Long-term follow-up case reports on the use of magnetic attachment as intracoronal/extracoronal attachments

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Introduction

In recent years, the magnetic attachment has been applied to the removable prostheses, such as bar attachment, intracoronal and extracoronal attachment. In this clinical report, three long-term follow-up cases of removable dentures using magnetic attachment are presented.

Case 1

The patient, 79 years old woman, was referred to the clinic with complaints of masticatory dysfunction and poor esthetics caused by the missing teeth. The missing teeth were 11-13, 15, 16, 21-23, 26 and 35-36. In this case, the removable bridge with intracoronal magnetic attachment at 17, 14, 24, 25 and 27 for upper side and removable dentures for lower side were applied. The patient was satisfied with these dentures. About three years later, 27 was extracted due to the periodontal reasons, then the removable bridge was repaired with the denture base at 26 and 27 (Fig.1-a). Twelve years later, patient addressed the complaining of the pain at 14 and the denture base at palatal region (Fig.1-b) was then placed to the removable bridge for increasing the supporting zone (Fig.2).

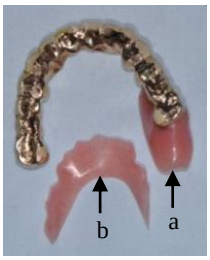

Fig.1 The removable bridge for upper side
(a: Denture base at 26 and 27, b: Denture base at palatal region)

Fig.2 The views of intra oral and removable bridge (left: Intra oral view without bridge, center: The removable bridge after repaired, right: Intra oral view with bridge)

The patient has been recalled for fourteen years with scaling and checking the fit of denture base. In this case with the magnetic attachment, when the abutment teeth were lost, the concept of increasing the supporting zone for the occlusal force was confirmed.

Case 2

This patient, 81 years old woman, complained with poor esthetic of lower denture and instability of the upper denture. The missing teeth were 11-16, 21-27, 35-37 42 and 45-47. In this case, the removable partial denture with extracoronal magnetic attachment at 34 and 44 for lower side and removable dentures for upper side were applied. Regarding the mechanical stress in extracoronal magnetic attachment, the remaining teeth of 31-34, 41, 43 and 44 was connected with fixed bridge before the removable partial denture was set (Fig.3). The reasonable space was allocated between the extracoronal magnetic attachment and residual ridge mucosa for easy to clean by patient. The patient regained masticatory function and esthetic with these dentures (Fig.4).

Fig.3 The fixed bridge at anterior region and the partial denture for lower side

Fig.4 The oral view with removable dentures
(left: Frontal view with dentures, right: Intra oral view with dentures)

After about fifteen years, the removable denture for upper side was refabricated with titanium cast plate denture. Clinical maintenance with scaling and occlusal adjustment for this patient has executed over fifteen years (Fig.5). In such a case with extracoronal magnetic attachment, the mechanical problems with cantilever effect of extracoronal attachment and the hygiene under the attachment should be considered. In this case, the fixed bridge at the anterior region and appropriate morphology of extracoronal attachment were addressed to these problems.

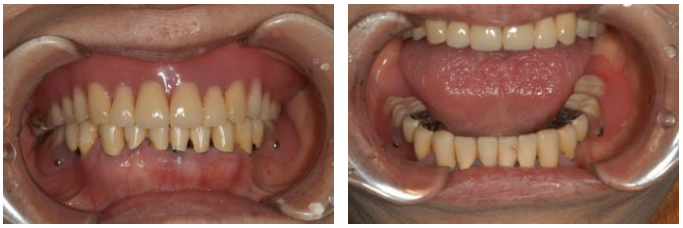

Fig.5 The oral view with removable dentures after about fifteen years
(left: Frontal view with dentures, right: Intra oral view with dentures)

Case 3

This patient, 50 years old man, came with complaint of masticatory dysfunction caused by the missing teeth. The missing teeth were 46 and 47. The removable bridge with extracoronal magnetic attachment at 45 and intracoronal magnetic attachment at 48 were applied to this patient. The reasonable space was allocated under the extracoronal magnetic attachment for easy to clean up as well as the "case 2". The extracoronal magnetic attachment was applied to reasons of poor esthetic in clasps by patients and vital tooth of 45 (Fig.6). This patient has been scheduled for occlusal adjustment and checking fit of removable prostheses for nine years (Fig.7). The comfortable mastication and good periodontal condition could be observed.

Fig.6 The view of removable bridge and the keepers in working cast at 45 and 48
(left: Bottom view of removable bridge, center: Keepers in abutment teeth, right: Oral view with removable dentures)

Fig.7 The oral view with removable dentures after nine years

Conclusions

To conclude, the treatment with magnetic attachment applied for the intracoronal and extracoronal attachment was reliable plans, however careful periodic examination and occlusal adjustment is essential for long-term better prognosis.