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Inhaber: Marina Kisiliuk
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Fax.:+ 49 5151 919 2560
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Chefredakeur/Editor-in-chief:
Marina Kisiliuk
Korrektur:
O. Champela
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N. Gavrilets

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Batih V.M.,
Ivanitska O.V.,
Higher State Educational Institution of Ukraine "Bukovinian State Medical University", Chernivtsi, Ukraine
Borysenko A.V.,
Lynovytska L.V.
O.O. Bohomolets National Medical University, Kiyv, Ukraine

TREATMENT OF CHRONIC APICAL PERIODONTITIS IN PATIENTS WITH PREVALENT PARASYMPATHIC VEGETATIVE NERVOUS SYSTEM

Abstract. *Caries complications are a major cause of early loss of teeth. The effectiveness of conservative treatment of apical periodontitis is quite low. The solution is to improve treatment and implementation in the dental practice. The problem of increasing the effectiveness of treatment of chronic apical periodontitis is urgent and further study of the possibilities of its optimal application in patients with prevalent parasympathetic vegetative nervous system is necessary. Objective: to determine the effectiveness of chronic apical periodontitis treatment in patients with the prevalent parasympathetic autonomic nervous system. Clinical studies were conducted on a group of 60 patients with apical chronic periodontitis. Treatment of patients with chronic apical periodontitis was carried out according to treatment protocols approved by the Ministry of Public Health of Ukraine (2005). To normalize the condition of the autonomic nervous system of patients the developed scheme of medical preparations of treatment was used. The root canals were obturated and caries cavity was filled with permanent composite restoration. Efficacy of treatment was assessed on the basis of clinical and radiological data immediately after treatment, and 18 months later. According to this method 60 cases with chronic apical periodontitis were treated. In most cases – 56 (93.33%) – any exacerbation of process after treatment was not observed. X-ray examination indicated the tendency to restore the bone in periapical areas in 57 patients (95.0%). Comparison of destruction areas before treatment and after treatment showed its decrease in 53 (83.33%) patients. The results suggest high efficiency during treatment of patients with chronic apical periodontitis with prevalent parasympathetic autonomic nervous system.*

Key words: *chronic apical periodontitis, patients with prevalent parasympathetic autonomic nervous system, results of treatment.*

The scientific research conducted is a part of a planned scientific study of the Department of Therapeutic Dentistry at Higher State Educational Establishment of Ukraine "Bukovinian State Medical University" on the issue "Elaboration of Methods of Diagnostics, Therapeutic Treatment and Rehabilitation of Dental Patients", State Registration № 0115U002765 and a planned scientific study of the Department of Therapeutic Dentistry, O.O.Bohomolets National Medical University "Peculiarities of Diagnostics, Treatment and Prevention of Caries, Periodontal Diseases and Oral Mucous Membrane Occurring Against the Ground of Somatic Pathology", State Registration № 0107 U002 901.

A considerable spread of dental caries in Ukraine reaching in some regions 96-98% is an important problem in dentistry. Due to this fact a high level of complications after dental caries is observed in Ukraine, that is, pulpitis and periodontitis. Their occurrence is 75-78%. Patients with these caries complications constitute 30-40% of all the individuals consulting dentists. Inadequate treatment of its absence results in considerable early loss of teeth and occurrence of various inflammatory diseases of the maxillary-facial area. Endodontic treatment of pulpitis and periodontitis is rather complicated, and unfortunately it efficacy is not high. In addition, foci of chronic periodontitis are the cause of occurrence of a number of systemic diseases of the body [4, 5, 8-10, 17, 21, 22].

Considering this fact the problem of treatment of different forms of periodontitis remains

extremely topical for Ukrainian dentistry. Nowadays up-to-date instruments and medicines are available in Ukraine for endodontic treatment, although inadequate financing limits their use. The level of complications after endodontic treatment of periodontitis remains high [14, 15, 25]. Therefore increasing efficacy of periodontal treatment is an urgent problem. Its solution includes improvement of endodontic treatment methods and their introduction into the dental practical work. Traditional methods of treatment are not always adequate to achieve success [3-5, 8-10, 18]. To enhance the efficacy of endodontic treatment physiotherapeutic methods of treatment are used, for example, the method of copper-calcium hydroxide (CCH) depoforesis or cupral depoforesis [2, 7, 11-13, 20, 24].

Reaction of the vegetative or parasympathetic autonomous nervous system is one of the mechanisms of the body adjustment to environmental changes and occurrence of pathological processes. It is considered as one of the constitutional characteristics of the body stipulating the type of reaction to various physiological and pathological irritants. Analysis of literary data demonstrated a considerable effect of the vegetative nervous system to stressful situations, especially in young and elderly people. A substantial influence of the vegetative nervous system on development of different diseases is indicated [1, 6, 26].

Objective: to determine the efficacy of medical treatment in patients with chronic periodontitis (vagotonic) considering condition of the vegetative nervous system.

Materials and methods. Condition of the vegetative nervous system was considered in treatment of patients with chronic periodontitis. Condition of the vegetative nervous system was assessed by means of Kerdo index detection [23]. 60 patients were chosen for this study suffering from chronic periodontitis with prevalent parasympathetic nervous system.

To normalize the condition of the vegetative nervous system of patients a scheme of medical preparation of patients was elaborated. Thus, two days before treatment at the dentist patients were administered to an appropriate medical treatment including: buskopan in tablets 0,01 g in the dose of 1 tablet three times a day during 2 days; valerian tincture 25 drops three times a day for 2 days. After dental treatment the following treatment was indicated: ibuprofen 0,2 g 2 tablets three times a day for 3 days; valerian tincture 20 drops three times a day for 3 days; tablets of buskopan 0,01 g 1 tablet three times a day for three days.

In this group of patients 60 teeth were treated afflicted with chronic periodontitis. Among the forms of periodontitis chronic granulating periodontitis prevailed – 45 teeth (75,0%), in 15 (25,0%) teeth chronic granulomatous periodontitis was diagnosed. There were 34 teeth of the upper jaw (56,67%) and 26 (43,33%) teeth were on the lower jaw including 35 (58,33%) molars, 16 (26,67%) premolars and 9 (15,0%) upper incisors.

Clinical and radiological examinations of patients and teeth afflicted by periodontitis were performed. The diagnosis was made on the basis of the clinical data obtained and radiographic results [19]. X-ray of the afflicted teeth enabled to assess accurately condition of a carious cavity, its connection with the dental cavity, shape and number of roots and root canals, pathological changes in the periapical tissues. In case of necessity thermodiagnostics, electrodiagnostics of the afflicted teeth were made. The diagnosis of periodontitis was made according to I.G.Lukomsky classification [16]. According to anamnesis data general condition of patients was satisfactory.

The control group included 15 patients who underwent treatment of 20 teeth by means of generally accepted methods of treatment.

Methods of treatment of patients suffering from chronic periodontitis. Preliminary examination of patients demonstrated that among them vagotonics with chronic periodontitis prevailed (62,65%), and sympathotonics were 37,35%. Two days before treatment at the dentist patients were administered to an appropriate medical treatment. Surgical treatment of chronic periodontitis proper in patients was performed according to the protocols of treatment approved by the Ministry of Public Health of Ukraine (2005). For medical treatment of the root canal 3% sodium hypochloride solution and 3% of hydrogen peroxide solution were used. Instrumental treatment of the root canals was conducted by the crown-down method. To make the root canals

wider (in case they are narrowed) the preparation Largal Ultra containing EDTA was used. To promote passing medicines into the periapical tissues the apical opening was opened 0,2-0,3 mm wide. A turunda with antiseptic solution or 1% metronidazole was inserted into the root canal. Carious cavity was closed by a hermetic dressing. In case obliterated root canals were available depoforesis of the root canals and periapical foci with cupral was performed by Knappworst method: 3 sessions with the interval of 8-10 days [11, 12]. "Atatsamit" was left in the root canal, and the cavity was covered with hermetic dressing. Several days later in case a patient did not complain of inflammatory signs the root canal and the carious cavity were filled.

To assess the efficacy of the therapy conducted the patients were examined in the nearest terms and 12-18 months later. Clinical and radiological examinations of patients were carried out. In case the treatment was successful the patients did not complain and clinical signs of inflammation were absent. X-ray images detected decreased foci of affliction of the periapical tissues.

Results and discussion. 69 teeth with chronic periodontitis were treated according to this method. Among the forms of periodontitis chronic granulating periodontitis prevailed – 45 teeth (75,0%), in 15 (25,0%) teeth chronic granulomatous periodontitis was diagnosed. In the process of treatment exacerbation of periodontitis was not found and there was no need to remove hermetic dressing. In the nearest terms after filling of root canals painful sensations of patients were assessed as well as availability of possible exacerbation of the process in the periapical tissues. In 56 (93,33%) teeth exacerbation of the process was not found (positive percussion, hyperemia and swelling of the gums in the projection of the tooth apex, etc.). The teeth were painless with percussion, chewing, the gums in the area of the teeth treated were without pathological changes. In 4 (6,67%) patients pathological process was exacerbated that had been eliminated after 2-3 sessions of UHF-therapy. In 2 (3,33%) patients periodical dull ache in the treated teeth was found lasting for a year.

After filling the root canals intraoral contact radiography of teeth to control the quality of filling was performed. In 52 (86,67%) teeth the root canals were filled within the limits of the apical opening, in 8 (13,33%) patients filling material did not reach 1-2 mm to the apical opening.

A control X-ray examination of patients in a year demonstrated a tendency to restoration of the osseous tissue of the periapical area in 57 patients (95,0%). The patients did not complain of ache or discomfort sensations in the treated teeth. Decreased foci of affliction were found in radiographic images of 53 (83,33%) teeth (Fig. 1, 2). In 7 (16,67%) patients stated unreliable decrease of the afflicted area in the periapical tissues. In all the cases filling material did not reach to the apical opening of the dental root.

Conclusion. The results obtained enable to state a high efficacy of the suggested treatment of patients with chronic periodontitis in those with prevalent parasympathetic vegetative nervous system.

The prospects of further investigations are elaboration of differential methods of treatment of various forms of periodontitis in patients with prevalent parasympathetic and sympathetic vegetative nervous system.

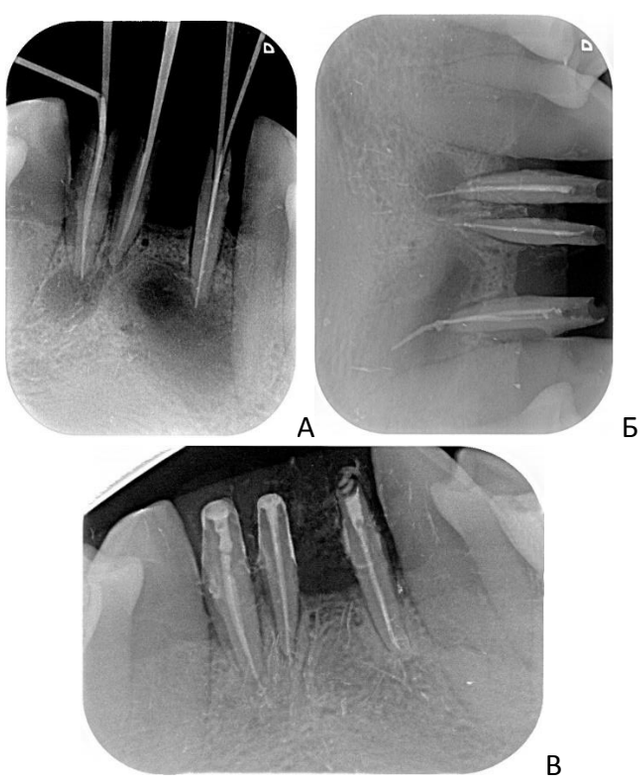

Fig. 1. Patient N. Radiograms of 31, 32, 42 teeth. Diagnosis: chronic granulomatous periodontitis: А – before treatment, Б – after treatment; В – 18 months after treatment

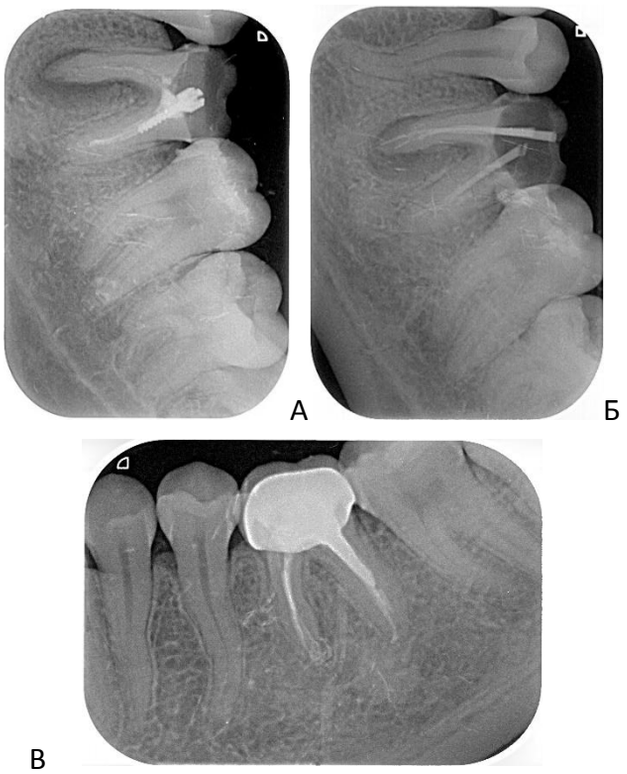

Fig. 2. Patient M. radiogram of 46 tooth. Diagnosis: chronic granulomatous periodontitis: А – after treatment, Б – after treatment; В – 18 months after treatment. Considerable decrease of sizes of afflicted periapical tissues.

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