

A 3-year clinical evaluation of the removable partial dentures attachments

Language: English

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Introduction

Removable partial dentures using attachments are aesthetic alternatives for edentulous patients with good retention and stability. There are many patients which cannot afford implant retained dentures or their physical condition do not allow us to treat them using implants. In these cases, removable partial dentures using attachments are good treatment alternatives.

Objectives

The aim of our study was to evaluate which of the attachments has been used more frequent and also to assess the patient satisfaction regarding each of these attachments.

Material and Methods

In this study the evaluated attachments were extra - coronal attachments, retentive ball attachments, telescopic crowns - retained removable partial dentures, bar clip attachments and magnetic retention. The number of the attachments was 267 and the surveying period was 3 years. The oral surveys were carried out by calibrated dentists in the Department of Prosthodontics, Timișoara, România in 2006-2009. The evaluation included the type of the partially edentulous arches, the type and the number of the attachments and the patients satisfaction regarding aesthetics, retention and stability during mastication and speech. Statistical analysis was performed for these evaluations. Each patient has signed and Informed Consent according to the Ethical Committee of our University (World Medical Association Declaration of Helsinki - Ethical Principles for Medical Research Involving Human Subjects). The maxillary and mandibular edentations were as in Tab. 1.

Kennedy Clasification	Maxillary - 53	Mandibular - 57
Kennedy I 110	Kennedy 1 - 13	Kennedy 1 - 24
	Kennedy I modif 1 - 21	Kennedy I modif 1 - 25
	Kennedy I modif 2 - 10	Kennedy I modif 2 - 9
	Kennedy I modif 3 - 8	Kennedy I modif 3 - 0
Kennedy II 73	Kennedy 2 - 1	Kennedy 2 - 2
	Kennedy II modif 1 - 20	Kennedy II modif 1 - 6
	Kennedy II modif 2 - 17	Kennedy II modif 2 - 17
	Kennedy II modif 3 - 2	Kennedy II modif 3 - 5
Kennedy III 36	Kennedy 3 - 0	Kennedy 3 - 0
	Kennedy III modif 1 - 15	Kennedy III modif 1 - 10
	Kennedy III modif 2 - 2	Kennedy III modif 2 - 4
Kennedy IV 0	Kennedy III modif 3 - 5	Kennedy III modif 4 - 0
	0	0

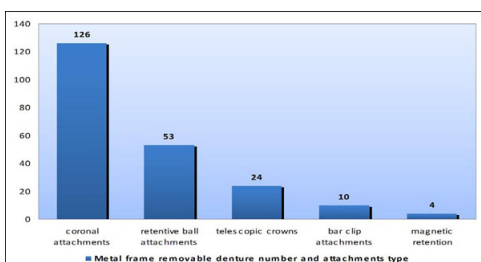
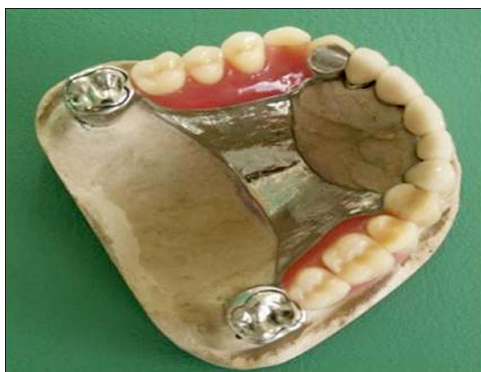
Table 1: Maxillary and mandibular distribution of the edentulous arches

Results

The most frequently used attachments were the extra-coronal attachments (58,6%), followed by the ball attachments (24,4%), the telescopic crowns (11,05%), the bar clip attachments (4,6%) and finally the magnets (0,18%) (Fig. 2). The evaluated attachments have advantages and disadvantages in different clinical situation. Patients satisfaction was very good and good in most of the treated patients (Fig. 3). Patient satisfaction improved significantly between baseline and the new prosthesis with each attachment type for all domains of satisfaction ($P < 0.05$).



Fig.2 Maxillary metal frame removable partial denture with extra-coronal attachments (1-7)



Removable partial dentures	Mastication		Aesthetics		Stability		
	Good	Accept	Poor	Good	Accept	Poor	Poor
extra - coronal attachments	9		9		9		
retentive ball attachments	6		8		8		
telescopic crowns	6		8				7
bar clip attachments	5		8				6
magnetic retention	4		8				6

Table 2: Patients satisfaction / type of attachment

Conclusions

The mostly used attachments in this study were the extra-coronal attachments because these are easy to use and they fit well to the clinical situation (Kennedy classification of partially edentulous arches). All the attachments used in this study were well accepted by the patients because of their good aesthetic and retention. Many of the patients included in the study mentioned that the galvanic telescopic crowns are too expensive for them. Also, using magnets involves a delicate technology, that is why our technicians are reserved in using these attachments.

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This Poster was submitted by Assist. Prof. Luciana Goguta, DDS, PhD.

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A 3-year clinical evaluation of the removable partial dentures attachments

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Removable partial dentures are aesthetic alternatives for edentulous patients with good retention and stability. The aim of our study was to evaluate which of the attachments has been used more frequent and also to assess the patient satisfaction regarding each of these attachments.

Materials and methods. In this study the evaluated attachments were extra - coronal attachments, retentive ball attachments, telescopic crowns - retained removable partial dentures, bar clip attachments and magnetic retention. The number of the attachments was 267 and the surveying period was 3 years. The oral surveys were carried out by calibrated dentists in the Department of Prosthodontics, Timisoara, Romania in 2006-2009.

The evaluation included the type of the partially edentulous arches, the type and the number of the attachments and the patients satisfaction regarding aesthetics, retention and stability during mastication and speech. Statistical analysis was performed for these evaluations.

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Kennedy Classification	Maxillary - 53	Mandibular - 57
Kennedy I	Kennedy I-13	Kennedy I-24
110	Kennedy I modif 1 - 21 Kennedy I modif 2 - 10 Kennedy I modif 3 - 8	Kennedy I modif 1 - 25 Kennedy I modif 2 - 9 Kennedy I modif 3 - 8
Kennedy II	Kennedy 2-1	Kennedy 2-2
73	Kennedy II modif1 - 20 Kennedy II modif2 - 17 Kennedy II modif3 - 2	Kennedy II modif1 - 6 Kennedy II modif2 - 17 Kennedy II modif3 - 5
Kennedy III	Kennedy 3-0	Kennedy 3-0
36	Kennedy III modif1 - 15 Kennedy III modif2 - 2 Kennedy III modif3 - 5	Kennedy III modif1 - 10 Kennedy III modif2 - 4 Kennedy III modif3 - 0
Kennedy IV	0	0

Fig.1 Maxillary and mandibular distribution of the edentulous arches



Fig.2 Maxillary metal frame removable partial denture with extra-coronal attachments

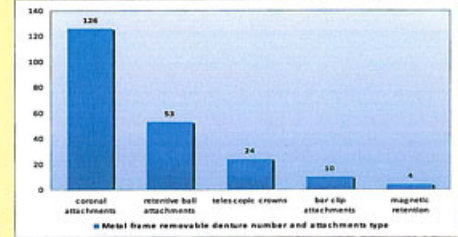


Fig.3 Distribution of the attachments/removable partial dentures - a 3 year evaluation

Results. The most frequently used attachments were the extra-coronal attachments (58,6%), followed by the ball attachments (24,4%), the telescopic crowns (11,05%), the bar clip attachments (4,6%) and finally the magnets (0,18%) (Fig. 3). The evaluated attachments have advantages and disadvantages in different clinical situation. Patients satisfaction was very good and good in most of the treated patients (Fig.4). Patient satisfaction improved significantly between baseline and the new prosthesis with each attachment type for all domains of satisfaction (P<0.05).

Conclusions. The mostly used attachments in this study were the extra-coronal attachments because these are easy to use and they fit well to the clinical situation (Kennedy classification of partially edentulous arches). All the attachments used in this study were well accepted by the patients because of their good aesthetic and retention. Many of the patients included in the study mentioned that the galvanic telescopic crowns are too expensive for them. Also, using magnets involves a delicate technology, that is why our technicians are reserved in using these attachments.

Removable partial dentures	Mastication			Aesthetics			Stability		
	Good	Accept	Poor	Good	Accept	Poor	Good	Accept	Poor
extra - coronal attachments	9	0	0	9	0	0	9	0	0
retentive ball attachments	6	0	0	6	0	0	6	0	0
telescopic crowns	6	3	3	6	3	3	6	3	3
bar clip attachments	5	0	0	5	0	0	5	0	0
magnetic retention	4	0	0	4	0	0	4	0	0

Fig.4 Patients satisfaction /type of attachment

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