# New York City College of Technology Department of Dental Hygiene DEN 2300 Case Presentation

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### Patient Profile

- Mrs. Z. is a 56 Year-old Asian Female
- Lower-class, lives in Brooklyn, single mom who lives with her son. She currently has no dental insurance.
- Her last dental exam was over 3 years ago. 3PA were taken at that time, Maxillary Anterior Bridge was done.
- ◆Patient states brushing 2 times per day with a soft toothbrush, using Colgate toothpaste, no tongue cleaner, flosses occasionally. No oral piercing.

### **Health History Overview**

Blood Pressure: 139/83/p76, 2nd Reading: Bp 133/83/p75

**ASAII** 

Medical Conditions: (last Medical exam was 11/19/18)

- Hyperthyroid
- High Blood pressure
- Diabetes type 2
- Penicillin allergy

### **Current Medications:**

- Propylthiouracil 50mg tab/day
- Aspirin EC 81 mg tab/day
- Metformin HCL 850 mg tab/day

### **Chief Complaint**

- Patient stated that "My mouth is very dirty and wondering how to brush correctly."
- She also stated that she has lots stains in the tongue side. Possibly due to that she likes to drink tea after meal and can the stain be removed?
- She concerned that her medical condition might affect her teeth health.

### Penicillin Allergy

Normally, Penicillin is prescribed for treating bacterial infection. And the chances that Penicillin being recognized and attracted Penicillin by our immune system is low.

Symptom might include: Hives, a skin rash, fever, itchy skin or eyes, congestion, and swelling in the mouth, shortness of breath, and throat.

Mrs.Z stated that she will develop face rash, swelling when penicillin in her body systemically.

### How Penicillin allergy being managed

WIthdraw of the drug, and discontinue use of penicillin.

Then, Administer Antihistamines, as well as corticosteroids to reduce inflammation.

In case of anaphylaxis develop: have epinephrine injection ready to keep up blood pressure and offer oxygen support.

### Sources Used

Penicillin allergy. (2019, December 5). Retrieved from <a href="https://www.mayoclinic.org/diseases-conditions/penicillin-allergy/symptoms-causes/syc-20376222">https://www.mayoclinic.org/diseases-conditions/penicillin-allergy/symptoms-causes/syc-20376222</a>.

Blumenthal, K. (2019, February 15). Do you really have a penicillin allergy? Retrieved from <a href="https://www.health.harvard.edu/blog/do-you-really-have-a-penicillin-allergy-2019022616017">https://www.health.harvard.edu/blog/do-you-really-have-a-penicillin-allergy-2019022616017</a>.

# Dental Hygiene Management : Penicillin allergy

Contraindications to dental hygiene care?

Absolute not to use Penicillin for preventive measure to against bacteremia infection.

Management strategies: use different class of antibiotic

Clindamycin: 600 mg orally or 600 mg intravenously. 1 hour prior to the dental procedure.

### Sources Used

Martin, L. J. (2018, July 9). Penicillin Allergy: Symptoms, Tests, Treatment and Desensitization. Retrieved from <a href="https://www.webmd.com/allergies/penicillin-allergy#1">https://www.webmd.com/allergies/penicillin-allergy#1</a>.

Penicillin Allergy FAQ: AAAAI. (n.d.). Retrieved from <a href="https://www.aaaai.org/conditions-and-treatments/library/allergy-library/penicillin-allergy-faq">https://www.aaaai.org/conditions-and-treatments/library/allergy-library/penicillin-allergy-faq</a>.

### **Hyperthyroid**

- Hyperthyroidism, is due to an excess of triiodothyronine (T3) and tetraiodothyronine (T4, also known as Thyroxine)
- ●Its symptoms and signs vary from person to person and may include irritability, muscle weakness, inability to fall asleep, tachycardia, fever, diarrhea, goiter, and weight loss. Symptoms are less typical in older or pregnant women

# How Hyperthyroidism is Managed

<u>Radioactive iodine</u>: This Radioactive iodine can cause thyroid gland shrink. This medication might have some symptome side effects, but the side effects will goes away within months. As a result, thyroid gland become smaller.

Anti-thyroid medications: Propylthiouracil, his medication reduce thyroid gland from making excess T3 and T4. This treatment may last more than a year. This drug can cause liver damage and allergic reaction for some people.

<u>Beta blockers</u>: Although, it can not treat hyperthyroidism. It can relief the symptoms of hyperthyroidism, for example, tachycardia, tremor.

<u>Surgery (thyroidectomy):</u> If the Radioactive iodine is not good for you due to your other medical condition and you can not tolerate anti-thyroid drugs. Then thyroidectomy might be indicated. However, there is a chance to hurt your vocal cords and parathyroid glands.

My patient currently is taking Propylthiouracil 50mg tab/day since being diagnosed hyperparathyroidism.

### Sources Used

Hyperthyroidism (overactive thyroid). (2018, November 3). Retrieved from <a href="https://www.mayoclinic.org/diseases-conditions/hyperthyroidism/symptoms-causes/syc-20373659">https://www.mayoclinic.org/diseases-conditions/hyperthyroidism/symptoms-causes/syc-20373659</a>.

Hyperthyroidism. (n.d.). Retrieved from <a href="https://www.thyroid.org/hyperthyroidism/">https://www.thyroid.org/hyperthyroidism/</a>.

# Dental Hygiene Management: Hyperthyroidism

### Contraindications to dental hygiene care?

It is is contraindicated to use locale anesthetic containing epinephrine or atropine in uncontrolled hyperthyroidism, may cause thyroid storm and injection can induce high blood pressure, tachycardia, or marked dysrhythmia

### Management strategies:

- Control of nervousness and excitability: ask patient their best relaxed time during the day to come for dental treatment.
- Us other less invasive anesthetic, such as topical anesthetic.
- Inform patient to take antithyroid drugs regularly.

### Sources Used

Hashimoto, Johnson, C., Miller, & Mosby. (n.d.). Hyperactive and Hypoactive thyroid Disease - ppt download. Retrieved from <a href="https://slideplayer.com/slide/12042012/">https://slideplayer.com/slide/12042012/</a>.

Endocrine disorders Dr.linda Maher. - ppt video online download. (n.d.). Retrieved from <a href="https://slideplayer.com/slide/5955231/">https://slideplayer.com/slide/5955231/</a>.

### High Blood Pressure

 High blood pressure is a chronic disease with persistently high arterial blood pressure.

Hypertension is generally asymptomatic, but chronic hypertension is a major risk factor for conditions such as coronary artery disease, stroke, heart failure, atrial fibrillation, peripheral arterial obstruction, visual impairment, chronic kidney disease.

# How High blood pressure is Managed

- Modify your lifestyle: Such as regular exercise, reduce sodium intake, manage stress, and emotion control.
- <u>Taking prescribed medication</u>: such as Diuretics.Beta-blockers.ACE inhibitors.Angiotensin II receptor blockers.Calcium channel blockers.Alpha blockers.Alpha-2 Receptor Agonists.

My patient currently is taking Aspirin EC 81 mg tab/day in order to make blood thinner, since my patient resting blood pressure is Bp 133/83/p75,a little more than elevated blood pressure. Therefore her physician advise her to take blood thinner.

### Sources Used

What is High Blood Pressure? (n.d.). Retrieved from https://www.heart.org/en/health-topics/high-blood-pressure/the-facts-about-high-blood-pressure/what-is-high-blood-pressure.

Recklinghausen, V. (n.d.). DENTAL MANAGEMENT OF MEDICALLY COMPROMISED PATIENT LEARNING OBJECTIVES Dental management of Cardiovascular disease & Hypertension Dental management of. - ppt download. Retrieved from <a href="https://slideplayer.com/slide/9698364/">https://slideplayer.com/slide/9698364/</a>.

# Dental Hygiene Management : High Blood Pressure

#### Contraindications:

- 1. Avoid treatment if the disease is poorly controlled or advanced.
- 2. Recent myocardial infarction < 6 months
- 3. Recent stroke < 6 month
- 4. Unstable Angina
- 5. Refractory arrhythmia

#### Management strategies:

- Schedule Patient in the morning appointment. Asking patient if patient taking hypertensive drugs regularly. If patient has high blood pressure during dental assessment, then give referral.
- Ask patient if she has been taking blood thinner and seeing the her physician regularly.
- Take 2nd blood pressure when patient rested.
- Alert instructor if high blood pressure went uncontrolled.
- Rise patient slowly when pt out of dental chair.

### Sources Used

Southerland, J. H., Gill, D. G., Gangula, P. R., Halpern, L. R., Cardona, C. Y., & Mouton, C. P. (2016, October 17). Dental management in patients with hypertension: challenges and solutions. Retrieved from <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5074706/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5074706/</a>.

(n.d.). Retrieved from <a href="https://www.rdhmag.com/patient-care/article/16408260/safe-standards-for-high-blood-pressure">https://www.rdhmag.com/patient-care/article/16408260/safe-standards-for-high-blood-pressure</a>.

### <u>Diabetes</u>

- Diabetes is a metabolic disease, which is characterized by a patient's blood glucose that is above the standard value for a long time.
- High blood sugar can cause symptoms commonly known as eat more, drink more, frequent urination, and weight loss.
  - OFor type 1 diabetes (patient who can not produce insulin)symptoms can occur from one week to one month,
  - OFor type 2 diabetes (patient's cells are not sensitive to insulin) many complications can occur if left untreated. General symptoms include blurred vision, headache, muscle weakness, slow wound healing, and itchy skin. Acute complications include diabetic ketoacidosis and high osmotic hyperglycemia.

# How Diabetes is Managed

- Modify your lifestyle: Eat well balanced meal, for example, Coordinate your meals and medications. Monitoring your blood glucose levels, especially Hemoglobin A1C.
- Taking prescribed medication: such as Biguanides,
   Sulfonylureas, Insulin

My patient currently is taking Metformin HCL 850 mg tab/day. However, she does know her hba1c value.

### Sources Used

Watson, S. (2019, March 22). Diabetes: Symptoms, Causes, Treatment, Prevention, and More. Retrieved from <a href="https://www.healthline.com/health/diabetes">https://www.healthline.com/health/diabetes</a>.

Diabetes. (2018, August 8). Retrieved from <a href="https://www.mayoclinic.org/diseases-conditions/diabetes/symptoms-causes/syc-20371444">https://www.mayoclinic.org/diseases-conditions/diabetes/symptoms-causes/syc-20371444</a>.

# Dental Hygiene Management : Diabetes

#### Contraindications to dental hygiene care?

It is is contraindicated to treat uncontrolled Diabetes patient, especially when patient rush to clinic without eating proper meal, as a result of hypoglycemia.

#### Management strategies:

- Hypoglycemia is one of the complication during dental treatment: ask patient to eat before dental appointment. Therefore, have candy bar ready in clinic in case patient need it.
- Ask patient if patient take diabetes medications on schedule, and confirm dose, type of insulin with patient as well.
- Patient with Diabetes might experience weaker immunity response to pathogen. Therefore, try to minimize induce bacteremia while probing and have patient rinse.

### Sources Used

What is Diabetes? (2016, December 1). Retrieved from <a href="https://www.niddk.nih.gov/health-">https://www.niddk.nih.gov/health-</a> information/diabetes/overview/what-is-diabetes.

Staff, S. B. I. (n.d.). Diabetes Mellitus. Retrieved from

https://www.aaom.com/index.php?option=com\_cont ent&view=article&id=87:diabetesmellitus&catid=22:patient-conditioninformation&Itemid=120.

# COMPREHENSIVE ASSESSMENTS

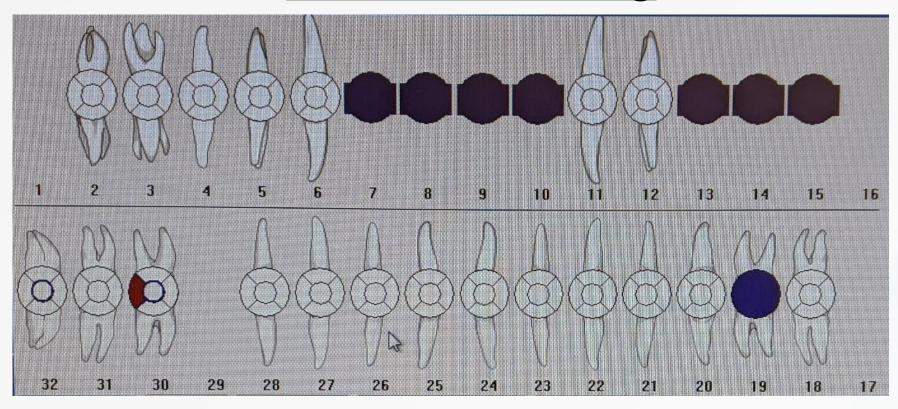
# Radiographs



# Summary of Clinical Findings

- 1. <u>Extraoral Examination</u>: Localized facial macule. Bilateral submandibular lymph node enlarged
- Intraoral Examination: Right unilateral linea alba. Bilateral cheek bite. Unilateral mandibular exostosis on # 27
- Occlusion: Bilateral Class 1 occlusion right side tendency toward class 3. Overjet: 5mm. Overbite 80% Generalized Attrition. Generalized erosion. Generalized Recession.
- 4. <u>Deposits</u>
  - ■Generalized heavy extrinsic brown stains due to drinking tea.
  - ■Generalized heavy supra and subgingival calculus.

### **Dental Charting**



- 1. #1,#16,#17,#29 are missing
- 2. Bridge from #7 to #10 and #13 to #15
- 3. Class I composite restoration on #30,#32
- 4. FPM on #19
- 5. Overhang restoration on tooth # 30D (open margin as well)
- 6. Caries on tooth #30DO (2nd composite decay)
- 7. PFM on tooth #30

### Caries Risk Assessment

- Summary of Clinical Evidence of Caries
  - Example: 2nd Composite Decay noted on the occlusal of # 300
- Summary of Radiographic Evidence of Caries
  - Example: Radiographic evidence of 2nd composite decay noted interproximal of #30D

<u>Dental Home</u>: Mrs.Z stated that due to limited budget she does not see the dentist regularly.

Medication that reduce salivary flow: Due to multiple drugs she takes, systemically, saliva flow might reduced as well

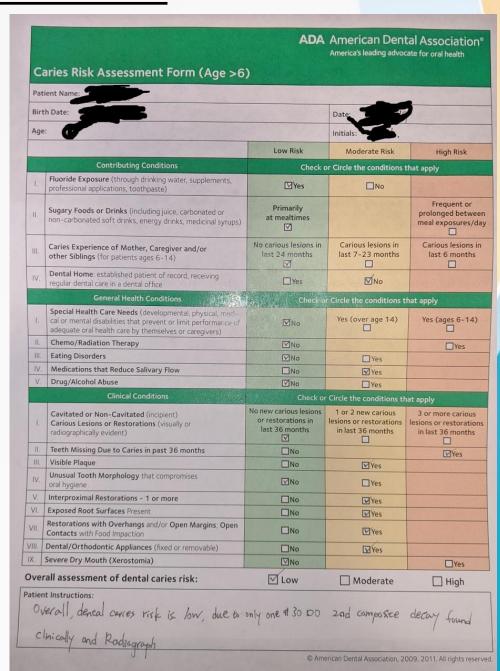
Visible plaque: were noted by using disclosing solution PI :1.8

<u>Interproximal Restorations:</u> Base on the Radiograph, #30D has open margin due to 2nd composite decay.

Exposed Root Surfaces: Grade 2 furcation involvement (#31L and #19 L) can be seen clinically.

Restoration Overhangs: Base on the Radiograph, #30D has open margin due to 2nd composite decay.

Dental Appliances: Bridge present from #7 to 10 and #13 to 15



# Gingival Description & Periodontal Status

Gingival Description: Pale pink color, enlarged sized, Apical to CEJ, Rolled Thickened edge. Bulbous papilla. Smooth Fibrotic texture, Soft leathery consistency. Generalized inflammation. BOP.

Periodontal Status: Based on the

Generalized probing depths of 4-5 mm

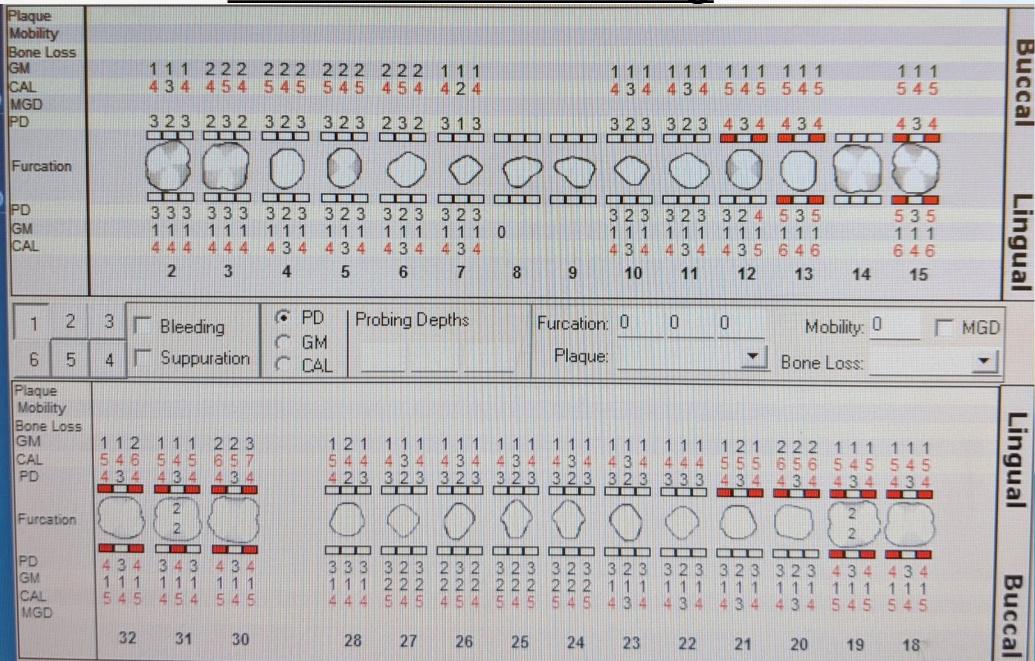
Clinical Attachment Lost up to 6~7mm base on #30 MD

Localized Mild bleeding in posteriors.

Generalized recession 1~2mm

Grade 2 furcation involvement (#31L and #19 L) can be seen clinically.

Periodontal Charting



## **Dental Hygiene Diagnosis**

### Periodontal Diagnosis

- ■Type II active periodontitis due to generalized 4-5 mm probe depths. localized mild BOP on posterior molar.
- Radiographic evidence of moderate bone loss.
- Generalized recession 1~2mm
- Grade 2 furcation involvement (#31L and #19 L) can be seen clinically.
- Low risk for dental caries base on #30DO secondary composite decay (only one tooth decay found).

### Dental Hygiene Care Plan

- 1. Take thorough medical history.
- 2. Reiterate the importance of maintain well controlled DB and well controlled BP
- 3. Explain the possible oral healthy effect (or systemically) of drugs that patient takes
- 4. Explain that exposure of root surface might cause sensitivity to cold and hot fluid.
- 5. Perform EO,IO theroughtly.
- 6. Note the Dental Charting and Periodontal Charting.
- 7. Radiographic exposure
- 8. Detect the supra and sub calculus.
- 9. Provide DH diagnosis to patient.
- 10. Perform Caries Risk Assessment Form
- 11. Exam the gingiva health.
- 12. Obtain treatment consent.
- 13. Offer OHI based on location of plaque being stained and PI score and review OHI on later visit.
- 14. Debridement of calculus with hand instrumentation and ultrasonic.
- 15. Impression and Sealant possibly on later visit.
- 16. For root exposure ues 5% Fl-Varnish to reduce sensitivity.

# Consent for Treatment/treatment plan

Visit 1: //-///	Visit 2:	Visit 3:	Visit 4:
(Date) Patient Education:	(Date) "	(Date)	(Date)
	Patient Education:	Patient Education:	Patient Education:
TB manual D power assisted	☐ TB-manual ☐ power assisted	☐ TB manual □power assisted	OTB manual D power assisted
Interdental Aid	2 Interdental Aid + losting	O Interdental Aid	□Interdental Aid
□ Toothpaste	□ Toothpaste	☐ Toothpaste	☐ Toothpaste
□ Rinse	□ Rinse	Cl Rinse	☐ Rinse
Radiographs: Digital	Radiographs: Digital	Radiographs: Digital	Radiographs: Digital
□ FMS □ BWS (V/H) □ Pan	□ FMS □ BWS (V/H) □ Pan	□ FMS □ BWS (V/H) □ Pan	□ FMS □ BWS (V/H) □ Pan
Debridement: # 30 2/ 25	Debridement: 1+4	Debridement: 2+3	Debridement:
□ Quadrant(s) _ ¬ ; ' ; ' ; '	□ Quadrant(s) <u>IT </u>		☐ Quadrant(s)
Debridement: # 30,31,32  Quadrant(s) # hand scaling	☐ Whole Mouth	☐ Whole Mouth	☐ Whole Mouth
ran Management	Pain Management:	Pain Management:	Pain Management:
□ Topical	O Topical	[ C Topicl	□ Topical
□ Oraqix	□ Oraqix	El Oraqix	□ Oraqix
□ Local Anesthesia	☐ Local Anesthesia	☐ Local Anesthesia	□ Local Anesthesia
Coronal Polish:	Coronal Polish:	Coronal Polish: Colyche	Coronal Polish:
□ Engine	D Engine	O Engine	□ Engine
Air Polisher: Agent	Air Polisher: Agent	Air Polisher: Agent	Air Polisher: Agent
Other:	Other:	Other: Topical Fluoride: FI- Varia 5%	Other:
☐ Topical Fluoride:	☐ Topical Fluoride:		
□ Arestin:	□ Arestin:	Arestin:	☐ Arestin:
☐ Sealant(s):	☐ Sealant(s):	☐ Sealant(s):	D Sealants:
☐ Impressions	© Impressions	.   C Impressions	☐ Impressions

### Implementation —Treatment-include all visits

#### 1. <u>Preventive Services:</u>

Due to ASA 2 status and H case value, I plan to have patient come 3 visits. And disclose to evaluate Mrs.z's compliance of OHI, and find where possible plaque accumulated to determine the proper OHI for Mrs. Z

<u>Visit 1</u>: Mrs.Z plaques score was 1.8 (Fair-Poor) due to heavy cervical biofilm accumulation. Modified bass technique was introduced to pt, since Mrs.Z was interested how to brush correctly during first visit.

<u>Visit 2</u>: Mrs.Z plaques score was 1.5 (Fair) due to interproximal biofilm accumulation on tooth surface flossing technique was introduced to pt. Upon review the OHI, Mrs.Z was complaining modified bass was too time consuming

### Implementation -Treatment-include all visits

#### 1. Preventive Services:

<u>Last visit</u>: Mrs.Z plaques score was 2.7 (poor) due to biofilm accumulation on more than ¾ tooth surface. OHI was not effective due to biofilm accumulation and she said that her co-worker said that she has halitosis sometimes during the day while working.

Upon reviewed with Mrs.Z, she said she got tired after off work from Chinese Restaurant, therefore she can not brush effectively, although she reported that compliant with modified bass.

Since this is the last visit, so i recommended her to use Oral B power toothbrush and Listerine antiseptic. Oral B power toothbrush can make her feel easier to brush more efficiently. Listerine antiseptic can help her reduce halitosis and keep plaque controlled. If she follow the instruction, and use the power toothbrush regularly. Then much lower PI will be anticipated on next 3 months recare visit.

## Implementation -Treatment Continued

#### 2. Debridement Performed

For H calculus and Heavy stain. Quadrant Debridement for multiple visit should be combined with ultrasonic and hand scaling.

<u>Visit 1</u>: Due to time constraints, patient need to leave 45 mins early to pick up her granddaughter. tooth #30,31,32 were handscaled. I use universal curette and after five 11/12, 13/14 to reach deeper pocket.

<u>Visit 2</u>: FSI-Power 1000 tip were used to remove supra calculus on UR, LR. Then I switch to FSI-Slim 1000 for posterior deeper harder to reach area. Upon Ultrasonic debridement, I found Mrs.Z is a gagger. Therefore, semi-supine for her was recommended, and she refused to turn toward and away while i was working lingual and buccal side of teeth. Due to those facts, it very inconvenient for me to maintain ergonomic posture. I have to lean more forward in order to gain access her teeth. Next, I used explore to check any remaining calculus I left behind, then I removed it with hand instrument.

<u>Last Visit</u>: The debridement for LL, UL, performed was similar to Visit 2. The only difference was I hand instrumentation more because she said that she liked hand instrumentation more than ultrasonic debridement.

# <u>Evaluation of Care – Outcome of Care – Prognosis</u>

Last visit, overall the gingiva around quadrant 1+4 (previously scaled teeth), the inflammation was reduced. However, due to Mrs.Z's age and multiple use of the dugs. Initially, my goal was bring down the PI score down to 0.7 where equals good. During the Visit2 her PI did went down from 1.8 to 1.5 score.

However, My prediction of PI for last visit was wrong. Due to Mrs.Z hand dexterity is not as good, and she is tired after she comes off work. Her PI went up to 2.7 (poor) on the last visit. Therefore, I decided to implement Oral B power toothbrush and Listerine antiseptic to control the biofilm. Mrs.Z seemed excited to this new brush technique, and I given instructions that how to use Oral B power toothbrush to Mrs.Z as well. Lastly, Mrs.Z were told to come back three months later for recare, and I would like to evaluate how is the PI score and check if the plaque and film were under controlled.

Overall, I am anticipated that Oral B power toothbrush can bring her PI score down when she comes back for recare, and monitor any oral or systemic change on the body due to the medical condition and drugs that Mrs.Z takes.

## Referrals

Upon the intra Oral examination. The #30 DO were identified 2nd composite decay, And Mrs.Z was referred to a Dentist for revaluation condition of Caries.

### Continued Care Recommendations

• Mrs.Z were recommend 3 months recare due to Heavy calculus and actively periodontitis type II based on generalized PD 4~5mm

• Mrs.Z PI score went up to 2.7 (poor) at last visit, this shows that she has difficulty keeping up regular cleaning. Due to her complex medication, and hand dexterity not as good. I would recommend to see her more frequently on shorter recare interval to make sure her follow up the OH and update any medical conditions change.

### Final Reflection

#### What went right? and why?

Mrs.Z is very punctuated and cooperated patient. She always arrive 20 min prior before clinic open. And she was trying to open her mouth as big as she can to accommodate my hand instrumentation.

#### What went wrong? and why?

- 1. The PI score went higher on the last visit. She complained that modified bass was too time consuming and feel lazy to do it sometime.
- 2. She felt her jaw is tired when open straight 3 hours, and she needed to stop the procedure frequently to rest her jaw.
- 3. FMS did not take on the first visit, due to that she need to leave 45 min early to pick up her granddaughter.
- 4. Pt is a gagger and I do not have previous experience to gagging patient.

#### What could you have done differently? Some examples might include:

- Base on her PI, instead of teaching her modified bass method, I should have implemented Oral B
  power toothbrush at first visit, so I can track the PI on followed up visit to see any other improvements
  or other possible problems she might encountered when using the power toothbrush.
- I should have use bite block(with dental floss attached, in case of swallowing), so her jaw could rest
  more without exerting force on her TMJ.
- o FMS should have done on the First Visit. Radiograph could give more details on lost of bone and interproximal cavities.