

Enhancing Pink–White Balance: Characterized Gingiva in CD

A Case Report

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Abstract:

➤ Background:

Complete dentures remain the cornerstone of rehabilitation for edentulous patients. While retention and stability are essential, esthetics significantly influence acceptance. Gingival characterization enhances the pink–white balance, producing more natural prostheses.

➤ Case Report:

A 50-year-old female with complete edentulism presented seeking highly esthetic tooth replacement. Maxillary and mandibular conventional complete dentures were fabricated with gingival toning. The prosthesis successfully restored mastication, phonetics, and facial esthetics, with high patient-reported satisfaction.

➤ Conclusion:

Characterized gingiva in complete dentures improves esthetic integration, patient confidence, and psychosocial acceptance.

Keywords: Complete Denture, Gingival Toning, Esthetics, Pink–White Balance, Characterization.

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I. INTRODUCTION

The rehabilitation of edentulous patients with complete dentures is a fundamental aspect of prosthodontics. While retention, stability, and support are considered essential clinical determinants of prosthesis success, patient satisfaction is often primarily influenced by esthetics¹. For many individuals, the acceptance of a complete denture is strongly linked to its ability to restore a natural smile, lip support, and facial harmony². Esthetics in complete dentures can be divided into two essential components: **white esthetics** and **pink esthetics**. *White esthetics* relates to tooth form, arrangement, shade, and proportion, while *pink esthetics* refers to gingival form, contour, and coloration³. The harmonious integration of these two elements is critical in producing dentures that are indistinguishable from natural dentition.

The psychological and social implications of denture aesthetics cannot be overstated. Studies have shown that aesthetically pleasing dentures improve **self-confidence, social interaction, and quality of life** in edentulous patients^{4,5}. Modern prosthodontics emphasizes an **aesthetic-first approach**, incorporating smile analysis, lip support, and facial symmetry into treatment planning.

Thus, aesthetics in complete dentures extends beyond cosmetics; it is integral to **functional rehabilitation, psychosocial well-being, and patient identity**. The incorporation of individualized tooth selection and gingival characterization should therefore be regarded as a standard in contemporary denture practice.⁶

II. DENTURE CHARACTERIZATION

Denture characterization refers to the modification of artificial dentures to enhance their natural appearance, making them resemble the patient's oral tissues more closely. While conventional dentures often appear uniform and artificial, characterization techniques aim to replicate the individuality found in natural dentition and surrounding soft tissues.⁷

Characterization can be divided into two components:

➤ Tooth Characterization (White Aesthetics):

- Altering tooth shade, translucency, and surface texture to mimic natural wear.
- Incorporating minor rotations, spacing, or gingival embrasures to avoid a "denture look."
- Using stains or layering techniques to produce life-like esthetics.

➤ Gingival Characterization (Pink Esthetics):

- Simulating gingival pigmentation, root eminences, stippling, and natural contours.
- Use of tinted acrylic resins, extrinsic stains, and composite modifiers to reproduce natural gingival color variations.
- Enhances pink-white harmony, especially in patients with high smile lines.

The clinical significance of denture characterization lies in its ability to improve psychological acceptance and patient satisfaction. Esthetically pleasing dentures restore not just oral function but also self-confidence and social comfort. Characterized dentures are particularly important for patients with high esthetic demands, as they reduce the artificial appearance traditionally associated with prostheses.

III. GINGIVAL TONING

Esthetics in complete dentures depends not only on tooth arrangement and shade but also on the harmonious reproduction of the surrounding gingival tissues. A plain, uniformly pink denture base often looks artificial, especially in patients with a high lip line. To overcome this limitation, **gingival toning** is employed to replicate the natural variations in gingival color, contour, and texture.

➤ What is Gingival Toning?

Gingival toning is the **characterization of the denture base** using intrinsic or extrinsic stains to simulate natural gingival appearance. The goal is to reproduce:

- Subtle color variations of attached and marginal gingiva,
- Root eminences and interdental papillae,
- Melanin pigmentation where indicated, and
- Surface textures such as stippling.

➤ Methods of Gingival Toning

• Intrinsic Characterization:

Pigments, fibers, or colored acrylic powders are incorporated during denture processing. This technique

creates permanent color effects that resist wear and chemical cleaning. However, it requires advanced laboratory skill and is irreversible once processed.

• Extrinsic Characterization:

Stains, composites, or acrylic modifiers are applied to the external denture surface after processing. This method allows detailed finishing and corrections but is less durable and may fade with time⁸

➤ Clinical Importance

• Esthetic Outcome:

By mimicking natural gingival tissues, dentures look more lifelike and blend better with the patient's facial esthetics.

• Psychological Impact:

Patients often report greater self-confidence, improved social acceptance, and better overall satisfaction with characterized dentures^{9,10}

• Prosthodontic Value:

Gingival toning enhances the pink-white harmony, making the prosthesis indistinguishable from natural oral tissues, especially important in cases of high smile lines.

IV. CASE REPORT

➤ Patient Profile :

A 50-year-old female patient reported to the Department of Prosthodontics with the chief complaint of complete absence of teeth in both arches. The patient expressed a strong desire for tooth replacement with a particular emphasis on esthetics.

➤ Clinical Examination and Diagnosis

Intraoral examination revealed a completely edentulous maxilla and mandible. The residual ridges were well-formed, with adequate height and width to support a prosthesis. Extraoral evaluation confirmed satisfactory lip support, competent lips, and favorable smile dynamics. The diagnosis was made as *completely edentulous maxilla and mandible with adequate ridge form*.

➤ Treatment Plan

It was decided to fabricate conventional maxillary and mandibular complete dentures. Given the patient's esthetic concerns, the treatment plan included gingival characterization (gingival toning) to enhance the pink-white balance and create a more natural appearance

➤ Clinical Procedure

• Primary Impressions:

Muco-compressive primary impression was taken using high-fusing impression compound leading to the fabrication of a primary cast. Spacer wax was adapted, and a special tray was fabricated over it.

- **Final Impressions:**

Border molding was performed with green stick compound and a secondary impression was made using zinc oxide eugenol impression material.

- **Jaw Relation Records:**

Vertical dimension and centric relation were established.

- **Teeth Arrangement:**

Teeth selection was done using Berry's biometric index, patient's facial form, facial profile & complexion. Anterior teeth setting was done to develop an anterior guidance that is in harmony with patient's esthetics and phonetics. Later, posterior teeth were arranged. Teeth were arranged to optimize esthetics, phonetics, with particular attention to smile line and buccal corridor.

- **Wax Try-In:**

The trial dentures were evaluated for esthetics, phonetics, and occlusion. Patient approval was obtained before processing.

- **Processing and Characterization:**

Dentures were processed with heat-cured acrylic resin. Intrinsic stains were incorporated during packing, and

extrinsic gingival toning stains were applied post-processing to simulate natural gingival shades, root eminences, and papillae.

- **Insertion:**

The characterized dentures were finished, polished, and inserted. Occlusion, retention, and esthetic were verified.

- **Post Op Instructions:**

Patient was given instructions to wear them only during day time and store them in box at night, to clean the denture daily with soap water and denture brush and not use toothpaste as the abrasives in it can cause wearing away of acrylic. Gentle tissue cleansing and massaging of oral tissues should also be done. Patient might have speech problems initially and should do reading practice while at home. The problem of speaking will disappear and the tongue will adapt within a few weeks. During initial stages, patient should avoid sticky and hard food. Once comfortable, patient could start having solid food. While sneezing / coughing, patient should keep mouth closed to avoid denture's accidental falling off. Excess saliva production after new denture is normal and can last upto one week. This problem will disappear with time. A regular recall should be followed at 24hrs & 7 days after insertion with a maintenance at 3months, 6 months and 1 year interval.

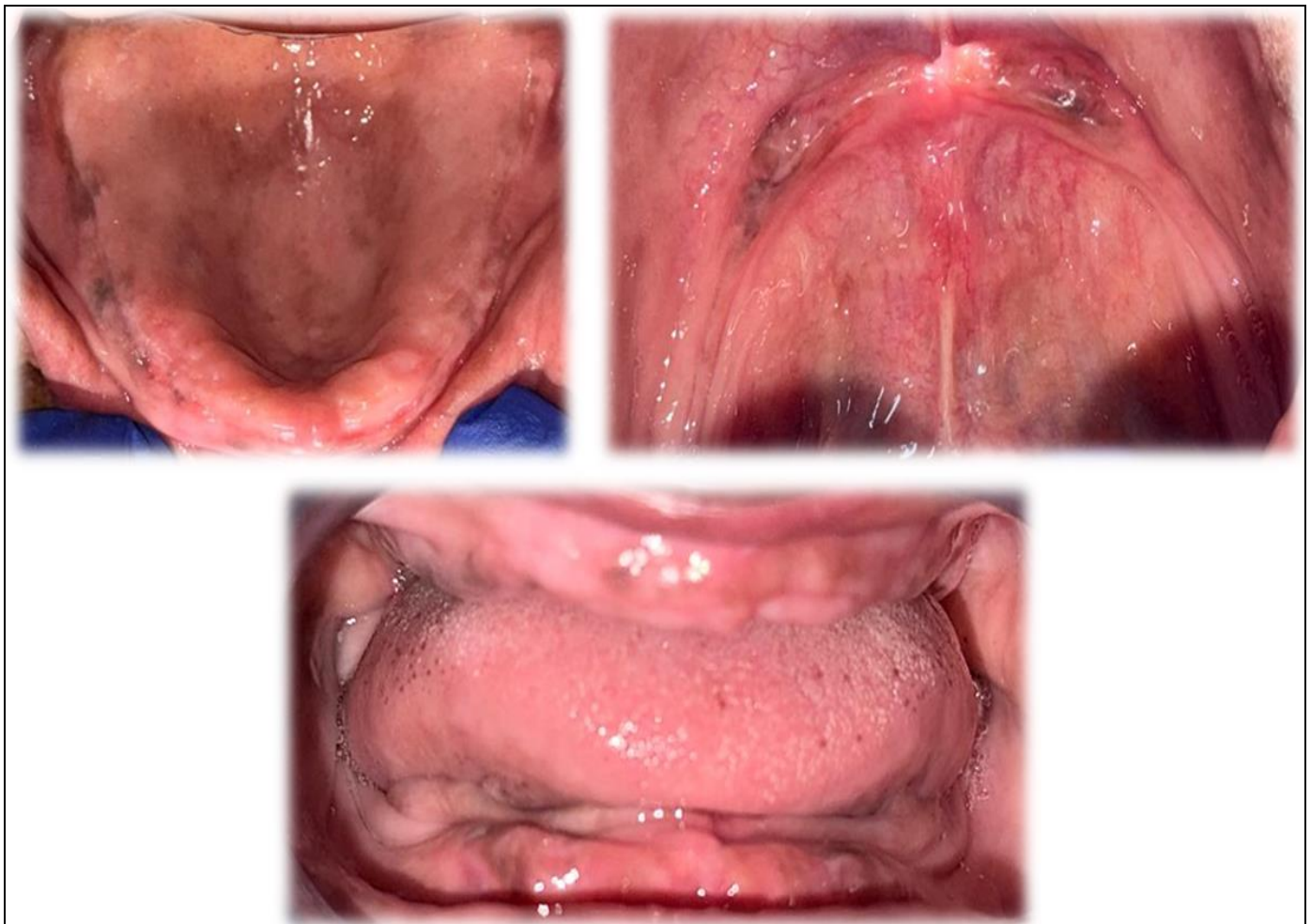


Fig 1 Intra-Oral Pre Operative Pictures

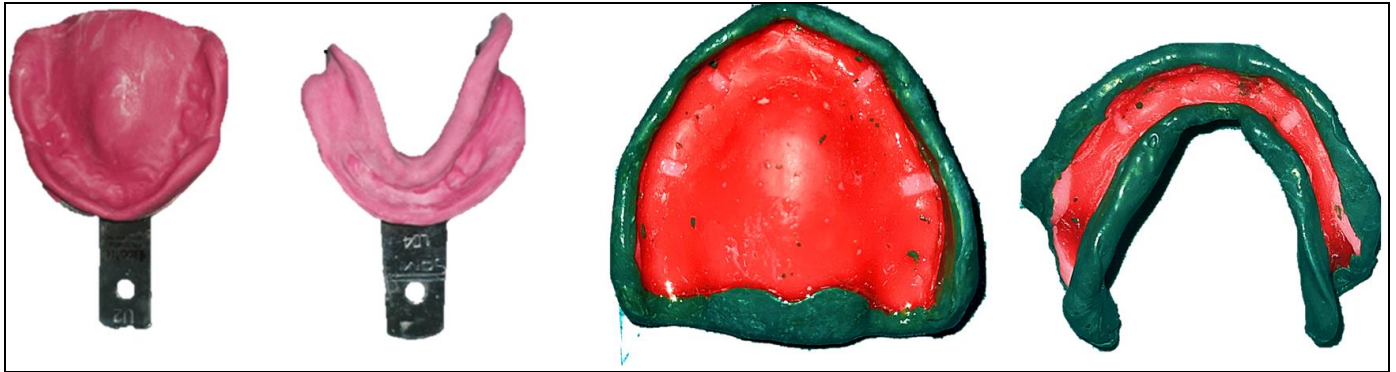


Fig 2 Primary Impressions and Border Molding



Fig 3 Final Impressions



Fig 4 Jaw Relation Record



Fig 5 Teeth Arrangement



Fig 6 Denture Characterization



Fig 7 Gingival Toning

V. DISCUSSION (SUMMARY)

Beyond retention and stability, esthetics plays a key role in the success of complete dentures. While tooth form and arrangement (*white esthetics*) are important, gingival toning (*pink esthetics*) adds realism by reproducing natural gingival colors, root eminences, papillae, and stippling.

Intrinsic methods (pigments within acrylic) provide durable results, whereas extrinsic methods (surface stains)

allow fine detailing but may fade. Studies show that characterized dentures are preferred by patients and significantly improve satisfaction and esthetic perception.

In this case, combining intrinsic and extrinsic gingival toning enhanced the pink-white harmony, producing a natural appearance that met the patient's high esthetic expectations. Thus, gingival characterization should be considered a standard component of modern complete

denture fabrication, as it improves function, esthetics, and psychosocial acceptance.

VI. CONCLUSION

Gingival toning transforms conventional dentures into lifelike restorations by enhancing the pink–white esthetic balance. It not only restores oral function but also improves confidence, social acceptance, and overall patient satisfaction.

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