

# Esthetic denture using magnet attachment for a patient with anterior teeth missing: A case report

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## Abstract

### 【Introduction】

The patient was a 62-year-old female with three anterior teeth removed due to odontogenic myxoma in her mandibular jaw. Her chief concerns were esthetics and a functional prosthetic rehabilitation. For the missing teeth with a defect of the alveolar bone, a sectional removable partial denture (RPD) was fabricated using a magnetic attachment.

### 【Materials and Methods】

The metal base denture was composed of labial and lingual segments to utilize the undercut of adjacent teeth for the denture retention. The framework of lingual segment was first cast with Co-Cr alloy and then placed to the master cast. Next, the labial segment framework was cast to completely fit to the lingual segment. Both segments were connected using a magnetic attachment (PHYSIO MAGNET, NEOMAX). After artificial incisors were arranged on the labial segment framework, denture base resin was poured and polymerized, and the sectional RPD was finally completed.

### 【Results, Discussion】

Using magnetic attachments, the sectional RPD could be fabricated without a metal clasp, providing better esthetics and greater function and retention. However, long-term follow-up is necessary for keeping the connective strength between labial and lingual segments and confirming the cleaning condition of the joint area.

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## Introduction

This case report describes the fabrication of a sectional removable partial denture (RPD) using magnetic attachments for missing anterior teeth and a large bone defect to recover function and esthetics.

## Treatment Progress

2016/ June	Initial visit
July	Surgical removal of a tumor and extraction of #43, #42, and #41
December	Delivery of the acrylic denture
2018/ March	Start of sectional RPD fabrication
October	Delivery of sectional RPD



Fig.1 Missing anterior teeth with alveolar bone



Fig.2 Panoramic x-ray

The patient was a 62-year-old female who visited the Tsurumi University School of Dental Medicine with swelling in the mandibular right anterior teeth region. After the diagnosis of an odontogenic myxoma, the tumor was removed, along with three anterior teeth and the alveolar ridge (Fig.1, 2). Six months after the operation, an acrylic denture with metal clasps was delivered (Fig.3), and its impression surface was adjusted to the alveolar ridge resorption. One year later, the sectional RPD was fabricated using a magnetic attachment.



Fig.3 Delivery of the acrylic denture with a clasp



Fig.4 Try in of the RPD framework

### Design of sectional removable denture

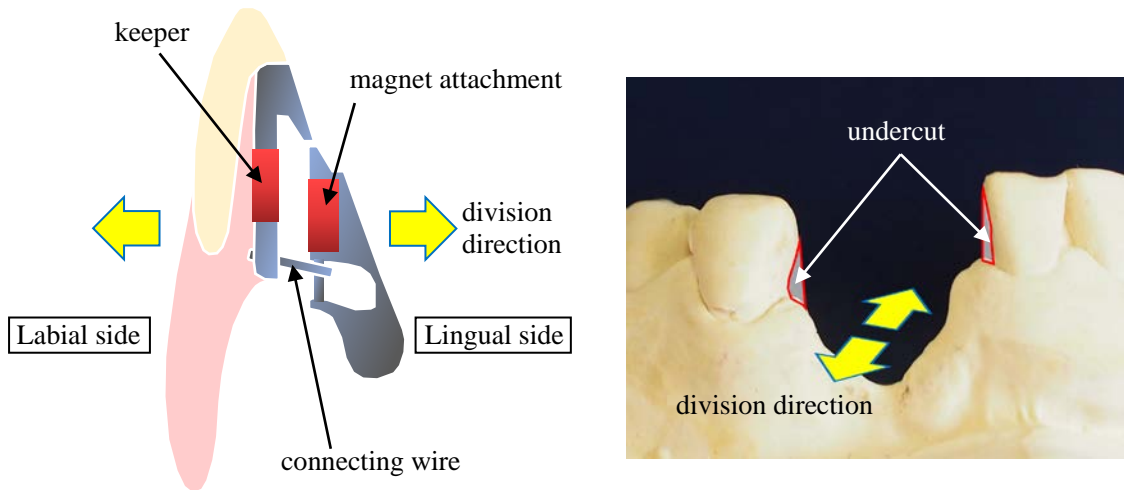


Fig.5 Design structure of the sectional RPD



Fig.6 Connecting two segments with wire to prevent separation



Fig.7 a, b: Sectional RPD (a: labial side, b: lingual side), c: Frontal view after delivery

The metal base denture was composed of labial and lingual segments to utilize the undercut of adjacent teeth for denture retention. The framework of the lingual segment was first cast with Co-Cr alloy and then placed on the master model. Next, the labial segment framework was cast to completely fit to the lingual segment. Both segments were connected using a magnetic attachment (PHYSIO MAGNET, NEOMAX) and Co-Cr wire (Figs.4-6).

After artificial incisors were arranged on the labial segment framework, denture base resin was poured and polymerized, and the sectional RPD was finally completed (Fig.7).

### Results and Discussion

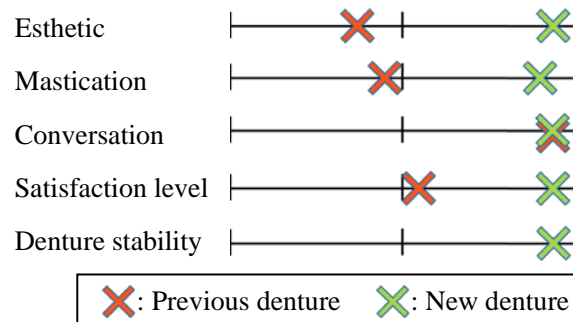


Fig.8 Visual analogue scale

Using magnetic attachments, a sectional RPD could be fabricated without a metal clasp. Patient satisfaction could be obtained because it provided better esthetics, function, and retention (Fig.8). However, long-term follow-up is necessary for maintaining the connective strength between the labial and lingual segments and to confirm the clean condition of the joint area.