

Case Report #15: Periodontitis

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Case Report: Periodontitis

Patient Profile

- 65 year old Caucasian male
- History of stroke eight years ago
- Slurred speech
- Reduction in salivary flow
- Vitals: blood pressure was 130/80, pulse was 72 BPM, and respirations were 18 bpm, ASA III, a patient with severe systemic disease
- He has not been to the dentist in three years
- He only eats spicy foods because he has trouble tasting his food
- INR reading was 2.5 which puts him in a safe place to have dental services performed without the need to consult with his physician
- He is currently on: (Enalapril) vasotec, (warfarin) coumadin, and (atorvastatin) lipitor.

Medical Assessment

The pharmacologic category of (Enalapril) vasotec is angiotensin-converting enzyme (ACE) inhibitor. It is taken orally and has an onset of action of 1 hour and can peak 4-6 hours. The use of this drug with our patient is for treatment of heart failure. The effects on dental treatment may include abnormal taste and he may experience orthostatic hypotension as he stands up after treatment. This can happen due to lying on the dental chair for extended periods of time. Prepare for caution with sudden changes in position during and after dental treatment. There are no effects on bleeding.

The pharmacologic category of (atorvastatin) lipitor is an antilipemic agent. The effects on dental treatment, one must assess unusual presentations of muscle weakness or myopathy resulting from lipid therapy such as the patient having a difficult time brushing teeth or weakness with chewing. Refer the patient back to their physician for evaluation and adjustment of lipid therapy. The time the medications take to peak is 1 to 2 hours.

The pharmacologic category of (warfarin) coumadin is an anticoagulant. The use is to reduce the risk of myocardial infarction. It also reduces the risk of thromboembolic complications that arise from cardiac valve replacement. The effects on dental treatment is increased risk of bleeding, mouth ulcers, and taste disturbance. The effects on bleeding, since it is an anticoagulant, bleeding is a potential adverse effect of warfarin during dental surgery. Risk is dependent on the intensity of anticoagulation and patient susceptibility. Consultation with a prescribing physician is advisable. The time for it to peak is within 4 hours. Stroke patients maintained on warfarin should continue therapy during dental procedures as warfarin is unlikely to increase bleeding risk. The adverse reactions include the major factor of bleeding. It is taken orally and 5 mg once daily for most patients. Our patient is a geriatric and they tend to require

lower dosages to produce a therapeutic level of anticoagulation. Dental health professionals should discuss patient with physician to ask for recent INR results to ensure that the patient is within a reasonable range prior to an invasive dental procedure.

Dental Assessment

- Tooth #19 has a defective crown restoration with an open distal margin and the presence of gingival recession.
- No visible caries present upon intraoral examination, use of ODU 11/12, or radiographic evidence.
- No need for prostheses.



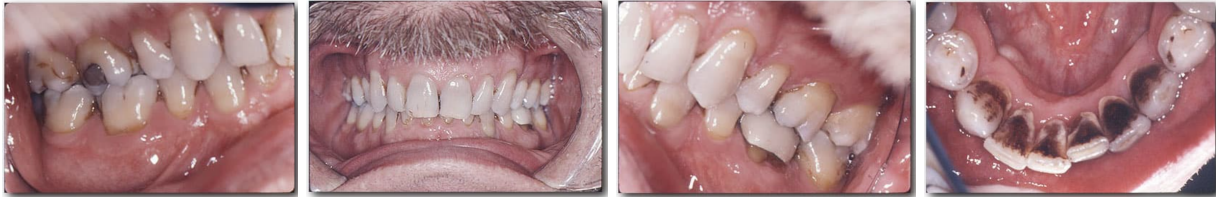
E& I findings from intraoral photographs

- Generalized recession on facial surfaces of most of the maxillary teeth and buccal surfaces of the mandibular teeth
- Missing teeth #1, 5, 12, 16, 17, 21, 28, 32
- Amalgam restorations on teeth #2, #3, #14, #18, #30, #31

From EO/IO evaluation:

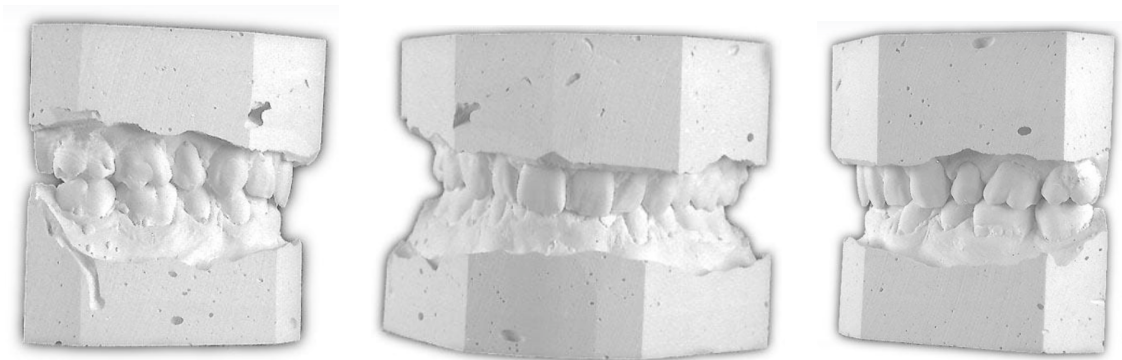
- No palpable lymph nodes
- Thyroid normal
- Face symmetrical
- No TMJ
- Lips, cheeks, tongue, and pharynx WNL
- Gingival tissues present with marginal signs of inflammation in lingual regions
- Heavy tobacco stains and visible supragingival calculus on lingual surfaces of mandibular anterior teeth
- The maxillary and mandibular free gingiva are pinkish, firm, knife-edged, and stippled.
- The maxillary free gingiva presents with generalized inflammation.
- The maxillary and mandibular attached gingiva appear pinkish, firm,

knife-edged, and stippled.



Occlusal Classification

- Patient is missing all first premolars on his maxillary arch and mandibular arch.
- Alignment of teeth and face are symmetrical.
- Class I on both right and left molars.
 - The study models and intraoral images display the mesiobuccal cusp of the maxillary first molars occluding mesial to the buccal groove of the mandibular first molars.
- Class I on both right and left canines.
 - The distal of the mandibular canines are distal to the mesial of the maxillary canines.
- Patient has an anterior overbite, mm unidentifiable.

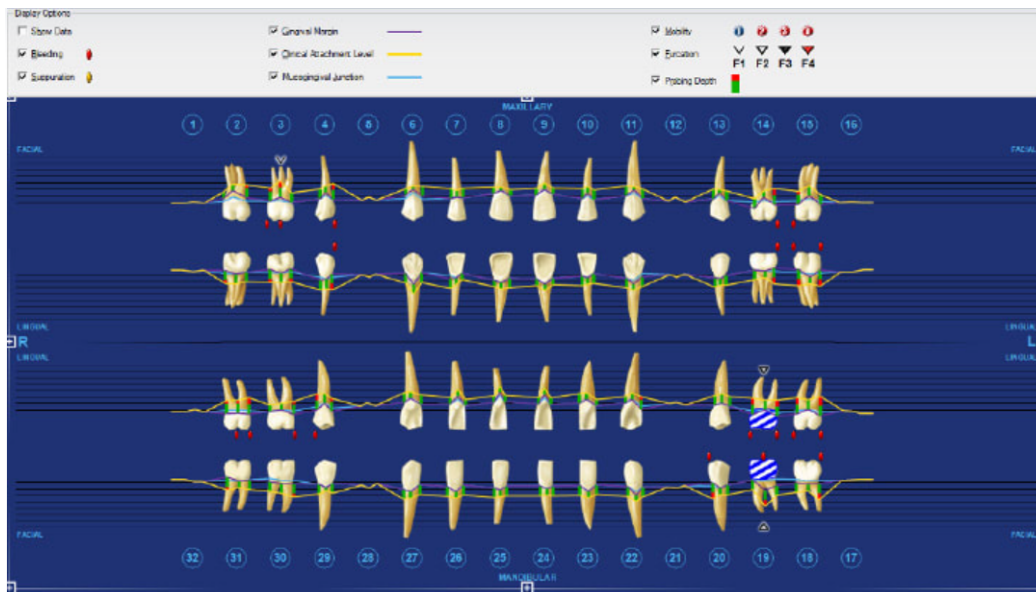


Periodontal Assessment

- Patient has history of periodontal therapy consisting of periodic scaling and root planing.
- It has been three years since his last dental visit.
- He presents with generalized moderate bone loss with localized severe bone loss on the mandibular left posterior and maxillary right posterior, especially on areas of tooth #20 and #29.
- Generalized pocket measurements of 1-6 mm on posterior teeth and localized 1-4 mm pockets on anterior teeth.
- Clinical attachment levels are measured between 1-8 mm with furcation involvement on the facial of tooth #3 (Class 1) and both facial and lingual of tooth #19 (Class 2).

- There is generalized recession on facial surfaces of most of the maxillary teeth and buccal surfaces of the mandibular teeth.
- There is visible supragingival calculus on the lingual surfaces of mandibular anterior teeth as well as heavy tobacco stains.
- Plaque Index: 30%
- Bleeding Index: 15%
- Mobility: None

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
F																
PD		2	2	4	4	6	3	2	2	2	2	2	2	3	1	3
GM		1	2	1	0	1	0	3	2	1	1	3	3	1	0	3
CAL		3	4	5	4	6	3	3	2	2	2	2	2	3	2	3
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PD		4	4	4	2	2	4	6	3	4	4	3	3	3	3	3
GM		1	1	1	0	0	0	1	0	0	0	0	0	0	0	0
CAL		3	3	4	2	2	3	4	3	3	3	3	3	3	3	3
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	(32)	(31)	(30)	(29)	(28)	(27)	(26)	(25)	(24)	(23)	(22)	(21)	(20)	(19)	(18)	(17)



Dental Hygiene Diagnosis (AAP classification)

- AAP Class II, Grade B

Dental Hygiene Care Plan: Medium-Heavy calculus level

Based on our review of his vitals, medical history, medical, dental, and periodontal assessment the patient has no immediate emergency needs. We may conclude our consultation during appointment one with the treatment plan presentation recommending full mouth scaling and root planing with local anesthesia; lidocaine HCl 2%. Based on his INR reading of 2.5, no medical clearance is required.

- Our appointment plan will require 6 visits to complete (including initial consultation). During each subsequent appointment (appointment 2-6), we will again RMH, check vitals, perform EO/IO examination, discuss OHI, and provide post operative instructions.
 - **OHI** will consist of recommending the use of a soft bristled toothbrush after rinsing to help reduce the amount of bacteria within the oral cavity, after tongue brushing and after flossing in a C-shaped manner hugging the interproximal areas of each tooth. This sequence should be performed at least two times a day.
 - **Post operative instructions:** Soreness, sensitivity, and minimal bleeding is normal after periodontal scaling and root planning. This will subside gradually after 2-3 days. Avoid eating/chewing anything on the side of the mouth where treatment has been performed, or until anesthesia has worn off to avoid biting or burning your cheek or tongue. Avoid eating any hot foods that may potentially irritate the gingiva as well as hard/crunchy foods or seeds that may potentially get stuck in the gingiva and interrupt healing until removed. Avoid brushing and flossing for at least 12 hours, but be sure to resume after 12 hours using a soft bristled toothbrush. Avoid alcohol based mouth rinses as this may potentially cause irritation. If needed, you may rinse with warm salt water to help speed healing.
- Appointment 2: begin treatment of scaling and root planing on the LLQ as the combined clinical attachment level and probing depth are most severe on tooth #19. Local anesthesia will be administered prior to scaling. No contraindications of medications have been noted.
- Appointment 3: 1 week after appointment 2. Evaluate to determine healing of prior scaling treatment of LLQ. Proceed with scaling and root planing on ULQ with local anesthesia.
- Appointment 4: 1 week after appointment 3. Further evaluation to determine the healing of prior scaling treatment of both ULQ as well as LLQ. Proceed with scaling and root planing of URQ.

- Appointment 5: 1 week after appointment 4. Evaluation to determine the proper healing of gingiva after prior scaling will be performed. Proceed with scaling and root planing on the LRQ. This will complete scaling and root planing treatment.
 - Appointment 6: 4-6 weeks after appointment 5. Perform probing and calculus detection. At this time, application of fluoride is permissible. Topical fluoride varnish is recommended due to its higher degree of safety, effectiveness, and ease to administer. Selective polishing will also be performed during this appointment.
 - **Maintenance interval:** The patient will be placed on a three month maintenance interval for periodontal maintenance
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- **Referral:** Refer back to DDS for restoration of the defective crown on tooth #19.

The Appointment Plan outline is outlined on the following page.

Appointment	Date/Interval	Procedures:
1	Initial Appointment	Assessment Only RMH, Check Vitals, EO/IO Exam FMX Periodontal Assessment Consultation Present Treatment Plan No Medical Clearance Required; INR 2.5
2	1 week later	RMH, Check vitals, EO/IO Exam LLQ SRP w/ Lidocaine HCl 2% OHI (on page 6) Post Op Instructions given (on page 6)
3	1 week later	RMH, Check vitals, EO/IO Exam Review LLQ URQ SRP w/ Lidocaine HCl 2% OHI (on page 6) Post Op Instructions Given (on page 6)
4	1 week later	RMH, Check vitals, EO/IO Exam Review URQ LRQ SRP w/ Lidocaine HCl 2% OHI (on page 6) Post Op Instruction (on page 6)
5	1 week later	RMH, Check vitals, EO/IO Exam Review LRQ ULQ SRP w/ Lidocaine HCl 2% OHI (on page 6) Post Op Instructions Given (on page 6)
6	4-6 weeks later	RMH, Check vitals, EO/IO Exam Probing & Calculus check Fluoride varnish application Selective Polishing Refer to DDS for Crown #19 redo
Maintenance Recommendation	Each 3 months	RMH Check vitals EO/IO Examination Reevaluate periodontal health Periodontal Maintenance

Dental Hygiene Human Needs Assessment

Protection from Health risks, anxiety, fear and stress

Patient needs: Patient has a history of stroke eight years ago, slightly elevated blood pressure (Stage 1), a slurred speech, reduction in salivary flow, bad breath, and trouble tasting food.

Goal and Care Plan

- Refer to his physician to monitor his medications
- Educate the patient on the importance of maintaining dental visits as they may help reduce the probability of having another stroke
- Recommend a toothpaste and mouthrinse to help with bad breath
- Recommend drinking more water to increase salivary flow

Freedom from fear and Stress

Patient needs: Patient has tobacco stains left over from smoking which he misses, particularly if he has a drink. He also hates the burning sensation from using mouth rinse.

Goal and Care Plan

- Selective polishing to remove tobacco stains (avoid polishing crown #19)
- Recommend an alcohol free mouth rinse
- Recommend nicotine patches to lessen his impulse to smoke when he drinks

Freedom from pain

Patient needs: Patient hates the burning sensation caused from using mouth rinse.

Goal and Care Plan

- Recommend an alcohol free mouth rinse
 - Ex. Colgate peroxyd

Wholesome Facial Image

Patient needs: His wife complains that he has bad breath. He also has a slurred speech and tobacco stains left over from smoking.

Goal and Care Plan

- Recommend toothpaste, mouth rinse, and maintenance interval to help patient with bad breath
- Educating patient on brushing technique and oral health will also help with his bath breath
- There are special products dentists may prescribe, including Zytex which is a combination of zinc chloride, thymol and eucalyptus oil that neutralizes the sulfur compounds and kills the bacteria that causes them.

Skin and Mucous Membrane Integrity of Head and Neck

Patient needs: Gingival tissue has some marginal signs of inflammation in lingual regions. There is bleeding on probing, probing depths greater than 4mm, attachment loss between 1-8mm, and reduced salivary flow. Patient also has generalized recession on facial surfaces of most of the maxillary teeth and buccal surfaces of the mandibular teeth.

Goal and Care Plan

- Recommend full mouth scaling and root planning to remove supra and subgingival calculus and provide patient with oral hygiene instructions (on page 6) to help alleviate the inflammation, particularly in the lingual regions.
- Fluoride will be placed on teeth with generalized recession once there has been a 4-6 week period after treatment of scaling and root planning has been completed.

Biologically Sound and functional dentition

Patient needs: defective crown restoration on tooth #19

Goal and Care plan

- Refer to DDS for crown redo

Conceptualization and problem solving

Patient needs: He needs to change his brushing technique, improve the frequency of his flossing, switch to a different mouth rinse, and improve his dental visit frequency.

Goal and care plan

- Recommend a soft bristled toothbrush
- Recommend the modified bass technique for brushing using the toothbrush at 45 degrees at the front and back surfaces of the teeth
- Recommend an alcohol free mouth rinse such as colgate peroxyd
- Educate patient on the importance of maintaining routine dental visits and how periodontal history may have been linked with his history of having a stroke eight years ago

Responsibility for Oral Health

Patient needs: There is plaque and calculus present due to poor oral health and not having been to the dentist in three years. Patient needs OHI.

Goal and Care Plan

- Recommend full mouth scaling and root planning to remove plaque and subgingival and supragingival calculus
- Encourage patient to maintain recall appointments based on his oral health status

Research Summary

A study from the *Journal of Periodontology* examined the connection of poor oral hygiene and its association with the development of strokes. Poor oral hygiene including frequency of tooth brushing, frequency of dental scaling, number of missing teeth, and dental caries are several indicators that can affect periodontal disease. This is a common global disease and has become a major risk factor associated with having a stroke, a leading cause of mortality. Our patient has a history of long lapses between dental visits as well as a history of periodontal disease which may have contributed to the stroke he had eight years ago. His wife also complained that his breath stinks which is an indication of plaque buildup and biofilm accumulation over long periods of time. According to the study, “systemic inflammatory reaction from the invasion of oral bacteria and inflammatory mediators produced by the host (humans) in response to the presence of oral bacteria could be elicited from periodontal disease or poor oral hygiene and this systemic inflammation could increase the risk of stroke”(Chang 2). Smoking was also found to contribute to the risk of having a stroke along with periodontal disease. Our patient smoked for over 40 years and didn't quit even after having a stroke. His inconsistent dental hygiene appointments align with his history of systemic inflammatory reactions that may have resulted from periodontal disease.

Article Reference

Chang, Y., Woo, H., Lee, J.S., Song, T. (2020). Better oral hygiene is associated with lower risk of stroke. *Journal of Periodontology*, 92; 87-94. Retrieved December 3, 2021, from <https://aap.onlinelibrary.wiley.com/doi/epdf/10.1002/JPER.20-0053>