



Denture in Person: A Case Report

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Abstract

Denture Characterization means 'Modification of the form and colour of the denture base and the teeth to produce more lifelike appearance.' Different techniques and materials are used since ages for tinting of the denture bases. Keeping in account the pros and cons of the explained techniques, very feasible and a simplified modification of the age old, most popular Pound's 'sift in' technique was attempted. The result thus obtained was significantly satisfying for the patient as well as the operator and every possible effort was made to make the Complete Denture experience worthwhile.

Keywords: Characterization; Complete Dentures; Intrinsic Staining; Aesthetic Dentures; Pound's Technique

Introduction

Every completely edentulous patient demands the denture to be as natural as possible. It is necessary to reproduce the anatomic characteristics and to simulate the natural hues of gingiva, present before the loss of natural dentition.

Denture Characterization means 'Modification of the form and colour of the denture base and the teeth to produce more lifelike appearance (GPT9)1 Being the most significant process, involves the natural size, arrangement, colour of artificial teeth replacing the contour, structure, and colour of the surrounding tissues so as to minimize the "denture look" of complete dentures. It creates a beautiful emergent profile of the teeth through the gingiva. As every patient has a different characteristic, Dentures too must be personalised as to achieve maximum form, function and aesthetics.

We aim to present a case report of characterised denture with selective intrinsic staining of the denture base with modification of Pound's 'sift in' technique2.

Case History: Mrs Sindhu Patole, age fifty two years, a completely edentulous patient reported with a chief complaint of inability to eat due to missing teeth since four months.

Both the arches were of Atwood's order 3, based on the diagnostic criteria by McGarry, classification was Class I ideal or minimally compromised. 3 The residual bone height was 22mm measured at the least vertical height with sufficient inter-arch space of 17 mm, Class I ridge relation and a short upper lip of 18mm.

After thorough clinical and radiological examination and high aesthetic demand of the patient, characterised bilaterally balanced maxillary and mandibular complete dentures were planned.

Primary and final impressions were made in conventional manner, followed by facebow transfer and Jaw relation.

Technique

1. Trial of the waxed-up denture intraorally. Evaluation of form, function and aesthetics and patient approval. (Figure1-12)
2. Flasking and Dewaxing of the waxed-up dentures are done conventionally. Application of separating medium (DPI cold mould seal, Dental Products of India, Mumbai, India).

- 3. Section the Heat cure resin polymer (Lucitone 199, Dentsply, York Division. PA.) in four parts, add heat cure colour pigments (MP Sai Enterprises, Mumbai, India.) for skin, red and brown shade in each of the three sections and plain polymer in the fourth section. Add monomer and make thin mixtures.
- 4. A paint brush and tile are used for the shade matching and mixing and selected areas of the counter mould are painted sectionally with the resin.
- 5. Fibres of red and pink colours are placed selectively with small tissue forceps to resemble the vascularity of the mucosa.
- 6. The resin packed is then allowed to dry for 10 minutes then the remaining mould is packed with conventional heat cure resin at dough stage.
- 7. Equal firm compression is applied and the denture is allowed to bench cure for 6 hours.
- 8. Curing is done with short curing cycle and Denture is retrieved post polymerisation.
- 9. Finishing and polishing done with conventional technique.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 9



Figure 7



Figure 10



Figure 8

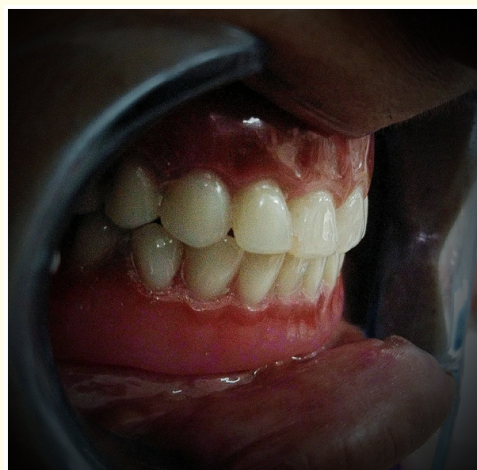


Figure 11



Figure 12

Discussion

Ever since the recognition of the presence of pigmented areas of the gingiva, the increased vascularity in the frenal and mucobuccal regions and the presence of ischemic effect at the neck of the teeth, Prosthodontists felt it necessary that these characteristics be reproduced in artificial dentures. In the research view of characterised denture, In 1951 Pound was the first to characterize denture base resin intrinsically by sifting coloured methyl methacrylate polymers into the monomer popularised as 'sift in' technique.' however the disadvantages were: the effects were difficult to anticipate until the denture is processed, constant running of the monomer over the labial surfaces of the mould leading to final impregnation of the plaster into acrylic resin and crazing of teeth..2 Procter in 1953, introduced four different colour blended powders by studying the gingival colours by an automatic colour camera.4 Johnson in 1955 separated the denture base from the teeth during the packing and staining procedure and closed together after trial pack.5Kemnitzner in 1956 introduced the melanotic pigmentation by combination of blue and brown stain.6

Dummett in 1968 introduced the Denture tissue tinting chart that mimic the Attached Gingiva, Alveolar Mucosa, Blanched areas over roots, Frenum Attachments and Papillae.7 Zimmerman., *et al.*

(1982) suggested the dark pigmentation for dark skinned Asiatic populations and proved a definite correlation 8. Szabo., *et al.* 1987 introduced clear light cure resin for surface staining of denture. 9. Custom Tinting Denture Bases by Visible Light Cure Lamination was brought to picture by Berte in 1995.10 Patras in 2011 reported characterization of implant retained overdentures can significantly improve the patients' function 11 Chandna., *et al.* summarised a review article on characterization of Complete dentures in 2016.12 Jadhav., *et al.* in 2018 revisited the use of sift-in method of Pounds in his research.13

The technique advocated by this paper is a modification of Pound's technique. Instead of simmering the tinted polymer with monomer by sprinkle on method, individual mixes of the tints are made within the pink coloured heat cure acrylic and then painted selectively.

Primary Advantages of this technique are (1) Exact visualization of shade after the final mix. (2) The concentration of the stains can be altered for each patient and concerned area. (3) various combinations of stains can better the shade matching. (4) No risk of porosities as the resin is packed in Dough stage.

Secondary advantages are:(1) More control of the operator on the minute details as different sizes of brushes can be used and lesser chances of stains getting mixed with each other. (2) More working time. (3) Uniformity and superior quality of the final outcome as both stained and base resin are packed in same consistency. (4) Require less finishing and polishing.

Disadvantages are (1) Time consuming process. (2) The effect of the denture changes intraorally so stains are used selectively and carefully. (3) Verbal and written Consent is required from the patient.

Summary

This particular case report evaluates the Pound's 'sift in' technique and modifies it by dividing the heat cure resin in four parts and adding heat cure colour pigments for skin, red, brown and pink. The result was satisfactory for the patient as well as the operator.

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