

A Simple Chairside Technique of Removing Crown and Fixed Partial Denture Restorations

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Abstract

Retrieving failed cemented crowns and fixed partial dentures with minimum discomfort to the patient has always been a clinical concern. This article describes a technique which will allow easy and predictable removal of these restorations.

Key words: Crown, fixed partial denture, retrievability.

Introduction

Removal of old cemented crowns and fixed partial dentures (FPD) is often encountered in clinical practice. This is often due to clinical complications like secondary caries, the need for endodontic treatment, porcelain veneer fracture, periodontal disease, loss of retention. Post loosening, root fracture etc (1).

Removing the cemented crowns or fixed partial dentures from the abutment can be difficult; hence, it is always possible to damage the supporting periodontal tissues or core builds up during removal. Retrievability of these fixed restorations becomes further difficult with the usage of resin cements for definitive cementation. There are a variety of tools available to clinicians for removal of these restorations, but many of them exert extracting forces to the tooth and supporting biological tissues. This usually results in a lot of discomfort to the patient. This article describes a simple chair side technique for removal of these fixed restorations. The proposed technique requires an orthodontic band remover Plier (Eltee Plier, New Delhi, India) used for removing cemented orthodontic bands and a straight fissure carbide bur (S.S. Great White #2 gold series, Lakewood, New Jersey, U.S.A.) The procedure can be performed for the retrievability of the cemented single or multiple-unit fixed prostheses.

Clinical Technique

1. Make a vertical cut in the middle of the buccal surface of the cemented crown extending from the crest of free gingival margin to the center or bucco-occlusal line angle of the crown. This can be done with the help of a straight fissure carbide bur (S.S. Great White #2 gold series, Lakewood, New Jersey, U.S.A.), (Fig. 1).

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Figure 1. Vertical cut made on the buccal surface with carbide straight fissure bur

2. Apply Orthodontic band remover Plier (Eltee Plier, New Delhi, India) by keeping the top flat end of the plier on the occlusal surface and the bottom curved end on the gingival border of the cemented crown.

3. Application of manual pressure to the top flat end of Plier exerts pressure directed apically through the center of the tooth. The curved end of Plier kept on the

gingival margin applies a simultaneous coronal force to the cemented crown sufficient enough to break the cement seal and lift up the gingival margin of casting out of the abutment. The counteracting force from the top end will balance the extracting force from the bottom end of the Plier (Fig. 2).

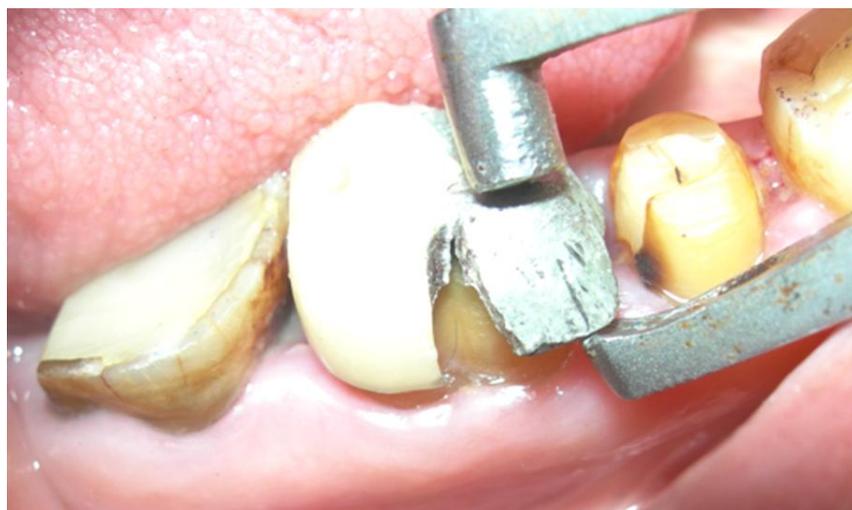


Figure 2. Orthodontic band remover Plier applied for elevating crown margin

4. If there is resistance to lifting of crown margin, vertical cut can be extended further occlusally. This will make the lifting of the gingival margin of casting is done more easily due to greater flexibility.

5. The same technique can be applied to the retainers of fixed partial denture (Figs. 3-5).



Figure 3. Vertical cut made on the retainer of fixed partial denture



Figure 4. Application of Orthodontic band remover Plier on anterior FPD retainer



Figure 5. Elevated gingival margin of FPD retainer

Discussion

The presented technique describes a predictable retrievable method of cemented fixed crown and bridge restorations. Similar to the technique proposed by Okamoto et al. (2) and Schweitzer et al. (3) to retrieve cement retained implant prosthesis, this technique also uses a simultaneous counteracting apical and a coronal force to dislodge the superstructure. Due to the counteracting forces, extracting forces on the periodontium are resisted, so the procedure brings much comfort to the patient. However, the techniques proposed by Okamoto et al. (2) and Schweitzer et al. (3) use a pre-prepared guide hole or slot in the casting itself to get a purchase point for retrievability. But this cannot be used on a tooth retained fixed prosthesis as compared to implant retained fixed prosthesis due to greater chances of secondary caries. Semiconservative technique such as wamkey (4) also uses the same principle for dislodgement of crowns but it is difficult to locate the interface between the occlusal surfaces of the underlying core and requires an expensive armamentarium as compared to the presented technique. The only disadvantage of the technique is damage to the preexisting fixed restoration due to vertical cut made during retrieval. But this disadvantage can be overlooked considering the painless removal of the restorations. In some cases, retrieval is possible with

just the application of orthodontic plier without making a vertical cut especially in teeth that have been prepared with excessive taper and / or in teeth with short clinical crowns. If the crown resists displacement when the vertical cut is not given, it is unwise to attempt to force the crown off with the pliers, as the tooth may fracture. Then the normal protocol of above mentioned technique, with the vertical cut, should be followed.

Conclusion

This technique is easy, reliable and much comfort to the patient. It does not require any complex, expensive armamentarium. The proposed technique can be used as one of the methods of removing failing crown and bridge restorations.

References

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