

A case report of a removable partial denture using magnetic attachments of different designs on intermediate missing mandibular molars

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Abstract

In this presentation, we report a case in which two dentures with different designs of magnetic attachments were attached to intermediate missing mandibular molars.

The patient, a 59-year-old male, complained of masticatory dysfunction. After the initial preparation, the distal root of the mandibular right second molar was fitted with a coping magnetic attachment in consideration of its load-bearing capacity as an abutment tooth, and we decided to fabricate an extracoronal magnetic attachment using an EC Keeper Tray (GC, Japan) for the mandibular right first and second premolars.

The definitive denture had the first molar as a homemade metal tooth and the second molar as a hard resin tooth (SR-Orthosit-PE; Ivoclar-Vivadent AG, Liechtenstein). In addition, GIGAUSS (GC) was used for a magnetic attachment (the coping type was the D400), and the D600 was applied to the extracoronal type. One year after the installation of the right denture, in response to the patient's request to use the same magnetic attachment as the right side, the first and second premolars on the left side were equipped with similar extra-crown attachments, and the dentures were made of the same material.

Introduction

In the partial denture design, when intermediate missing teeth are on the right and left sides, due to the patient's need for wearing comfort, we sometimes design two dentures without a major connector. In this presentation, we report a case in which two dentures with different designs of magnetic attachments were attached to intermediate missing mandibular molars.

Clinical History

Clinical History: The patient, a 59-year-old male, complained of masticatory dysfunction. He had a partially edentulous maxilla (Kennedy Class II) and a history of arrhythmia. He complained that he wanted



Fig. 1 Intraoral view at the first visit

response to the patient's request to use the same magnetic attachment as the right side for subsequent defect prostheses, the first and second premolars on the left side of the mandible were equipped with extra-crown attachments similar to the abutment teeth, and the dentures were made of the same material. As a support function to replace the root attachment on the right side, a mesial rest was added to the third molar on the left side of the mandible (Figs. 9 and 10).

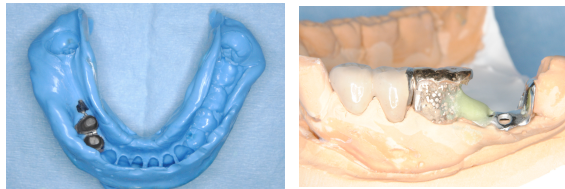


Fig. 9 Pick-up impression and denture framework (Left side)



Fig. 10 Definitive denture (Left side)

Conclusion

Magnetic attachments can be used as support teeth by reducing the lateral pressure as coping types, even if the remaining teeth have problems with the crown-to-root ratio due to the absorption of alveolar bone. In addition, if the crown-to-root ratio is good, it is possible to produce highly stable dentures by having the abutment teeth carry the retention force and bracing force as an external type of crown (Fig. 11).^{1,2)} In this case, we applied these advantages and produced a denture. As a result, OHIP-14, which is related to QOL, was two points from the minimum value. By analyzing the amount of glucose discharge during gumi-jelly chewing, mandibular movements were quantitatively evaluated to be 188 mg/dl (right side) and 228 mg/dl (left side). We plan to confirm the postoperative course while performing regular maintenance in the future.



Fig. 11 Intraoral view of treatment procedures

References

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