

Group 4: David L, Natalia M, Erica L, Lin L, Irma L

DEN 1218 - D228

4/15/19

Treatment Planning Assignment

Periodontal disease is the loss of bone and gum tissue surrounding the teeth that causes the tooth to become loose. This is normally caused by bacteria traveling deeper as they break down the tissue. These bacteria are introduced due to the person not cleaning their mouth routinely allowing the bacteria to adhere and proliferate in their mouths. These descriptions can also be applied to type III/moderate chronic periodontitis but there are possibilities of furcation and mobility of the tooth due to the major bone and tissue loss surrounding the tooth. These descriptions of type III/moderate chronic periodontitis can create an influence of treatment planning for a patient. However, a patient could also have many other conditions such as systemic diseases that need to be considered while creating the treatment plan. For this paper we will be creating a treatment plan for a patient with type III/moderate chronic periodontitis alongside other conditions that may all affect treatment planning.

Before treatment planning can occur, we need to look at our patients' medical history to find out if he/she has any systemic conditions or if they are taking any medications that could affect our treatment plan. The first thing we should notice on the medical history is the medications our patient is taking Advair Diskus, Serevent Diskus, and Metformin. Advair Diskus is used to control and prevent wheezing and shortness of breath which could be caused by asthma or an ongoing lung disease like chronic periodontitis and emphysema. Side effects of Advair Diskus could be hoarseness, throat irritation, a headache or stomach ache, serious side effects could include a white patch on the tongue or anywhere in the mouth, oral side effects include oral candidiasis, dental caries and hoarseness. Serevent Diskus is used to prevent or decrease wheezing and trouble breathing caused by asthma, chronic pulmonary disease,

chronic bronchitis, and emphysema. Side effects of Serevent Diskus are hoarseness, throat irritation, and rapid heartbeat. Oral side effects are xerostomia, tooth pain, sores or white patches in the mouth, coughing, and sore throat. Metformin is used for lowering the blood glucose level by influencing the body's sensitivity to insulin which is used to treat type 2 diabetes. Side effects include weakness or lack of energy, respiratory tract infections, and chills. Due to these medications we can assume that the patient is diabetic and has a possible breathing problem. If we were to continue to go over the medical history, we would find that the patient has checked off for diabetes type 2 and Emphysema. Diabetes type 2 is when the body becomes resistant or is not as sensitive to react to insulin thus increasing the amount of glucose in the blood. Emphysema is a disease that causes shortness of breath due to damaged air sacs in the lungs. Due to these diseases we can already decide not to use air polishing since the patient has a breathing disorder and the air from the air polisher could affect the patient. We would also consider, while scaling teeth, how the tissue is responding since diabetic patients take a longer time to heal due to the blood glucose affecting the nerves which leads to bad circulation of blood needed for healing. Just by looking at their medical history we can already see what the possible outcomes for treatment can be without having to look in their mouth.

The next step we would take before making a treatment plan is doing an extraoral and intraoral examination. What we could possibly see in this patient extra orally are acanthosis nigricans which is a light brown to black coloring of the skin around the neck area which would further imply that the patient has diabetes. Before going Intra orally the patient could possibly state that they have pain in their teeth which could be due to the medication Serevent Diskus we could possibly smell a fruity breath from the patient due to the amount of glucose the patient has in their blood. In addition to Serevent Diskus, since it can cause xerostomia, the patient could also have signs of caries which indicates the need for radiographs. We could also possibly see redness of the throat which another side effect of Serevent Diskus. We would also likely see white patches throughout the patient's mouth because of Advair Diskus. These findings

would be considered within normal limits since none of these findings can be pathological or inhibit treatment for the patient. After these examinations the next step would be measuring probing depths which would indicate the patient's periodontal status. For type III/moderate chronic periodontitis probing depths are about 5-6mm with bleeding upon probing. We would also be able to notice how the tooth is able to move slightly about 2mm as well as depressions being easily made on the gingiva. These are indications of type III/moderate chronic periodontitis, but we would need to take radiographs such as a Full Mouth Series to be certain. However, consideration about the patient's last major dental radiographs would be considered.

To successfully treat this patient, we would need to have more than one visit since the patient is diabetic and treatment for this patient can be several hours, the patient would need to come again at another time to continue care. It would also be important for the patient to eat before coming as well as bringing a snack like an orange or juice. Once probing and exploring are completed we would begin to teach homecare based on the patient's needs. It would be best to influence the patient to use an interdental aid to fit the spaces in-between the open contacts of teeth. We would also consider how many areas of debridement there is which would indicate if scalers/curettes or cavitron are needed. But, since there is a possibility of tooth mobility it would be better to use manual scalers/curettes since we can control the force of removal. Due to the 5-6mm pockets it would be best to use an instrument with a long shank such as the SN 135. This could also be used if the patient has a lot of heavy calculus. Whilst scaling we should take extra precaution not to injure the tissue, since the patient is a diabetic, it would take longer to heal thus creating a bacteremia. Since the medication Serevent Diskus can cause tooth pain to the patient it would be best to administer anesthesia or a topical if the patient has trypanophobia. After debridement is completed we will begin to polish their teeth using the engine polisher. We would not consider using the air polisher since the patient has a history of Emphysema and the use of the air polisher can induce bacteremia in the patient's lungs. However, if the patient does not have any stain whatsoever we wouldn't

need to use the engine polisher unless the patient specifically asked to for cosmetic purposes. On the flip side, if the patient does have staining we would consider choosing the correct paste for polishing depending if the patient has a light, medium, or heavy staining. After polishing the patient's teeth, we would then consider using 2% neutral fluoride since the patient could have a possibility for caries due to xerostomia induced by the medications. Finally, once treatment is completed we would have the patient revisit again in 3 months to check up on their homecare and the status of the oral health. If treatment is not completed this can be due to the patient not being compliant and returning for continuing care resulting in a reduction of oral health. However patient compliance can also be due to the patient having a phobia of the dental office and having a difficult time returning for care. If so much consideration should be applied to influence the patient to return to increase their oral health.

Based on the actions of the treatment plan we can expect to see lessened inflammation, if it was present previously, due to the removal of calculus. Although removal of the removal of calculus would increase the patients overall oral health the loss of tissue and bone is irreversible thus the importance of teaching and emphasizing home care to the patient is of utmost important for the patient to maintain their periodontal health and prevent it from worsening such as major loss of attachment of tooth causing tooth loss. To assist the patient in the prevention of biofilm retention we would tell the patient to use a saliva substitute if they have xerostomia due to their current medication. This would assist the patient in creating a natural defense against tooth decay since it contains bicarbonate, calcium, and phosphate which play a role in repair of early tooth decay. We could also possibly see, if the patient returns, when probing the decrease of bleeding upon probing or even the absence of bleeding upon probing. However, if the patient is not compliant in his/her homecare the expected outcomes would be the opposite. In fact, the oral health may even be worse than before causing immediate care to retain the patient's teeth.

Periodontitis, emphysema, and diabetes type 2 are conditions that need to be taken into consideration when making a treatment plan for the patient. Normal treatment planning for a patient with these conditions as well as taking medications can be at serious risk since, for example, a diabetic patient can be introduced to bacteremia due to their poor healing of tissues. Therefore, the role of the hygienist is to have knowledge for treating type III periodontitis and knowledge and consideration of the different systemic diseases and what they can be at risk for during treatment.

References

- *Metformin HCL*. (n.d.). WebMD. Retrieved from <https://www.webmd.com/drugs/2/drug-11285-7061/metformin-oral/metformin-oral/details>.
- *Metformin*. (n.d.). MedlinePlus. Retrieved from <https://medlineplus.gov/druginfo/meds/a696005.html>.
- Agado B; Bowen DM; “Does the Link Between COPD and Periodontitis Affect Dental Hygiene Treatment?” Access, Apr.2009; 23(4): 19-21. 3p. (Journal Article - pictorial, tables/charts) ISSN: 1050-0758
- *Emphysema*. (n.d.). *Emedicinehealth*. Retrieved from https://www.emedicinehealth.com/emphysema/article_em.htm. Noraian, D. (n.d.). *The Mouth-Body Connection*. Kirk W. Noraian Laser Periodontics & Detal Implants. Retrieved from <https://www.docperio.com/periodontal-disease/the-mouth-body-connection/>.
- Preshaw, P.M., Alba, A.L., Herrera, D. et al. *Diabetologia* (2012) 55: 21. <https://doi.org/10.1007/s00125-011-2342>
- “Adults with Respiratory Disorders: Asthma and Allergies”. *Dental Washinton* http://dental.washington.edu/wp-content/media/sp_need_pdfs/Asthma-Adult.pdf
- “Advair Diskus (Fluticasone Propionate): Side Effects, Interactions, Warning, Dosage & Uses.” *RxList*, www.rxlist.com/advair-diskus-drug.htm#warnings.
- “Advair Diskus Inhalation : Uses, Side Effects, Interactions, Pictures, Warnings & Dosing.” *WebMD*, WebMD, www.webmd.com/drugs/2/drug-20538/advair-diskus-nhalation/details.
- “Serevent Diskus Inhalation : Uses, Side Effects, Interactions, Pictures, Warnings & Dosing.” *WebMD*, WebMD, www.webmd.com/drugs/2/drug-5330/serevent-diskus-inhalation/details.
- “Serevent Diskus (Salmeterol Xinafoate): Side Effects, Interactions, Warning, Dosage & Uses.” *RxList*, www.rxlist.com/serevent-diskus-drug.htm#clinpharm.
- Periodontal disease. (n.d.). Dental Health foundation. Retrieved from <https://www.dentalhealth.ie/dentalhealth/causes/periodontaldisease.html>.
- Classifications of Periodontal Diseases. (n.d.). Crest. Retrieved from <https://www.dentalcare.com/en-us/professional-education/ce-courses/ce542/classifications-of-periodontal-diseases>.