the rolling method along with string floss and mouth rinse for dry mouth.
- Debridement: Ultrasonic and hand instruments will be used on patient's natural dentition. Implant scalers will be used on patient's implants.
- Pain Management: Patient reports that he never needed pain management during his previous dental cleanings, so no pain management will be recommended.

GOALS →

Dental Hygiene Care Plan: Goals

1. Patient will reduce plaque score by 50% by 3 month recare.
2. Patient will report using interdental brush dipped in Colgate Peroxyl 1x day by 3 month recare.
3. Patient will report using electronic toothbrush 1x day by 3 month recare.



Consent for Treatment

Visit 1: <u>10/24</u> (Date)	Visit 2: <u>10/31</u> (Date)	Visit 3: <u>11/2</u> (Date)	Visit 4: _____ (Date)
Patient Education: <input checked="" type="checkbox"/> TB say <u>rolling</u> <input checked="" type="checkbox"/> Interdental Aid <u>superfloss</u> <input checked="" type="checkbox"/> Toothpaste <u>1.1 to NAF</u> <input checked="" type="checkbox"/> Rinse <u>0.15% NAF</u>	Patient Education: <input type="checkbox"/> TB <input type="checkbox"/> Interdental Aid <input type="checkbox"/> Toothpaste <input type="checkbox"/> Rinse	Patient Education: <input type="checkbox"/> TB <input type="checkbox"/> Interdental Aid <input type="checkbox"/> Toothpaste <input type="checkbox"/> Rinse	Patient Education: <input type="checkbox"/> TB <input type="checkbox"/> Interdental Aid <input type="checkbox"/> Toothpaste <input type="checkbox"/> Rinse
Radiographs: <input type="checkbox"/> Digital <input type="checkbox"/> Film <input type="checkbox"/> FMS <input type="checkbox"/> BWS (V/H) <input type="checkbox"/> Pan	Radiographs: <input type="checkbox"/> Digital <input type="checkbox"/> Film <input type="checkbox"/> FMS <input type="checkbox"/> BWS (V/H) <input type="checkbox"/> Pan	Radiographs: <input type="checkbox"/> Digital <input type="checkbox"/> Film <input type="checkbox"/> FMS <input type="checkbox"/> BWS (V/H) <input type="checkbox"/> Pan	Radiographs: <input type="checkbox"/> Digital <input type="checkbox"/> Film <input type="checkbox"/> FMS <input type="checkbox"/> BWS (V/H) <input type="checkbox"/> Pan
Debridement: <u>LRQ</u> <input type="checkbox"/> Quadrant <u>4, 1, *</u> <input type="checkbox"/> Whole Mouth	Debridement: <u>ULQ LLQ</u> <input type="checkbox"/> Quadrant <u>2, 3, *</u> <input type="checkbox"/> Whole Mouth	Debridement: <input type="checkbox"/> Quadrant <u>3</u> <input type="checkbox"/> Whole Mouth	Debridement: <input type="checkbox"/> Quadrant _____ <input type="checkbox"/> Whole Mouth
Pain Management: <input type="checkbox"/> Oraqix <input type="checkbox"/> Local Anes. _____	Pain Management: <input type="checkbox"/> Oraqix <input type="checkbox"/> Local Anes. _____	Pain Management: <input type="checkbox"/> Oraqix <input type="checkbox"/> Local Anes. _____	Pain Management: <input type="checkbox"/> Oraqix <input type="checkbox"/> Local Anes. _____
Coronal Polish: <input type="checkbox"/> Agent _____ <input type="checkbox"/> Air Polisher Agent _____	Coronal Polish: <input type="checkbox"/> Agent <u>engine polish w/ Agent</u> <input type="checkbox"/> Air Polisher Agent _____	Coronal Polish: <input type="checkbox"/> Agent _____ <input checked="" type="checkbox"/> Air Polisher Agent <u>glycine</u>	Coronal Polish: <input type="checkbox"/> Agent _____ <input type="checkbox"/> Air Polisher Agent _____
Other: <input type="checkbox"/> Topical Fluoride: _____ <input type="checkbox"/> Arestin: _____ <input type="checkbox"/> Sealants: _____ <input type="checkbox"/> Impressions _____	Other: <input checked="" type="checkbox"/> Topical Fluoride: <u>5% NaF varnish</u> <input type="checkbox"/> Arestin: _____ <input type="checkbox"/> Sealants: _____ <input type="checkbox"/> Impressions _____	Other: <input type="checkbox"/> Topical Fluoride: <u>5% NAF</u> <input type="checkbox"/> Arestin: _____ <input type="checkbox"/> Sealants: _____ <input type="checkbox"/> Impressions _____	Other: <input type="checkbox"/> Topical Fluoride: _____ <input type="checkbox"/> Arestin: _____ <input type="checkbox"/> Sealants: _____ <input type="checkbox"/> Impressions _____

The findings of my assessments were explained to me and I authorize my student dental hygienist to perform the procedures delineated in the treatment recommendations above and I understand that modifications to care and photographs may be required based on my individual needs. A thorough discussions with my student hygienist and/or clinical faculty supervisor, the nature, purpose timing and cost of these procedures, available treatment alternatives, and the advantages and disadvantages of each, including no treatment was discussed. I understand that additional treatment and/or referrals may be deemed appropriate in order to treat my oral condition. I understand that the dental hygiene clinic has the right to discontinue treatment and deny appointment scheduling after (2) missed appointments within the academic semester. In this event, I will be provided with a list of regional hospitals/clinics for continuation of care. I have read and understand the above statement and all my questions concerning my treatment have been satisfactorily answered.

Patient/Guardian

Student Clinician

Attending Faculty

Date

Form to be scanned in patient record and dispensed to patient

Implementation of Treatment

❖ Preventive Services

- Oral Self-care Instructions: Pt demonstrated rolling method, flossing with Superfloss, and using interdental brush at wide contacts. Note: At first, patient refused to use electronic toothbrush and requested a super soft toothbrush. However, after seeing that he was still missing a lot of areas after disclosing, he said he would look into purchasing an electronic toothbrush.
- Fluoride Therapies: 5% NaF varnish was applied.
- Antimicrobials: Since patient had dry mouth, 20mL of Colgate Hydris was given as preprocedural rinse at every visit.
- Dietary Guidance: Patient was suggested to drink more water during the day to see if it would alleviate his dry mouth.

Implementation of Treatment

❖ Debridement Performed

- Three visits (V1, V2, V3) were used to debride Mr. L's full dentition.
- During V1, ultrasonic and hand instruments were used to debride LRQ. Since there was no visible supracalculus on implant #30, only implant scalers were used.
- During V2, ultrasonic and hand instruments were used to debride ULQ and LLQ. Similarly, only implant hand instruments were used to debride implants #19 and #21.
- During V3 (last visit), ultrasonic and hand instruments were used to debride URQ. Then, full dentition was engine polished with fine grit paste.
- Patient was very compliant and no pain management was needed.
- Extraoral and cross arch fulcrumming were used.

Evaluation of Care – Outcome of Care - Prognosis

<u>Goal Statements</u>	<u>Prognosis</u>
1. Patient will reduce plaque score by 50% by 3 month recare.	Goal to reduce plaque score by 50% <u>will be met</u> because patient was highly motivated during patient education session.
2. Patient will report using interdental brush dipped in Colgate Peroxyl 1x day by 3 month recare.	Goal to use interdental brush dipped in Colgate Peroxyl <u>will be met</u> because patient already uses a interdental brush and is willing to try Colgate Peroxyl.
3. Patient will report using electronic TB 1x day by 3 month recare.	Goal to use electronic TB <u>will be partially met</u> because patient is still loyal to his manual toothbrush. He stated that he is willing to try using the electronic toothbrush but he wanted to practice more with his manual toothbrush first.

Referrals

Patient was not given any referrals.

Continued Care Recommendations

- ❖ Recommended Recare Interval: **3 months**
- ❖ Patient was recommended for a three-month recare because patient has:
 - ❖ Chronic periodontitis and needs periodontal maintenance therapy.
 - ❖ Three implants and needs implant maintenance therapy with adequate home care.
 - ❖ Dry mouth and is at high risk for caries. According to CAMBRA Clinical Guidelines,¹⁷ those who are at high risk for caries are recommended for a 3 month recare.
- ❖ Continued Oral Home Care Recommendations:
 - ❖ Use electronic toothbrush 2x day with 1.1% NaF toothpaste
 - ❖ Use interdental brush 1x day
 - ❖ OTC 0.05% NaF rinse 1x day



Final Reflection

❖ Positive Thoughts Only!

- ❖ Overall, I was very pleased with the outcome of this case as Mr. L was one of my very first patients who presented with systemic conditions.
- ❖ I was happy that I was able to complete his case in four visits as planned, but there were a few areas that I could have done better.



Always Room for Improvement →

Final Reflection

❖ What I Could Have Done Better:

- ❖ Treatment Implementation: Since Mr. L presented with three implants and had significant biofilm, I thought that he would benefit from air polishing with glycine powder. However, the air polisher was not available during his last visit – so I did engine polishing with fine grit paste instead.
- ❖ Patient Education: Initially, I taught Mr. L the rolling toothbrushing technique as he used to scrub his teeth. I wanted to recommend the electronic toothbrush when we first did patient education, but he was very loyal to his manual toothbrush. It was not until his last visit that he said he would consider purchasing one after seeing minimal improvement of his plaque score. Looking back, I should have been more assertive in my home care recommendations.
- ❖ Time Management: Even though I was pleased to be able to complete Mr. L's case in 4 visits, perhaps I could have finished his case in 3 visits if I was able to manage my time and scale more efficiently. Therefore, I will continue practicing and honing my skills!

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Picture Sources

- Slide 2: <http://clipart-library.com/clipart/95367.htm>
- Slide 5: <http://www.heart.org/en/health-topics/high-blood-pressure/the-facts-about-high-blood-pressure/what-is-high-blood-pressure>
- Slide 6: <http://www.healthgoesup.com/articles/221/1/how-to-prevent-high-cholesterol-1.html>
- Slide 7: <https://loinhacviet.info/explore/family-clipart-exercise/> and <http://clipart-library.com/clipart/8cA69e7Ki.htm>
- Slide 8: <http://clipart-library.com/clipart/264416.htm>
- Slide 9: <http://clipart-library.com/clipart/560824.htm>
- Slide 18: <http://clipart-library.com/clipart/8TEbR6Ejc.htm>
- Slide 20: <http://clipart-library.com/clipart/n1117982.htm>
- Slide 26: <http://clipart-library.com/clipart/pcoAgKzKi.htm>
- Slide 27: <http://clipart-library.com/clipart/kT8okoaxc.htm>
- All photos of patient's dentition were taken with patient's consent.