

제거가 용이한 형태의 시멘트 유지형 임플란트보철 ; 증례보고

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Case report: Fabrication of retrievable cemented implant restorations

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Abstract

This article is a case report to present clinical application of fabrication method of multiple unit retrievable cemented implant restoration which can be retrieved with flat bladed implant torque driver.

I. Introduction

The clinician is often required to retrieve an implant restoration from abutment in case of abutment screw loosening or achieving access to implant for periodontal therapy. Therefore, the property of retrievability is an advantage of screw retained implant restoration over cement retained implant restoration¹. However, there are cases such that the clinician has no choice other than cemented implant restoration due to different reasons.

Removing a cemented implant restoration is not a predictable procedure. When there is screw loosening, the effort of removing the restoration can end up with breaking the abutment screw which is detrimental for further prosthetic treatment. And often, the abutment gets severely damaged during the cutting procedure. Patient may complain of mucosal irritation due to blast of metal particles. Potential risk of thermal trauma to surrounding tissue cannot be overlooked when the ultrasonic device is used².

Various methods have been introduced to provide retrievability to cemented implant restoration. Those methods include cement- and screw-retained implant prosthesis³, Cement- and screw-retained implant-supported prostheses⁴, set screw⁵, retrieving screw⁵, and removing driver⁶ technique. The indication of cement- and screw-retained implant prosthesis technique is limited due to screw hole position. Cement- and screw-retained implant-supported prostheses technique cannot be applied to single unit implant restoration. Set screw, retrieving screw, and removing driver technique demand special set of tools to fabricate the restoration which is not commonly available.

Shweitzer⁷ et al introduced A technique for retrieval of cement retained implant-supported prostheses. This article is a case report is to present clinical application of this new technique of retrievable cemented implant restorations.

II. Technique

1. Incorporate a vertical channel in the lingual axial wall of customized abutment (Gold cast abutment; Osstem Implant, Seoul, Korea). The width of the channel should be enough to fit a flat bladed implant torque driver (Slot torque driver; Osstem Implant, Seoul, Korea); at least

wider than 2 mm. The depth of the channel depends on the lingual volume of the restoration, but minimum of 1.5 mm is recommended to engage the driver tip. The path of the channel has to be parallel to the restorative path of insertion especially in case of multiple unit prosthesis (Fig 1).



Fig 1.

2. Fabricate the cemented implant restoration with the male part on internal surface of the restoration that can slide into the channel of the abutment. The margin of the restoration over the channel is carved to form a vent, or opening to allow engagement of flat bladed implant torque driver (Fig 2).



Fig 2.

3. Deliver the abutment and cement the restoration in conventional method except the vent is filled with the composite resin. In order to close the vent with the composite resin, the lingual margin of the abutment and the restoration has to be coronal to the soft tissue level from the beginning (Fig 3).

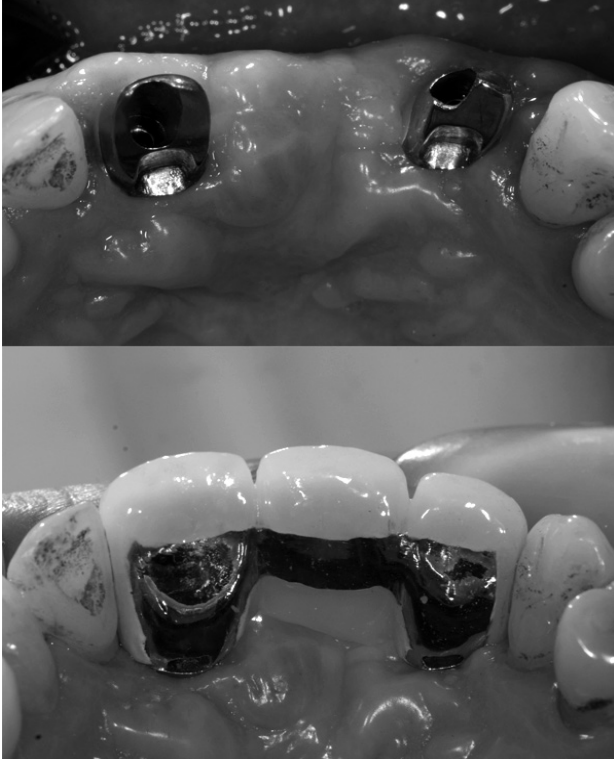


Fig 3.

4. When indicated, remove the composite from the vent and 'lift' the restoration from the abutment by engaging and twisting a flat bladed implant torque driver in the vent with the help of torque wrench (Torque wrench; Osstem implant, Seoul, Korea) (Fig 4).

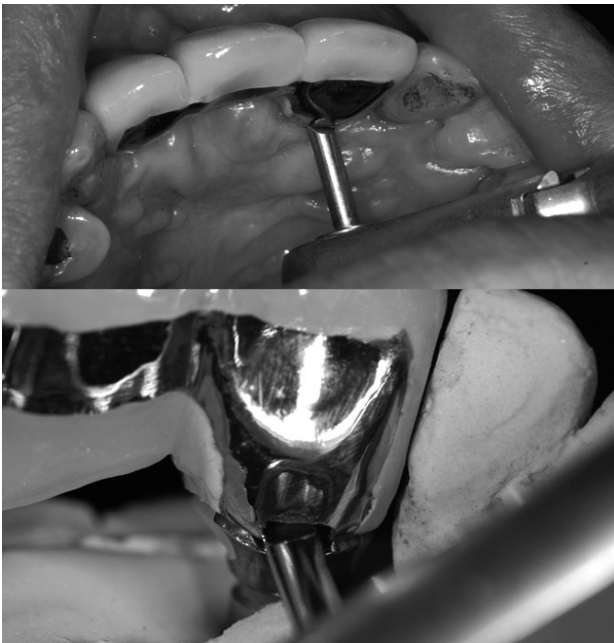


Fig 4.

III. Discussion

This technique described above can be applied not only to the gold cast customized abutment but also to the CAD-CAM milled titanium customized abutment. It does not require other than common tools for implant restoration; universally applicable.

IV. Summary

A technique of fabricating retrievable cemented implant restoration by incorporating vertical channel and sliding male part in abutment and restoration, respectively, is described which is universally applicable.

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