

By Christina Branco

December 5, 2018

PATIENT PROFILE

- VP is a 49-year old Caucasian male.
- Middle class, single, lives in Brooklyn, NY, college-educated, currently employed as a statistician for a marketing company, very concerned about oral health, has dental benefits, has dental home, and receives regular dental care in a private office as well as the City Tech dental clinic, no tobacco or recreational drug use, rarely drinks alcohol
- VP is a Russian immigrant who has been here for many years. He is fastidious regarding dental care and oral hygiene. He appreciates care that is evidence-based, and puts tremendous stock in research, as well as personal outcomes regarding home care/prophylaxis.

PATIENT PROFILE, CONTINUED

- Last dental visit in July 2018, in a private office, for a dental cleaning. Prior history – was referred to dentist to evaluate suspicious lesions on #7, 14, and 15 in Feb. 2018, dentist determined areas were not carious; pocket reduction surgery in UR and LR in 2017
- Radiographic History four bitewings taken in private practice in Jan. 2018, unavailable at time of appointments; radiographs would have been very useful to see bone levels, restorations, whether or not overhangs are present, etc.
- Oral Hygiene Routine VP uses electric toothbrush twice daily, soft manual toothbrush once a day after lunch, prescription fluoride toothpaste (Prevident 5000) once a day before bed and over-the-counter fluoride toothpaste, flosses two to three times per day, uses Listerine antiseptic mouthwash once daily, sometimes uses ACT mouthwash, sometimes uses CloSYS mouthwash

CHIEF COMPLAINT

- VP reported some intermittent pain/sensitivity in UR/LR areas.
- Recession present in both areas
- Evidence of bruxism
- Gingival irritation present, appears to be due to trauma (VP reports wearing retainers at night)

HEALTH HISTORY OVERVIEW

- Vitals
 - First appointment BP 144/89, P 64; retaken 15 minutes later BP 136/82, P58
 - Second appointment BP 135/80, P 62 with arm cuff
 - Third appointment BP 123/82, P 71 arm cuff, patient reported not drinking coffee before appointment.
- ASA II

HEALTH HISTORY OVERVIEW, CONTINUED

- Medical Conditions
 - Hypothyroidism
 - Metabolic syndrome
 - Sleep apnea
- Current Medications and Dosage
 - Levothyroxine, 75 mcg daily for hypothyroidism
 - Metformin, 2000 mg daily for metabolic syndrome and weight control
 - Victoza, 1.8 mg daily for metabolic syndrome, injectable

WHAT IS HYPOTHYROIDISM?

- Endocrine disorder characterized by underactive thyroid gland does not produce enough thyroid hormone to keep body functioning normally
- What causes it?
 - Autoimmune disease Hashimoto's Thyroiditis
 - Can also be due to surgical removal of thyroid, radiation treatment

American Thyroid Association. (2018). Hypothyroidism (Underactive). Retrieved December 5, 2018, from https://www.thyroid.org/hypothyroidism/

SIGNS/SYMPTOMS OF HYPOTHYROIDISM

- Varied
- Feeling cold
- Easily fatigued
- Dry skin
- Forgetfulness
- Depression
- Constipation

American Thyroid Association. (2018). Hypothyroidism (Underactive). Retrieved December 5, 2018, from https://www.thyroid.org/hypothyroidism/

TREATMENT OF HYPOTHYROIDISM

- What is the Suggested Treatment for Hypothyroidism?
 - Medications to replace T4 thyroid hormone

American Thyroid Association. (2018). Hypothyroidism (Underactive). Retrieved December 5, 2018, from https://www.thyroid.org/hypothyroidism/

- How does patient manage it?
 - Medication Levothyroxine

DENTAL HYGIENE MANAGEMENT OF HYPOTHYROIDISM

- Contraindications
 - None if well-controlled
- Patient management strategies
 - Use stress reduction techniques
 - Check for macroglossia, salivary gland enlargement, glossitis, dysgeusia, enamel hypoplasia, mouth breathing
 - Watch for hormonal toxicity
 - Hemostatis possible increased risk of bleeding, apply pressure to bleeding for extended time
 - Possible delayed wound healing may lead to increased risk of infection
 - Consult with primary care physician may be needed to check cardiovascular status
 - Use central nervous system depressants and barbiturates sparingly due to increased sensitivity

Chandna, S., & Bathla, M. (2011). Oral manifestations of thyroid disorders and its management. *Indian journal of endocrinology and metabolism*, 15(2), S113-6.

WHAT IS METABOLIC SYNDROME?

- Group of conditions that, together, increase risk of heart attack, stroke, and diabetes
 - Includes increased blood pressure, increased blood sugar, excess body fat, and abnormal cholesterol and triglyceride levels
- What causes it?
 - Being overweight/obese
 - Sedentary lifestyle
 - Insulin resistance

Mayo Clinic Staff. (2018, March 06). Metabolic syndrome. Retrieved December 5, 2018, from https://www.mayoclinic.org/diseases-conditions/metabolic-syndrome/symptoms-causes/syc-20351916

SIGNS/SYMPTOMS OF METABOLIC SYNDROME

- Usually none
- Marked weight gain
- Possible signs/symptoms of diabetes polydipsia, polyuria, fatigue, blurred vision

Mayo Clinic Staff. (2018, March 06). Metabolic syndrome. Retrieved December 5, 2018, from https://www.mayoclinic.org/diseases-conditions/metabolic-syndrome/symptoms-causes/syc-20351916

TREATMENT OF METABOLIC SYNDROME

- What is the Suggested Treatment for Metabolic Syndrome?
 - Healthy lifestyle changes diet, exercise
 - Smoking cessation
 - Stress reduction

Friedlander, A. H., Weinreb, J., Friedlander, I., & Yagiela, J. A. (2007). Metabolic syndrome: Pathogenesis, medical care and dental implications. *Journal of the American Dental Association*, 138(2), 179-187.

- How does patient manage it?
 - Medications Metformin and Victoza
 - Weight loss

DENTAL HYGIENE MANAGEMENT OF METABOLIC SYNDROME

- Contraindications
 - None
- Patient management strategies
 - Use strategies, treatments, and products that focus on preserving natural dentition
 - Nutritional counseling to decrease caries risk

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WHAT IS SLEED ADNEAS

- Obstructive sleep apnea: airway becomes blocked during sleep leading to reduced or stopped breathing
- Central sleep apnea: brain does not signal to breathe
- What causes it?
 - Physical structure
 - Medical conditions obesity, enlarged tonsils, endocrine disorder, neuromuscular disorder, heart/kidney failure, genetic syndrome, premature birth

National Heart, Lung, and Blood Institute. (n.d.). Sleep apnea. Retrieved December 5, 2018, from https://www.nhlbi.nih.gov/health-topics/sleep-apnea

SIGNS/SYMPTOMS OF SLEEP APNEA

- Snoring or gasping during sleep
- Reduced or absent breathing
- Sleepiness, especially during the day Headaches upon waking
- Difficulty with motor skills

- Memory challenges verbal/visual-spatial
- Dry mouth upon waking
- Decreased attention/concentration
 Sexual dysfunction/decreased libido
 - Waking often during sleep to urinate

National Heart, Lung, and Blood Institute. (n.d.). Sleep apnea. Retrieved December 5, 2018, from https://www.nhlbi.nih.gov/health-topics/sleep-apnea

TREATMENT OF SLEEP APNEA

- What is the Suggested Treatment for Sleep Apnea?
 - Healthy lifestyle changes
 - CPAP breathing machine during sleep
 - Mouthpiece custom-fitted mandibular repositioning device or tongue retaining device
 - Surgery tonsillectomy, maxillary/jaw advancement, tracheostomy

National Heart, Lung, and Blood Institute. (n.d.). Sleep apnea. Retrieved December 5, 2018, from https://www.nhlbi.nih.gov/health-topics/sleep-apnea

- How does patient manage it?
 - Use of CPAP machine

DENTAL HYGIENE MANAGEMENT OF SLEEP APNEA

- Contraindications
 - None
- Patient management strategies
 - Look for evidence of periodontitis recession, inflammation

Carson, J. R. (2016, April 12). How Sleep Apnea Affects Oral Health and How Dentists Can Help. Retrieved December 5, 2018, from https://www.johnrcarsondds.com/how-sleep-apnea-affects-oral-health-and-how-dentists-can-help/

Look for evidence of bruxism and TMJD

Perfect Smile Tulsa. (2018). Sleep Apnea's Effects on Dental Health. Retrieved December 5, 2018, from https://www.perfectsmiletulsa.com/blog/sleep-apneas-effects-on-dental-health

DENTAL HYGIENE MANAGEMENT OF SLEEP APNEA, CONTINUED

- Professional fluoride application
- Thorough oral hygiene instruction patient requires good oral home care
- Check for evidence of Xerostomia and provide products to alleviate

Padma A., Ramakrishnan, N., & Narayanan, V. (2007) Management of obstructive sleep apnea: A dental perspective. *Indian Journal of Dental Research*, 18(4), 201-209, Retrieved December 5, 2018, from http://www.ijdr.in/text.asp?2007/18/4/201/35833.

EFFECTS OF MEDICATIONS ON DENTAL TREATMENT

- Levothyroxine
 - No significant effects
- Metformin (for metabolic syndrome)
 - Possible taste disorder
- Victoza (Liraglutide; for metabolic syndrome)
 - None for VP since medication was not used for diabetes

Wynn, R. L., T. F., & Crossley, H. L. (2018). Drug Information Handbook for Dentistry Including Oral Medicine for Medically Compromised Patients & Specific Oral Conditions (24th ed.). Netherlands: Wolters Kluwer.

COMPREHENSIVE ASSESSMENTS

RADIOGRAPHS

- No radiographs were available during appointments.
- This was a great disadvantage because radiographs would have shown bone levels, state of restorations, and presence of any overhangs.
- VP was recommended for four bitewing radiographs to assess the presence of interproximal decay.

SUMMARY OF CLINICAL FINDINGS

- EO bilateral crepitation of TMJ on three excursions but no discomfort
- IO fissured tongue, accumulation of filiform papilla in median fissure, mild xerostomia, gingival irritation and redness on soft palate were noted on several occasions, but patient reported wearing retainers at night and lesions appear to be from trauma
- Occlusion bilateral class I occlusion, 30% overbite, 3mm overjet







SUMMARY OF CLINICAL FINDINGS, CONTINUED

- Dental multiple restorations present
 - PFM #3
 - Composites #4 OBD, #5 MOD, #6 FL, #8-11 F, #12 OD, #13 ODL, #18 MO, #20 MOD, #21 DOB, #22 F, #26 F, #27 F, #28 DO, and #29 MOD
 - Implants with Crowns #19 (placed 2010) and #30 (placed 2004)
 - Diastemae between #7-8, and #8-9
 - Open contacts between #19/20 and #29/30
 - Fracture #281
 - Abfraction present #28B
 - Generalized attrition, severe on anterior teeth
 - Erosion on lingual surfaces of maxillary anterior teeth
 - No overhangs noted, but radiographs would have been helpful







SUMMARY OF CLINICAL FINDINGS, CONTINUED

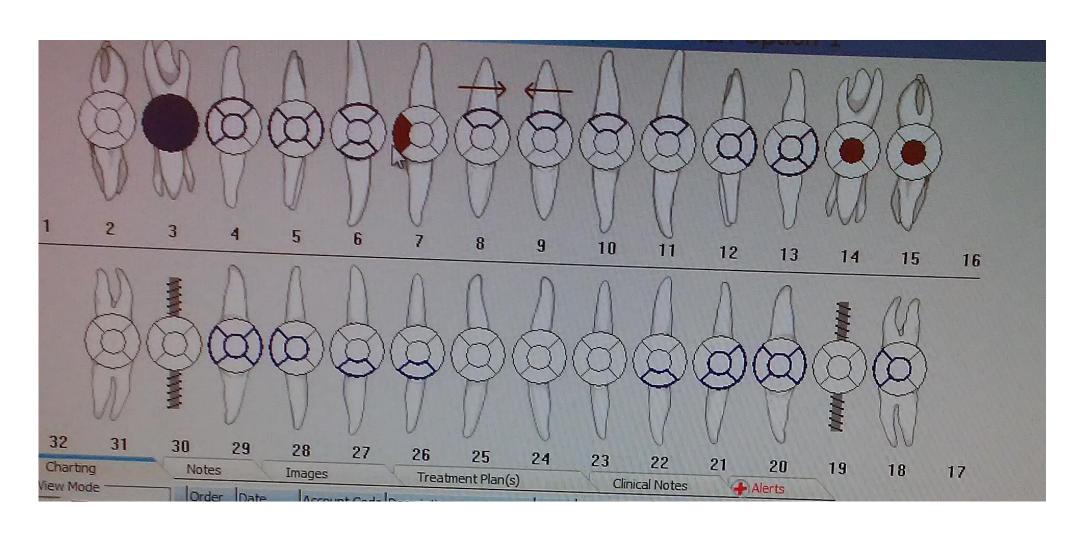
- Deposits medium calculus case value due to amount and location of calculus deposits and staining, some calculus deposits on posterior teeth, abundant supra- and subgingival calculus on mandibular anterior teeth, light staining present
- Plaque index 1, deposits concentrated along margin and interproximally



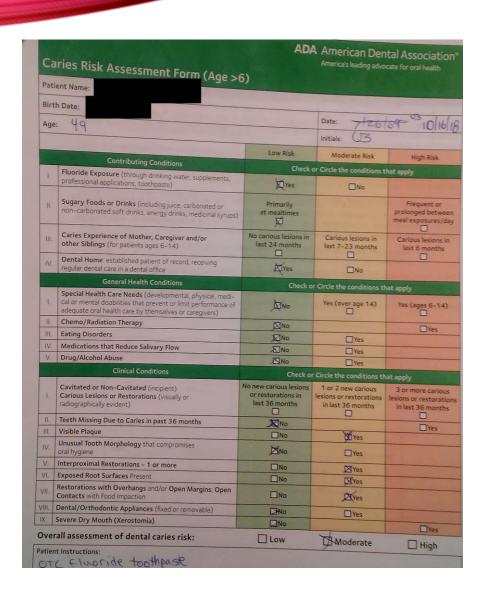




DENTAL CHARTING



CARIES RISK ASSESSMENT



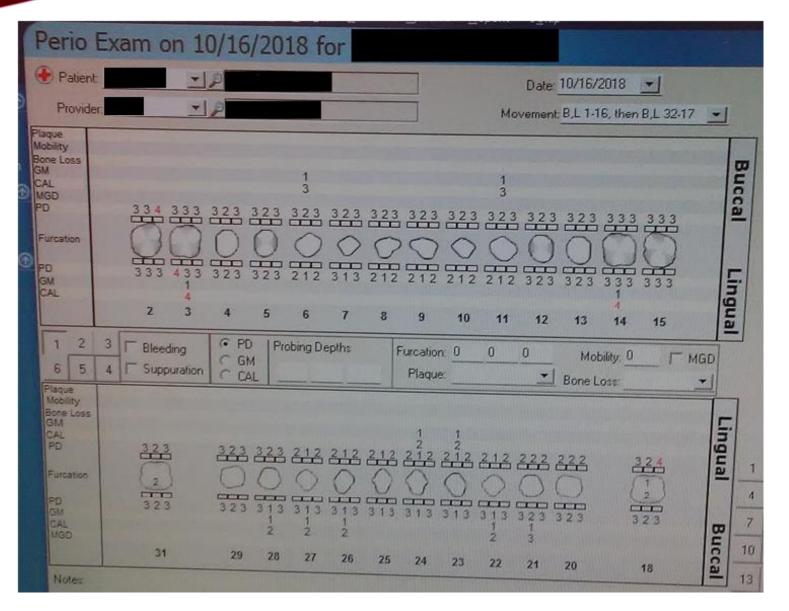
 Moderate risk of caries due to several risk factors for disease – visible plaque, multiple interproximal restorations, exposed root surfaces, two open contacts with reported food impaction, and mild xerostomia

 Clinical and Radiographic Evidence – #7, 14, 15 appeared to have evidence of decay, but dentist did not identify caries at VP's Fed. 2018 visit, no other clinical evidence of caries; radiographs not available at time of treatment

GINGIVAL DESCRIPTION & PERIODONTAL STATUS

- Generalized coral pink tissue, marginal redness, erythematous papillae between anterior mandibular teeth, scalloped, firm, stippled tissue filled interdental spaces, mildly edematous papillae between anterior teeth, 1 mm recession present on #3, 6, 11, 14, 21-24, and 26-28, grade I furcation from the lingual of #18, grade II furcation from the buccal of #18, and grade II furcation from the buccal of #31, 1-3 mm PD, no BOP
- Type II Periodontitis, generalized, stable due to 1-3mm PD, recession, and minimal bleeding on probing, status of bone loss is unknown due to lack of radiographs

PERIODONTAL CHARTING



DENTAL HYGIENE DIAGNOSIS

- Medium calculus case value due to amount and location of calculus present (few subgingival deposits on posterior teeth, substantial multi-surface supra- and subgingival calculus deposits on mandibular anterior teeth), and presence of staining (light yellow-brown staining, interproximal areas of mandibular anterior teeth)
- Type II periodontitis, stable due to 1-3mm probing depths, recession, Grade I and II furcations on #18/31, and lack of bleeding on probing
- Bruxism as evidenced by generalized attrition
- Moderate risk of caries due to several risk factors for disease visible plaque, multiple interproximal restorations, exposed root surfaces, two open contacts with reported food impaction, and mild xerostomia and mitigated by use of prescription fluoride toothpaste, frequent dental visits (three visits for dental cleanings in 2018), and adequate home care

DENTAL HYGIENE CARE PLAN

- Established one goal because home care was excellent, should have included goals regarding mouthwash and toothbrushing.
 - Patient will use superfloss three times per week by next recare appointment.
 - Patient will use saliva substitutes, as needed, by next recare appointment.
 - Patient will continue to brush at least twice a day with electric toothbrush by next recare appointment.

CONSENT FOR TREATMENT

Toothpaste Toothpaste Toothpaste Rinse Radiographs: Digital Film FMS BWS (V/H) Pan Debridement: Whole Mouth Pain Management: Whole Mouth Pain Management: Whole Mouth Pain Management: Whole Mouth Pain Management: Oraqix Film Pain Management: Oraqix Coronal Polish: Oraqix Coronal Polish: Oraqix Coronal Polish: Oraqix Coronal Polish: Oraqix Or	Visit 1: 10/16/18 (Date) Patient Education:	Visit 2: 11 6 18 Patient Education: Jegy 2	Visit 3: 11/13/18 (Date) Patient Education:	Visit 4:
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IMPLEMENTATION - TREATMENT

- Preventive Services
 - Oral Self Care Instruction discussed disease process and need to remove biofilm (VP demonstrated average knowledge of disease process and asked very astute questions)
 - Reviewed use of electric toothbrush, taught use of Superfloss, patient completed both successfully
- Fluoride Therapies
 - applied 5% sodium fluoride varnish, VP already uses Prevident 5000 toothpaste daily supplemented by OTC fluoride toothpaste
- Sealants
 - VP was approved for two sealants (#2, 31) but these procedures were
 postponed until they could be completed with cotton rolls instead of rubber
 dam to pose less danger to the adjacent crown and implant

IMPLEMENTATION - TREATMENT, CONTINUED

- Antimicrobials
 - VP uses Listerine antiseptic mouthwash, discussed use of alcohol-free antimicrobial rinse (Crest ProHealth) due to mild Xerostomia
- Nutritional Counseling
 - Discussed acidic contents of diet, especially coffee, discussed effects on teeth (erosion), and how to help prevent damage

IMPLEMENTATION – TREATMENT, CONTINUED

- Debridement Performed
 - Hand debridement of full mouth using ultrasonic scaler, implant scalers, and hand instrumentation
 - Before debridement, I chose the zero-alcohol mouthwash due to VP's mild xerostomia. I supplemented with Biotene and Colgate Hydris (at separate appointments) towards the end of debridement.
 - During debridement, VP required a bite block because he kept falling asleep.
 Because of his sleep apnea, I had to keep rousing him. Once or twice, when he began to doze, he started to move his mouth as if he were about to start speaking.

IMPLEMENTATION – TREATMENT, CONTINUED

- Debridement Performed
 - At other points, while using the saliva ejector, VP's mouth became too dry and we needed to stop. He began coughing as well. The solution was to raise VP to a semi-supine position, debride while standing, and use hand instruments more than the Cavitron. At the same time, in areas where the Cavitron was necessary, we had to adjust the position of the saliva ejector, and stop frequently to rinse with water.
 - Air polishing was changed to engine polishing with fine paste because the stains were mostly removed during debridement.

POST-TREATMENT PHOTOGRAPHS





EVALUATION OF CARE

- Outcome of Care Prognosis
 - VP will meet his goal of using Superfloss he appeared to be dedicated to oral health.
 - Had the other two goals been written, patient would have also met them due to his motivation.

REFERRALS

• No referrals were required at this time.

CONTINUED CARE RECOMMENDATIONS

- VP has an extensive, strong oral home care regimen. As such, most recommendations were to continue with products and procedures.
- Added Superfloss to address diastemae and open contacts
- Advised patient to supplement with Biotene, or Colgate Hydris, and use zeroalcohol mouthwash (Crest ProHealth) to provide antiseptic properties while considering his mild xerostomia

CONTINUED CARE RECOMMENDATIONS, CONTINUED

- Recommended 6-month recare (May 2019) at the dental clinic.
 - Excellent home care routine
 - Fair plaque score
 - Good periodontal health
 - Patient also goes to a private dental office for treatment

WHAT WENT RIGHT?

- During the assessment phase, I was glad that I was able to build a relationship with VP. We had very productive and educational discussions where I used evidence-based rationales and data to explain oral health. At the same time, it was exciting to use critical thinking during treatment planning to provide effective care. For example, because of the type and location of VP's staining, I wanted to use air polishing due to better access interproximally.
- I enjoyed using my skills to maneuver through some tricky situations during treatment. For example, I stood up to put VP is a more semi-supine position to keep him from coughing. Also, it was gratifying to diagnose, and then alleviate VP's Xerostomia with a myriad of options.
- Finally, I was glad to be able to address VP's meticulous nature regarding oral care. He asked about at-home fluoride varnish. I explained why it was not necessary for him while bringing in his CAMBRA score, as well as his current regimen.

WHAT WENT WRONG?

- A few things went wrong during treatment. First and foremost, radiographs were never obtained. VP had them taken in private practice, but I did not remind him to bring them in to clinic. At the same time, I neglected to have him bring in his retainers.
- There were a few charting discrepancies as well. I did not see or note the abfraction on #11F. Also, minimal BOP was written in the paper chart, but was not noted in the perio charting.
- Regarding VP's medical conditions, I felt that I was more reactive rather than proactive. Instead of anticipating problems (like coughing or drying out his tissue with the saliva ejector) and avoiding them, I had to adjust treatment after something happened.

WHAT WOULD I DO DIFFERENTLY?

- The first thing I would do differently would be to obtain radiographs. I would also ask VP to bring his retainers, especially since his gingiva appeared to be irritated by them. I would also question him more thoroughly regarding material, use, type, and who made them.
- I would more clearly address VP's chief complaint. I did not check in with him at subsequent visits.
- Additionally, I would want to be more proactive regarding his treatment by researching his medical conditions before treatment.
- Finally, I would have included two additional goals for VP.

WORKS CITED

American Thyroid Association. (2018). Hypothyroidism (Underactive). Retrieved December 5, 2018, from https://www.thyroid.org/hypothyroidism/

Carson, J. R. (2016, April 12). How Sleep Apnea Affects Oral Health and How Dentists Can Help. Retrieved December 5, 2018, from https://www.johnrcarsondds.com/how-sleep-apnea-affects-oral-health-and-how-dentists-can-help/

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