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ANALYSIS OF THE RESULTS OF THE STUDY OF SOUND PRONUNCIATION IN PATIENTS WITH PROSTHETICS WITH COMPLETE REMOVABLE DENTURES

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Introduction. One of the most important social tasks is protection and strengthening people's health. In the modern world, there is a trend towards aging of the population, which causes a general increase in morbidity. This provision fully refers to the deterioration of the dental status of the population, which leads to an increase in the number of patients who have defects of the dentition.

The complete loss of teeth causes particularly significant morphological, functional and aesthetic changes in the maxillofacial area. In dental practice, the prosthetics of fixed prosthetics is widely used. Restoration of speech is one of the main tasks when using removable dentures.

The aim of the study: to research the peculiarities of the development of speech adaptation when using removable dentures of a long length.

Materials and methods. For research, 2 groups of patients were formed: the first group of patients without dental defects rows, the second group - with defects of tooth rows. The

research was conducted using the sound computer spectography method before prosthetics, immediately after fixation of orthopedic structures, after 3, 7, 30 days.

Results. The application of the sound computer spectrography method made it possible to carry out a graphic registration of the pronunciation of the sounds of the Ukrainian language by patients before prosthetics and during adaptation to orthopedic structures. The obtained results demonstrate qualitative differences between sound pronunciation in pathients without dentition defects (control) and patients with partial loss of teeth. They also reveal the existence of certain dynamics of acoustic processes during the first 30 days of using fixed structures.

Conclusion. Thus, with excessive occlusal contacts of the teeth, the power and frequency of loudest sounds is significantly reduced. When manufacturing non-removable structures using the digital method, adaptation is faster compared to the analog method. At the beginning of using non-removable structures, after 3 days the power of sounds [o], [u] and the frequency of sounds [a], [o] are restored. After a temporary new deviation from the norm after 7 days, the frequency and power of loud sounds are fully restored after 30 days.

Key words: complete removable dentures; adaptation; pronunciation of sounds; occlusal relations of jaws; digital method.

Relevance. One of the most important social tasks is the protection and strengthening of people's health. In today's world, there is an aging trend population, which leads to a general increase in morbidity [1]. This provision fully applies to the deterioration of the dental status population, which leads to an increase in the number of patients with dental defects. The complete loss of teeth causes particularly significant morphological, functional and aesthetic changes in the maxillofacial area [2, 3]. In the dental office dental prosthetics with complete removable dental prostheses (RDP) are widely used in practice [4]. Restoration of speech is one of the main tasks in the production of long fixed structures [5]. However, information on the mechanisms and dynamics of speech recovery in orthopedic dental patients is extremely limited [6]. Although recently there has been an increased interest in speech processes in orthopedics dental treatment [7, 8], the processes of speech adaptation with total prosthetics remain unexplored. This requires a detailed study of the acoustic parameters of speech in patients who are beginning to use it, as well as changes in bioelectrical processes and coordination of movements of the active components of the speech apparatus. Since for certain categories of the

population (teachers, announcers, dispatchers) the proper restoration of sound pronunciation determines not only the quality of life, but also professional suitability [9, 10], the development of ways to improve speech adaptation, in particular with the use of physical exercises, is very relevant. This determined the purpose of our research.

Materials and methods. For the analysis, we formed 2 groups of patients: the first - patients without defects dentition, the second with complete secondary dentition. The research was carried out using the method of sound computer spectography before prosthetics, immediately after fixation of fixed structures, after 3, 7, 30 days.

The presented work is a fragment of the initiative research work of the Department of Postgraduate Education of Dentists-Orthopedic Doctors "Influence of dental structures and materials on the prosthetic field and adaptive properties of the organism", State registration number 0116U004188.

The research was approved by the Biomedical commission of ethics of Poltava State Medical University, Ukraine.

The research was conducted according to the written informed consent of the patients and was carried out in compliance with the principles of bioethics and the rights of the patient in accordance with the Helsinki Declaration (2000) and the Fundamentals of Ukrainian legislation on health care (1992).

Results and its discussion. The application of the sound computer spectrography method made it possible to carry out graphic registration pronunciation of the sounds of the Ukrainian language by patients before prosthetics and during adaptation to fixed structures. The obtained results demonstrate qualitative differences between sound pronunciation in persons without dental defects (control) and patients with dental defects. They also reveal the existence of certain dynamics of acoustic processes during the first 30 days after prosthetics with fixed structures.

Spectral analysis of loud sounds showed that the sound power [a].

In patients with dentition defects before prosthetics, it is likely to be reduced and remains at this level for 3 days after fixation of the structures.

7 days after fixation of the orthopedic structures, the sound power [a] increases compared to the previous periods of observation and does not differ from that in the control. At the same time, after 30 days, a probable decrease in power occurs again. Sound power [o] probably

decreases during prosthetics of long fixed structures, and remains so on the day of fixation. It has a tendency to normalize after 3 days from the start of cementing the structures and remains so in the future. The sound power [u] in patients with dentition defects is 15% lower than this indicator in persons with intact dentition. Fixation of non-removable structures immediately significantly increases the sound power [u] compared to the power before prosthetics, which, however, remains below the norm. After 3 days from the beginning, after fixing the structures, the specified indicator increases to the norm, but after 7 days, it probably decreases again.

After 30 days, a full restoration of the sound power [u] is found.

-The dynamics of changes in the strength of the vowel sounds [u], [y], [e] have a different appearance. The power of these sounds in edentulous patients is probably lower than in humans without dentition defects and remains at this level during the first 7 days of using the removable dental prostheses (RDP). However, after 30 days the power of the sounds [u], [e] increases in comparison with that before prosthetics and in previous periods of observation and reaches control indicators. At the same time, power sound [e] does not change and does not undergo normalization. Through the spectral analysis of vowel sounds, it was established that the defect of the dental rows contributes decrease in sound frequency [a] compared to the norm. On the day of fixation of prostheses, these differences deepen. After 3 days from the beginning of cementation of fixed structures, the frequency of sound [a] increases and remains.

The frequency of sound [e] in patients with dentition defects before prosthetics is higher than that in controls. On the day of fixation of the fixed structure, this indicator tends to normalize, remains so after 3 days, but increases again after 7 days from the start of using prostheses. It is completely restored after 30 days of adaptation. The frequency of the vowel [e] in patients with dentition defects has a tendency to decrease compared to controls, remains at this level for 7 days after the beginning of using prostheses and does not differ from controls after 30 days of the adaptation period.

Conclusion. Thus, patients with prostheses with fixed structures of long length significantly reduce the power and frequency of loudest sounds. At the beginning of cementation of fixed structures, after 3 days, the power of sounds [o], [u] and the frequency of sounds [a], [o] are restored. After a temporary new deviation from the norm after 7 days, the frequency and power of loud sounds are fully restored after 30 days. Prospects for further developments in this direction will allow to improve the quality of prosthetics with fixed dental structures by

improving speech adaptation through the development of complex physical exercises of a generally relaxing and articulatory nature, which accelerate normalization sound pronunciation, increase the effectiveness of restoration by longing of sounds at the end of the adaptation period and optimize biometric processes in the muscles of the lips. It was established that fixed structures, which are made by the digital method, have higher adaptation possibilities compared to analog methods.

Conflict of interest. Author declares that he has no conflict of interest that could be perceived as prejudicing the impartiality of the article.

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