

A Modified Method for Rebasing Implant-Retained Overdentures

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There is a constant need for rebasing implant-retained overdentures because of the inevitable continuous absorption of the underlying residual ridge, which results in a lack of proper occlusion and possible rotation of the denture around the retentive components. This step-by-step article describes all of the clinical and laboratory procedures needed for rebasing a mandibular implant overdenture retained with a bar on two implants, securing an accurate fit. This procedure can be applied successfully for rebasing overdentures with different superstructures (ball attachments or magnets), and for replacing worn or damaged retentive components and matrices.
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For many patients, there is a need for rebasing implant-retained overdentures as a result of the continuous absorption of the underlying residual ridge in the posterior region. This creates a lack of proper occlusion and thus a gap under the denture base and a rotation of the denture around the retentive components, mainly in cases where short distal extensions from rigid bars are not used.^{1–3}

When rebasing an implant-retained overdenture, a procedure similar to that for conventional complete dentures is applied. However, it is more complicated and varies depending on the type of retainer used.⁴

The aim of this study was to describe a simple and accurate clinical and laboratory method for rebasing implant-retained overdentures.

Procedure

Rebasing a mandibular implant overdenture retained with a bar on two implants can be completed as follows.

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Clinical Stages

The clinical aspect of the rebasing process consists of 12 steps.

1. Remove all undercuts and a thin layer of material from the denture-fitting surface.
2. Place a small amount of low-viscosity modeling compound at four regions of the denture-fitting surface, corresponding to the second molars and canines.
3. Make an impression of the opposing dental arch.
4. Insert the denture in the mouth and ask the patient to close, occlude gently, and remain in this position until the compound is set.
5. Check the occlusion.
6. Remove the denture from the mouth and drill holes corresponding to the bar screws (Fig 1).
7. Unscrew and remove the bar from the mouth.
8. Place the impression abutment copings directly onto the abutments and tighten them firmly.
9. Insert the denture and check its position in relation to the impression copings.
10. Cover the holes with a piece of wax plate.
11. Make the impression applying the reseating technique and using a low-viscosity elastomeric material (Aquasil LV, Dentsply) while the patient is in occlusion.
12. Remove the impression abutment copings from the mouth and reseat them onto the impression.



Fig 1 Holes in the original denture corresponding to the bar screws.

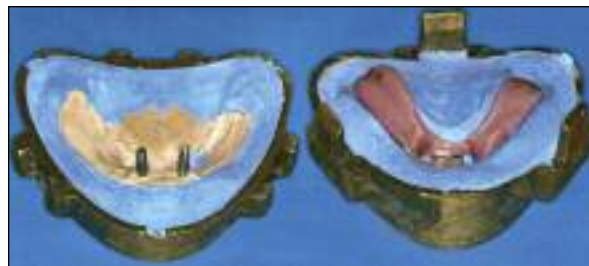


Fig 2 Master cast in the flask.



Fig 3 Clips stabilized on the bar with acrylic resin.



Fig 4 Overdenture with clips after processing and the bar attached to the abutment analogs.

Laboratory Stages

The rebasing process is then continued in a laboratory setting by implementing the following 12 steps.

1. Attach the abutment analogs to the impression copings and make the master cast.
2. Invest the master cast in the flask (Fig 2).
3. Remove the impression copings from the abutment analogs.
4. Place the bar in its position on the master cast.
5. Check the passive and accurate fit of the bar to the abutment analogs and tighten the screws firmly.
6. Remove the clips from the denture base.
7. Separate the denture base material from the teeth and discard.
8. Block out the space around the bar with putty silicon.

9. Seat the clips on the bar and stabilize them with autopolymerizing acrylic resin (Fig 3).
10. Pack heat-polymerizing acrylic resin and process.
11. Remove the overdenture and the bar attached to the abutment analogs from the master cast (Fig 4).
12. Finish and polish the denture.

Clinical Stages

Delivery of the newly rebased overdenture can then be carried out in a clinical setting.

1. Place and tighten the bar in its position in the mouth.
2. Insert the denture and clip it on the bar.
3. Check for stability.
4. Check the occlusion and perform occlusal adjustments.

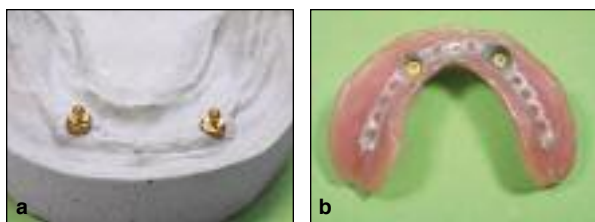


Fig 5 (a) The ball attachments with the new matrices on the implant analogs and (b) the overdenture with replaced matrices after processing.

Discussion

The rebasing procedure described concerns a bar-retained overdenture. However, this method may be successfully applied to different retentive components (ball attachments or magnets) and used for replacing worn or damaged retentive components or matrices. An example of a rebased overdenture retained with ball attachments where the worn matrices were replaced can be seen in Fig 5.

This method holds some advantages in relation to usual laboratory practices, where the transfer of all retentive components takes place during the impression procedure.⁵ The main advantage is the ability to check the fit of the bar to the abutment analog on the master cast, as compared to doing so solely in the mouth. This is achieved because only the abutment's position in the mouth is transferred to the master cast and thus the seat of the retentive components on the abutment analogs enables checking the actual relation in the mouth.

In cases where all retentive components are transferred during the impression procedure and the abutment analogs are tightened to the retentive complex before making the master cast, the clinician cannot check whether the passive and accurate fit of the retentive components to the abutment analogs is the same as that to the abutments in the mouth. Thus, possible faults or displacement during this procedure are transferred to the master cast and consequently, to the rebased denture.

Conclusion

The described technical procedure can be applied successfully for rebasing overdentures with different superstructures and for replacing worn or damaged retentive components.

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