

A case report of same-day denture repair using magnetic attachments

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Abstract

We report clinical uses of magnetic attachments for the repair of dentures and retainers on the same day.

This report describes three clinical cases. In all cases, the abutment teeth that act as retention elements for the dentures were detached due to secondary caries, and, without abutment teeth, retention was extremely poor. The patients were dissatisfied with the dynamic stability and retention of their dentures. Therefore, keepers of the magnetic attachments were fixed with composite resin material to the remaining radicular teeth, and magnetic assemblies were attached to the dentures. The magnetic attachments used were MAGFIT® RKR (AICHI STEEL, Japan) in cases 1 and 2 and GIGAUSS® (GC, Japan) in case 3. As a result, patients' complaints of functional dissatisfaction were resolved.

Introduction

Magnetic attachments that have the unique feature of “retention without bracing” protect abutments from excessive force¹⁾. Thus, the magnetic attachments can be applied to damaged crowns and short roots²⁾. We report the clinical use of dental magnetic attachments for abutments damaged by secondary caries and, on the same day, denture repair.

Case 1

Clinical History: The patient, a 66-year-old female, complained of masticatory dysfunction. The patient had a partially edentulous maxilla and mandible (Eichner B3). At the initial examination, a fixed bridge on #7, 8, and 9 as abutment teeth for removable partial denture was detached, and #7 was found to have been damaged by caries. The patient was dissatisfied with the dynamic stability and retention of the denture (Fig.1–3).

Treatment Procedure: The fixed bridge was cut off between #8 and #9, and the magnetic attachments that act as retention elements were applied to the remaining radicular tooth of #7. MAGFIT® RKR (AICHI STEEL, Japan) magnetic attachments were used in this case. Keepers of the magnetic attachment were fixed with adhesive resin cement on the abutment teeth (G-CEM LinkAce, GC, Japan). Then, the magnetic assembly was attached to an additional tooth (Zen Opal Shell, GC, Japan) by denture repair (Fig.4). As a result, the patient's complaints of functional dissatisfaction were resolved (Fig.5).



Fig.1 Intraoral view after amputation of bridge



Fig.2 Dental radiograph at #7



Fig.3 Previous denture

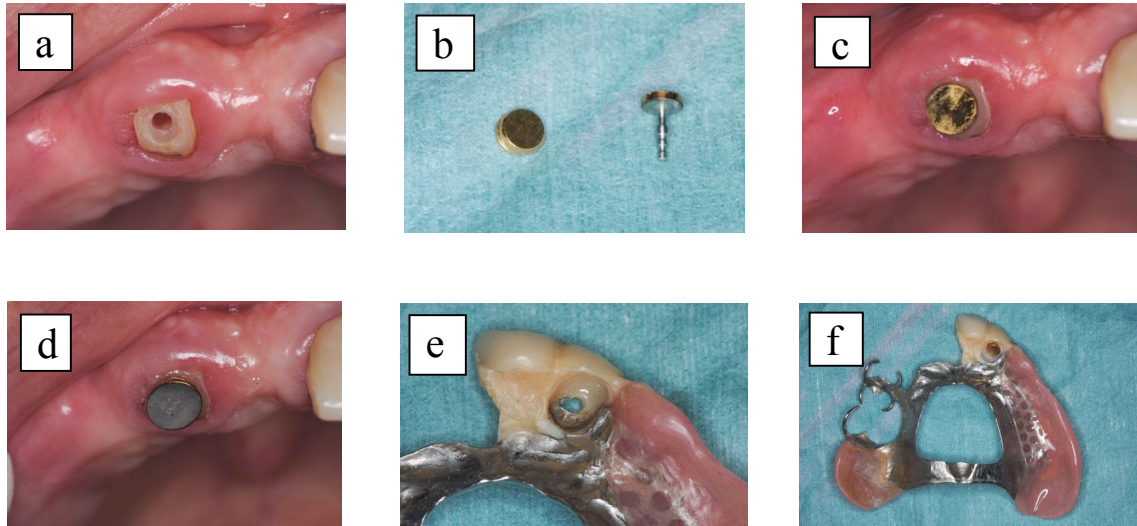


Fig.4 Treatment procedure of the magnetic attachment (a. preparation of root, b. magnetic attachment, c. seating of the keeper, and d–f. seating of the magnetic assembly)



Fig.5 Intraoral view after prosthetic treatment

Case 2

Clinical History: The patient, a 77-year-old female, complained of masticatory dysfunction. The patient had a mandibular overlay complete denture. At the initial examination, a magnotelescopic crown of #22, as the abutment tooth for a removable partial denture, was detached (Fig.6). The patient was dissatisfied with her retention of the denture and demanded immediate recovery of function.

Treatment Procedure: Magnetic attachment (MAGFIT[®] RKR, AICHI STEEL) that act as retention elements was applied to the remaining radicular of tooth #22 (Fig.7). As a result, the patient's complaints of functional dissatisfaction were resolved.

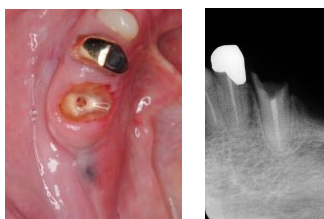


Fig.6 Intraoral view and dental radiograph of #22 at the initial examination



Fig.7 Intraoral view and denture after prosthetic treatment

Case 3

Clinical History: The patient, a 65-year-old male, had a partially edentulous mandible (Eichner B1: missing mandibular second premolar and first molar teeth) with the chief complaint of masticatory dysfunction. All maxillary prostheses had failed, with a marginal discrepancy and caries damage (Fig.8 and 9).

Treatment Procedure: First, the prostheses with marginal discrepancies were removed, and the #6, 7, and 8 teeth were extracted due to severe caries and periodontitis. Then, an immediate denture in the maxilla was set on a portion of the edentulous area(Fig.10). The magnetic attachments that act as retention elements were applied to the remaining radicular teeth (#3, 10, and 11). GIGAUSS D400[®] (#10 and #11 teeth) and GIGAUSS D1000[®] (#3 tooth) (GC, Japan) magnetic attachments were used in this case. Keepers of the magnetic attachment were fixed with adhesive resin cement on the abutment teeth (Multilink[®] Automix, Ivoclar Vivadent, Liechtenstein) (Fig.11). As a result, the patient's complaints of functional dissatisfaction were resolved immediately.



Fig.8 Intraoral view at the initial examination

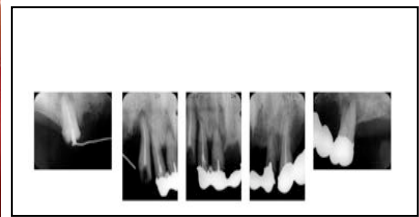


Fig.9 Dental radiographs at the initial examination



Fig.10 Intraoral view with an immediate denture



Fig.11 Seating of keepers on the abutment teeth

Conclusion

A magnetic attachment could be provided as a useful retentive appliance for alleviating patient complaints regarding function. In the interval, the remaining dentition, periodontal condition, and retentive forces of the prostheses have been examined as part of a maintenance program.

References

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