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TECHNOLOGY  
DEPARTMENT OF DENTAL HYGIENE

Case Study #1

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# OVERVIEW

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- Dental Hygiene Care Plan
- Implementation
- Reflection

# PATIENT PROFILE

Mr. A is a 26-year-old Asian male. He presented to the clinic with a chief complaint of gums bleeding and discomfort during flossing and brushing. Mr. A is motivated to improve his oral health and manage his dental concerns. Mr. A practices daily oral hygiene using an electric toothbrush and Waterpik, complemented by floss picks several times a week. He also uses Listerine mouth rinse daily.

He reports regular dental hygiene visits, with the most recent appointment in April 2023 and a dental exam in December 2022. He has Type 2 diabetes, currently poorly controlled, and is hypertensive. Mr. A manages his diabetes with Metformin and Glipizide, supplemented by Vitamin D and a daily multivitamin. He does not smoke and reports only occasional alcohol consumption.

# CHIEF COMPLAINT

- Patient states, “My gums bleed when I floss and it hurts sometimes when I brush my teeth.”
- Patient reports discomfort and sensitivity associated with routine oral hygiene practices.
- Last dental hygiene appointment was approximately six months ago (April 2023).

# HEALTH HISTORY OVERVIEW

**Blood Pressure:** 137/79

**Pulse:** 83

**ASA Classification:** III (due to uncontrolled hypertension and diabetes)

## **Medical Conditions:**

Type 2 Diabetes (poorly controlled)

Hypertension Stage I

Shellfish allergy

## **Current Medications:**

Metformin 750 mg (2x/day) – for diabetes

Glipizide 14 mg (2x/day) – for diabetes and blood sugar control

Vitamin D supplement – for deficiency

Multivitamin – for overall health

# COMPREHENSIVE ASSESSMENTS

# SUMMARY OF CLINICAL FINDINGS

## Extraoral/Intraoral Findings:

- Clicking noted on TMJ right side during movement, asymptomatic.
- White-coated tongue and bilateral linea alba observed.
- Bilateral mandibular tori present with keratinized tissue noted near #17.

# SUMMARY OF CLINICAL FINDINGS

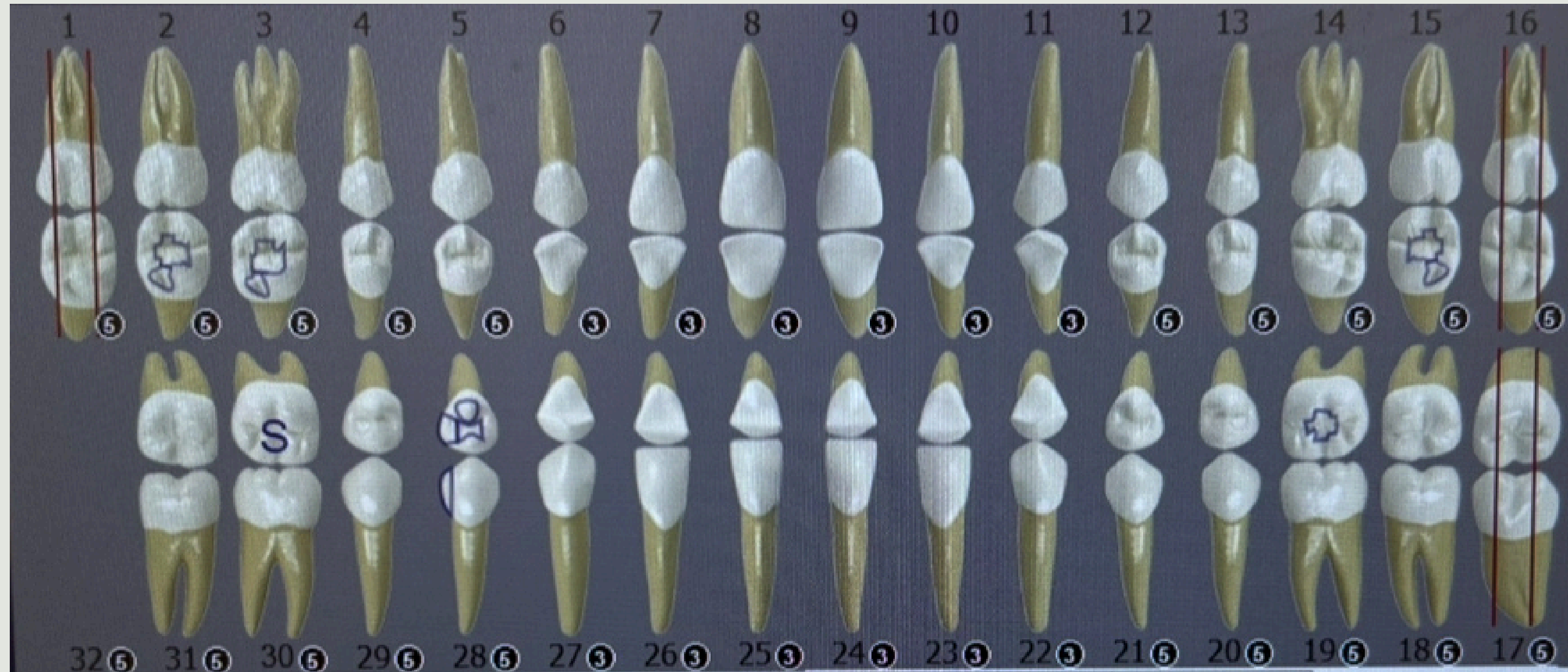
## **Occlusion:**

- Bilateral Class I molar relationship.
- Overjet approximately 3mm, overbite approximately 10%.
- Localized anterior crowding and slight attrition noted.

## **Calculus:**

- Generalized heavy subgingival calculus on posterior teeth.
- Localized moderate supragingival calculus on anterior teeth.
- Light stain present on lingual surfaces of anterior teeth.

# Dental Charting



- Unerupted Teeth: #32
- Partially Erupted Teeth: #1, #16, #17
- Composite Restorations: #2 (OL), #3 (OL), #15 (OL), #19 (O), #28 (ODL)
- Sealant Present: #30
- No suspicious lesions noted.

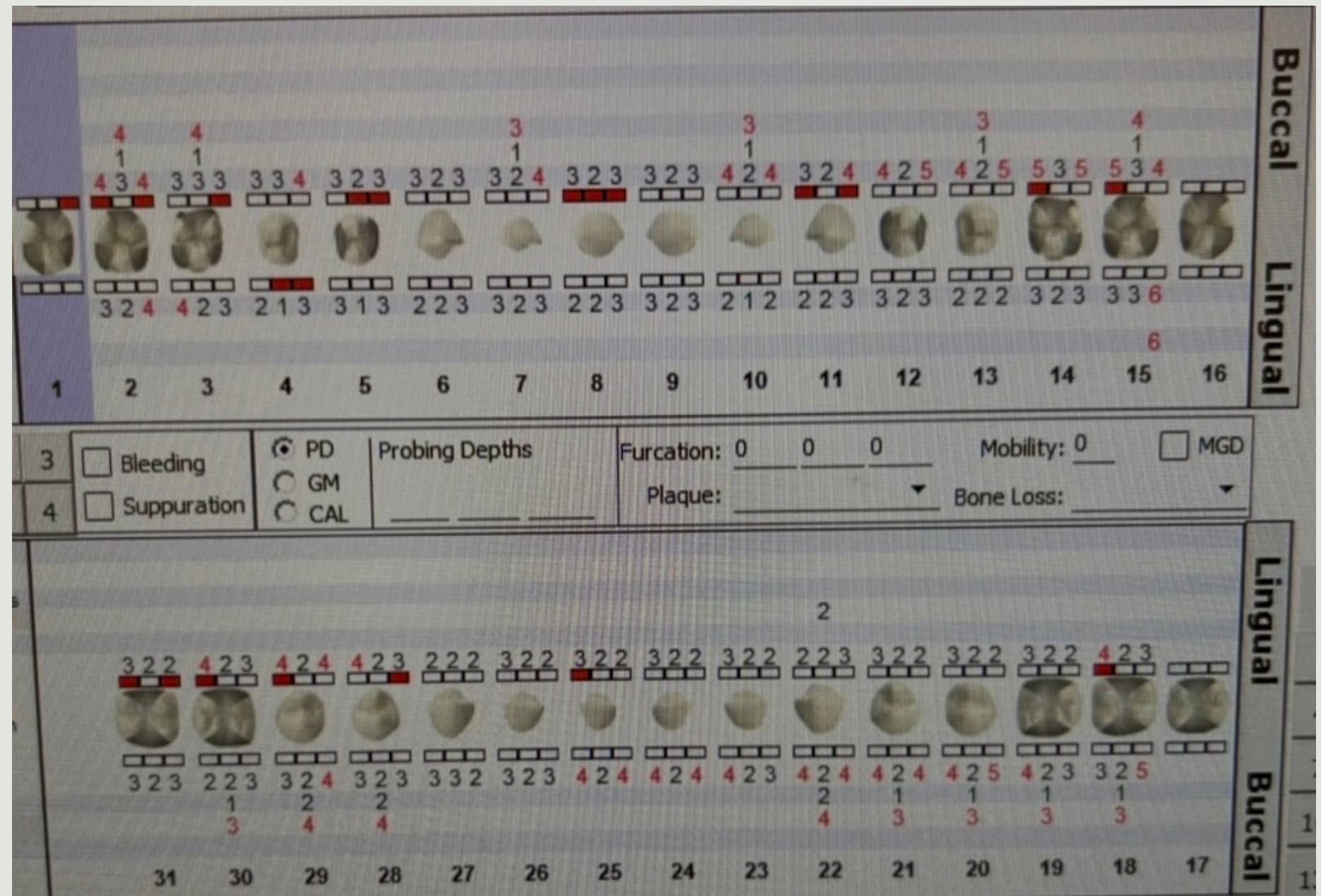
## Gingival Description

Gingiva appears generalized diffused red and enlarged. Margins are rolled, with bulbous papillae. The texture is smooth and shiny, and the consistency is spongy and puffy. Heavy bleeding on probing (BOP) was noted throughout the mouth, especially in posterior regions.

## Periodontal Status

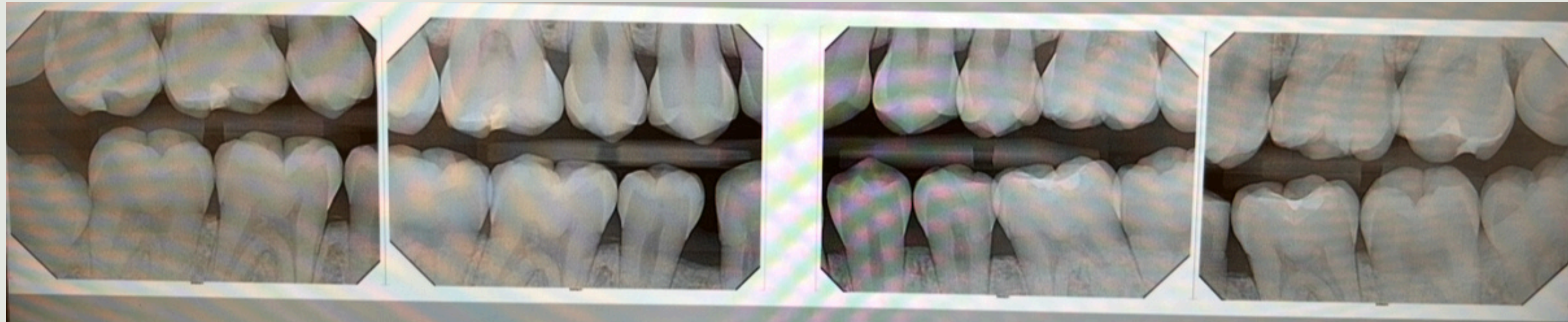
Periodontitis Stage II, Grade C

# PERIODONTAL CHARTING



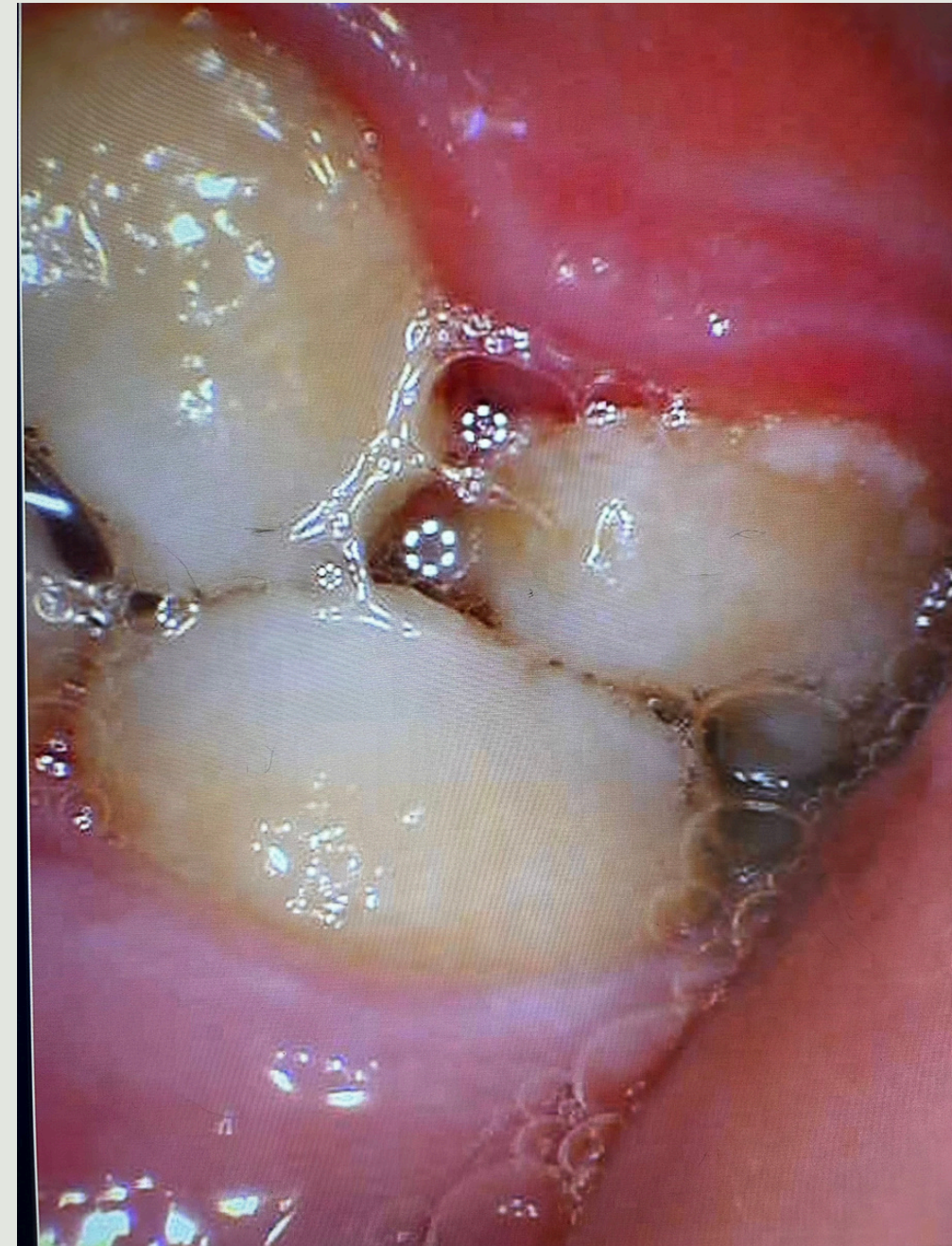
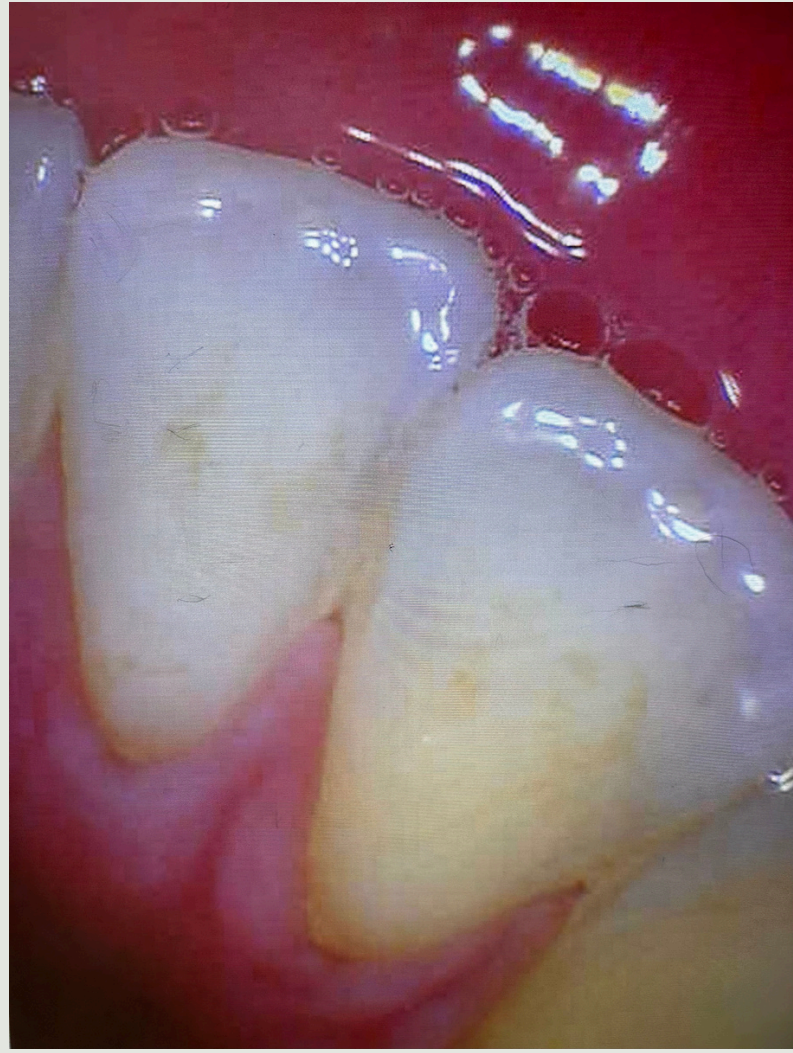
- Probing depths ranged from 1–4 mm generalized, with localized areas of 5–6 mm on posterior teeth.
- Heavy bleeding on probing (BOP).
- No mobility, no furcations, and no significant gingival recession noted.

# RADIOGRAPHS



- Digital bitewing radiographs were exposed.
- Radiographic evidence of generalized horizontal bone loss less than 15% with localized areas of horizontal bone loss greater than 15% by premolar regions.
- Radiolucency noted on mesial of #30.
- Moderate subgingival calculus detected.
- All third molars are present radiographically.
- Evidence of past composite restorations on teeth #2, #3, #15, #19, and #28.

# Intraoral Photos



# DENTAL HYGIENE DIAGNOSIS

- Generalized moderate gingival inflammation related to the presence of plaque, calculus deposits, and poor glycemic control.
- Localized 5-6mm periodontal pockets associated with plaque accumulation and diabetes-related delayed healing.
- Generalized horizontal bone loss related to periodontitis and poor oral hygiene practices.
- Increased risk for caries due to visible plaque, exposed root surfaces, recent caries in the past 36 months, and history of interproximal restorations.
- Patient demonstrates need for improved oral hygiene techniques, including effective brushing and interdental cleaning.
- Patient is at an increased risk for periodontal disease progression without regular maintenance and medical management of diabetes.

# DENTAL HYGIENE CARE PLAN

## Visit #1



- Complete medical history review and confirm diabetes management (confirm patient ate and took medications).
- Conduct all assessments: EO/IO exam, periodontal charting, CAMBRA evaluation.
- Expose and review BW radiographs.
- Educate patient on the Modified Bass brushing technique.
- Begin quadrant scaling and root planing of quadrants 2 and 3 using ultrasonic and hand scalers.
- Provide comfort measures: allow patient to take breaks, sip water, and raise the chair slowly.
- Apply 20% Benzocaine gel as needed for pain management.
- Discuss periodontal disease, diabetes, and oral-systemic health connection.
- Provide referral for hypertension management.

# DENTAL HYGIENE CARE PLAN

## Visit #2



- Review home care progress and confirm diabetes management (confirm patient ate and took medications).
- Evaluate previously scaled quadrants 2 and 3.
- Complete quadrant scaling and root planing of quadrants 1 and 4 using ultrasonic and hand scalers.
- Educate patient on C-shaped flossing technique during this visit.
- Continue slow chair adjustments and water breaks for patient comfort.
- Apply 5% Sodium Fluoride Varnish for caries prevention.
- Reinforce Modified Bass brushing and newly introduced C-shaped flossing technique.
- Discuss need for a 3-month recare interval due to diabetes and periodontal disease.



# Implementation

## Visit #1

- Vital signs were taken. BP: 137/79 Pulse: 83.
- Full medical and dental history reviewed and updated.
- ASA III classification assigned based on patient's uncontrolled Type II Diabetes and Stage I Hypertension.
- Completed all clinical assessments including EO/IO exam, periodontal charting, dental charting, CAMBRA assessment.
- Discussed importance of diabetes control on oral health; confirmed patient ate and took his medication before treatment.
- PI (Plaque Index) score obtained and discussed.
- Taught Modified Bass brushing technique. Patient demonstrated understanding successfully.
- Scaling and root planing performed for Quadrant 1 using ultrasonic and hand instrumentation.
- Chair was raised slowly throughout appointment to prevent dizziness. Patient allowed frequent breaks, sips of water, and to sit upright when needed.
- Pain management achieved with 20% Benzocaine topical anesthesia.
- Referral given for medical evaluation.

# Implementation

## Visit #2

- Reviewed medical and dental history: no changes reported.
- PI (Plaque Index) score obtained and discussed.
- Patient reports attempting Modified Bass brushing technique as instructed.
- Reinforced Modified Bass brushing and introduced C-Shaped Flossing technique; patient demonstrated C-shaped flossing successfully.
- Scaling and root planing completed for Quadrants 2, 3, and 4 using ultrasonic and hand instrumentation.
- Residual calculus removed from previously scaled areas.
- Frequent breaks and hydration provided to accommodate patient's diabetic needs and comfort.
- Pain management achieved with 20% Benzocaine topical anesthesia.
- Gingival tissue appeared improved upon evaluation (less bleeding, firmer consistency).
- Applied 5% Sodium Fluoride varnish for caries prevention.
- Provided post-treatment oral hygiene instructions focusing on continued Modified Bass brushing, daily C-shaped flossing, and importance of maintaining controlled blood sugar levels.
- Patient advised to return for 3-month periodontal maintenance (recare) interval due to periodontal status.

# Challenges During Treatment

One of the main challenges encountered during treatment was managing the patient's diabetes and the complications associated with it. Due to his uncontrolled type 2 diabetes, the patient experienced delayed healing, persistent heavy bleeding during debridement, and increased oral discomfort. Throughout the appointments, the patient reported feeling continuously thirsty and needed frequent breaks, which extended the duration of each session.

Adjustments were made to the treatment plan to accommodate the patient's condition. Multiple pauses were given to allow the patient to hydrate and recover. Despite strict bleeding control measures, moderate to heavy bleeding was still observed during and after scaling procedures, especially in inflamed areas.

The patient's diabetes not only contributed to delayed tissue healing but also heightened his sensitivity and post-treatment discomfort. Emphasizing the importance of glycemic control and consistent follow-up care was critical in managing the systemic impact on his oral health.

Continuous education was provided on the relationship between diabetes and periodontal disease progression, aiming to motivate the patient toward better systemic and oral health management.

# Final Reflection



- Treating Mr. A, a patient with diabetes, hypertension, and stage II grade C periodontitis, highlighted the challenges of managing complex medical conditions during dental care. His delayed healing, continuous thirst, heavy bleeding, and frequent need for breaks required flexibility and careful planning throughout treatment.
  - Although he showed improvement using the Modified Bass brushing and C-shaped flossing techniques, his systemic conditions impacted overall healing. This case emphasized the importance of customizing care, reinforcing education, and motivating patients to manage both their oral and systemic health.
  - Overall, it was a rewarding experience that strengthened my commitment to providing compassionate, individualized care and the importance of consistent follow-up to support long-term health outcomes.
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