

## A case report of extracoronal-type magnetic attachments for abutment teeth with mandibular free-end edentulism followed up for 14 years

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### Abstract

This case report describes our establishment of an appropriate OVD for a patient with a decreased OVD to restore the aesthetics and function by the use of magnetic attachments.

As a definitive prosthesis, a maxillary removable overlay denture with coping-type magnetic attachments and a horseshoe plate as the major connector was fabricated, and a mandibular removable partial denture with an extracoronal-type magnetic attachment was also fabricated.

Fourteen years after the denture setting, the definitive prosthesis has been used without serious problems and the magnetic attachment has no clinically significant loss of retention.

### Introduction

Magnetic attachments are one abutment device with many advantages in the field of dentistry in a super-aging society, such as having a stable retentive force by permanent magnets and being easy for the patient to put on and take off by himself,<sup>1)</sup> However, there are only a few reports regarding its longevity. In this report, we focus on a 14-year-old case of partial dentures in which the extra-coronal-type magnetic attachment was applied to Class I of the Kennedy classification of partially edentulous arches.

### Clinical History

The patient, a 59-year-old female, complained of aesthetic dissatisfaction and masticatory dysfunction. The patient had a partially edentulous maxilla (Eichner classification: B3; disease type classification at the Japan Prosthodontic Society: 1-I Level I; and Occlusal-triangle: area A) (Figs. 1, 2, and 3). All fixed prostheses were failed restorations with marginal discrepancies and damage from caries and periodontal disease. The patient refused to wear a mandibular removable partial denture because of dissatisfaction with a visible metal clasp on the anterior teeth. She was diagnosed with infra-occlusion by OVD analysis.



Fig.1 Intraoral view at the first visit

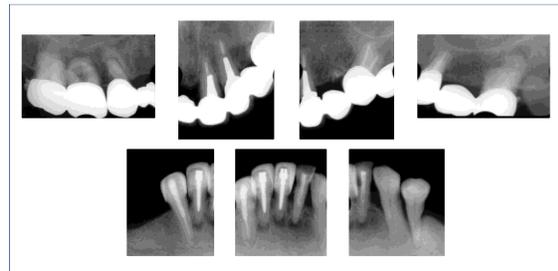


Fig.2 X-ray photographs at the first visit





When the form of the prosthetic device becomes more complex, it is expected that patients will have difficulty controlling plaque by themselves; therefore, the dentist performed plaque removal every 3 months (Fig. 16). The masticatory function test and the scores of oral quality of life using the OHIP-14 used as postoperative evaluations both showed good results (Figs. 17 and 18).



Fig.16 Maintenance

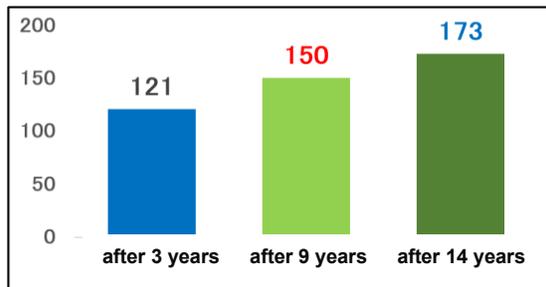


Fig.17 The masticatory function test

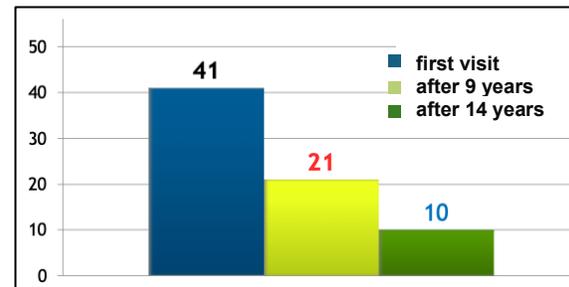


Fig.18 OHIP-14

## Conclusions

In this case, it is thought that the selection of a retainer according to the bearing capacity of the abutment tooth based on preoperative probing depth and dental X-ray photographs, the necessary pre-prosthetic treatment, and regular maintenance to follow changes in the oral environment and dentures over time have led to good results.<sup>2)</sup>

## References

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