LABORATORY TECHNIQUE

The Need of Additional Tissue Relief Required under a Minor Connector

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ABSTRACT

Fabrication of a cast partial denture is complex in terms of clinical designing and laboratory fabrication. One of the problem areas during fabrication of the cast partial denture in the laboratory is to provide an effective retention mechanism to denture acrylic resin that will be joined to the metal framework at a later stage. This article describes the need of raising the minor connector through additional tissue relief between the major connector and denture acrylic. The procedure is beneficial and easily implemented in a dental laboratory.

Key words: Casting procedure, major connector, meshwork, tissue relief, vertical stop

INTRODUCTION

In a tooth tissue supported cast partial denture, the union between the acrylic resin and the metal framework is critical to allow the flow of acrylic dough on either side of the minor connector. The dough has feeble flow but has to flow within minute spaces of minor connector components. Conventionally, the desired results are achieved by providing a relief under most of the minor connectors on the working cast before duplication of the master cast is done. However, there are certain situations where a thin layered wax is used to replicate the major connector of the cast partial denture (unilateral large edentulous spaces) and it becomes difficult to provide adequate space under the minor connector adjacent to major connector.[1,2] This article provides a simple modification of the master cast that allows the minor connector (meshwork type) to be kept at a higher level so that the acrylic resin flows under the meshwork. The modification is done on the master cast, by marking the exact area of the major connector and the minor connector. Once the area of the minor connector is marked on the master cast, relief wax 0.3 mm thick is applied to the entire marked area. This area will appear raised in the refractory cast after duplication of the cast, whereas the area of the major connector will not be raised. Once the refractory cast is obtained, place the required wax pattern for a major and minor connector [Figure 1a]. After obtaining the casting for the framework, one should be able to see the minor connector not touching the cast surface on the soft tissue area [Figure 1b]. The meshwork wax pattern is thin and lacks body, to support on its own. When the length of the meshwork is more, the meshwork tends to fall in the middle or toward the edges. Providing a tissue relief in the manner described above does not allow meshwork to collapse at any place. Once the casting is done, there will be space present under the meshwork minor connector, suggesting the successful application of the relief area. Once the results are verified that the heat cure denture base resin can be joined to the major connector with ease. Storage of denture in water does not affect the bonding mechanism between the resin and the metal since the retention is purely mechanical in nature [Figure 1c].

CONCLUSION

Additional relief under the minor connector when meshwork is desired prevents the development of thin acrylic resin over the metal framework toward the tissue side of the cast partial denture.

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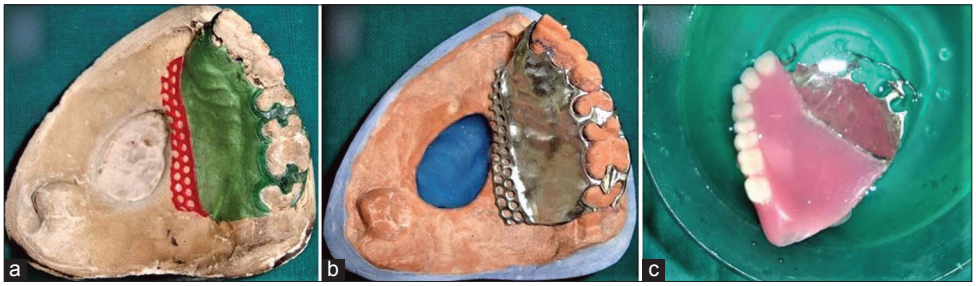

Figure 1: (a) Wax pattern on refractory cast, (b) metal framework showing space under the minor connector – meshwork, (c) acrylic resin joined two major connectors using an effective minor connector

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