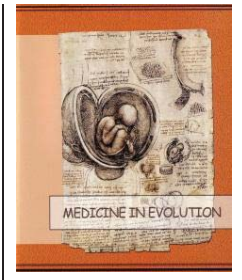


Solving partial edentation by elastic prostheses - a viable alternative compared to partial acrylate prostheses



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Abstract

Extended partial edentation is a condition that has an increased stage in the population, justifying the interest in the study of masticatory functions, retention and aesthetics. Flexible partial dentures are an alternative in solving partial edentation.

The purpose of this work is to provide an overview of the clinical application of flexible partial prostheses as well as the assessment of the satisfaction of the patient wearing flexible partial prostheses regarding, their chewing ability, speech, retention and aesthetics.

Material and method: The study group included 47 patients who had partial edentations restored or not. The objectives pursued were: gender distribution, age distribution and not least the determination of the degree of satisfaction of the partially edentulous patient by restoring the functions of the dento-maxillary apparatus regarding mastication, retention and aesthetics, the degree of acceptance of the prosthetic treatment adapted to the situation of each individual patient.

Results: Almost half of patients consider good chewing with prostheses and excellent retention. Two-thirds consider aesthetics to be excellent.

Conclusions: The use of flexible materials in the manufacture of partial prostheses is becoming more common as they have high resistance to fracturing. Flexible partial prostheses by Valplast can be used successfully because they adapt very well to the different situations encountered, depending on the particularities of each prosthetic field in the mouth cavity.

Keywords: extended partial edentation, flexible prosthesis, Valplast

INTRODUCTION

The proportion of adults with a partial edentation is constantly increasing as a result of increased life expectancy [1,2]. The prevalence of partial edentation is already estimated at more than 20% in some areas [3] and the number of individuals with partial edentation is constantly increasing. Aesthetics is a major issue for patients requiring dental treatment, with mostly prosthetic treatment. People over the age of 65 have an average of 18,9 remaining teeth, 43,1% missing 6 or more teeth [4,5]. In the United Kingdom, an adult dental health study in 2009 and it was found that 'almost one in five adults wore partial or total dental prostheses [6].

Due to the improvement of oral health, people lose their teeth much later and less. This factor implies an increased need to solve the treatment of partial edentation compared to the total edentation [2,7].

The main goal of the treatment of partial edentation should always be "to preserve what remains, not the systematic replacement of what has been lost". Therefore, partial prosthesis is an acceptable form of treatment by offering a wide range of restorative options involving maintaining or improving the phonetics, establishing or increasing the masticatory efficiency, stabilizing the dental relationships and developing the necessary aesthetics [8].

The satisfaction of patients wearing partial prostheses is reported in relation to the individual's personal particularities, the previous experience if he has been wearing partial dental prosthesis, and the manufacturing procedure. Trituration food capacity, stability and aesthetics are the most important factors in the acceptance and flexible partial denture wearing [9,10].

The patient's dissatisfaction with the partial prosthesis may also depend on the appearance of complications, such as: the increased risk of damage to the remaining teeth in the oral cavity through the appearance of caries, periodontal disease, tooth mobility, oral mucosal diseases (stomatitis and mouth disease) and others [11,12].

Aim and objectives

The purpose of this retrospective clinical study was to assess the satisfaction of the patient wearing flexible partial prostheses regarding their ability to chew, retention and aesthetics.

MATERIAL AND METHODS

This study covered a lot of 47 patients of both sexes, aged between 37 and 65 years, who had presented partially edentations which have been restored or not, and who were the object of this research (Table 1). Partially edentulous treatment data were reviewed and summarized, focusing on the current and future impact on available oral health. Data on patient satisfaction and compliance with treatment through flexible partial prostheses were a priority for the individual patient.

Table 1. Gender distribution of patients

Gender	Nr.	%
Female	19	40,43%
Male	28	59,57%
Total	47	100,00%

Valplast is a flexible denture base resin that is ideal for partial and unilateral dentures. The resin is a biocompatible nylon thermoplastic that provides unlimited design versatility

and eliminates the concern about acrylic or metal allergies. The informed consent of each patient who participated in this study was obtained.

Of all 47 partly edentulous patients who received prosthetic treatment, 59,57% were male (Figure 1). The high percentage in men is due to the presence of periodontal disease as well as skills related to higher consumption of alcohol and tobacco.



Figure 1. Gender distribution of patients

Most of partially edentulous patients were in the 40-60 age group, with mostly male 75% (Table 2).

Table 2. Distribution according to age

AGE GROUP	GENDER				TOTAL	
	Female		Male			
	Nr.	%	Nr.	%	Nr.	%
<40	1	5,26	2	7,14	3	6,38
40-60	16	84,21	21	75,00	37	78,72
60-65	2	10,53	5	17,86	7	14,89
Total	19	100,00	28	100,00	47	100,00

RESULTS

The evaluation of the satisfaction of the patients studied regarding the mastication capacity, retention and aesthetics of the flexible partial prostheses, is represented as a percentage compared to four parameters: bad, medium, good and excellent.

Regarding the degree of satisfaction of patients on mastication (Table 3) the highest share is represented by patients who evaluated mastication as good: 44.68%.

The satisfaction of patients who have assessed retention as excellent is 48,94% (Table 4).

Patient satisfaction in terms of the aesthetics of the flexible partial prostheses is considered excellent and was significantly higher, in proportion of 63.83% (Table 5).

Table 3. The degree of satisfaction of the partially edentulous patient regarding mastication with the partial elastic prosthesis

Retention	Female		Male		Total	
	Nr	%	Nr	%	Nr	%
Bad	1	5,26%	0	0,00%	1	2,13%
Medium	3	15,79%	2	7,14%	5	10,64%
Good	7	36,84%	14	50,00%	21	44,68%
Excellent	8	42,11%	12	42,86%	20	42,55%
Total	19	100,00%	28	100,00%	47	100,00%

Table 4. The degree of satisfaction of the partially edentulous patient regarding the retention with the elastic partial prosthesis

Chewing ability	Female		Male		Total	
	Nr	%	Nr	%	Nr	%
Bad	0	0,00%	1	3,57%	1	2,13%
Medium	2	10,53%	2	7,14%	4	8,51%
Good	9	47,37%	13	46,43%	22	46,81%
Excellent	10	52,63%	13	46,43%	23	48,94%
Total	19	100,00%	28	100,00%	47	100,00%

Table 5. Degree of satisfaction of the partially edentulous patient regarding the aesthetic aspect of the elastic partial prosthesis

Aesthetics	Female		Male		Total	
	Nr	%	Nr	%	Nr	%
Medium	2	10,53%	2	7,14%	4	8,51%
Good	5	26,32%	8	28,57%	13	27,66%
Excellent	12	63,16%	18	64,29%	30	63,83%
Total	19	100,00%	28	100,00%	47	100,00%

DISCUSSIONS

The results obtained from our study are consistent with those obtained by Cosme DC et al., they state that the vast majority of patients were very satisfied with elastic partial prosthesis [13].

Elastic prostheses are a therapeutic solution for patients allergic to metal or acrylate. They are better tolerated by patients with a deficient prosthetic field or systemic diseases (eg. diabetes). The most important advantage of elastic dentures is the lack of release of harmful monomer [14].

Flexible dentures help patients avoid pain associated with acrylic dentures. These dentures are porous to "breathe" better than other types of prostheses and the flexible resin coating allows for a custom fit [15].

Valplast removable partial denture can be recommended for elderly patients with edentulous areas bordered by teeth and who are not subjected to high chewing forces. The main advantages are: aesthetic satisfaction and ease of insertion and disinsertion [16].

Valplast prosthesis as a temporary denture can cause gingival labial recession of adjacent teeth so it is not indicated for the restoration of a previously missing tooth [17].

Although nylon (polyamide) prosthesis materials have a low modulus of elasticity and rigidity, they have great fracture resistance [18-20].

Adhesion of microorganisms to the denture base materials is an important issue. The studies concerning the effect of disinfecting methods on polyamides are very limited. The Val-Clean method has no particular influence on the gloss. Polident and Val-Clean can be safely used as denture cleaners as far as colour stability and flexural strength both are concerned [21,22].

CONCLUSIONS

In the coming years, the number of patients with partial edentulousness will increase with the need for treatments.

The correct evaluation of the dentition, the condition, the position of the teeth, the education of the patient, the maintenance are just a few steps necessary for a guaranteed success. Research and progress in digital technologies such as qualitative improvement of materials such as bio-compatible polymers have the potential to solve many of the problems related to the use of flexible partial prostheses and satisfactory oral health. Digital strategies

and the production of new materials expand the therapeutic field applicable to partial prostheses. The combination of improved materials, research and education will focus on the care of patients with partial edentation and will allow an improvement in the quality of life of our patients.

The use of flexible materials in the manufacture of partial prostheses is increasingly common because they have a high resistance to fracture. Flexible partial prostheses can be used successfully because they adapt very well to the different situations encountered, depending on the particularities of each prosthetic field in the oral cavity.

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