

Use of Bioink in Transferring Rest Seat Extension to the Working Cast

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ABSTRACT

The use of cast partial denture has decreased in the past two decades due to increased preference of implant supported fixed restorations by both patient and their dentists. However, certain clinical situations do not render the use of implants in which case, the cast partial dentures are still the choice of treatment. During the fabrication of the cast partial denture, transfer of occlusal rest seat to the working cast is done using an impression material. Since the prepared rests are of small dimensions, clinicians generally are not able to isolate defects made in the recording of these preparations. A simple technique that isolates these areas during the recording of occlusal rests is presented. The technique uses colored ink on the prepared area which get transferred to the impression as well as the master cast. The technique is simple and inexpensive and can be particularly useful in academic settings.

INTRODUCTION

One of the most difficult science to be applied clinically is the science of the cast partial denture to restore a partially edentulous arch. With the advent of osseointegrated implants, the practice of cast partial dentures has decreased, but keeping in mind the relation of lower socioeconomic status, cast partial dentures will still remain an important treatment option even in the near future [1]. Besides designing a particular clinical situation for a cast partial denture framework, the other uncertain, but important clinical step is accurate transfer of position and dimensions of various mouth preparations to the dental laboratory. Elastomeric impression materials are the choice of materials for recording various preparations for a cast partial denture. However, various mouth preparations, especially rests (occlusal, incisal or cingulum) are so small in dimensions that it is difficult for a clinician to analyze whether these areas have been recorded correctly in the impression or not [2].

To overcome such lacunae and provide the clinician a viable method, we present a novel technique of identifying the error in recording rests while at the same time transferring the entire rest area to the master cast.

Technique

1. Once the mouth preparations have been prepared on the respective abutments, make a check impression using an irreversible hydrocolloid and pour a check cast with dental plaster (fast setting).
2. Verify the correctness of the prepared rest seats on the check cast. Isolate each rest seat intraorally and dry the area completely. Apply a layer of Bio Ink

(Bausch Intraoral Ink, Canada) within the confines of the prepared rest seat (Figure 1A) using an applicator tip or an injectable custom made disposable syringe. Care is taken not to overflow the ink over the unprepared tooth surface.

3. With a contrasting elastomeric light body impression material, inject the light body into the rest seat areas and complete the impression using either medium body (custom tray) or putty consistency (stock tray). On removal, the area of the light body that would have not contacted the surface will be visible on the impression indicating that the rest seat has not been recorded properly.

4. A similar technique is also useful to verify the fit of the cast framework on the working cast (Figure 1 B) since the markings will be still present on the rest seat area on working cast.

5. The same procedure can also be utilized during the metal framework trial (Figure 1C) and the final insertion of the cast partial denture framework (Figure 1D) also.

6. Necessary precaution includes complete dryness of the area, minimal application of the ink and complete drying of the ink before impression making or metal framework trial. Since the ink is biocompatible with the human body, skin contact will not result in any harm. However, minimum quantity should be applied intraorally since the presence of saliva will spread the ink throughout the oral cavity

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Figure 1: (A) Bio Ink application on the occlusal rest seat (B) Bio Ink transfer to the metal framework (C) Bio Ink transfer during the framework clinical trial (D) Bio Ink transfer to cast partial denture.