NEW YORK CITY COLLEGE OF TECHNOLOGY
DEPARTMENT OF DENTAL HYGIENE

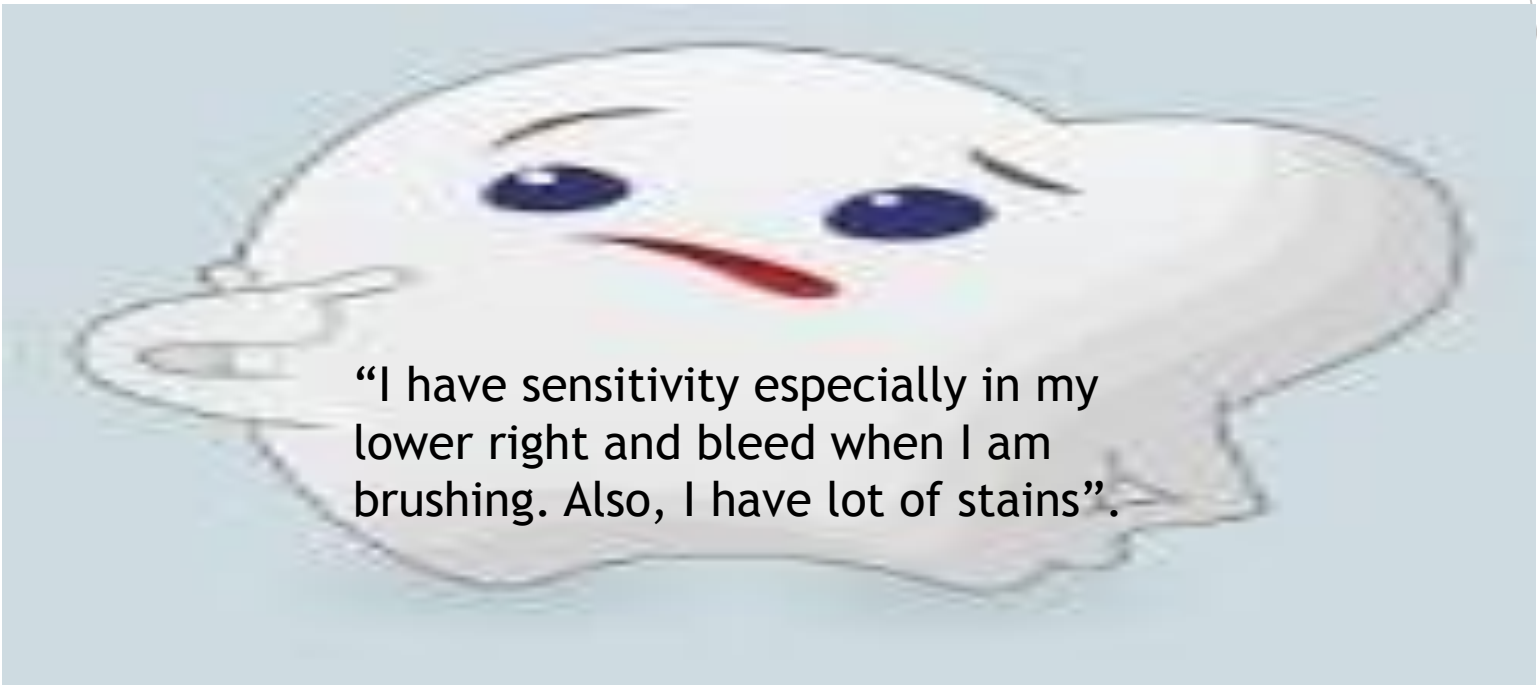
SUBMITTED BY:
JANETH C. RUD

Patient Profile

- Mrs. D. is 69 years old African-American female. She is married and has a stepson. She is retired and used to work in Human Resources. She changed her diet after hernia surgery and stroke in 2015.
- She is a non-smoker but drinks alcohol few times a week.
- She has access to dental care. She comes regularly to Citytech (>10 years) for dental check-ups and cleanings.
- She currently has no dental insurance and has to pay out-of-pocket for dental care.
- Last dental check-up and cleaning was on May, 2018 in Citytech.
- Last dental radiographs were 4 horizontal bitewings taken on November, 2017 at Citytech.
- Patient reported brushing 2 times a day with a soft manual toothbrush and sometimes alternates with an electric toothbrush. She is using Crest Pro health toothpaste.
- Patient reported using soft picks and oral rinse Listerine Total Care twice a day.

Chief Complaint

Patient stated



When I checked the patient’s mouth, I found dental erosion that caused her sensitivity especially on the LR and recessions in some areas. Patient has some gingival inflammation that caused bleeding when brushing. During the interview the patient stated that she drinks alcohol regularly, specifically red wine. She also drinks coffee a few times a day. This caused her teeth to accumulate moderate amount of stains.

Health History Overview

Vitals

- Blood Pressure: 107/74
- Pulse: 63

Medical Conditions

- Patient had a hernia surgery in 2015.
- Patient had a stroke 1 week after the hernia operation in 2015.

Current Medications

- Patient is taking aspirin 81 mg as a blood thinner due to her stroke.
- She is also taking fish oil pills twice a day as a dietary supplement.

Patient is ASA II

Explanation of Conditions

According to Centers for Disease Control and Prevention (CDC), a stroke is sometimes called a brain attack. It happens when a blood clot blocks blood flow to the brain or when a blood vessel in the brain ruptures. The brain can start to die within minutes because of the lack of oxygen. It can damage parts of the brain, cause long term disability or even death. A blockage of a blood vessel in the brain or neck, called ischemic stroke is the most frequent cause of stroke and is responsible for about 80% of strokes (National Institute of Neurological Disorder and Stroke 2018). Signs and symptoms include sudden numbness or weakness of face, arm or leg, loss of vision, sudden confusion, trouble speaking, dizziness, loss of balance or coordination and severe headache. Risk factors for this condition are age, gender, race and family history of stroke. Studies show the risk of stroke doubles between the ages of 55-85 and more women die from stroke (National Institute of Neurological Disorders and Strokes 2018). African-Americans have a higher risk of stroke. This is due to sick sickle cell disease which can cause a narrowing of arteries and disrupt blood flow. Stroke also runs in families. Genetic tendency for stroke risk factors are inherited predisposition for high blood pressure and diabetes. The common lifestyle among family members also contributes to familial stroke.

Explanation of Conditions

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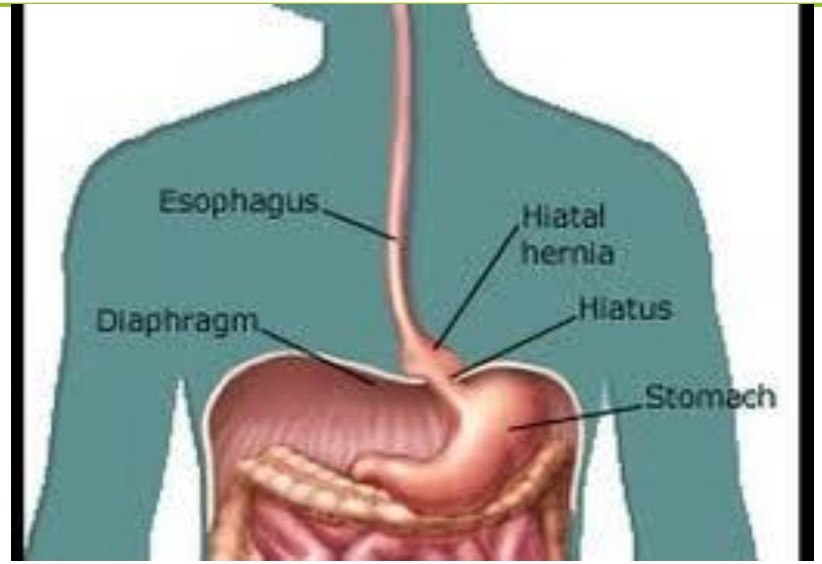
Explanation of Conditions continued

Hiatal Hernia is a condition in which part of the stomach pushes up through the diaphragm muscle. The diaphragm helps keep acid from coming up into the esophagus. When the acid leaks from stomach to the esophagus it is called Gastroesophageal Reflux Disease (GERD). The cause of a hiatal hernia is unknown. It may have to do with the weakness in the surrounding muscle. Sometimes the cause is an injury or birth defect. Hiatal hernia is common in the people over the age of 50. Obesity and smoking are also risk factors of this condition.



Citations

African-American Women and Stroke (2016). *Centers for Disease Control and Prevention*. Retrieved November 6, 2018 from https://www.cdc.gov/stroke/docs/AA_Women_Stroke_Factsheet.pdf

Brain Basics: Preventing Stroke (2018). National Institute of Neurological Disorders and Stroke (2018). *National Institute of Neurological Disorders and Stroke*. Retrieved November 4, 2018 from https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Preventing-Stroke

Hiatal Hernia and Anti-Reflux Surgery (2018). *London Health Sciences Center*. Retrieved November 5, 2018 from https://www.lhsc.on.ca/thoracic-surgery/hiatal-hernia-and-anti-reflux-surgery

Know the signs and symptoms of a stroke (2016). *Centers for Disease Control and Prevention*. Retrieved November 3, 2018 from https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_strokesigns.htm

Management of Condition

For Hernia condition, the current standard of care is either hernia excision or laparoscopic surgery. Various tests should be done before any medical treatment. In the absence of GERD (type I Hernia), surgery is unnecessary. All symptomatic paraesophageal hiatal hernia (type II-IV) should be repaired through surgical procedures. One of the most common procedures is the laparoscopic approach. It is a minimally invasive procedure in which small incisions are made through the abdominal wall. A thin tube with a tiny video camera attached to one end (laparoscope) will be inserted through one of these incisions. Adequate caloric and nutritional intake are important after the surgery. Post-operative risks include bleeding, infection, heart attack, stroke, irregular heartbeat, blood clots to the lung and sometimes death.

Mrs. D. underwent the laparoscopic hiatal hernia surgical operation. She felt a lot better after the surgery. Although a week after the operation, she had a stroke. A high occurrence for elderly patients who have poor overall health (Zuiki, 2016). She took statin for 3 years to lower cholesterol levels which reduces the chances of getting another stroke. At present, she is taking aspirin as a blood thinner and fish oil as a dietary supplement.

Citations

Hiatal Hernia and Anti-Reflux Surgery (2018). *London Health Sciences Center*. Retrieved November 5, 2018 from https://www.lhsc.on.ca/thoracic-surgery/hiatal-hernia-and-anti-reflux-surgery

O' Connor, A. (2018, September 25). Fish Oil Drug May Prevent Heart Attack and Strokes in High-Risk Patients. *The New York Times.* Retrieved November 1, 2018 from https://www.nytimes.com/2018/09/25/well/fish-oil-heart-attack-stroke-triglycerides-omega-3s.html

Zuiki, T. et al. (2016). The management of gastric volvulus in elderly patients. *International Journal of Surgery Case Reports*, vol. 19, pp 88-93. Retrieved October 29, 2018 from https://www.sciencedirect.com/search/advanced?docId=10.1016/j.ijscr.2016.10.058

Dental Hygiene Management

According to Feagan (2018), there is a relationship between hiatal hernia and GERD. The barrier between the stomach and the esophagus is weakened which results in stomach acid entering the esophagus. This stomach acid flows back up and reaches the mouth. Too much acid in the mouth can cause demineralization of the teeth. Early recognition of dental erosion is important to prevent serious damage of dentition. Dental management includes restorative treatment and fluoride varnish application. Restoration prevents progression of the erosion and it also helps to block teeth hypersensitivity. This seals the enamel and reestablishes the tooth contour and decreases further enamel loss by acid exposure (Dundar and Sengun, 2014). Wearing a mouth guard at night can prevent additional damage to the surfaces of teeth and protects against acid. The patient should be instructed to use fluoride-containing dentifrices. The patient should not brush immediately after eating acidic food because brushing can cause more enamel loss (CDHO Factsheet Gastroesophageal Reflux Disease 2016). Moreover, brushing with products high in sodium bicarbonate will help in neutralizing the acid and its harmful effects while being very low in abrasion. For a patient who had a history of stroke, opening the mouth can be a bit challenging due to the patient's physical limitation. Time management should be considered. Oral home care should be thoroughly discussed with the patient. Dental professionals routinely follow the patient's progress through regularly scheduled oral prophylaxis appointment (3 month recare interval). It was found that dental prophylaxis and periodontal treatment reduces the incidence of ischemic stroke (Pillai, 2018). Treatment decreases the chances of developing inflammation and therefore reduce the risk of stroke.

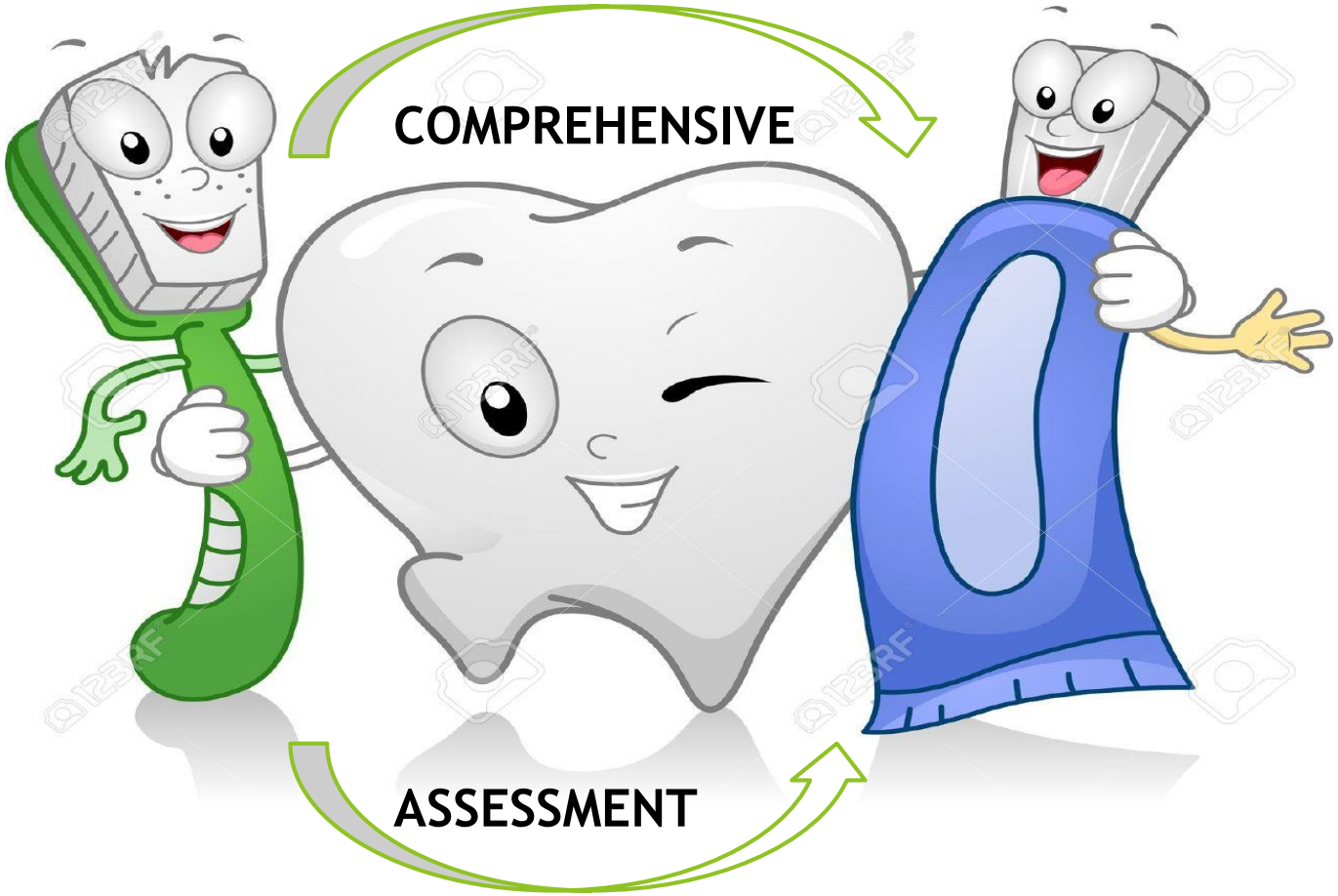
Citation

Dundar, A. and Sengun, A. (2014). Dental approach to erosive tooth wear in gastroesophageal reflux disease. *African Health Sciences*, vol. 14(2), pp 481-486. Retrieved November 5, 2018 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4196415/

Feagan, A. (2018). A Case of Gastroesophageal Reflux (GERD) and Hiatal Hernia. *Academic One File*. Retrieved October 25, 2018 from http://go.galegroup.com.citytech.ezproxy.cuny.edu/ps/i.do?id=GALE%7CA542847107&v=2.1&u=cuny_nytc&it=r&p=AONE&sw=w

Gastroesophageal Reflux Disease (2016, September 7*). College of Dental Hygienists of Ontario*. Retrieved October 25, 2018 from http://www.cdho.org/Advisories/CDHO_Factsheet_GERD.pdf

Pillai, R. et al. (2018). Oral Health and Brain Injury: Causal or Casual Injury? *Cerebrovascular Disease Extra*, vol. 8(1) pp 1-15. Retrieved November 5, 2018 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5836263/


COMPREHENSIVE
ASSESSMENT

Dental Hygiene Process of Care

Patient assessment was conducted during the first visit which includes:

- Patient filled out the medical history update

- Reviewed the medical history

Vitals were taken

Extra oral and intra oral examination

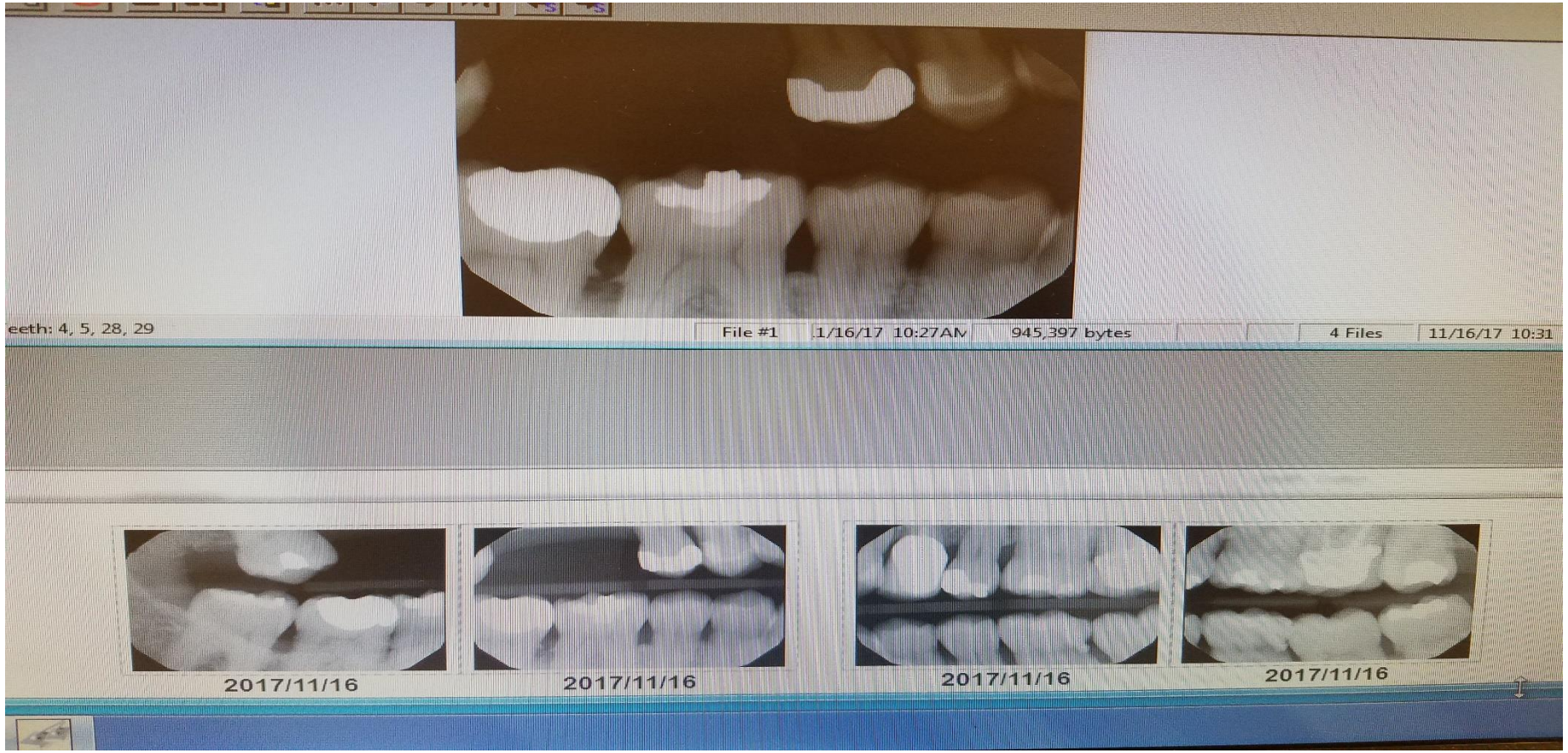
Reviewed the dental chart

Checked the perio probing depths of the patient

- Accretion assessment and plaque index

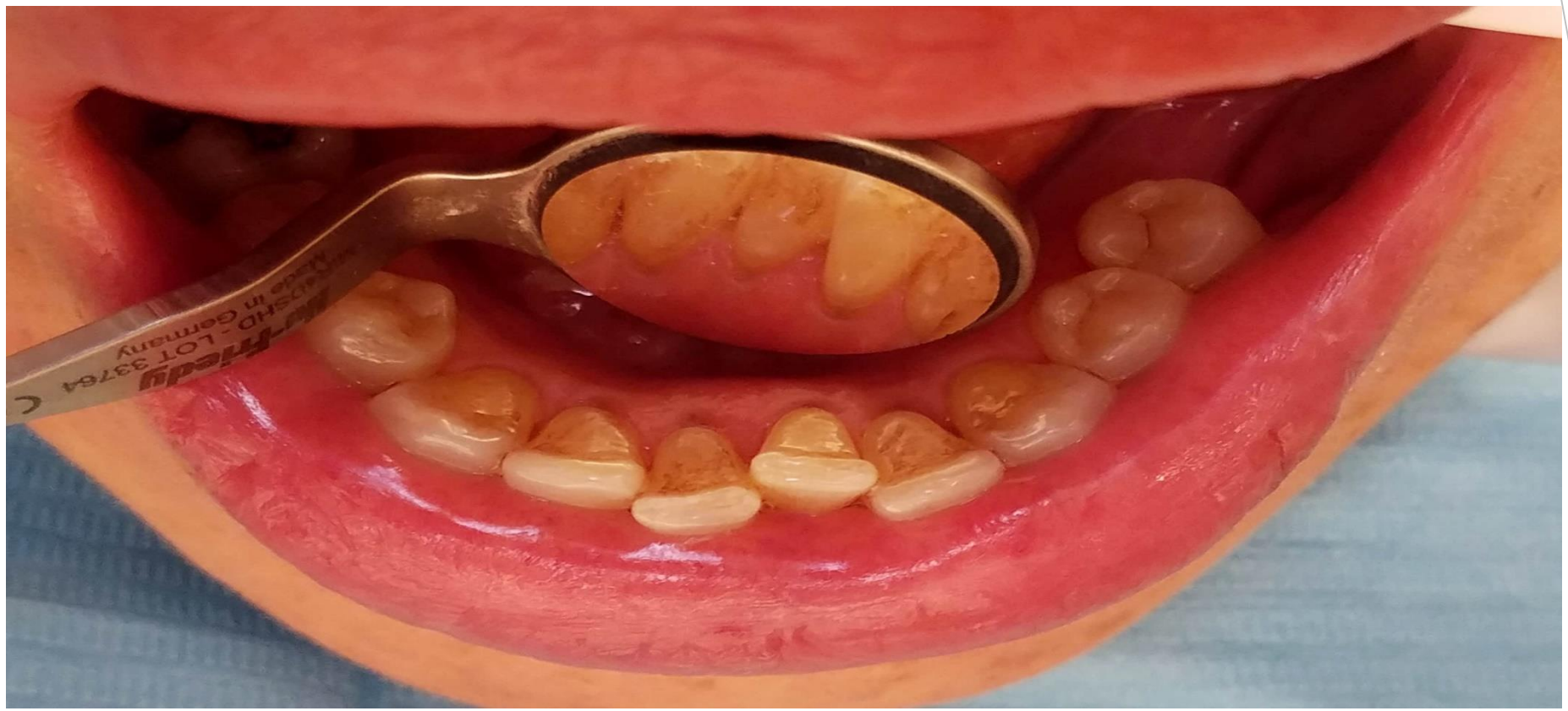
Discussed oral home care with the patient

Photo of the Radiograph



This radiograph was taken on November16, 2017. It showed moderate bone loss and caries was present on #19 which was extracted after the patient was given a referral form to see a dentist.

Intra oral Photo



The photo showed some recessions on the lingual of the anterior mandible and moderate staining.

Summary of Clinical Findings

EO/IO:

Patient has bilateral mandibular TORI and chapped lips.

Dental:

Patient has class I occlusion with overjet of 2mm and overbite of 10%

Class I amalgam restorations on #1(O), #14(O) and #17(O)

Class II amalgam restorations on #4(MOD), 13(MO), #16(OB), #30(OB) and #31(MOL)

Class I composite restoration on #32(O) and class II composite restoration on #15(MOD)

PFM crown on #12 and #15, missing teeth on #2, #3 and #19

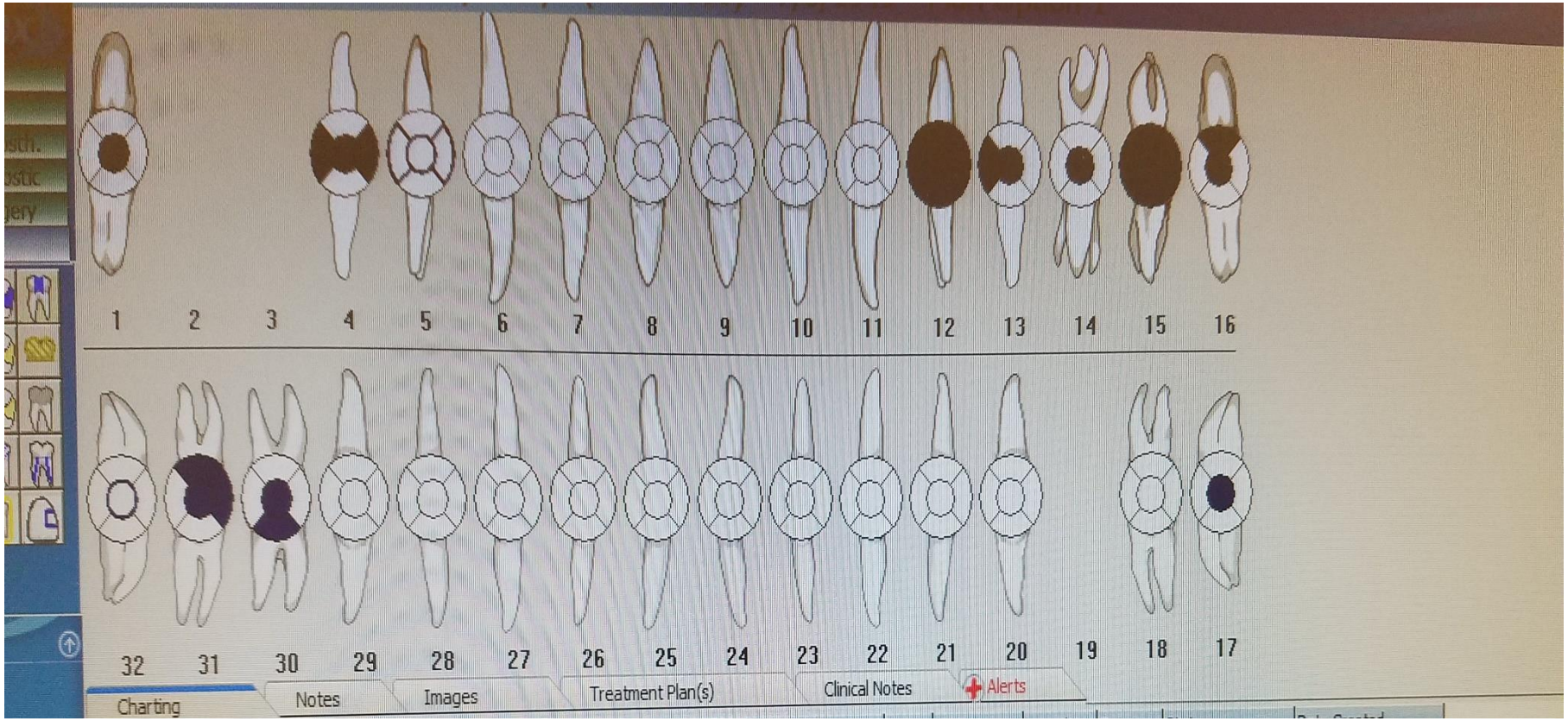
Crowding teeth on #23-#25, type II embrasures on posterior teeth

Dental erosion is present in localized areas

Deposits:

Generalized medium subgingival/supragingival calculus with medium staining on maxillary and mandibular anterior lingual

Dental Charting Photo



Class I and II restorations, crowns and missing teeth are shown in this photo

CAMBRA Caries Risk Assessment

Birth Date: 04/03/40 Date: 01/12/18
Age: 69 Initials: ES

		Low Risk (0)	Moderate Risk (1)	High Risk (10)	Patient Risk
Contributing Conditions					
I.	**Fluoride Exposure** (through drinking water, supplements, professional applications, toothpaste)	(Yes)	No		
II.	**Sugary or Starchy Foods or Drinks** (including juice, carbonated or non-carbonated soft drinks, energy drinks, medicinal syrups)	Primarily at mealtimes		Frequent or prolonged between meal exposures/day	
III.	**Caries Experience of Mother, Caregiver** and/or other **Siblings** (for patients ages 6-14)	No carious lesions in last 24 months	Carious lesions in last 7-23 months	Carious lesions in last 6 months	
IV.	**Dental Home**: established patient of record, receiving regular dental care in a dental office	(Yes)	No		
General Health Conditions					
I.	**Special Health Care Needs***	(No)	Yes (over age 14)	Yes (ages 6-14)	
II.	**Chemo/Radiation Therapy**	(No)		Yes	
III.	**Eating Disorders**	(No)	Yes		
IV.	**Smokeless Tobacco Use**	(No)	Yes		
V.	**Medications that Reduce Salivary Flow**	(No)	Yes		
VI.	**Drug/Alcohol Abuse**	(No)	Yes		
Clinical Conditions					
I.	**Cavitated or Non-Cavitated** (incipient) **Carious Lesions or Restorations** (visually or radiographically evident)	No new carious lesions or restorations in last 36 months	1 or 2 new carious lesions or restorations in last 36 months	3 or more carious lesions or restorations in last 36 months	
II.	**Teeth Missing Due to Caries** in past 36 months	No		(Yes)	
III.	**Visible Plaque**	No	(Yes)		
IV.	**Unusual Tooth Morphology** that compromises oral hygiene	No	(Yes)		
V.	**Interproximal Restorations** - 1 or more	No	(Yes)		
VI.	**Exposed Root Surfaces** Present	No	(Yes)		
VII.	**Restorations with Overhangs** and/or **Open Margins**; **Open Contacts** with Food Impaction	(No)	Yes		
VIII.	**Dental/Orthodontic Appliances** (fixed or removable)	(No)	Yes		
IX.	**Severe Dry Mouth (Xerostomia)**	No		(Yes)	
				TOTAL:	High risk

Patient Instructions: Patient needs to use the ~~Rx~~ fluoride oral rinse .05% daily and use fluoride dentifrice 2x a day. Also, she was advised to minimize the alcohol consumption and brush her teeth after midnight snacks.

*Patients with developmental, physical, medical or mental disabilities that prevent or limit performance of adequate oral health care by themselves or caregivers.

ADA American Dental Association®

- Plaque/Biofilm formation
- Crowding teeth on #23-#25
- Class II restorations
- Xerostomia or dry mouth
- Radiographic evidence of decay noted on tooth #19 which was extracted recently (1/18).

Patient has high caries risk for the following reasons:

Gingival Description and Periodontal Status

Gingiva appeared to be pale pink, rolled, non-resilient, shiny and mild to moderate inflammation BOP

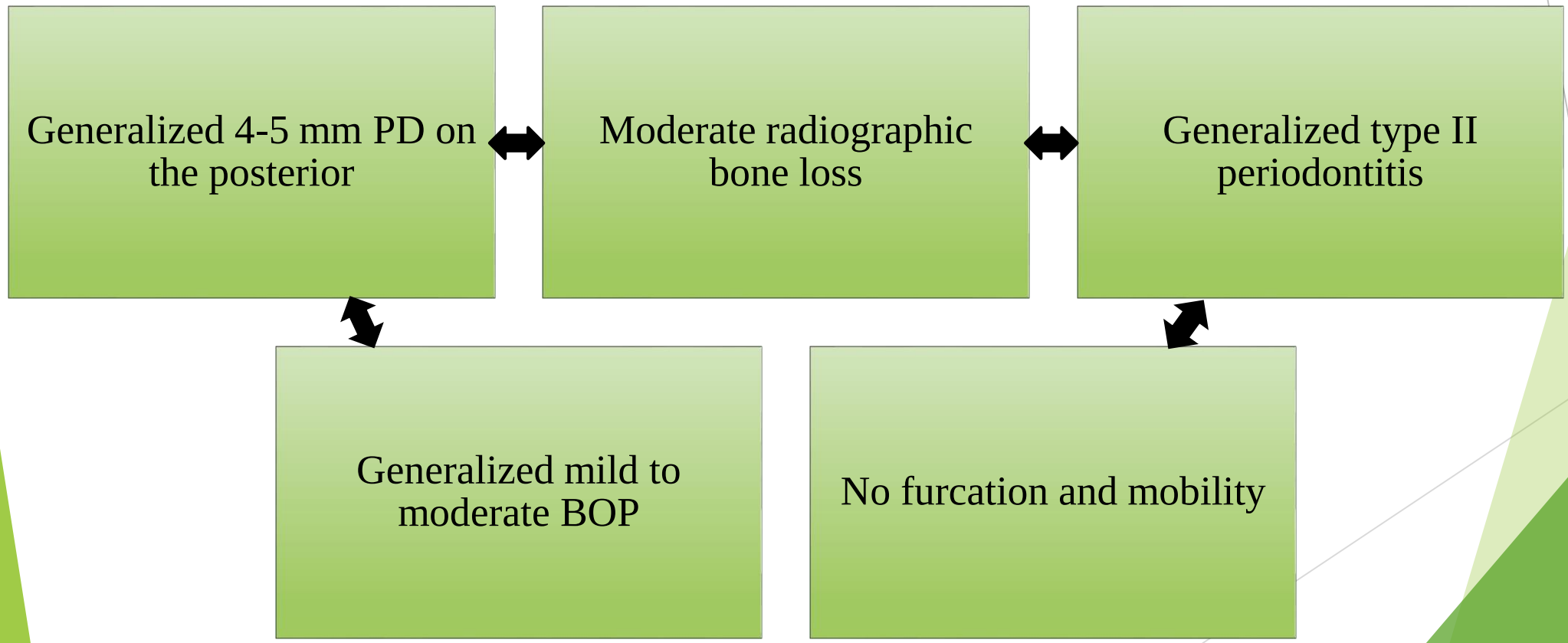
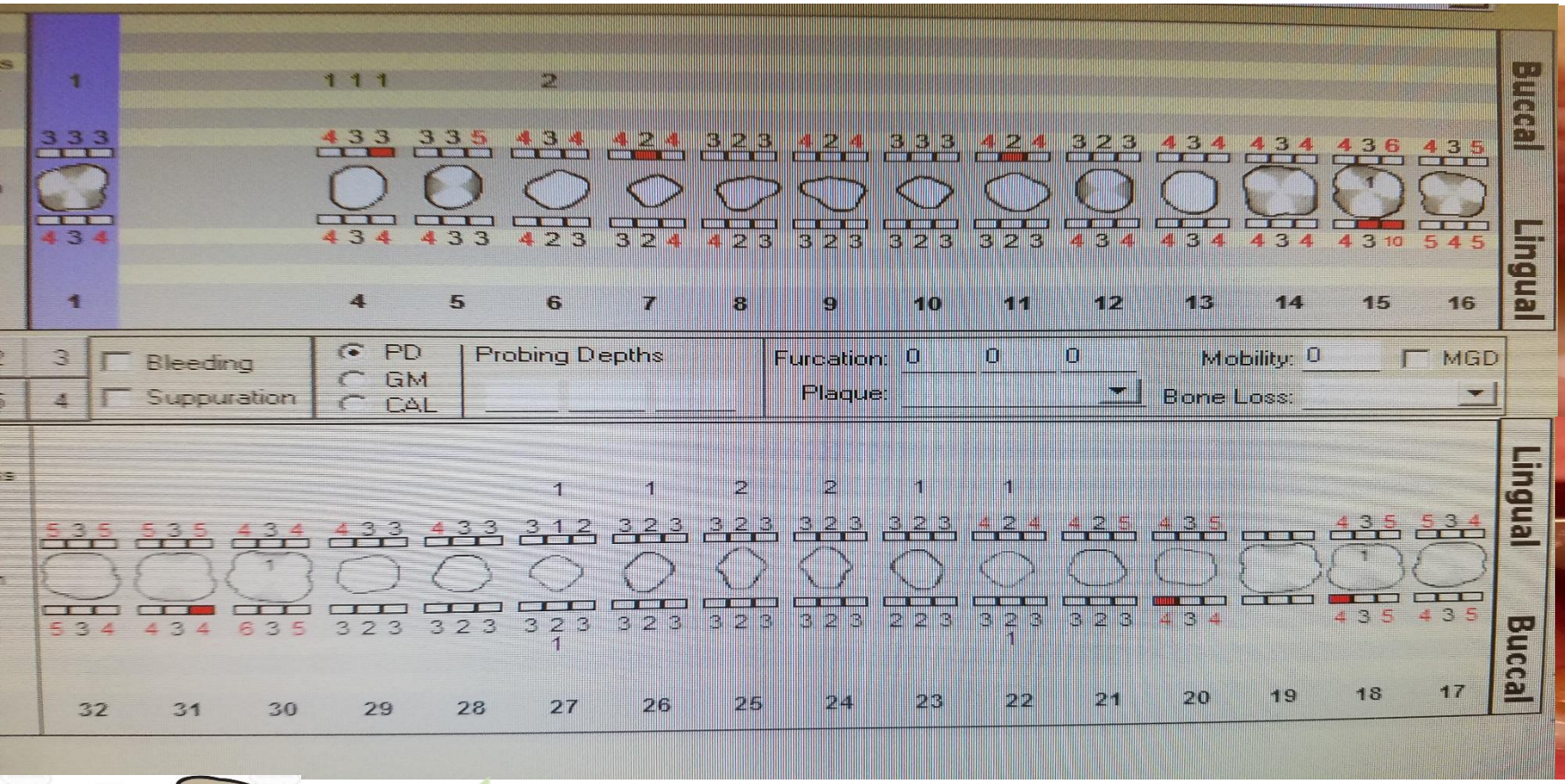
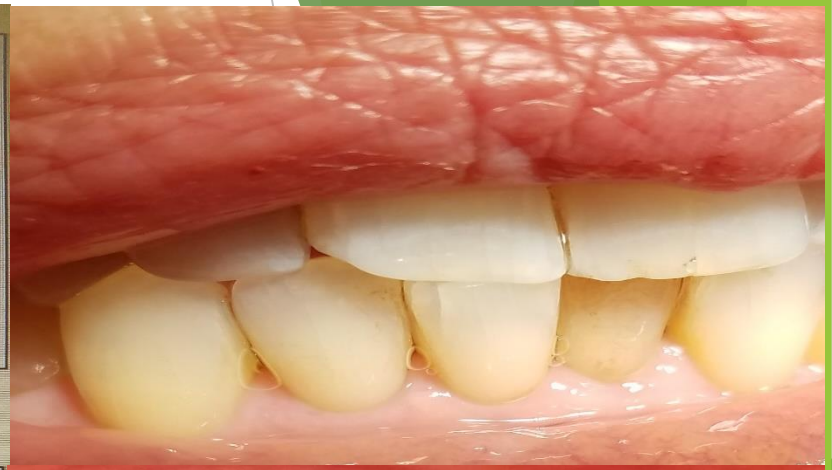


Photo of Periodontal Chart



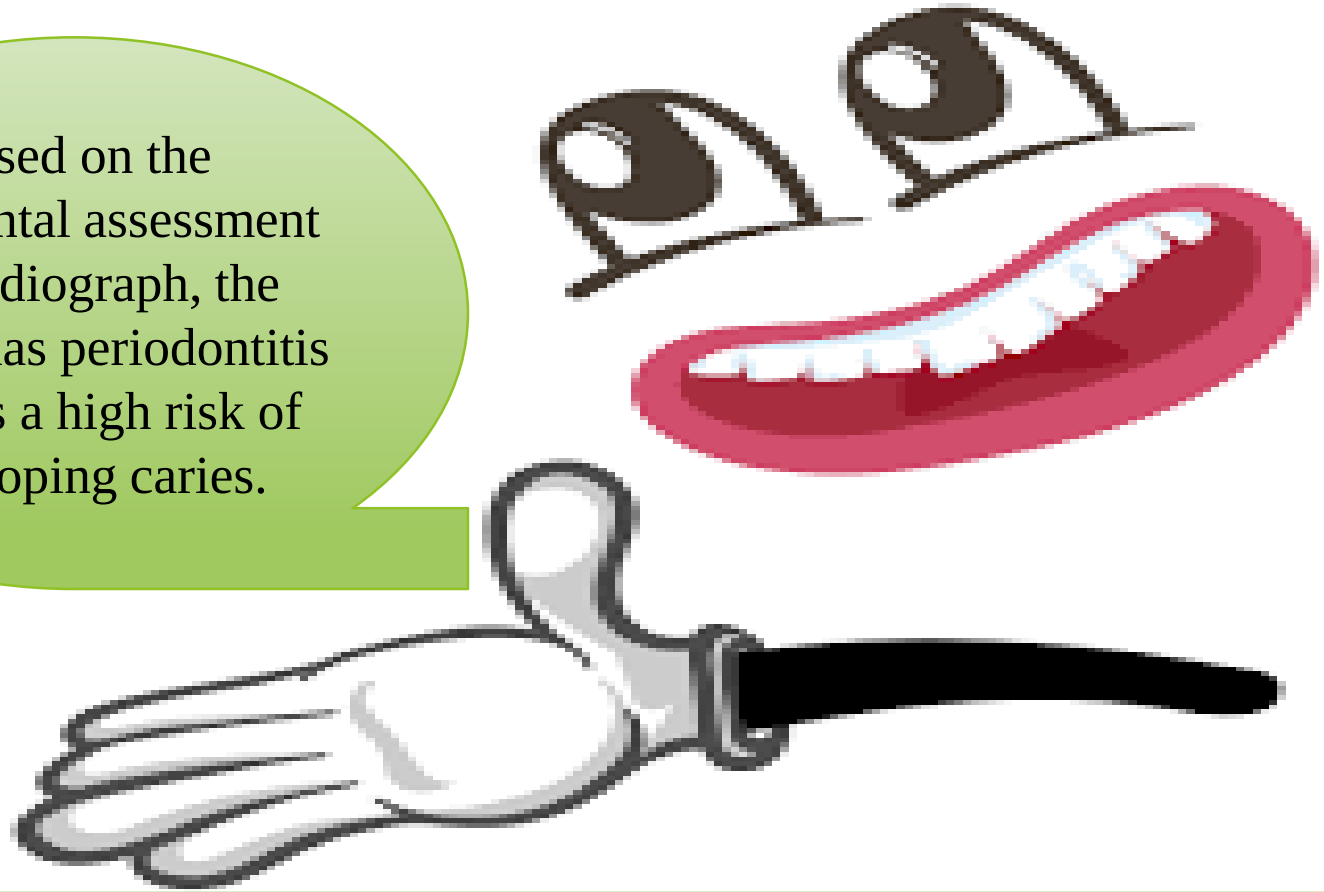


4-5 mm PD on most of the posterior teeth, 6 mm on #15 DB and #30 DB and 10 mm on #15DL

Recessions on #1, 4, 6, 22, 23, 24, 25, 26 and #27

Dental Hygiene Diagnosis

Based on the periodontal assessment and radiograph, the patient has periodontitis and has a high risk of developing caries.



The patient also has Gastroesophageal Reflux Disorder (GERD) which caused hypersensitivity in some areas of her teeth. Dental erosion can be found on the surfaces of her teeth, an evidence of the condition.

Dental Hygiene Diagnosis

Risk for Caries:
Patient is at a high risk of caries due to multiple risk factors and minimal protective factors.

- Plaque/ Biofilm formation
- Class II restorations and crowding teeth
- Dry mouth

Patient had an extraction recently due to caries.

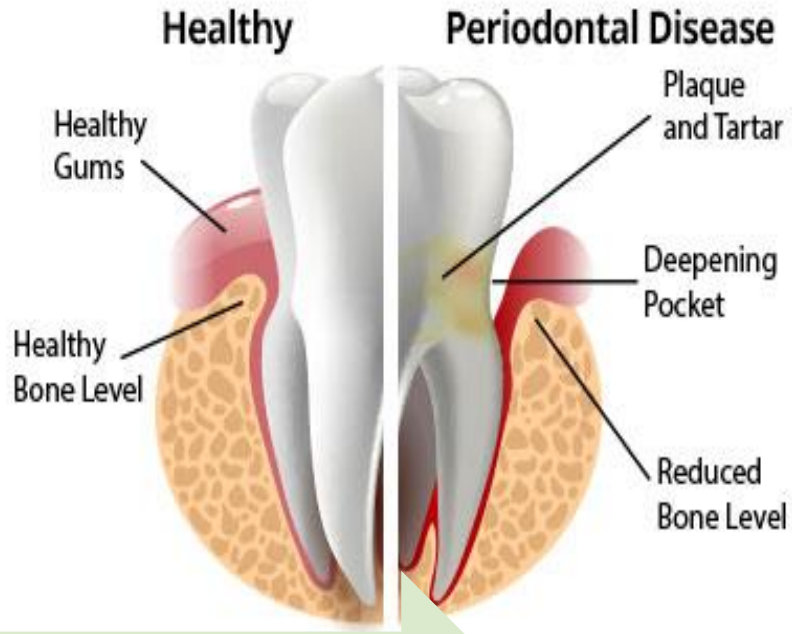
Periodontal Diagnosis

Type II and localized type III, active periodontitis due to:

Generalized 4-5 mm probing depths, 6 mm PD on #15 and #30 and 10 mm on #15

Radiographic evidence of moderate bone loss

Generalized mild to moderate inflammation and BOP



The following factors contributed to the progression of the diagnosis:

Plaque/Biofilm formation

Ineffective oral care

Class II restorations and recessions

Dental Hygiene Care Plan

Goals that were established with patient regarding her condition:

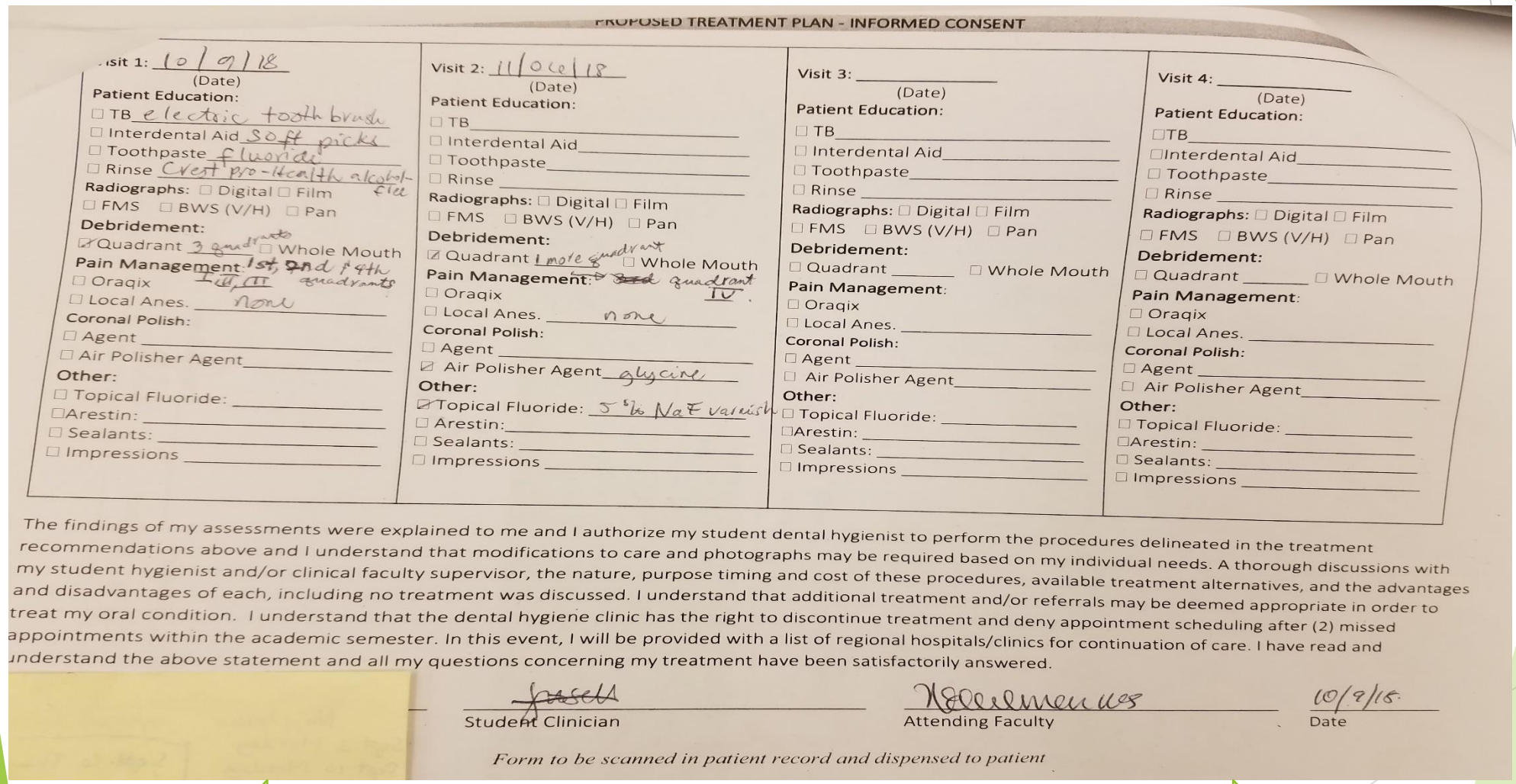
- Patient will start using electric toothbrush 2 times a day by 3 month recare.
- Patient will reduce BOP by 3 month recare.
- Patient will report rinsing with .05% fluoride oral rinse once a day in 1 minute by 3 month recare.
- Patient will start using proxa brush and rubber tip 2 times a day by 3 month recare.
- Patient will reduce 1-3 mm PD by 3 month recare.

Dental Hygiene Care Plan continued

First Visit	Patient Assessment, Plaque Score and Oral Self-care Instruction
Second Visit	Debridement on quadrant 1 and 4 (UR and LR)
Third Visit	Debridement on quadrant 2 and 3 (UL and LL). Air polishing with glycine powder and 5% fluoride varnish application

Pain Management: Patient preferred not to have injection or oraquix.
The patient was scheduled for 3 month recare.
Horizontal 4BW's is noted to be taken during the next visit.
A continued care recommendation form was given to the patient after the treatment.

Consent for Treatment



PROPOSED TREATMENT PLAN - INFORMED CONSENT

Visit 1: 10/9/18 (Date)

Patient Education:
- ☐ TB electric tooth brush
- ☐ Interdental Aid soft picks
- ☐ Toothpaste fluoride
- ☐ Rinse Crest pro-health alcohol-free

Radiographs: ☐ Digital ☐ Film
☐ FMS ☐ BWS (V/H) ☐ Pan

Debridement:
☑ Quadrant 3 quadrants ☐ Whole Mouth

Pain Management: 1st, 2nd & 4th quadrants I, II, IV
☐ Oraqix
☐ Local Anes. none

Coronal Polish:
☐ Agent
☐ Air Polisher Agent

Other:
☐ Topical Fluoride:
☐ Arestin:
☐ Sealants:
☐ Impressions

Visit 2: 11/06/18 (Date)

Patient Education:
- ☐ TB
- ☐ Interdental Aid
- ☐ Toothpaste
- ☐ Rinse

Radiographs: ☐ Digital ☐ Film
☐ FMS ☐ BWS (V/H) ☐ Pan

Debridement:
☑ Quadrant 1 more quadrant ☐ Whole Mouth

Pain Management: ~~3rd~~ quadrant IV
☐ Oraqix
☐ Local Anes. none

Coronal Polish:
☐ Agent
☑ Air Polisher Agent glycine

Other:
☑ Topical Fluoride: 5% NaF varnish
☐ Arestin:
☐ Sealants:
☐ Impressions

Visit 3: (Date)

Patient Education:
- ☐ TB
- ☐ Interdental Aid
- ☐ Toothpaste
- ☐ Rinse

Radiographs: ☐ Digital ☐ Film
☐ FMS ☐ BWS (V/H) ☐ Pan

Debridement:
☐ Quadrant ☐ Whole Mouth

Pain Management:
☐ Oraqix
☐ Local Anes.

Coronal Polish:
☐ Agent
☐ Air Polisher Agent

Other:
☐ Topical Fluoride:
☐ Arestin:
☐ Sealants:
☐ Impressions

Visit 4: (Date)

Patient Education:
- ☐ TB
- ☐ Interdental Aid
- ☐ Toothpaste
- ☐ Rinse

Radiographs: ☐ Digital ☐ Film
☐ FMS ☐ BWS (V/H) ☐ Pan

Debridement:
☐ Quadrant ☐ Whole Mouth

Pain Management:
☐ Oraqix
☐ Local Anes.

Coronal Polish:
☐ Agent
☐ Air Polisher Agent

Other:
☐ Topical Fluoride:
☐ Arestin:
☐ Sealants:
☐ 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.

Student Clinician | Attending Faculty | Date 10/9/18

Form to be scanned in patient record and dispensed to patient

The patient had 2 appointments scheduled for treatment.

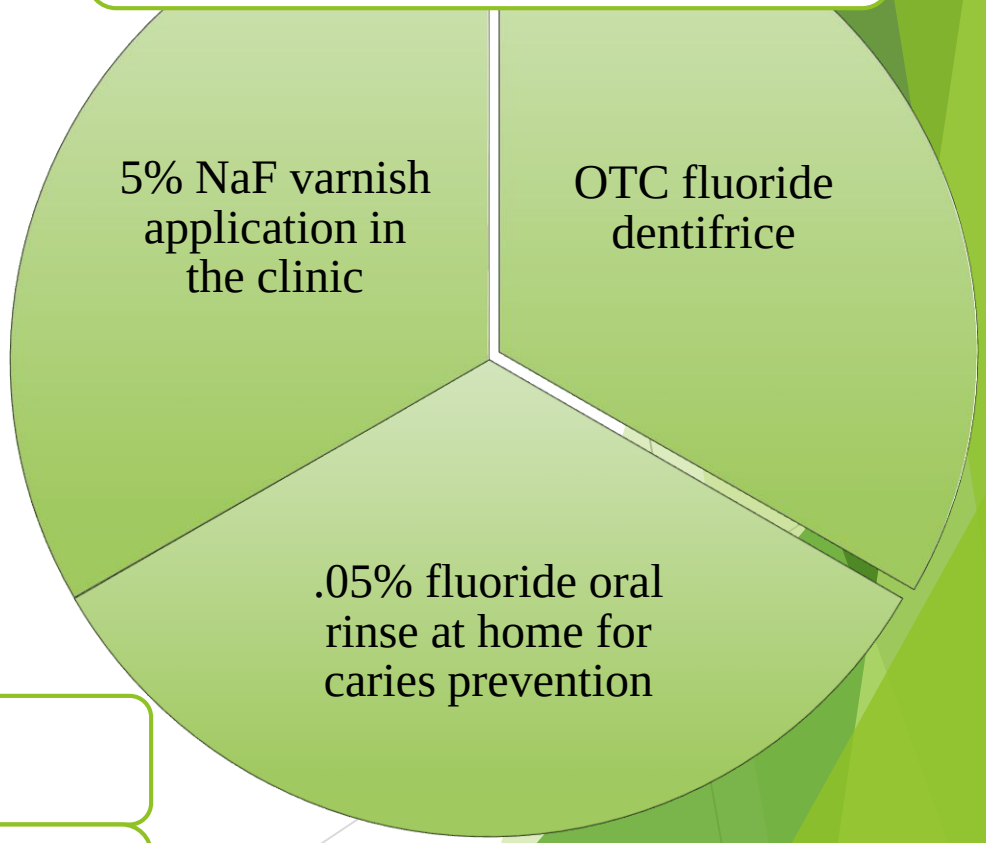
Implementation - Treatment

I. Preventive Services: Oral Self-care Instruction

Patient education on :

- How to use an electric toothbrush
- How to use proxa brush on interproximal areas
- Use of rubber tip on the soft gingival tissue on #15

Fluoride Therapies: Home/Professional



Antimicrobials : Listerine total care

Dietary Guidance : Patient was advised to minimize eating sugary food and the consumption of alcohol

Implementation - Treatment continued

II. Debridement Performed

- Hand instruments (universal and scaler) and ultrasonic scaler (green insert) were used for the removal of the subgingival and supragingival calculus.
- Intra oral and extra oral fulcrum techniques were used for premolar and anterior surfaces.
- Advanced fulcruming was used in #1 due to the tenacious calculus on the distal and buccal surfaces of the tooth. Treatment of the patient was a bit challenging because she has difficulty in opening her mouth.

III. Polishing Instrument

Air polishing with glycine powder was used for staining and plaque/biofilm removal. The patient has a lot of restorations so glycine is preferable because it is least abrasive. This powder is also recommended for supragingival.

IV. Varnish

5% NaF varnish was applied to the patient to protect from caries and erosion.

Evaluation of Care - Outcome of Care

Goal Statement	Prognosis
1. Patient will start using electric toothbrush 2 times a day by 3 month recare.	The goal to use the electric toothbrush will be met, patient has been using it as an alternative for her manual toothbrush.
2. Patient will start using the proxa brush and rubber tip 2 times a day by 3 month recare.	The goal will be met because during her second appointment, she stated that she was already using these interdental aids.
3. Patient will reduce BOP by 3 month recare.	The goal will be met. Patient is motivated to do the oral home care.
4. Patient will reduce 1-3 mm PD by 3 month recare	The goal will be met because she is seeing a periodontist and she's interested in the application of arestin.
5. Patient will report rinsing .05% fluoride rinse once a day for 1minute by 3 month recare.	The goal will be partially met, patient does not like the taste of oral rinse in general.

Referrals

Periodontist	• Patient has periodontal disease. Tooth #10 has a 10mm DP.
Oral Surgeon	• Needs a consultation for implant on #2, #3 and #19.

Also, the patient was given a referral form to see her dentist for hypersensitivity in the areas with dental erosion. Sometimes, restorations can be done to decrease the sensitivity. She also needs a prescription to help increase her saliva production.

Prognosis

Overall, patient's periodontal health had improvement over the 10 years of oral care in City Tech. The patient comes to the clinic diligently every 3 months and follows all the oral home care instruction. I believe the patient will have a positive outcome because she is motivated to improve her oral home care and change her diet.

Continued Care Recommendation

A 3 month recare interval was recommended to this patient because of periodontal disease and high caries risk. Bacteria that causes periodontal disease is re-established within 3 months after treatment. Periodontal maintenance is very important to disrupt bacterial growth that would cause an increase in probing depths. The application of 5% NaF varnish should be performed every 3months.

Final Reflection

Due to physical limitations, the patient had difficulty of opening her mouth. I could have used a mouth block to keep her mouth open. Wisdom tooth #1 was really hard to access and there was tenacious calculus build up on the distal subgingivally. I could have used the gracey curet 13/14 to go into deeper pockets. I used the universal curet and scaler most of the time. Also I could have used the 3 bend blue tip of ultrasonic scaler for better access of tenacious calculus on the posterior teeth. The patient also had sensitivity on the lingual mandible anterior due to recessions. I could have used an oraquix or local anesthetic to make the patient comfortable. Although, the patient told me she preferred not to have injection. The engine polishing was not working so well so it took time for me to remove all of the stains. I needed to use the hand instrument for most of the stained teeth. Overall, it was a great experience to treat a patient who has a medical condition. As a dental hygienist, I should be knowledgeable enough to know how the patient's condition affects dental treatment. At the end of the treatment, the patient told me I was very gentle. When I called her the next day to check up on her, she replied she didn't feel any discomfort and she was grateful. She said I am going to be a great dental hygienist in the future. Those words keep me motivated in finishing this course.