

Analysis of Jaw Electromyographic Examinations in Elderly Patients with Complete and Partial Adentia

Nurov Norpilot Boboqulovich

PhD., Department of Orthopedic Dentistry and Orthodontics, Bukhara State Medical Institute, Uzbekistan

Abstract On a global scale, it is argued that special importance should be attached to the diagnosis and orthopedic treatment of patients with complete absence of teeth in the lower and upper jaw at a sufficient level of scientific research (1) **Background:** The jaw-facial area manifests itself as a dynamically changing part in the process of development and growth in the body. Morphometric indicators of the craniofacial complex are influenced by internal and external factors (2) **Methods:** Methods for determining the degree of conformity of the mucous membrane of the prosthetic area, methods of differentiated distribution of the chewing load from a fully removable plate prosthetic to the underlying tissues, depending on its degree of conformity and the size of the prosthetic subspace, as well as finding ways to slow down the atrophy of the prosthetic process of For removable dentures, it is also indicated that the factors that cause the development of pathological reactions of the body include the action of microorganisms, the allergic and toxic effect of the substances that make up the prosthetic composition, the thermal insulation effect of the base of the prosthesis on the subcutaneous tissue (3).

Keywords Orthopedic treatment, Dental defects, Complete absence of teeth, Membrane of the prosthetic removable plate prosthetic, Anthropometric orthopantograms, Panoramic telorentgenograms

1. Introduction

The jaw-facial area manifests itself as a dynamically changing part in the process of development and growth in the body. Morphometric indicators of the craniofacial complex are influenced by internal and external factors. These indicators also depend on the age of the individual. In recent years, more and more importance has been attached to The Shape of the face, its appearance structure. According to data, The Shape of the face is influenced by the dimensions of the facial and partial brain sections in the head, their location, as well as their size, as well as the location of the soft tissues of the craniofacial sphere. Tooth decay has a significant effect on changes in face height, increasing by 17% at the eruption of milk teeth, another 14% at the initial permanent molars and subsequent tooth eruption, and 24% at the second permanent molar eruption [1,3,5,7,9].

As it increases in size, the child's face ratio as well as its external shape changes as the bones of the facial skeleton shift relative to each other. An increase in the size of the facial bone occurs as a result of the overall growth of the bones that make up it. The main role is given to jaw growth.

The growth of the facial bone from the base to the front and down occurs faster than the brain bone grows back and up.

According to a number of authors, the shape and dimensions of the craniofacial sphere are directly influenced by environmental factors. Head and face shapes are determined using special indices of significant clinical significance, based on morphometric indicators of these areas. To determine the dimensions of the craniofacial sphere, various methods are used, which are carried out along certain points and lines, they are determined in pictures, telorentgenograms, tomograms, panoramic pictures.

2. Methods

The study of craniofacial complex indicators is of particular relevance in physician-orthodontists who diagnose pathology, determine the treatment plan and predict results based on the shape and dimensions of both the head and its individual areas. Anthropologists studied the law of proportions in individual parts of the body and found a "golden cross section", which is determined by dividing the value into two unequal parts, in which the large part belongs to the whole large part (13:8), as in the case of the small part (8:5), that is, the large part is The "Golden cut" of the face runs along the point between the eyes, through the gnatic part of the facial skeleton (from the tip of the nose to the chin point in the closed position of the mouth, along the line where the lips are adjacent; in the open position of the mouth, this distance is equal to the distance from the chin point to the upper lip).

When describing the aesthetic peculiarities of the face, the

* Corresponding author:

nurov.norpolot@bsmi.uz (Nurov Norpilot Boboqulovich)

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following indicators are used: - anfas; - the dimensions of the top, middle and bottom of the face and their proportions; - fascial morphological index; - facial asymmetry; - face shape in profile, nose, lip, chin shape. In the main group of patients, m. masseter and m. When the data from the Temporalis electromyography study was processed, no statistical reliable difference was obtained in the numerical data of the original chewing and chakka muscles, so we decided to present them in Tables 1 and 2.

In applied dentistry, special attention is paid to the shape of the dental arches. The dimensions of the tooth arches are determined to be related to the indicators of the jaws, facial skeleton and the whole organism. Studies of teeth by several scientists on radiographs such as orthopantograms, panoramic telereöntgenograms are known, which make it possible to determine the size of the crown and Root, The Shape of the roots, as well as their condition. Anthropometric and nutritional indicators differ in the type of osteogenesis that is not completed. Therefore, anthropometric measurements as well as nutritional status assessments are important in patients who have not completed osteogenesis [2,4,6,8,9].

It is known from Tables 1 and 2 that on the day of denture installation, with maximum jaw compression with fully removable lamellar prostheses in the main group of patients, the initial masticatory muscles at the stage of bioelectric activity were 136.3 and 8.4 MV in terms of biopotential amplitude, the chakra muscles. - 127.6 year 8.1 mv. The optimal compression force in the studied muscles was observed 1 month after the introduction of the plate prostheses, which were completely obtained by us, in the initial masticatory muscles - 233.8-7.6 MV, and in the muscles of the chakra - 197.1-10.6 mv. After the end of the first year of using the prostheses, the amplitude parameters of the bioelectric activity of the initial masticatory muscles in the main group of patients did not change significantly. The average amplitude at rest, both in the initial masticatory muscles and in the muscles of the chakra, changes imperceptibly over the course of a year, which corresponds to the literature data. The degree of dynamics of changes in the amplitude parameters of bioelectric activity in the initial masticatory muscles and chakra of the main group of patients is shown in Figure 1.

Table 1. Results of the functional characteristics of the right and left original chewing muscles in patients of the main group

Electromyography indicators	Duration of observation			
	Fixed day	1 Moon	2 Moon	12 Moon
Peace amplitude (mkv)	30,1±1,4	29,3±1,4	31,3±1,3	29,8±1,3
Maximum compression amplitude (mkv)	136,3±8,4	233,8±7,6	232,5±7,2*	235,1±5,7*

Note: as of the first research month, the reliability factor in terms of tracking Times is $r < 0.05$

Table 2. Results of functional features of the right and left Chakra muscle in patients of the main group

Electromyography indicators	Duration of observation			
	Fixed day	1 Moon	2 Moon	12 Moon
Peace amplitude (mkB)	30,7±1,6	29,8±1,4	30,1±1,3	31,2±1,4
Maximum maximum amplitude (MV)	127,6±8,1	197,1±10,6	198,8±9,6*	199,7±8,8*

Note: as of the first research month, the reliability factor in terms of tracking Times is $r < 0.05$

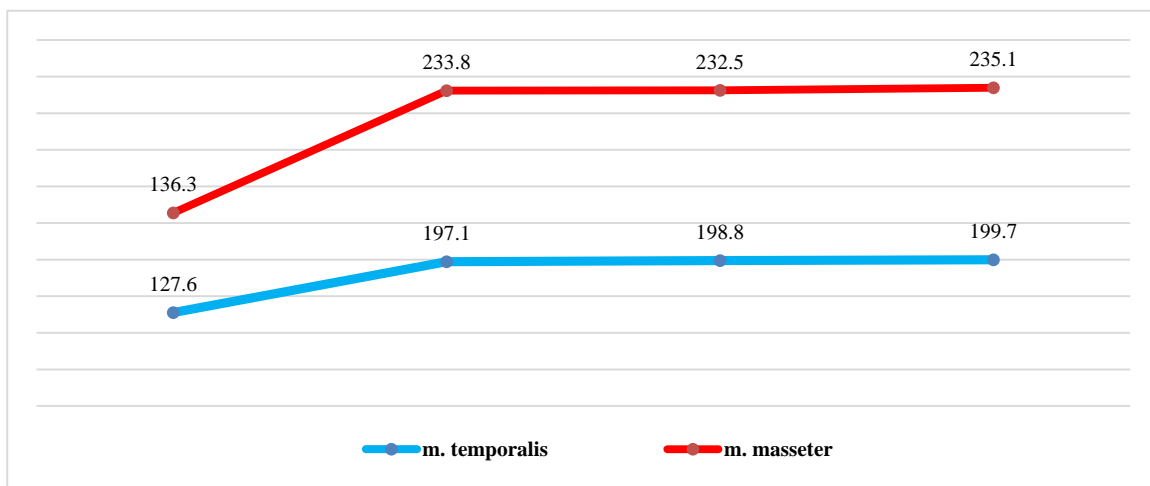


Figure 1. In the main group of patients with bioelectric activity of the masticatory and chakra muscles, a graph of changes in the maximum compression amplitude (mcv) is presented

When constructing dental rows with an alveolar tumor without teeth, an important task is to restore balanced occlusal-articulatory relationships, in which the specifics of the functional characteristics of artificial teeth are compensated by the shape of the chewing surface, while the deviation of any inclination of the tooth drum is consistent with the trajectory of movement. Smooth pressure of the base of the prosthesis on the supporting tissue is achieved through the formation of multiple occlusal contacts for optimal neuromuscular balance between face and jaw, as well as aspects of the biomechanical interaction of prostheses with the underlying tissue. When systematizing the data obtained, it becomes clear that irreversible morphological changes occur in patients with complete tooth loss in the form of an increase in the sagittal size of the bone elements of the pituitary joint chpjb, this must be taken into account at the stages of the formation of an artificial dental arch during prosthetics in patients of this category.

3. Conclusions

Adaptation to lamellar prostheses, which fully corresponds to the results obtained during the electromyographic examination of the main group of patients, occurs on average 1 month after orthopedic treatment. The self-assessment data of patients in the main group show that habituation to full mobility of prostheses occurs 28.0 ± 4.0 days after the installation of full mobility of lamellar prostheses in the "toothless jaws" of patients. This number is confirmed by the electromyography of the original chewing gum, the same as Miss.

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