Rehabilitation of Severely Resorbed Flabby Edentulous Ridge with Innovative Impression Technique: Case Series

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Abstract:
A flabby edentulous ridge decreases the stability of complete denture prosthesis. Displacement and compression of the flabby ridge result in trauma to the soft tissue and cause soreness in that region. Failure to recognize the cardinal importance of the tooth position will result unsatisfactory outcome. The many impression techniques have been proposed to overcome this difficulty, and they vary in their approach and their complexity. This article describes three clinical cases of severely resorbed flabby edentulous ridge with innovative impression technique: Case series. J Int Oral Health 2016;8(1):137-139

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Introduction
Flabby ridge could arise as a result of unplanned extraction or when natural teeth oppose an edentulous ridge for a prolonged period of time. The main purpose of final impression is to record the entire functional denture bearing area to ensure maximum retention, stability, and support. However, it is compromised in the case of flabby ridge due to varying displaceability of the supporting tissues.¹,² Hence, for these patients, a slight modification in the impression making procedures is a suitable treatment option to optimize retention, stability, and support of the complete denture prosthesis.²,³

Using mucostatic impression technique, good retention can be obtained when teeth are out of occlusion but instability occurs on occlusion. Mucocompressive technique places the tissues in compression at rest resulting in compromised blood supply to the tissues. Hence, our main aim is to obtain an impression which will compress non-flabby tissues and at the same time not displacing the flabby tissue, so as to achieve optimum support.⁴

Case Reports
Case report 1 (modified William H Filler technique)
A 55-year-old male patient with a history of denture wearing for past 15 reported with severely resorbed flabby maxillary anterior ridge (Figure 1a), compromising the stability of the denture. To overcome, these problems modified William H Filler technique and neutral zone concept were adopted as the final treatment plan.

Procedure
1. Primary alginate impression was made to ensure minimal distortion of flabby tissue
2. Uniform thickness of base plate wax was placed as a spacer. Double thickness of wax was used only in the flabby region⁵
3. Custom tray with a window created in the flabby area and a second custom tray for the flabby region was fabricated with an index on the first tray for proper orientation (Figure 1b)
4. Border molding was done using low fusing green stick compound and final impression for the first tray was made using zinc oxide-eugenol impression paste. Now the second impression was made in the overlying custom tray using light body condensation silicone to minimize the distortion of flabby tissue (Figure 1c)
5. In the master cast, mandibular occlusal rim was made using a mixture of low fusing impression compound and green stick compound⁶
6. The mandibular rim was softened in hot water, and the patient was asked to do all functional movements to mold the material into the neutral zone (Figure 1d)
7. After a loss of teeth, a potential denture space or void exists within oral cavity bounded by maxilla and soft palate above, by mandible and floor of mouth below, by tongue medially or internally and by muscles and tissue of lips and cheeks laterally or externally.⁷ Talking aloud rapidly activates the floor of mouth to the maximum physiological extent possible and helps gaining retention and stability.⁸ Followed by putty index of the molded occlusal rim is fabricated (Figure 2a)
8. Centric jaw relation was recorded using staple pin method. After the try-in procedure, polished denture was delivered

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to the patient with better retention, stability, and support than the old denture (Figure 2b)

Case report 2 (selective displacive technique)

A 62-year-old female patient with flabby ridge in the mandibular anterior region reported to our department (Figure 3a). Primary impression is made in a mucostatic material like alginate. A spaced custom tray is loaded with impression compound, and impression is made on the model (Figure 3b-d). This reduces the risk of displacing the flabby ridge. The tray is warmed and placed in the patient’s mouth (Figure 4a). It is adapted and border molded to the tissues and should be quite retentive. In the impression, the flabby ridge is compressed but not distorted as the other portions of the impression compound sink into the tissues. A wash impression is taken in impression paste to obtain maximum detail and retention and stability. The polished denture is delivered following the conventional steps in the fabrication of complete denture (Figure 4b).

Case report 3 (modified silicone technique - William H Filler)

A 55-year-old male patient reported with severely resorbed flabby maxillary anterior ridge. On the primary cast obtained from alginate impression, wax spacer is adapted with triple layer thickness of spacer over the flabby region (Figure 5a) and the custom tray is fabricated (Figure 5b). The final impression is made, excluding the flabby region using heavy body addition silicone followed by border molding (Figure 6a and b). Over this light body wash impression is made covering the entire anterior region (Figure 6c). Hence, the principle is same with different material with more advantages.

Discussion

Due to the advancements in the field of dentistry, the most patients retain some or most of their teeth. Yet completely
edentulous state is the most challenging condition and due to the unfavorable conditions as described earlier flabby ridge can occur. Fabrication of complete denture using conventional techniques will result in compression of the flabby tissue, soreness or pain in that area. Hence, multitude of impression techniques is introduced to overcome this problem.

Modified William Filler technique described in this article differs from that of William Filler technique in using light body condensation silicone instead of impression plaster paint on a technique where reorientation of the fractured impression plaster segment is time-consuming and prone to have errors. The main advantages of using light body impression material are minimal pressure to the tissues, better flow, better reproduction of details and less time consuming. In addition to this neutral zone concept is incorporated in the mandibular teeth arrangement so that forces from the cheek muscles are counteracted by the forces from the tongue and leads to better stability.

Conclusion
This impression technique is simple with no extra clinical steps compared with the conventional technique and uses materials which are readily available in general practice. William Filler technique was adopted to increase the support of the denture and the incorporation of neutral zone concept further enhanced the stability thus increasing the quality of the denture.9

References