New York City College of Technology

Department of Dental Hygiene

DEN 2300

Case Presentation

Student's Name: Nazrin Akbarova

Date: November 23, 2018

Patient Profile

- Ms. K is a 26 years old African-American, single, female
- Middle class, lives in New York with her boyfriend. Has an associate degree in arts, but currently babysitting. Has no dental insurance and has to pay out-of-pocket for care.
- Her last dental exam was on 9/5/18 for yearly check-up. Never had any hygiene services done before. Full mouth radiographs were taken in October/2017.
- Patient states brushing with electronic toothbrush once a day for 2 minutes with Colgate desensitizing toothpaste and using floss picks 2-3 times a week, Crest mouthwash 2 times a day.

Chief Complaints [CC]

- Patient states that "*My bad breath bothering me and also gums bleed a lot*."
- She has heavy deposits on all of her teeth.
- Ms. K would like to get her teeth cleaned so she would not need to carry mouthwash with her all the time.
- She is also concerned about her teeth appearance.

Health History Overview

Blood Pressure: 160/117, Pulse 77, ASA III

Medical Conditions: Dialysis Patient

Current Medications:

- ***Heparin*** (anticoagulant): right before dialysis procedure to prevent deep vein thrombosis. Routine hemodialysis requires anticoagulation with heparin to prevent clotting in the extracorporeal circuit. Because patient responses to heparin differ markedly, the doses required to achieve suitable anticoagulation must be determined on an individual basis.

- ***Calcium Acetate:*** during meal time for hyperphosphatemia (reason: too much phosphate in the blood). Phosphate binders, including non-calcium-based phosphate binders and calcium-based phosphate binder, are widely used to lower serum phosphorus levels in CKD (Chronic Kidney Disease) patients and prospective cohort study proved that treatment with phosphorus binders was independently associated with improved survival among incident hemodialysis patients.

- **Nifedipine** (Calcium Channel Blocker): 30 mg (1 tablet) once a day in the morning for hypertension. Results show that oral Nifedipine is effective in rapidly reducing blood pressure during or following hemodialysis.

Sources:

Schwartz, Lawrence B. "Heparin Comes Clean.(heparin Does Not Contain Sulfate Contaminants)(Editorial)." *The New England Journal of Medicine* 358.23 (2008): 2505-9. Web.

Choy, B Y, W K Lo, and I Kp Cheng. "Effectiveness of Calcium Acetate as a Phosphate Binder in Patients Undergoing Continuous Ambulatory Peritoneal Dialysis." *Hong Kong Medical Journal = Xianggang Yi Xue Za Zhi* 4.1 (1998): 23-26. Web.

Horiuchi, Daitaro, and Tagawa, Hitoshi. "Gingival Hyperplasia Induced by Nifedipine and Manidipine in a Dialysis Patient." *Nihon Toseki Igakkai Zasshi* 27.4 (1994): 325-27. Web.

Explanation of Conditions

- **Patient is on dialysis 3 times per week (Mon. Wed. Fri).**

The condition is a result of an end stage renal failure - Stage 5 End Stage Chronic Kidney Disease (CKD) (GFR <15 mL/min) which was diagnosed at the age of 10. In children, genetic causes account for the greatest number of cases. Had multiple (four) kidney transplants in the past which were not successful.

Signs and Symptoms:

- *high blood pressure readings due to excess fluid in the body;*
- *decreased urinary output;*
- *swelling due to fluid retention;*
- *nausea;*
- *fatigue*
- *shortness of breath*
- *too much acid in blood tissues.*

Chronic kidney disease (CKD) usually gets worse slowly, and symptoms may not appear until your kidneys are badly damaged. In the late stages of CKD, as you are nearing kidney failure (ESRD), you may notice symptoms that are caused by waste and extra fluid building up in your body. These patients require special attention with regard to bleeding tendencies, risk of infection, xerostomia and multiple medication use.

Sources:

P. Cohen, Eric. "Epidemiology of Chronic Kidney Disease: The Role of the Laboratory." Nephrology and Clinical Chemistry The Essential Link. Vol. 1. Bentham Science, 2012. 66-73. Web.

Stefan, Mihaela S, and Steven L Cohn. "Chronic Kidney Disease." Perioperative Medicine. London: Springer London, 2011. 303-14. Web.

Explanation of Conditions

Major oral manifestations in patients with ESRD can include ammonia-like breath, stomatitis, gingivitis, and hyposalivation. One of the earliest symptoms reported by patients is the ammonia-like breath-smell caused by the high concentration of urea in the body and its conversion to ammonia in the saliva. Other oral manifestations of ESRD include tooth mobility, malocclusion, soft tissue calcifications, and paleness of the oral mucosa due to anemia. Some patients undergoing dialysis are at increased risk for tooth erosion due to regurgitation that has often been associated with the dialysis process.

When treating dialysis patients it is important to keep in mind that some may be pre-occupied with the treatment of their renal disease and have a tendency to neglect preventive oral health measures. Patients may also experience stress in trying to comply with the extensive dietary restrictions and medication programs, which may also contribute to anxiety and aversion to further preventive instruction. In addition to good oral health promotion, there is an increased need for collaboration between the dental and medical professions to provide safe and appropriate dental care for these patients.

Sources:

Bayraktar, G, et al. "Oral Health and Inflammation in Patients with End-Stage Renal Failure." *Current Neurology and Neuroscience Reports.*, U.S. National Library of Medicine, 29 July 2009, www.ncbi.nlm.nih.gov/pubmed/19602614 .

Eltas, Abubekir, Ummühan Tozoğlu, Mustafa Keleş, and Varol Canakci. "Assessment of Oral Health in Peritoneal Dialysis Patients with and without Diabetes Mellitus." *Peritoneal Dialysis International : Journal of the International Society for Peritoneal Dialysis* 32.1 (2012): 81-5. Web.

National Institute of Diabetes and Digestive and Kidney Diseases. *United States Renal Data System 2010 Annual Data Report: Volume 2: Atlas of End-Stage Renal Disease in the United States.* Washington, D.C.: U.S. Government Printing Office; 2010. NIH publication 09–3176. Report.

Swapna, Lingam Amara et al. "Oral health status in haemodialysis patients" *Journal of clinical and diagnostic research : JCDR* vol. 7,9 2013. 2047-50.

Ziebolz, Dirk, Petra Fischer, Else Hornecker, and Rainer F. Mausberg. "Oral Health of Hemodialysis Patients: A Cross-sectional Study at Two German Dialysis Centers." Hemodialysis International 16.1 (2012): 69-75. Web.

Explanation of Conditions

Dialysis patients may form calculus more rapidly than healthy individuals possibly due to high salivary urea and phosphate levels. Elevated parathyroid hormone synthesis is also common in ESRF which causes accelerated bone loss. This may also exacerbate periodontal disease. Transplant patients who are immunosuppressed often experience a change in oral flora. This can predispose the patient to oral candidiasis. In addition cyclosporine and calcium channel blockers are known to contribute to gingival hyperplasia, which is exacerbated by poor oral hygiene.

The main oral health problem experienced by renal patients is xerostomia. This is a result of several factors which include multiple medications, restricted intake of fluids and diabetes, which many renal patients suffer from. Xerostomia may also predispose the patient to caries, mucositis and oral infection as the protective factors in saliva are not present.

Keeping a healthy smile when you have kidney failure can take some extra effort. The type of treatment you choose can affect the health of your teeth and gums. In turn, your oral health can have an positive impact on the rest of your body.

Sources:

Adnan, Hina. "Renal Disease and Dental Care" *SlidePlayer*, Inaya Medical College, Jan. 2015, www.slideplayer.com/slide/5783990/.

Gupta, Megha et al. "Oral conditions in renal disorders and treatment considerations - A review for pediatric dentist" *Saudi dental journal* vol. 27,3:113-9. 2015

Parkar, S M and C G Ajithkrishnan. "Periodontal status in patients undergoing hemodialysis" *Indian journal of nephrology* vol. 22,4. 2012.

How Conditions are Managed

Due to patient's high BP readings we asked the patient for physician's clearance letter and suggested to have dialysis treatment 1 day before dental hygiene services. Hence, patient wouldn't have much fluid retention in her body and her BP would be in balance.

Physician of my patient prescribed Nifedipine medications on a second visit of hygiene services to manage high BP readings. Patient is currently taking Nifedipine to lower BP readings, also continuing dialysis and effective oral home care.

According to the patient, the conditions are well-managed and focused on the control of fluid intake, excess sugar control, organized dialysis and antihypertensive treatment.

All accompanied by regular doctor visits.

Sources:

Ahmad S. Dietary sodium restriction for hypertension in dialysis patients. Semin Dial. 2004;17:284–7.[Accessed from PubMed]

Horl MP, Horl WH. Drug therapy for hypertension in hemodialysis patients. Semin Dial. 2004;17:288–94. [Accessed from PubMed]

Sekiguchi, Ricardo Takiy, Claudio Mendes Pannuti, Helio Tedesco Silva Jr., José Osmar Medina-Pestana, and Giuseppe Alexandre Romito. "Decrease in Oral Health May Be Associated with Length of Time since Beginning Dialysis." Special Care in Dentistry 32.1 (2012): 6-10. Web.

Dental Hygiene Management

There are no any contraindications for dental hygiene care.

Patient was put on Calcium Channel Blocker - antihypertensive medication: Nifedipine by her physician on a second dental hygiene visit. Nifedipine, a well-tolerated calcium-channel blocking drug, is known to produce a rapid and vigorous vasodilating effect on the peripheral vasculature.

My responsibility was to explain the patient how Nifedipine affects gingiva – gingival hyperplasia: commonly observed side effect of Nifedipine.

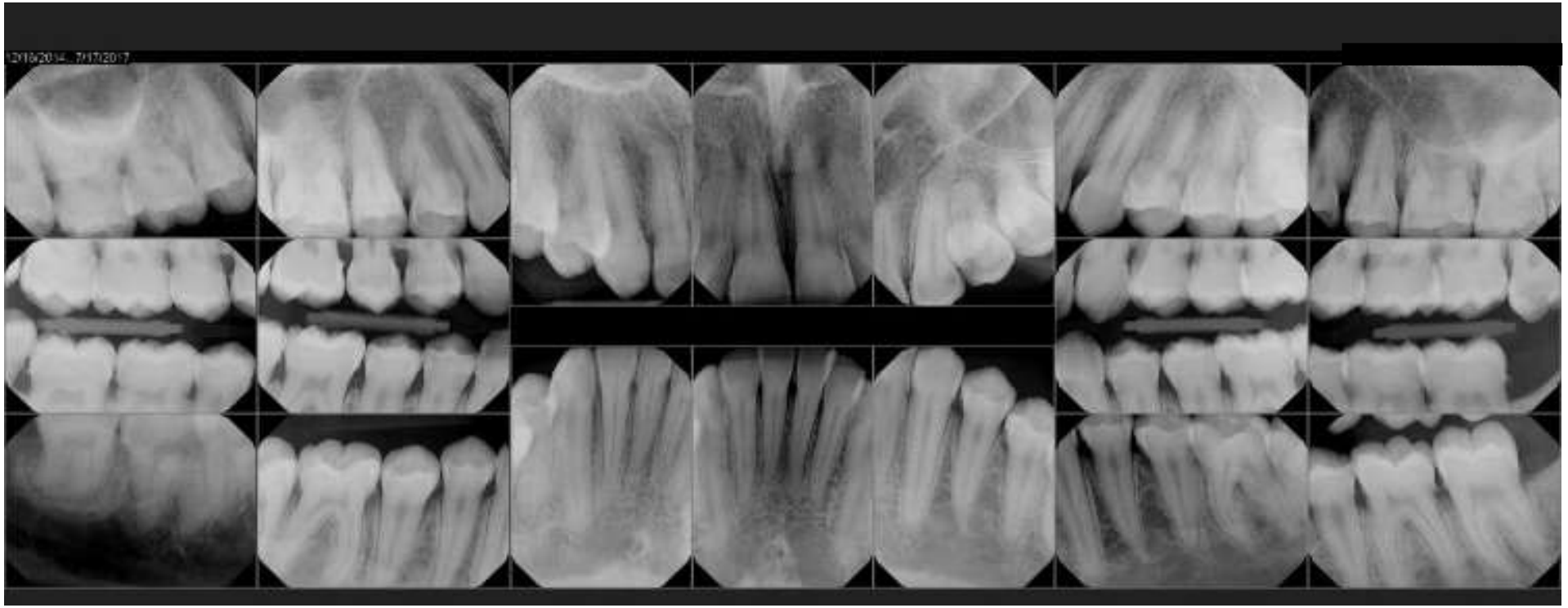
Sources:

Shah C, Joshi S, Sinha S, Parmar M, Joshi C. Amlodipine-induced gingival enlargement-A case series. *J Indian Dent Assoc* 2011;5:919-22.

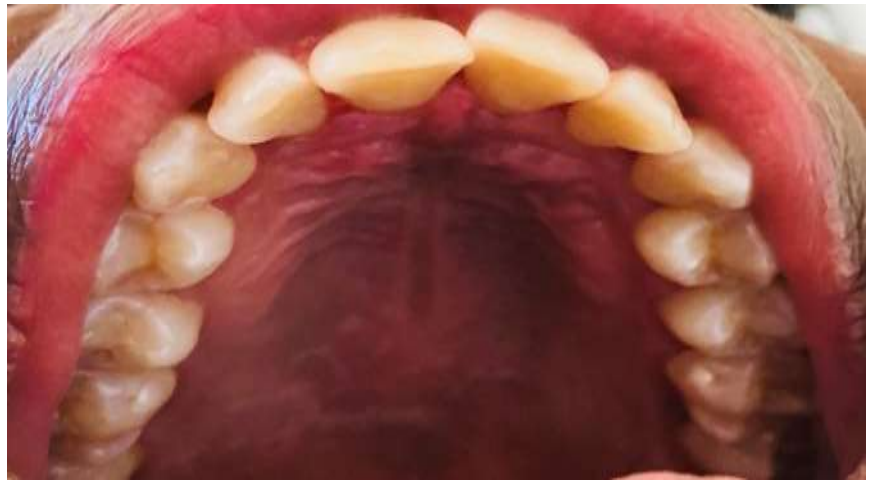
Weiss, J. H., D. M. Hartley, J. Koh, and D. W. Choi. "The Calcium Channel Blocker Nifedipine Attenuates Slow Excitatory Amino Acid Neurotoxicity." *Science* 247.4949 (1990): 1474-477. Web.

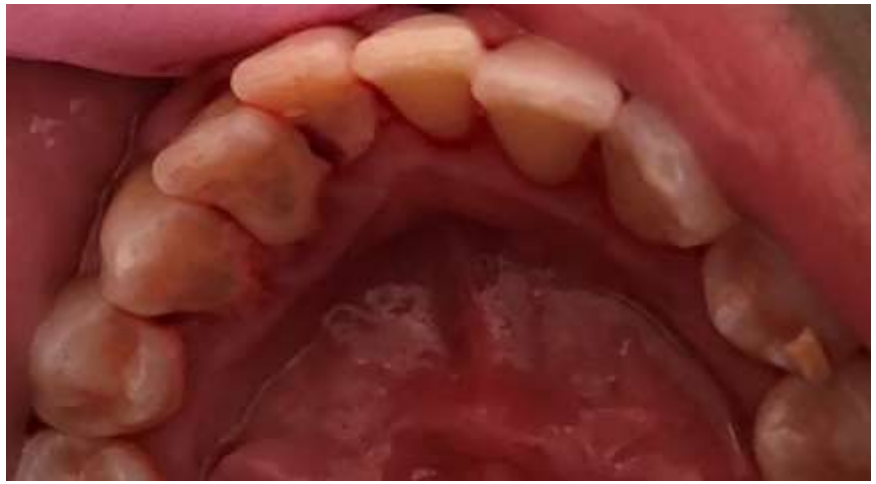
COMPREHENSIVE ASSESSMENTS

Radiograph(s)



Intraoral Photos





Summary of Clinical Findings

Extraoral Examination: Patient has a scar under the left side of her nose flares. According to the patient she fell after dialysis procedure due to dizziness. Right ear has a tear.

Intraoral Examination: No significant findings.

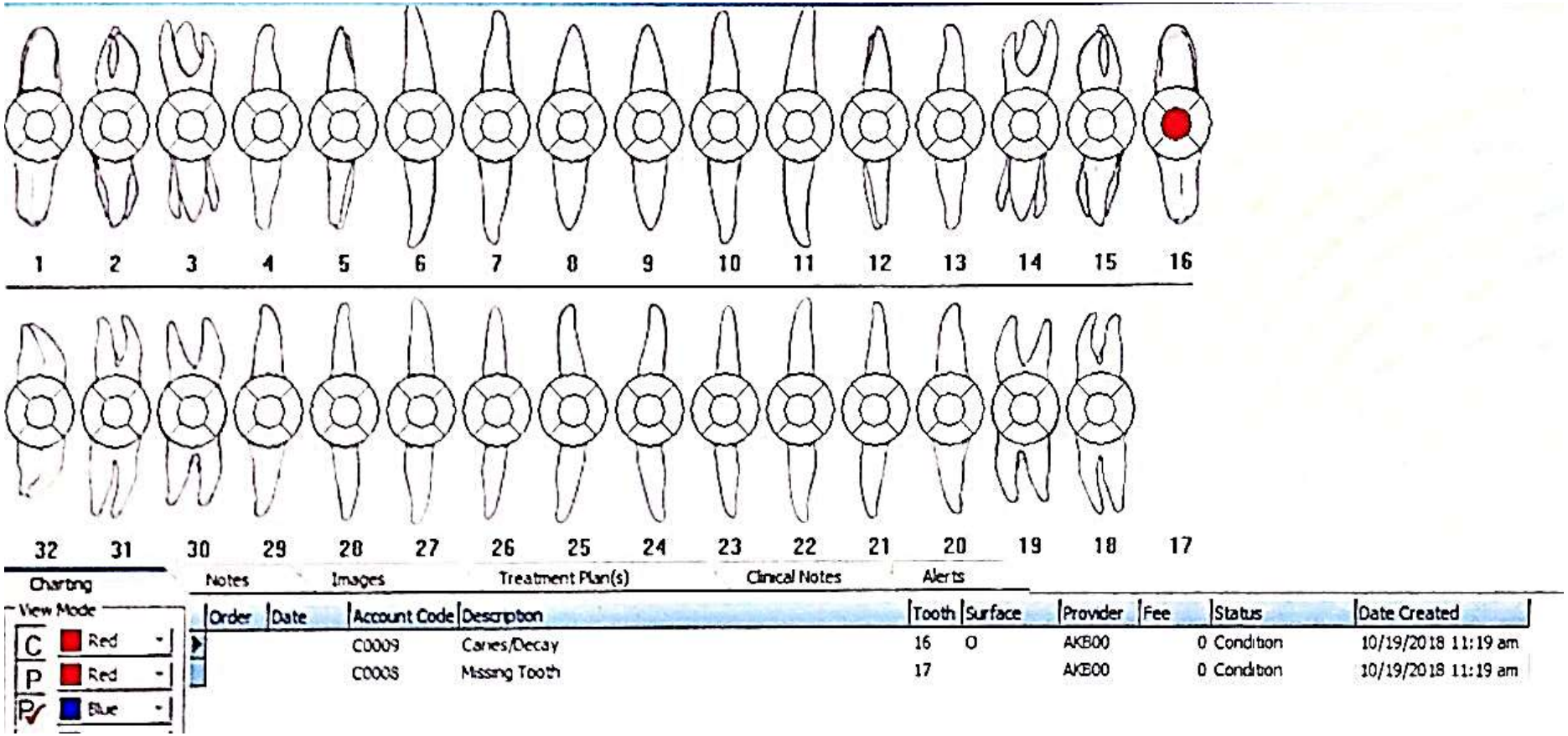
Occlusion: Class I; Moderate Overbite

Dental: Malposition/minimal crowding central and lateral mandibular incisors.

Deposits:

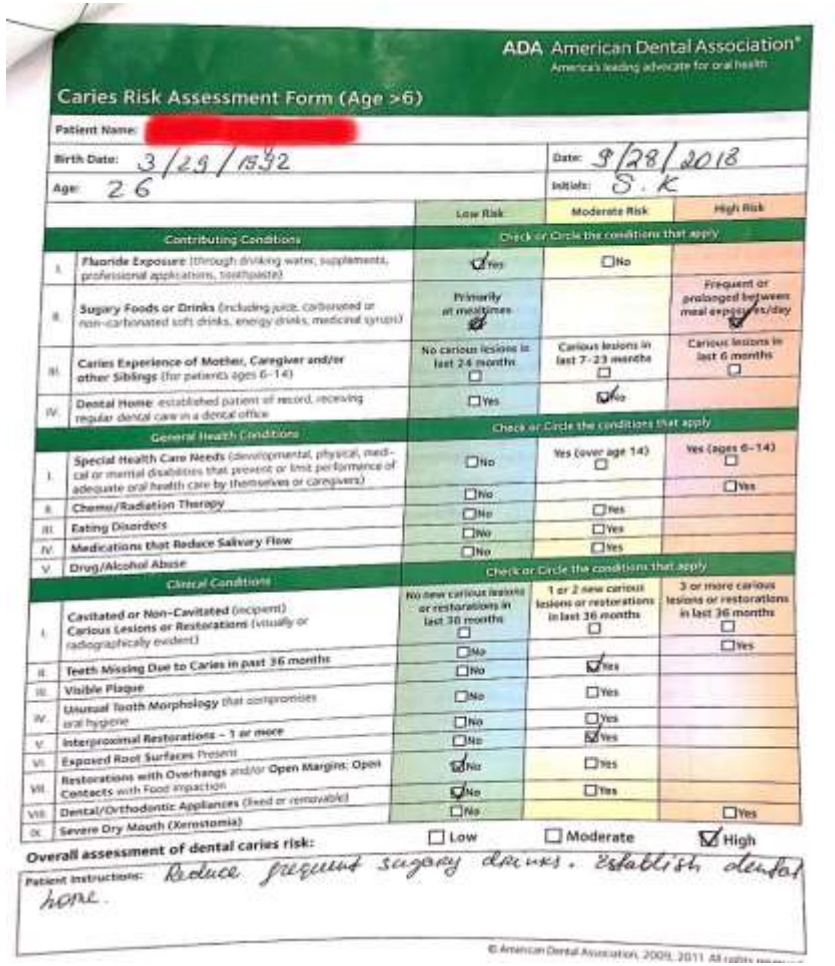
- Generalized light yellow stains
- Generalized severe supra/subgingival calculus

Dental Charting



Caries Risk Assessment

- Decay noted on the occlusal of #16
- No radiographic evidence of interproximal caries present.



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

Caries Risk Assessment Form (Age >6)

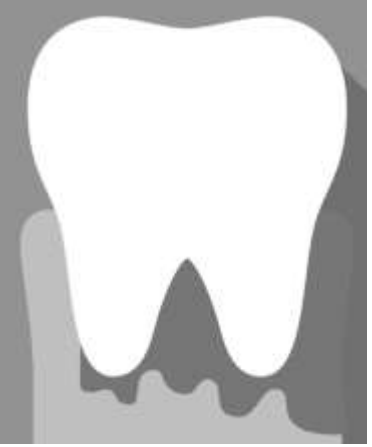
Patient Name: [redacted]
Birth Date: 3/29/1992 Date: 9/28/2018
Age: 26 Initials: S.K

		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)	☑ Yes	☐ No	
II.	**Sugary 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		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)	☐ No	Yes (over age 14) ☐	Yes (ages 6–14) ☐
II.	**Chemo/Radiation Therapy**	☐ No		☐ Yes
III.	**Eating Disorders**	☐ No	☐ Yes	
IV.	**Medications that Reduce Salivary Flow**	☐ No	☐ Yes	
V.	**Drug/Alcohol Abuse**	☐ No	☐ 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 ☐	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	☐ 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)**			

Overall assessment of dental caries risk: ☐ Low ☐ Moderate ☑ High

Patient Instructions: Reduce frequent sugary drinks. Establish dental home.

DENTAL HYGIENE 411



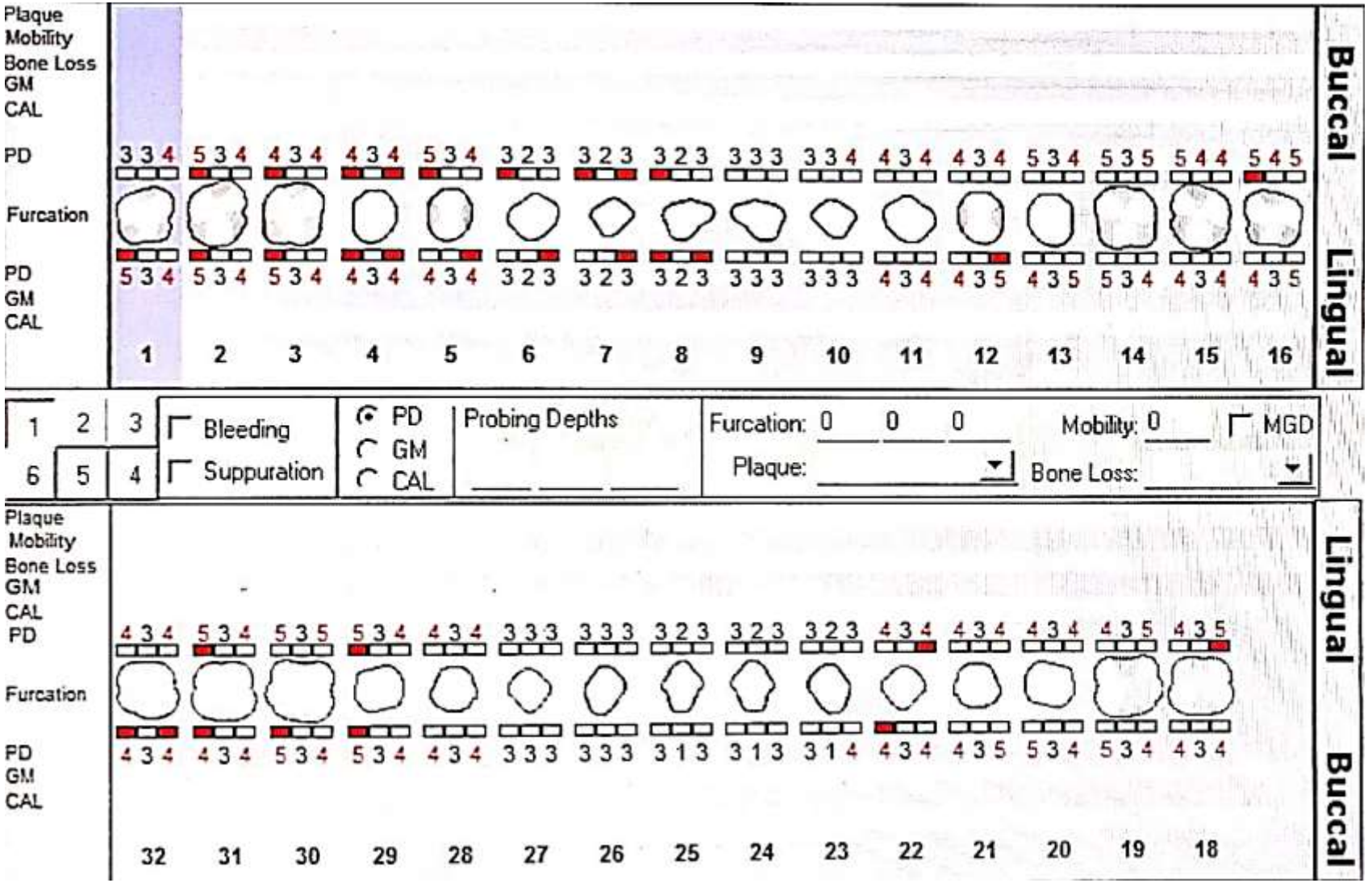
Gingival Description & Periodontal Status

Patient presented with active periodontal status : Type II.

Gingival description: *Gingiva is generalized erythematous and enlarged; papilla is inflamed, bulbous, leathery and shiny.*

- Generalized chronic slight periodontitis
- Generalized severe BOP
- Radiographic evidence of localized bone loss around tooth #24
- Localized moderate recession on teeth # 22, 24, 25, 27
- No clinical or radiographic evidence of furcation present.
- Localized mobility on tooth # 24

Periodontal Charting



Dental Hygiene Diagnosis

❖ Type II Active Periodontitis >>

- generalized 4-5 mm probe depths,
- severe BOP,
- radiographic evidence of localized slight bone loss around tooth #24.

❖ Patient is at a high risk for caries due to frequent sugary drinks and not established dental home.

Dental Hygiene Care Plan

1. Patient will report about using electric toothbrush twice a day for 2 minutes and regular flossing.

2. Patient will establish Dental Home by 3 month re-care.

3. Patient will report about reducing frequent sugary drinks.

Consent of Treatment

PROPOSED TREATMENT PLAN - INFORMED CONSENT

Visit 1: 9/28/18 (Date)	Visit 2: 10-5-18 (Date)	Visit 3: 10-12-18 (Date)	Visit 4: 10-19-18 (Date)
Patient Education:	**Patient Education:**	**Patient Education:**	**Patient Education:**
☑ TB Showed pt. right & el. tech	☐ TB	☐ TB	☐ TB
☐ Interdental Aid	☑ Interdental Aid Regular floss	☐ Interdental Aid	☐ Interdental Aid
☐ Toothpaste	☐ Toothpaste	☐ Toothpaste	☐ Toothpaste
☐ Rinse	☐ Rinse	☑ Rinse Listerine (antiseptic)	☐ Rinse
Radiographs: ☐ Digital ☐ Film	**Radiographs:** ☐ Digital ☐ Film	**Radiographs:** ☐ Digital ☐ Film	**Radiographs:** ☐ Digital ☐ Film
☐ FMS ☐ BWS (V/H) ☐ Pan	☐ FMS ☐ BWS (V/H) ☐ Pan	☐ FMS ☐ BWS (V/H) ☐ Pan	☐ FMS ☐ BWS (V/H) ☐ Pan
Debridement:	**Debridement:**	**Debridement:**	**Debridement:**
☑ Quadrant UR ☐ Whole Mouth	☑ Quadrant LR ☐ Whole Mouth	☑ Quadrant LL ☐ Whole Mouth	☑ Quadrant UL ☐ Whole Mouth
Pain Management:	**Pain Management:**	**Pain Management:**	**Pain Management:**
☑ Oraqix – 1 Carpule	☐ Oraqix	☐ Oraqix	☐ Oraqix
☐ Local Anes.	☑ Local Anes. PSA, MSA, ASA	☑ Local Anes. max. block	☑ Local Anes. PSA, MSA, ASA
Coronal Polish:	**Coronal Polish:** Mylacle directer, black	**Coronal Polish:**	**Coronal Polish:**
☐ Agent	☐ Agent	☐ Agent	☑ Agent Prophy paste (fine)
☐ Air Polisher Agent	☐ Air Polisher Agent	☐ Air Polisher Agent	☐ Air Polisher Agent
Other:	**Other:**	**Other:**	**Other:**
☐ Topical Fluoride:	☐ Topical Fluoride:	☐ Topical Fluoride:	☑ Topical Fluoride: Varnish
☐ Arestin:	☐ Arestin:	☐ Arestin:	☐ Arestin:
☐ Sealants:	☐ Sealants:	☐ Sealants:	☐ Sealants:
☐ Impressions	☐ Impressions	☐ Impressions	☐ 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.

[redacted] 9/28/18

Patient/Guardian Student Clinician Attending Faculty Date

Implementation of Treatment

1. Preventive Services:

- *Using electronic toothbrush twice a day for 2 minutes, flossing once a day with regular floss doing a "C" shape.*
- *Using Listerine antiseptic once a day.*
- *Fluoride Varnish (5% Sodium Fluoride) for dentinal hypersensitivity due to gingival recession.*
- *Reducing frequent sugary drinks. Removing totally is planned.*

Implementation of Treatment

2. Debridement Performed:

Debridement performed by using both Ultrasonic and hand instruments.

Prophylaxis treatment rendered as well as applying fluoride varnish.

Remembering advanced fulcrum techniques, root morphology, and types of strokes, as well as being knowledgeable about hand instruments were crucial in treating my patient.

The patient was using Heparin medication for her dialysis catheter, which made her blood very thin and created an additional challenge during debridement in the form of profuse bleeding. The amount was so profound that the teeth were almost unseen.

Another complication during the treatment was caused by Anesthetic. Due to high blood pressure, we were not able to use Epinephrine and replaced it with Carbocaine. But its effect was withering away rapidly and the sense of pain was coming back soon.

Evaluation of Care – Outcome of Care - Prognosis

Goal Statement	Prognosis
Patient will report about using electric toothbrush twice a day for 2 minutes and flossing once a day.	Patient was very compliant with all my suggestions and I forecast that goal should be met partially, considering medical condition.
Patient will report about reducing frequent sugary drinks.	This goal should be met in full as the patient was convinced in negative impact of these drinks to her CCs.

Referrals

Patient was referred to the dentist with following notes:

- to evaluate the carious lesion on tooth #16 and extract if needed,
- to check mobility on tooth #24.

(see attached Referral Form)

NEW YORK CITY COLLEGE OF TECHNOLOGY
City University of New York
Dental Hygiene Clinic
300 Jay Street, Brooklyn, NY 11201-1909

ADULT REFERRAL FORM

A copy of this original form has been placed in the patient's electronic record.

Date: 10-19-18

Dear Doctor,

A student, under faculty supervision, at the **Dental Hygiene Clinic** at the New York City College of Technology has performed a periodontal and oral disease risk assessment on: [redacted]

The patient is being referred to you for consultation and treatment in the following areas:

- Caries: #16
- Restorative Care:
- Oral Pathology:
- Oral Surgery: extract #16
- Periodontal Disease:
- Elevated Blood Pressure: 1st reading: _____ 2nd reading: _____
- Other: mobility #24

Thank you,
Dental Hygiene Student:
Attending Faculty: Christopher V Bowles

I, (the patient), have been informed of the clinical findings and recommendations. I understand that failure to comply with referral recommendations may result in permanent, irreversible long-term damage in the areas indicated. I further understand that failure to comply with recommendations may result in discontinuation of treatment at the dental hygiene clinic.

Continued Care Recommendations

I recommended 3 months re-care interval.

Reason: *The continued-care (re-care) is determined on the basis of individual patient needs. Continued care schedules with interval of 3 months was recommended to medically compromised patients who may be at increased risk and may benefit from more frequent recalls, also some medicines can cause more plaque, calculus to develop and gingival enlargement.* ***The goal is to be able to reveal minor problems at their early stage.***

Source:

National Collaborating Centre for Acute Care (UK). *Dental Recall: Recall Interval Between Routine Dental Examinations. London: National Collaborating Centre for Acute Care (UK);* 2004 Oct. (NICE Clinical Guidelines, No. 19.) Appendix G, Implementing the Clinical Recommendations – selecting the appropriate recall interval for an individual patient.
Available from: https://www.ncbi.nlm.nih.gov/books/NBK54548/

Final Reflection

Considering serious medical complications of my patient, application of the Individualized Human Needs Approach initially seemed over challenging. Beforehand, I had no experience working with someone that had such a complex medical history. I realized that with careful planning we are not just treating visible and diagnosed problems, but ideals, habits, and priorities as well. It was refreshing to involve a patient in her own oral health, instead of just fixing the neglect in her mouth.

No matter how rushed I felt or how scared I was to run out of time, it did not negatively affect the significance and quality of my job. It proved difficult sometimes, especially when I wanted to debride areas that were causing her pain, or use my ultrasonic tips in areas that were sensitive. Several times I was required to problem-solve and utilize the best tools and techniques that were taught during theoretical lectures.

I had to sacrifice some points on my special to accommodate my patient's needs, but it was worth it because my patient did endure to show up to her appointments regularly and expressed continuous interest in meeting our expected outcomes.

Once I had developed an appropriate care plan, I implemented treatment by educating Ms. K about self-care and by demonstrating tools that could achieve better oral health. We spoke over the following weeks so that I could ensure that she had begun to see oral health as a priority. I evaluated my services based on her responses and the tissue changes I had seen in her mouth. My instructors and peers provided advice and insight to help me provide the best care.

Final Reflection

My clinical strength with this patient was communication. She was not like any other patient I have had. I feel that the whole process went on smoothly. As a devoted hygienist and social observer, I contemplate that usually, the first impression matters the most. The way we communicate with our patients on the first visit can in major instances create a trust bonding that is important in the subsequent client <> healthcare provider relationship.

The only thing that I would change in treatment plan would be explaining the reason why it would be best to use anesthetic right on our first debridement day. Since my patient refused to get anesthesia prior to our first debridement procedure it took me longer to debride one quadrant than I expected and the appointment turned to be mentally exhausting. Further, I explained to my patient why local anesthesia benefits outweigh the risks, and we came to the mutual agreement to use anesthetic injections on our following visits.

Final Reflection

When I look back to the first day when Ms. K visited our clinic I remember her gloomy expression and frustration she had about the appearance of her teeth. She used to cover her mouth every time she talked or smiled.

Then at the end of her last visit, she smiled with a deep sense of gratitude full of self confidence and satisfaction about the appearance of her teeth.

Immediately after, I remembered a famous quote by Nhat Hanh,

“ Sometimes your joy is the source of your smile, but sometimes your smile can be the source of your joy.”

Final Reflection

Photographic Release Form

As part of this project, we will be taking photographs. Please initial in the spaces below what uses of these photographs you consent to, and sign at the end of the release form. Photos will only be used in the ways you consent to. Your name will not be identified in these photos.

1. K S Photographs can be used for project illustration.

2. K S Photographs can be used for classroom presentations.

[redacted]

Name

[redacted]

Signature

9/22/18

Date