SPECIFIC FEATURES OF THE TEMPOROMANDIBULAR JOINT FUNCTIONAL STATUS IN CASE OF FREE-END EDENTULOUS SPACE BASED ON FUNCTIONOGRAPHIC DATA

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Introduction. Following different types of data, dentition issues in adult patients account for 70 to 90% of cases and are rated among the major etiological factors behind temporomandib-ular pathology [1, 3, 4, 6, 9, 10]. Free-end edentulous space results in more prominent masticatory changes and, in case of lacking due treatment, get complicated with pathologies – both in the temporomandibular joint and in the masticatory muscles [2, 5, 7, 8].

Aim: to study functional changes in the temporomandibular joint and in the masticatory muscles in cases with free-end edentulous space based on functionographic data.

Materials and methods. A survey has been carried out involving 31 patients with free-end edentulous space, aged 40 to 60. All the patients were divided into two groups. Group 1 included 16 people with bilateral free-end edentulous space whereas those of Group 2 (15 persons) had it unilateral.

The temporomandibular joint functional status was evaluated with the Kleinrok-Khvatova functionography method based on the mandible movements oral record performed with a functionography.

Results. An analysis of the functionograms obtained from Group 1 revealed abnormal gothic arch and gothic angle (100–110°). The gothic angle was 91.13 ± 5.27° ($p < 0.05$) and fea-tured asymmetry, change in the length and the sides alignment, a smooth top, and an improper mid-sagittal line of the metal plate. The gothic arch had one or two sides shorter, while the lateral movements were asymmetrical and curved. The occlusion field was asymmetrical. The front oc-clusion movement line was short, curved and did not coincide with the mid-sagittal line of the metal plate.

In Group 2, the gothic angle was 83.13 ± 4.69° ($p < 0.001$), while there was some dis-turbed alignment and side length observed. The angle top was smooth. The gothic arch featured shorter sides (two of them), while the lateral movements were asymmetrical and curved. The occlusion field was asymmetrical. The conventional occlusion point identified aside from the mid-sagittal line of the metal plate. The lower jaw's anterior occlusion movement demonstrated a change in the course as well as a longer path.

Conclusions. The above-said means that patients with free-end edentulous space revealed disturbed values pertaining to the gothic arch and the gothic angle. In Group 2, the issues were much more prominent compared to the other group. This can be explained by the fact that in case of bilateral free-end edentulous space, the posterior mandible displacement is accompanied with a more symmetrical shift of the mandible heads within the mandibular fossa, while in case of unilateral free-end edentulous space it is asymmetrical shift of the mandible heads that prevails.

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ANATOMICAL FEATURES DETERMINING THE OPTIMAL INCLINATION ANGLE OF THE FRONT TEETH PALATAL FACETS

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Introduction. Dentition defects are among the main causes behind maxillofacial functional disorders, which lead to dentition and occlusion deformations, morphological changes in the temporomandibular joints as well impaired chewing, speech articulation and the aesthetics [1, 4, 6, 8, 9]. Localizing such defects in the upper jaw anterior area poses considerable difficulties when modeling prosthetic teeth, namely, recreating the inclination of the upper anterior teeth palatal facets in order to restore the aesthetics, speech, the sagittal incisor path, and an optimal dentition opening related to the temporomandibular joint function [2, 3, 5, 7, 10].

Aim of study — to identify anatomical features determining the optimal inclination angle of the front teeth palatal facets at upper anterior bounded edentuous space.

Materials and methods. We examined 150 people, aged 19–25, with intact dentition and orthognathic occlusion. Anatomical impressions were obtained and jaw cast models made where the inclination angles were measured for the alveolar, middle and palatal third of the anterior part of the palatal vault, as well as the inclination angles of the upper jaw anterior teeth palatal facets. The measurements were taken with a respectively developed device (useful model patent of the Russian Federation, #53141) following the method of determining the inclination angles of the upper jaw front teeth palatal facets when designing dentures. To measure the angle determining the palatal vault inclination and the anterior teeth palatal facets inclination, the ratio was determined for the palate height at the intercanine level line to the distance from the intercanine line to the central incisors.

Results. The cast models were used to identify and mark the point of palatal vault greatest depth perpendicular to the point of the median palatine suture intersects with a line drawn at the level of the alveolar process tops between the second premolars and the first molars. A strip of foil was put from this point to the top of the incisor papilla, which helped determine the anterior palatal vault length. This length was divided into three equal parts — alveolar, middle and palatal.

The study revealed that the inclination angle of the front teeth palatal facets varied from 34° to 55°, whereas the inclination angle of the mid-third of the anterior palatal vault was equal to the palatal facets inclination angle of the anterior teeth with an average precision of 84%, and ranged from 32° to 57 ± 2°.

This means that restoring the angle of the denture mid-part inclination towards the horizontal plane, which is equal to the inclination angle of the mid-third of the palatal vault anterior part, we will recover the optimal conditions for correct speech articulation and aesthetics, which will prompt the patient's adjustment to the denture.

Conclusions. The above allows concluding that the palatal facets inclination angle of the front teeth is equal to the inclination angle of the anterior