

THE CONDITION OF THE PULP OF INTACT TEETH IN SEVERE GENERALIZED PERIODONTITIS

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ABSTRACT:The treatment of patients with severe generalized periodontitis remains an extremely urgent problem to date, which numerous researchers approach from different positions.

Keywords:P –pulpitis,PT-periodontitis,ISO- International Standards Organization,GP- generalized periodontitis.The purpose of the study is: improving the effectiveness of treatment of patients with severe generalized periodontitis.

The task of the study:

1. Qualitative assessment of the microflora of the root canals of intact teeth and periodontal pockets of patients with severe generalized periodontitis outside the acute phase in comparison with the control group of patients without generalized periodontitis.
2. The range of pathological changes in the pulp of intact teeth in patients with severe generalized periodontitis without exacerbation was studied.
3. The fact of simultaneous microbial invasion in periodontal pockets and root canals of intact teeth of patients with severe generalized periodontitis without exacerbation has been established.
4. Identification of microorganisms by similarity and difference in periodontal pockets and root canals of intact teeth of patients with severe generalized periodontitis without exacerbation was carried out.

That is why dentists include methods that affect various types of treatment and rehabilitation of patients with severe generalized periodontitis the links of this pathogenetic chain.

However, it is not always possible to achieve the desired result, namely, a sufficiently long stage of remission and, ideally, a reduction in the severity of the disease.

The main reason for this is that generalized periodontitis is a chronic infectious disease, in which, against the background of an unfavorable situation, exacerbations of the process develop up to suppuration from periodontal pockets and abscess formation. The process occurs by reinfection from closely located foci of pathogenic microflora that has not been completely eliminated, with increased stress on teeth after prosthetics, hypothermia, poor oral hygiene, against the background of various common causes, etc. At the same time, immunity decreases, pathogenic microflora begins to multiply intensively, displacing antagonists from the microbial community and, having reached a certain active quantitative and qualitative level, has a pathogenic effect on periodontal tissues (O.K. Pozdeev, 2005; Socransky S.S., 1992).

Meanwhile, the undeniable fact is the unity of structures such as tooth and periodontal.

Recently, more and more often they talk about the so-called "endo-periodontal syndrome", in particular, about one of its variants, when infectious inflammation begins with periodontal tissues, and then spreads to the pulp of teeth (L.Y. Orekhova et al., 2004; P.V. Moroz et al., 2004; S.V. Novgorodsky et al., 2005; D.H.S. Simon, K.D. Deus, 2000).

However, researchers still cannot give an unambiguous answer, what is the degree of infection of the root canals of teeth with generalized periodontitis outside of exacerbation, what is the nature of histomorphological changes in the pulp of such teeth, and also what should be the medical tactics if these changes are significant? ,

D. Fallace et al. (1990) it is believed that the dental pulp with its protective mechanisms exists autonomously, but, like other tissues of the body, is subject to aging processes. Against the background of periodontal inflammation and microcirculation disorders characteristic of this disease, the physiological age of the pulp exceeds the chronological one.

Numerous studies have proven the pathogenic role of anaerobic microflora in the development of generalized periodontitis (A.P. Kolesov et al., 1989; A.M. Solovyova, 2000; I. Drizhal, 1999; J.K. Baumgartner, 2004; H.-P. Muller, 2004, etc.). A number of authors, mainly using polymerase chain reaction (PCR), found similar pathogenic anaerobic microflora; both in periodontal pockets and in root canals of intact teeth with generalized periodontitis of moderate and severe degree (Goncalves R.B., 1999; Rupf S., 2000; Rocas I.M., 2001, etc.). However, PCR reveals DNA fragments even of dead microorganisms that are present before the course of antibacterial therapy carried out in order to relieve exacerbations of the process. In this regard, the results of PCR cannot reliably indicate their actual presence at the time of the study: Therefore, the question remains open: the existence of a relationship between the course of generalized periodontitis, infection of the dental pulp and histomorphological changes in it. Meanwhile, clinical observations by various authors (A.I. Lampusova; 1981; T.V. Nikitina, 1982; A.V. Zimbalists et al., 1999, et al.) showed that tooth depulping against the background of severe generalized periodontitis significantly reduces their mobility and reduces the intensity of inflammatory phenomena around them. These observations have not yet been theoretically substantiated: So, judging by literary sources, researchers are more often engaged in a one-sided study of histomorphological or microbiological indicators. There is no information in the literature on a comprehensive simultaneous examination of patients with severe generalized periodontitis outside the acute phase using fundamental reliable techniques that allow parallel assessment of the state of the microflora of periodontal pockets; infection of the pulp; as well as the level of histomorphofunctional disorders occurring in it during the development of the disease.

In practical terms, it remains unclear: .the question of the expediency of preserving pulp or depulping of teeth in the treatment of severe generalized periodontitis.

Research objectives:

1. Qualitative assessment of the microflora of the root canals of intact teeth and periodontal pockets of patients with severe generalized periodontitis outside the acute phase in comparison with the control group of patients without generalized periodontitis.
2. The range of pathological changes in the pulp of intact teeth in patients with severe generalized periodontitis without exacerbation was studied.

3. The fact of simultaneous microbial invasion in periodontal pockets and root canals of intact teeth of patients with severe generalized periodontitis without exacerbation has been established.

4. Identification of microorganisms by similarity and difference in periodontal pockets and root canals of intact teeth of patients with severe generalized periodontitis without exacerbation was carried out.

Materials and methods of the study:

The materials of the study are the contents of root canals, PCs, as well as pulp extirpated from intact teeth of patients with severe GP and examined from the control group who do not have symptoms of GP

Clinical research methods included the identification of complaints, the collection of anamnesis of the disease, life, the determination of somatic, dental and periodontal statuses

The assessment of dental status included a study of the state of the organs of the maxillofacial region and the oral cavity. The hygienic condition of the oral cavity was assessed using the Fedorov-Volodkina hygiene index (IG) (Yu.A. Fedorov, V. V. Volodkina, 1971)

X-ray examination of patients was performed using orthopantomograms and intraoral X-rays. When evaluating the alveolar bone, attention was focused on the structure of the interalveolar septa, their shape and height, the nature of the bone edge, the presence of bone pockets and craters, the involvement of furcations, the state of the cortical layer, signs of osteoporosis.

Microbiological studies of periodontal pockets (PCs) and root canals were carried out by the cultural method. Samples from PCs and root canals were obtained according to the protocol of material sampling of the International Organization of Standards (ISO), adopted

By the Association of Microbiologists and the American Organization for Quality Control - Bacteriological Analytical Manual (YOU, 1986)

Microbiological cultural examination of the infected material was carried out under aerobic and anaerobic conditions in the Laboratory of Bacteriology of the Russian Research Institute of Traumatology and Orthopedics.

Histomorphological studies of the pulp of intact teeth were carried out using histological and histochemical dyes hematoxylin-eosin, alcyan blue, azur-eosin, CHIC, Van Gieson To study the material, an MBI-15 light microscope was used

The results of the study

Before the start of treatment, all patients underwent a clinical X-ray examination, as a result of which it was established that

both groups of patients with severe GP and those in the control group are comparable in gender, age, somatic status, the presence of a bad smoking habit, occupational hazards, the volume of defects in dentition and the level of oral hygiene

The studies were carried out after removal of supracrestal dental deposits. In addition, periodontal patients previously underwent the same course of antibacterial therapy for all in order to relieve exacerbation and create comparable conditions, while improving the clinical condition of patients

The conducted culture study revealed the presence of microflora in the root canals of patients with severe GP in 83.33% of cases, the identified microflora belongs to obligate and facultative anaerobes, Except for representatives of resident and transbiont flora, pigment-forming anaerobes, other gram-negative and gram-positive anaerobic microorganisms, yeast-like fungi of the genus *Candida*, which are capable of having an aggressive effect on surrounding tissues in associations, in particular in particular, to cause the destruction of periodontal tissues

The species identification of the PC microflora made it possible to compare and compare the microbial landscape of root canals and PCs

In total, 23 types of microorganisms were found in the root canals, 41 types of microorganisms were identified In periodontal pockets and root canals. Gram-positive types of microflora prevailed over gram-negative ones. This fact is explained by the selective effect of antibacterial drugs, which are part of a single treatment regimen for all patients, on gram-negative anaerobic microflora.

Conclusions: Cultural studies have revealed that of the 23 types of obligate and facultative anaerobic microorganisms found in the root canals of intact teeth, in 73.91% (57.0%*87.8%) of observations they are present in periodontal pockets. In 52.17% (34.5%*69.5%) of cases, there was a complete coincidence of the qualitative composition of the microflora, that is, microorganisms are found in periodontal pockets and root canals in the same people. A statistically significant predominance of certain types of periodontopathogenic flora in root canals was determined in comparison with periodontal pockets, indicating that the microflora remains viable regardless of the ongoing antibacterial therapy.

The results of a comprehensive study allow us to imagine the development of a pathological process in the pulp and periodontal of patients with severe GP in the form of a "permanent boomerang effect", when, against the background of trophic disorders and dystrophic changes, there is a long-term interaction between the microflora of periodontal pockets and pulp, exacerbating chronic inflammation and, thereby, reducing the protective properties of the dental gingival complex.

PRACTICAL RECOMMENDATIONS:

In a complex of therapeutic measures and in order to prevent exacerbations of severe GP, it is advisable to recommend tooth depulcation.

Before prescribing antibiotic therapy to patients with severe GP, it is advisable to conduct tests for the sensitivity of the microflora of periodontal pockets to antibiotics.

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