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

Agosto, Alexa 11/24/18

### **Patient Profile**

- Mr. A. is a 49 Year-old male.
- Middle class, lives in the Bronx, NY.
- PDH: presently, he has no dental insurance, therefore does not seek oral health care. Patient has not received a dental check up in over 20 years. His last dental hygiene visit was in 2008 at Hostos College Dental Hygiene Clinic. Radiographs were taken at this time, but he does not remember what type.
- Social Hx: daily betel quid chewer and drinks 2 beers occasionally. In India, chewing betel quid is very popular. Quid is defined as a mixture of substances that is placed in the mouth and chewed or remains in contact mucosa. Patient currently chews tobacco mixed with betel nut and manikchand for 30+ years.
- Ethnicity: East India, Hindi and studies a religion of Hindu.
- Patient states he brushes once a day with a medium bristled brush using sodium fluoride based toothpaste. He also states he does not floss or use a mouth rinse. Source: (https://www.ncbi.nlm.nih.gov/books/NBK316574/)



### **Chief Complaint**



- Patient states that, "my teeth are ugly because I have black stains everywhere".
- He has generalized brown and black staining on all aspects of his teeth both extrinsic and intrinsic.
- Mr. A. would like to get his teeth cleaned so he can smile again with confidence.



## Health History Overview

#### Blood Pressure: 139/91, Pulse: 91 ASA: III Medical Conditions:

- Betel nut quid use
- Diabetes Mellitus Type II
- Hyperlipidemia
- Urinary Incontinence
- **Current Medications:** 
  - Metformin 1,000mg BID for treatment of type II diabetes
  - Lisinopril 10mg QD for cardiovascular disease prevention
  - Atorvastatin 10mg QD for hyperlipidemia





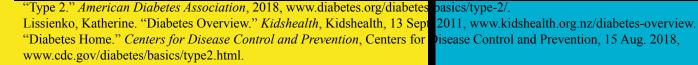
## Betel Nut Quid Use

Betel nut quid is believed to be used by about 20% of the world's population. It is very popular in countries like Asia and India. Betel nut is a fruit from areca palm. It's consumption consists of wrapping it in betel leaf mixed with other ingredients such as sweetening agents, spices and tobacco. Consumers typically tuck the betel leaf between the buccal mucosa and gingiva. They allow it to sit in place inside of their mouth for hours at a time. Research has suggested that betel nut quid use is a high risk factor for oral cancer squamous carcinoma.

https://publichealthlawcenter.org/sites/default/files/resources/Health-Risks-Betel-Quid-and-Tobacco-2017.pdf

### **Diabetes Mellitus Type II**

- Diabetes Type II is a hyperglycemic condition related to when blood glucose levels increase due to insulin resistance or pancreatic failure.
- This condition may present from genetic inheritance and/or environmental factors. The main cause of Diabetes Type II is obesity and lack of physical exercise.
- Signs & Symptoms of Undiagnosed Include:
- Excessive thirst
- Frequent urination
- Hunger
- Tiredness



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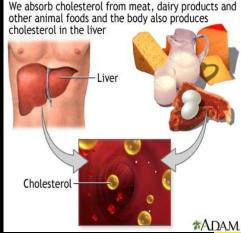
### Hyperlipidemia

Hyperlipidemia occurs when there is a presence of high lipid levels in the bloodstream. Cholesterol is a lipid that may potentially build up in the arteries causing restriction of blood flow. Although the liver synthesizes lipids, genetics and poor nutrition may alter the amount of lipids in the body increasing the risk of heart disease and/or heart attack. Symptoms/Risk Factors:

- Very often there are no signs or symptoms, a person may present with hyperlipidemia and not know it unless a blood test is performed.
- Smoking
- High blood pressure
- Obesity/overweight

"High Blood Cholesterol Levels: MedlinePlus Medical Encyclopedia." MedlinePlus, U.S. National Library of Medicine, 2018, medlineplus.gov/ency/article/000403.htm. "Guideline for Treating Blood Cholesterol to Reduce Cardiovascular Risk." *Global*, www.cardiosmart.org/Heart-Conditions/Guidelines/Cholesterol. www.cardiosmart.org/Heart-Conditions/Guidelines/Cholesterol.

"High Blood Cholesterol." National Heart Lung and Blood Institute, U.S. Department of Health and Human Services, www.nhlbi.nih.gov/health-topics/high-blood-cholesterol.



### **Diabetes Type II Management**

- Medical management of Type II diabetes includes oral hypoglycemic medications, nutritional diet and physical activity. Depending on the severity of the disease, patient's may be prescribed injectable insulin medications if they are not responding well to oral medications. However, since diabetes and cardiovascular disease come hand in hand, many patients are put on anti-hypogylcemic and cardiovascular agents.
- Mr. A. is currently managing his condition by being under the care of a physician. He is also taking oral medications such as metformin 1,000mg BID, and lisinopril 10mg QD. Mr. A. reports his current HBA1C level is a 6.4 and that he maintains three month recare physician appointments.





"Type 2." *American Diabetes Association*, 2018, www.diabetes.org/diabetes-basics/type-2/. Lissienko, Katherine. "Diabetes Overview." *Kidshealth*, Kidshealth, 13 Sept. 2011, www.kidshealth.org.nz/diabetes-overview. "Diabetes Home." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 15 Aug. 2018, www.cdc.gov/diabetes/basics/type2.html.

## Hyperlipidemia Management

- Medical management of hyperlipidemia initially begins with nutritional diet and exercise. OTC drugs such as omega 3 fatty acids may help reduce cholesterol. Physician's may also prescribe antihyperlipidemic agents such as niacins, statins, bile-acid-binding resins, fibrates, & ezetimibe to help reduce cholesterol levels and the overall risk of stroke and heart failure.
- Mr. A is currently managing his condition by being under the care of his physician and taking medication such as atorvastatin 10mg PO 1x daily. He also states he maintains a nutritional diet.



"High Cholesterol." *Mayo Clinic*, Mayo Foundation for Medical Education and Research, 15 Aug. 2017, www.mayoclinic.org/diseases-conditions/high-blood-cholesterol/diagnosis-treatment/drc-20350806. "Guideline for Treating Blood Cholesterol to Reduce Cardiovascular Risk." *Global*, www.cardiosmart.org/Heart-Conditions/Guidelines/Cholesterol. www.cardiosmart.org/Heart-Conditions/Guidelines/Cholesterol.

"High Blood Cholesterol." National Heart Lung and Blood Institute, U.S. Department of Health and Human Services, www.nhlbi.nih.gov/health-topics/high-blood-cholesterol.

#### **Diabetes Type II Risk of Oral Manifestations**

Several cases have been reported of irregular oral conditions on patients with known & unknown diabetes Type II. Signs & Symptoms Include:

- Xerostomia
- Hypogeusia
- Delayed mucosal wound healing



- Increased bleeding & inflammation of the gingiva
- Oral infections such as candidiasis, angular cheilitis, stomatitis
- Increased risk of periodontal disease, tooth loss and carious lesions

"Diabetes and Your Smile." Mouth Healthy TM, www.mouthhealthy.org/en/az-topics/d/diabetes.

Al-Maskari AY, Al-Maskari MY, Al-Sudairy S. Oral Manifestations and Complications of Diabetes Mellitus: A review. Sultan Qaboos Univ Med J. 2011;11(2):179-86.

Lissienko, Katherine. "Diabetes Overview." Kidshealth, Kidshealth, 13 Sept. 2011, www.kidshealth.org.nz/diabetes-overview.

### **Diabetes Medical Management**

#### **Contraindications for Care:**

- Careful monitoring that patient's HBA1C is in a therapeutic range (<7.0)
- Patient non-compliant with medicine

#### **Patient Management Strategies:**

- Always ask patient questions about last meal, most recent blood sugar glucose & HBA1C levels.
- Early morning scheduled appointments.
- Patient is directed to take medication before appointment.
- Test patient's sugar with glucometer
- Patient is advised to eat before appointment to reduce risk of hypoglycemia.

"Diabetes." *Diabetes*, 2018, www.ada.org/en/member-center/oral-health topics/diabetes. Skamagas, M., Breen, T.L., LeRoith, D. (2008) Update on diabetes melling: prevention, treatment, and association with oral diseases. "Oral Health Fact Sheet for Dental Professionals." *Dental.washington.et*, u, dental.washington.edu/wp-content/media/sp\_need\_pdfs/Diabetes2-Adult.pdf.

## Hyperlipidemia Management

#### **Contraindications for care:**

- Patient is noncompliant with medication
- Additional cardiovascular disease
- Recent heart attack



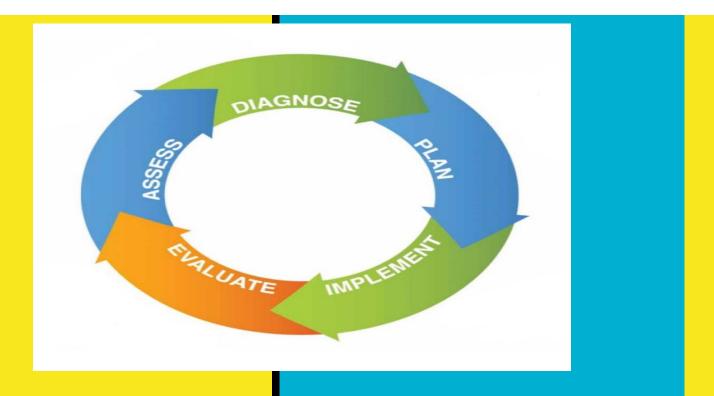
#### **Patient Management Strategies:**

- Always ask patient questions about recent cholesterol levels
- Precise medical history
- Measurement of BP prior to treatment
- Patient is instructed to take medication prior to appointment

"Dental Considerations in Patients with Heart Disease." *Medicinaoral*, www.medicinaoral.com/odo/volumenes/v3i2/jcedv3i2p97.pdf. "Managing Dental Health With Cardiovascular Issues." *Taktent.org.uk*, www.taktent.org.uk/articles/cardiovascular-issues.html. Lara M. Seidman Mary Beth Aichelmann-Reidy, DDS ¢ Nasir Bashirelahi, PhD. *The Academy of General Dentistry*,

www.agd.org/docs/default-source/self-instruction-(gendent)/gendent\_so17\_bashi relahi.pdf.

### **Comprehensive Assessments**



### **Clinical Findings**

- 1. Extraoral Examination: TMJ bilateral crepitation and clicking.
- 2. Intraoral Examination: Brown coated tongue. Hyperkeratinized linea alba with brown outline and cheek trauma on left side due to betel nut quid use. Referral given for suspicious oral cancer lesion found on the wall of the left pharynx with irregularly shaped borders, white with brown outlines approximately 10mm in size.
- 3. Occlusion: Bilateral Class I. Overjet: 4mm. Overbite: 15%
- 4. Dental Charting: Missing #1, 16, 17 & 32. Generalized attrition & recession.
- 5. Deposit: Generalized extrinsic and intrinsic dark brown staining. Moderate subgingival calculus.





### **Pre-treatment Intraoral Photos**



### Pre-treatment Intraoral Photos



### Pre-treatment Intraoral Photos



## Clinical Presentation of Oral Pathology Findings



### **Explanation of Differential Diagnosis & Suspicious Lesions**

1. High suspicion of squamous cell carcinoma on the wall of the left pharynx with irregularly shaped borders, white colored with brown outlines approximately 10mm in size. 2. Trauma

### Tooth Staining from Betel Nut Use

**Research has indicated that long term chewing of** betel nut stains the teeth intrinsically. Depending on the number of years, the permanent color ranges from red to black. For Mr. A., he has been chewing tobacco mixed with betel nut for over 30 years, therefore the extrinsic stains on the enamel of his teeth have transformed into intrinsic stains on the dentin layer.

http://www.cancerjournal.net/article.asp?issn=0973-1482;year=2014;volume=10;issue=3;spage=499;epage=505;aulast=Anand

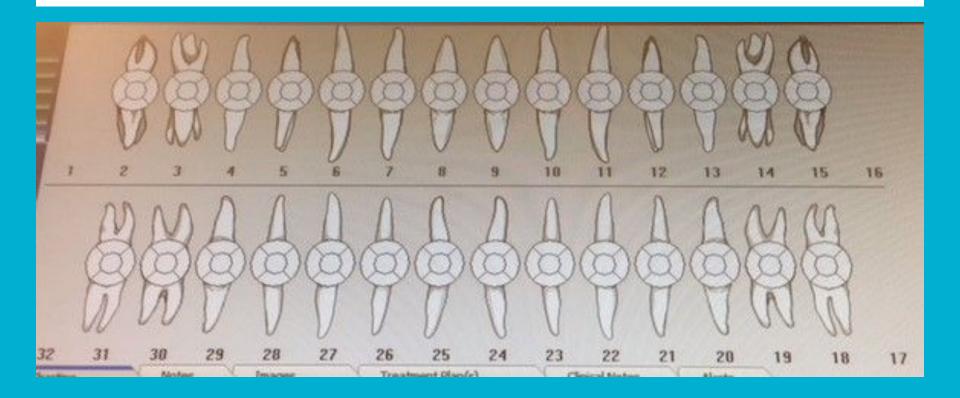
#### **Post-Treatment Intraoral Photos**



#### **Post-Treatment Intraoral Photos**



### **Dental Charting**



# Caries Risk

### Assessment

No clinical or radiographic evidence of caries, however patient is at a moderate risk for caries due to no dental home and systemic condition that can possibly cause xerostomia.

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### Gingival Description & Periodontal Status

- Generalized fibrotic, pigmented gingiva with rolled margins and moderate inflammation.
- Generalized moderate periodontitis.
- Generalized moderate BUP.
- Generalized 5-7mm CAL with possible horizontal bone loss due to generalized severe recession.
- Grade I furcations on teeth #3, 14, 18-20, 30-31
- No mobility present.

### **Periodontal Charting**

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### **Dental Hygiene Diagnosis**

• Type III active periodontitis due to 5-6mm probing depths, moderate BUP, severe recession and Grade I furcations on #3, 14, 18-20, 30-31.



- Patient is at a moderate risk for caries due to no dental home and generalized exposed root surfaces.
- Patient given a referral to PCP for evaluation by ENT for suspicious oral cancer lesion found on the wall of the left pharynx with irregularly shaped borders, white with brown outlines approximately 10mm in size. Patient was not given referral to oral surgeon because he has no dental insurance.

## Dental Hygiene Care Plan

- 1. Patient will report checking with oral surgeon about oral pathology lesion by 3 month recare.
- 2. Patient will report using soft-pick 1x a day by 3 month recare.
- 3. Patient will report brushing twice a day with a soft bristled brush for 2 minutes by 3 month recare.



### **Consent for Treatment**

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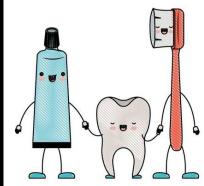
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### **Implementation - Treatment**

- 1. Preventative Services:
  - Oral Self Care Instructions: Patient was informed, to brush for two minutes twice a day using a soft bristled brush. In addition, he was taught the Modified Bass toothbrushing technique to disrupt the presence of biofilm and to use soft-picks to remove interproximal debris and clean furcation areas and type 2 embrasure spaces.
  - Fluoride Therapies: Patient was advised to use a sodium fluoride 1.1% toothpaste.
  - Sealants: Patient was not a candidate for sealants.
  - Antimicrobials: Patient was advised to use alcohol free mouth rinse Colgate Total Advanced Proshield for antibacterial protection. mouth rinse twice a day. Patient was explained the directions as to swish 20ml for 30 seconds twice daily.
  - Dietary Guidance: Patient was recommended to increase fruit and vegetable intake.



#### **Implementation - Treatment Continued**

- **2.** Debridement Performed:
- Debrided using the FSI- power 1000 triple bend and hand scaled using the sickle scaler's and gracey's to remove all heavy extrinsic stains, calculus and biofilm at all four quadrants in multiple visits. I was able to use both extraoral and intraoral fulcrum techniques when using the cavitron. Engine polished with fine paste to assist removing additional extrinsic stains and applied 5% fluoride varnish to reduce the risk of future caries due to no dental home & generalized root exposure.
- During debridement, the patient was well managed. He did not need any local anesthesia and was very well at suctioning areas when water accumulated. One difficulty I had during debridement was distinguishing if the staining was extrinsic or intrinsic. Therefore, I used hand instruments to detect the difference.



#### Evaluation of Care - Outcome of Care -Prognosis

	GOAL STATEMENT		<b>PROGNOSIS</b>
1.	Patient will report checking with oral surgeon about oral pathology lesion by 3 month recare.	1.	Goal to see a oral surgeon <u>has potential</u> to be met because patient seems concerned about lesion and states he will take referral to his primary care doctor.
2.	Patient will report brushing twice a day with a soft bristled brush for 2 minutes by 3 month recare.	2.	Goal to brush twice a day <u>has potential</u> to be met because patient states he likes the soft bristled brush better than the medium.
3.	Patient will report using soft-pick once a day by 3 month recare.	3.	Goal to use soft-pick once a day <u>will not</u> be met because patient states he does not like the soft-picks or any types of interdental aids.

### Referrals

A referral to see an ENT was given to the patient for a biopsy of a suspicious oral cancer lesion located on the wall of the left pharynx with irregularly shaped borders, white with brown outlines approximately 10mm in size. Patient has stated that he went to ENT and has a biopsy appointment scheduled for December 2018.



### **Continued Care Recommendations**

Patient is recommended for 3 month recare appointments, due to excessive biofilm build up and heavy staining. Patient is also a moderate risk for caries and should be evaluated every 4-6 months for any new carious lesions.

# Positive Final Reflections



**During the treatment phase, patient** compliance and debridement went very well. Patient was provided bathroom breaks due to urinary incontinence. The treatment plan was accurately followed and did not need any modifications.

# Critical Final Reflections

During the assessment phase, I struggled with documenting the lesion found on the left pharnyx. This was my first time treating a patient who chews betel nut quid.

# Critical Final Reflections

**During oral hygiene intervention, instead of** teaching the patient how to use a manual toothbrush I feel I should have taught my patient how to use an electric toothbrush. The Oral B powered toothbrush has a brush head that moves in correct motion. It can also detect when too much pressure is being used and has a timer so that the patient brushes for two minutes. I believe, the powered toothbrush would have been more beneficial to the patient.