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MODERN ASPECTS IN THE TREATMENT OF DESTRUCTIVE FORMS OF CHRONIC OSTEITIS

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Abstract

Treatment of chronic ostitis is an urgent problem of modern dentistry. Traditional endodontic treatment of the disease provides disinfection of root canals, removal of necrotised tissues, creation of conditions for healing of the periapical focus. When considering the pathogenesis of chronic apical ostitis, a certain role in its occurrence is attributed to mechanisms closely related to the sensitising effect of tissue substrates.

Keywords: osteoplastic materials, bone microporosity, bone macroporosity, jawbone, regeneration**.**

Introduction. The reaction of periodontal tissues to continuous irritation by antigens coming from the root system can manifest itself in the form of antibody-dependent and cell-conditioned reactions [2,3,8]. Endodontic scientific achievements are divided into the following main groups: methods of improving the methods of medical instrumental treatment of the root canal, creation of new medical preparations for treatment and filling of root canals, studying the possible effect of such materials on macro- and microorganisms, as well as on cells and periodontal tissues [14].

Bone tissue regeneration does not occur uniformly, and often the desired result is unattainable. Targeted influence on osteogenesis is of real interest. An important role in the process of bone tissue regeneration and in the healing of damaged tissues is assigned to platelets. Human bone tissue has a high reparative potential, but in many cases this potential cannot be fully realised. In this connection there is a necessity of application of various osteoplastic and osteoinductive materials. The key task is the selection of the adequate reparative agent, its introduction into the graft with the possibility of its further release in the area of the affected bone. Such an agent can be platelet-rich plasma obtained from the patient's own blood or donor blood [5]. By withdrawing the medication beyond the apex opening, direct action on pathologically changed periapical tissues is achieved [4].

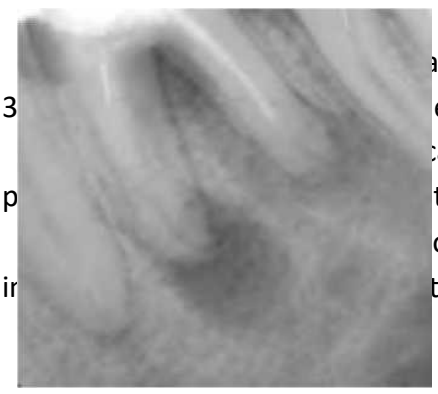
OBJECTIVE OF THE STUDY: To study the effectiveness of filling root canals of teeth with artificial osteoplastic raw material Oss.uz in chronic destructive ostitis.

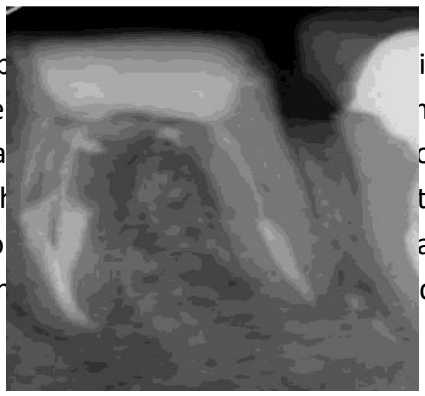
MATERIALS AND METHODS OF RESEARCH: We examined and carried out complex treatment of 67 teeth in 65 male and female patients aged from 25 to 55 years with the diagnosis of ‘chronic destructive ostitis’. All patients underwent clinical examination, radiological examination of single-rooted and multi-rooted teeth of upper and lower jaw before and after treatment, as well as at early terms in 1 month and late terms in 6 months. The degree of bone tissue resorption before the

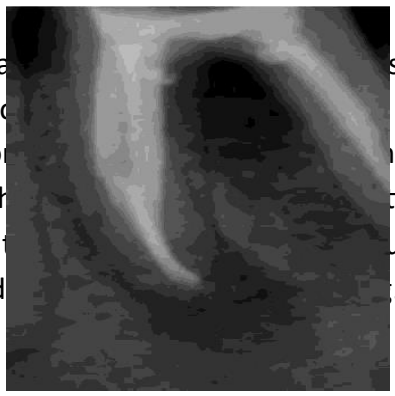
treatment, terms and character of bone structure recovery after the treatment were taken into account. We studied the state of periapical tissues of teeth with the help of modified periapical index PAI Solovieva A. M. and Hounsfield index, which was determined according to the results of CT scan performed on the ORTHOPHOSXG 3D tomograph [4,16]. Complex therapy in patients of the 1st (control) group (34 patients) included professional oral hygiene, root canal treatment, using the algorithm of endodontic intervention according to the protocol of the European Society of Endodontists [10,12,13]. After that the root canals were dried and artificial osteoplastic raw material Oss.uz was left. On the next day the canals were obturated with AH-Plus paste with gutta-percha pins by the method of lateral condensation. After radiological control of the level of filling of the root canal with filling material the crown part of the tooth was restored according to therapeutic or prosthetic indications.

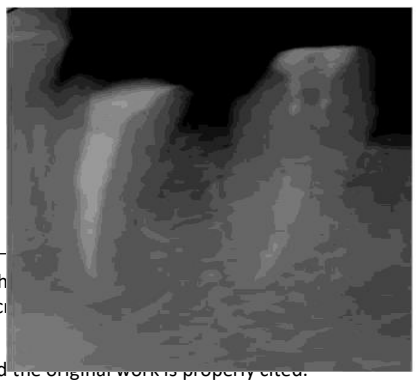
Treatment of patients of the 2nd (main) group (31 people) was carried out by the traditional method [18]. After radiological control of the level of root canal filling with filling material, the crown part of the tooth was restored according to therapeutic or prosthetic indications.

RESULTS AND DISCUSSION: The analysis of the dynamics of changes in clinical symptoms in the early terms of observation showed that reliable differences were revealed for all studied parameters, indicating a lower severity of local and general inflammatory reactions in the representatives of the 1st group. The absence of complaints was noted, at objective examination of the treated teeth the gingival mucosa in the projection of peri-superficial tissues - pale pink colour, painless percussion, restoration of teeth function. In patients of the control group changes in the radiological picture were observed after a month. PAI index changed in 24 patients from 5 to 2 points, in 10 patients - from 5 to 3 points (Fig. 1). In 6 months the recovery of periapical periodontal tissues was observed.









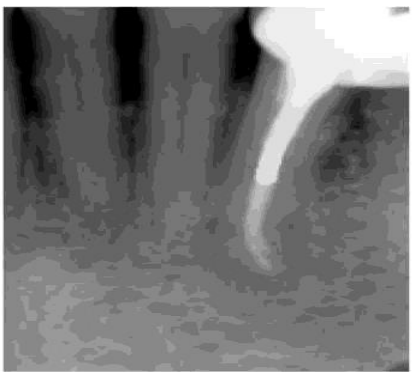


Figure 2. Copy of radiograph of patient Ch., 53 years old. Diagnosis: chronic destructive ostitis 3.3. Main group. Before treatment, 1 month after treatment, 6 months after treatment

In the main group in the first two weeks after root canal filling 5 patients had a complication in the form of periostitis, 10 patients had complaints of pain at biting and 4 patients had painful percussion, no complications were observed in 13 patients.

There were practically no changes in the radiological picture one month after the treatment (Fig. 2).

In 6 months radiologically complete restoration of the period tissues in the area of the apex was not observed (Fig. 2).

The results of comparison of the Hounsfield index of the destructive centre in patients of the control group before treatment, in a month and in 6 months after treatment are presented in Table 1. The results of healthy periodontal bone tissue were taken as the norm [16].

Table 1.

Results of comparison of the Hounsfield index of the foci of destruction in patients of the control group before treatment, after one month and 6 months after treatment

	DCT of healthy periodontal bone tissue	**DCT of the focus of destruction in the area of periapical tissues**		
		before treatment	**after 1 month**	**after 6 months**
	1610,0 ± 200,4	1075,0 ± 100,3	1177,0 ± 120,4	1520,0 ± 200,4
	1720,0 ± 200,2	1084,0 ± 100,0	1240,0 ± 130,8	1670,0 ± 200,2
	1570,0 ± 100,4	1078,0 ± 100,1	1230,0 ± 100,3	1480,0 ± 100,4
	1687,0 ± 220,3	1093,0 ± 110,2	1200,0 ± 100,0	1600,0 ± 220,3

The results of comparison of the Hounsfield index of the destruction centre in the patients of the main group before treatment, in a month and 6 months after treatment are presented in Table 2. The results of healthy periodontal bone tissue were taken as the norm [16].

The analysis of radiological data confirmed the purposefulness of using artificial osteoplastic raw material Oss.uz, which led to a pronounced restoration of bone tissue in patients in the 1st (control) group 6 months after treatment. At the same time in the 2nd (main) group the treatment resulted only in partial stabilisation of the process.

Table 2

Results of comparison of the Hounsfield index of the foci of destruction in the patients of the main group before treatment, one month and 6 months after treatment

	DCT of healthy periodontal bone tissue	DCT of the focus of destruction in the area of periapical tissues		
		before treatment	after 1 month	after 6 months
	1610,0 ± 200,4	1083,0 ± 100,3	1100,0 ± 120,4	1300,0 ± 200,4
	1720,0 ± 200,2	1143,0 ± 100,0	1147,0 ± 130,8	1450,0 ± 200,2
	1570,0 ± 100,4	1118,0 ± 100,1	1123,0 ± 100,3	1320,0 ± 100,4
	1687,0 ± 220,3	1097,0 ± 110,2	1112,0 ± 100,0	1500,0 ± 220,3

Thus, clinical and radiological methods of research substantiate the expediency of application of artificial osteoplastic raw material Oss.uz in treatment of chronic destructive osteitis.

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