www.ThePharmaJournal.com

The Pharma Innovation

ISSN: 2277- 7695
TPI 2015; 4(3): 27-29

www.thepharmajournal.com
Received: 07-03-2015
Accepted: 27-04-2015

Klymyuk Y.V
Department of prosthetic dentistry, Ivano-Frankivsk National Medical University, Ukraine

Ozhogan Z.R.
Department of prosthetic dentistry, Ivano-Frankivsk National Medical University, Ukraine

Correspondence:
Klymyuk Y.V
Department of prosthetic dentistry, Ivano-Frankivsk National Medical University, Ukraine

Comparative characteristics of dentition defects treatment methods by fixed partial dentures on base of hygienic indexes data in different periods after prosthesis

Klymyuk Y.V, Ozhogan Z.R.

Abstract
Prosthesis of partial adentia involves preparation of abutment teeth with the next manufacturing of fixed partial dentures. Thus, it should be taken into account abutment tooth vitality and consider the reserve forces to prevent periodontal functional overload. It is also necessary to monitor during treatment and at different times after the hygienic condition of the oral cavity.
Analyzing the data of clinical indexes it was found that preservation of teeth vitality is reliable criterion of efficiency for fixed partial dentures making than using pulpless teeth. Absence of periapical injuries in vital teeth that occurs in pulpless teeth because of damage of neurovascular bundle demonstrates the value of the Russel index, other indexes showed irritation and presence of bleeding as results of rubber dam using due to the necessity of endodontic treatment quality.
Ready data obtained as a result of complex hygienic indexes show the advantages of preserving tooth vitality of reference in at producing of fixed partial dentures.

Keywords*:* vital tooth, pulpless tooth, dental indexes, prosthesis.

1. Introduction
The need of replacement of tooth crown destruction and included partial dentition defects allows today using aesthetic casted fixed partial dentures, that requires preparation of abutment teeth crown [1]. But the question is necessary in case of existing indications on how to conduct a refilling of root canal and pulp extirpation of abutment teeth [2]. In this cases the dentist can aquaint the following problems: inability to refill root canal, which may be due to the presence of broken instruments during previous endodontic treatment, the presence of additional root canals, which it is sometimes difficult to find without the using of special optics that eventually will lead to the development of infection with subsequent formation of periapical inflammation of infectious genesis [3, 4].
However, in absence of inclination on tooth crown more than 15 degrees, pathological abrasion and availability of adequate thickness of hard tooth tissue it is possibility to leave vascular-nervous bundle of abutment teeth, saving their vitality [5].
Estimation of functional status, periodontal reserve forces of abutment teeth allow methods such as electroodontodiagnostics, dentynometry and gnathodynamometry, and the effectiveness of the treatment given the state of the mucous membrane of the gums can be argued, following an assessment of the oral cavity using hygienic indexes in patients with a vital and pulpless abutment teeth [6, 7]. This will help to justify choosing effective and rational method of treatment.

Purpose: evaluation of state of oral hygiene using dental indexes in patients with vital and pulpless teeth, followed by a comparison of the effectiveness of selected treatments depending on the functional state of the abutment teeth.

2. Materials and Methods
Conducting index evaluation was performed for patients of all ages who was treated using our proposed method. Totally during scientific work performing there were examined 83 patients and 60 primary patients in the control group of three age groups: 26 patients aged 30-39 years, 29 patients - 40-49 years and 28 patients - 50-59 years, respectively. Patients in the control group were examined only one time. Patients in main group for index evaluation were divided

on two subgroups, respectively, with vital teeth - 33 patients and pulpless teeth - 47 patients. In total, patients in main research group, that were treated with vital and pulpless abutment teeth were: 26 patients aged 30-39 years, 29 patients - 40-49 years and 28 patients - 50-59 years, respectively. For all patients referred to main group with vital abutment teeth with included partial dentition defects and the presence of tooth crown part defects preparation was conducted by our proposed method and manufactured aesthetic casted fixed partial dentures.

The manifestation of inflammatory activity was determined using our Shyller-Pisarev index. Papillae bleeding index (PBI) calculated by the method of Saxer and Miillemann. State of the gums and alveolar bone was determined by periodontal index PI (Russell). Severity of gingivitis was calculated using gingivitis (Loe, Silness) index. Statistical analysis was performed using the nonparametric Wilkoxon method using of computer program Statistica 10.

3. Results and Discussion

Assigning of hygiene indicators, Shiller-Pisarev test, papilla bleeding index (PBI), periodontal index PI (Russell) and gingivitis index Silnes-Looe (Loe, Silness), patients in the control group was conducted once. Patients in group with vital abutment teeth, and a group where according to the indications it was necessary to perform pulp extirpation mentioned parameters were determined in late periods after treatment: after 3, 6 and 12 months.

Shyller-Pisarev test in the control group in patients of age group 30-39 years was 0,94 ± 0,06, in the age group 40-49 years - 0,86 ± 0,07, in the group 50-59 years 1,13 ± 0.08, indicating a good level of hygiene.

Index of gingivitis Sillness-Loe in control group also remained in the normal range, as indicated by its data. Thus, in patients 30-39 years it was 0,16 ± 0,02, in the age group 40-49 years - 0,28 ± 0,03, in the group 50-59 years - 0,47 ± 0,03, indicating the absence of inflammation.

In view of the prevalence and intensity of periodontal lesions, we conducted a definition of periodontal index PI (Russell). Its data in control group of patients 30-39 years showed meaning 0,08 ± 0,02, in the age group 40-49 years - 0,25 ± 0,03, in the group 50-59 years - 0,38 ± 0,05, also pointed the absence of inflammation in the gingival tissues and bone.

Papillae bleeding index (PBI) in control group also pointed to the absence of inflammation in periodontal tissues, as evidenced by indicators obtained in all age groups. Thus, in patients 30-39 years it was 0,34 ± 0,03, in the age group 40-49 years - 0,41 ± 0,02 and in the group 50-59 years - 0,56 ± 0,05 respectively.

Describing all of data after 3 months of treatment it is possible to make consequence that it is visible stabilization of inflammatory processes in oral cavity of treated patients. All data are shown in **Table 1**, **Table 2**, **Table 3**.

Table 1:

Age group	Control group, intact teeth				Main group, vital teeth, 3 months after treatment				Main group, pulpless teeth,3 months after pulp exterpation			
Index	Shiller-Pisarev	Silness-Loe	Russel index	PBI index	Shiller-Pisarev	Silness-Loe	Russel index	PBI index	Shiller-Pisarev	Silness-Loe	Russel index	PBI index
30-39	0,94±0,06	0,16±0,02	0,08±0,02	0,34±0,03	1,06±0,08	0,31±0,04	0,27±0,04	0,47±0,06	1,34±0,08	0,5±0,09	0,63±0,07	0,67±0,06
40-49	0,86±0,07	0,28±0,03	0,25±0,03	0,41±0,02	1,2±0,07	0,42±0,08	0,36±0,03	0,56±0,06	1,45±0,07	0,47±0,05	0,78±0,06	0,71±0,09
50-59	1, 13±0,08	0,47±0,03	0,38±0,5	0,56±0,05	1,23±0,07	0,54±0,07	0,49±0,05	0,71±0,06	1,4±0,09	0,64±0,06	0,9±0,05	0,93±0,09

Table 2:

Age group	Control group, intact teeth				Main group, vital teeth, 6 months after treatment				Main group, pulpless teeth, 6 months after pulp exterpation			
Index	Shiller-Pisarev	Silness-Loe	Russel index	PBI index	Shiller-Pisarev	Silness-Loe	Russel index	PBI index	Shiller-Pisarev	Silness-Loe	Russel index	PBI index
30-39	0,94±0,06	0,16±0,02	0,08±0,02	0,34±0,03	1,17±0,09	0,4±0,05	0,67±0,06*	0,6±0,07	1,75±0,08*	0,63±0,07	1,07±0,08*	1,03± 0,08*
40-49	0,86±0,07	0,28±0,03	0,25±0,03	0,41±0,02	1,28±0,08	0,48±0,07	0,83±0,07*	0,68±0,05	1,88±0,07*	0,52±0,04	1,23±0,04	0,99± 0,07*
50-59	1, 13±0,08	0,47±0,03	0,38±0,5	0,56±0,05	1,36±0,06	0,61±0,09	0,92±0,06*	0,83±0,06	1,81±0,06*	0,69±0,07	1,16±0,09*	1,2± 0,07*

* Significant difference from the same data of comparing results from table 1, main group, vital and non vital 6 month after treatment at p <0,05

Table 3:

Age group	Control group, intact teeth				Main group, vital teeth, 12 months after treatment				Main group, pulpless teeth,12 months after pulp exterpation			
Index	Shiller-Pisarev	Silness-Loe	Russel index	PBI index	Shiller-Pisarev	Silness-Loe	Russel index	PBI index	Shiller-Pisarev	Silness-Loe	Russel index	PBI index
30-39	0,94±0,06	0,16±0,02	0,08±0,02	0,34±0,03	1,28±0,07	0,69±0,07*	0,71±0,02	0,86±0,04*	1,94±0,09*	0,92±0,06*	1,27±0,08	1,27± 0,08
40-49	0,86±0,07	0,28±0,03	0,25±0,03	0,41±0,02	1,69±0,05*	0,71±0,05*	0,85±0,04	0,94±0,08*	1,96±0,08*	1,12±0,07*	1,3±0,04	1,17± 0,07
50-59	1, 13±0,08	0,47±0,03	0,38±0,5	0,56±0,05	1,65±0,05*	0,87±0,06*	0,95±0,04	0,91±0,06	1,86±0,06	1,2±0,06*	1,45±0,07	1,39± 0,09*

* Significant difference from the same data of comparing results from table 2, main group, vital and non vital 6 month after treatment at p < 0,05

If to compare index data of 3 and 6 month after treatment, we see the significant difference ($p < 0.05$) between data of the only Russel' index in all of treated patients with vital abutment teeth. It could be explained because of fast stabilization of chewing balance in teeth with vital pulp. All of another data has no significant difference. In patients with nonvital abutment teeth there are no significant difference between the results of Sillness-Loe index.

Comparing the results of index estimation between 6 and 12 months after treatment we can conclude that data of Russel index in vital teeth are not significant changed, it can be grounded by absence of increased destructive changes in bone

structure. All another indexes data are changed significantly totally in Silness-Loe index and partially in rest of results, but clinically these changes can be described like acceptable. In patients with non-vital abutment teeth data of Index evaluation are significantly worse than in patients with vital teeth it represent the advantages of vital tooth saving in case of preparing them in role of abutment for fixed partial dentures.

4. Conclusions

1. A comprehensive examination of patients' tooth condition gives a possibility of monitoring the treatment consequence and facilitates the choice of optimum treatment.
2. Abutment teeth preparing saving their vitality has significant advantages over pulpless teeth, as evidenced by results obtained hygiene and periodontal indexes. All data of hygiene indexes were significantly better in patients with vital abutment teeth in late periods after performed treatment.
3. Stomatological index evaluation on far periods after making of fixed partial dentures allows depending on the functional state of the abutment teeth to make the prognosis of treatment effects of our proposed method of partial dentition defects' prosthesis.

5. References

1. Zhang, Sailer I, Lawn BR. Fatigue of Dental Ceramics. J. Dent 2013; 41(12):1135-47.
2. Daguci C, Daguci L, Popescu R, Mercut V, Bataiosu M, Pitru A. Considerations on dental bridges' stability and balance for mandibulary teeth with coronary-root amputation. Curr Health Sci J 2012; 38(4):188-90.
3. Skibitskiy VS. Structural and functional changes in the pulp after tooth preparation under fixed partial denture Sovremennaya stomatologiya, [in Ukrainian] 2008; 3:143-147.
4. Bragin EA. Saving Tactics of dentogingival saving at prosthesis by fixed partial dentures. Stomatologiya, [in Russian] 2003; 4:44-47.
5. Semenyuk VM, Yakovlev KK, Stafeev AA. *et al.* Principles of Treatment of patients with defects of teeth and dentitions by ceramic and metal-ceramic dentures using vital teeth. Panorama ortopedicheskoy stomatologii, [in Russian] 2001; 1:34-35.
6. Tokarevych IV, Naumovich UY. Modern methods of evaluating of chewing function. Sovremennaya stomatologiya, [in Russian] 2009; 3-4:14-20.
7. Ballanti F, Ranieri S, Baldini A, Pavoni C, Bollero P, Cozza P. Gnathological features in growing subjects. Ann Stomatol (Roma) 2014; 4(3-4):230-238.