CLINICAL-DIAGNOSTIC COMPLEX FOR IDENTIFYING AND ANALYSING THE ANATOMICAL STRUCTURES OF THE MANDIBLE BY CONE-BEAM COMPUTED TOMOGRAPHY

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Abstract. We have developed a clinicodiagnostic complex for detecting and analyzing "small" anatomical structures while planning a dental implantation. We have suggested the optimal diagnostic algorithm for planning dental implantation in different clinical situations taking into account the anatomical features which will reduce the risk of complications. The results of the study can be used in the practical work of dental medical organizations, maxillofacial hospitals, radiology departments, laboratories, which produce navigational templates, as well as in the educational process of training dentists, maxillofacial surgeons, specialists of the radial diagnostics.

Key words: radial diagnostics, computed tomography, lower jaw, anatomical structures.

Introduction. Biological complications of dental implantation make up a considerable part of treatment failures. This is largely due to the fact that it is only by following a planning protocol, which necessarily includes analysis of the internal structures of the area under study, that most mistakes can be avoided. The planning of the surgical phase of dental implantation should not only take into account clinical signs, but should also include detailed visualisation of anatomically important structures, their structure and topography. Damage to anatomical structures can lead to serious intra- and/or postoperative complications.

Purpose of the study: To develop a clinical diagnostic package for the identification and analysis of "small" anatomical structures in the planning of dental implants.

The materials of the present study were the results of a comprehensive clinical, instrumental and radiological examination of 100 patients aged 50 to 80 years with dental defects. The study was conducted during the period on the basis of the department of surgical dentistry and dental implantology of the Tashkent State Dental Institute.

Results: The main radiomorphometric parameter evaluated in the study was canal diameter. Table 17 shows the statistical results for this criterion in males and females.

The mean median NRC diameter values on the right and left sides in men were 2.1mm on the left and 2.4mm on the right ^=1.7mm and 1.8mm, Q3=2.4mm and 2.9mm;) in females, Me=2.35mm (Qx=1.8 and 1.9mm, Q3=2.4mm); in males and females, Me=2.4mm on the right and 2.25mm on the left (Qx=1.9 and 1.8mm, Q3=2.6mm on both sides). Thus, the diameter of the mandibular incisor canal did not exceed 2.4mm.

Conclusions: A planning algorithm using cone-beam computed tomography has been developed that increases the probability of identifying the studied anatomical structures and their detailed analysis, thus reducing the risk of complications. In the absence of visualisation of structures on cone-beam computed tomography images, a doctor can take into account the most significant X-ray morphometric parameters and studied features of topography of canalis sinuosus, alveolar-antral artery, mandibular mandibular basement zone and mandibular incisal canal, take preventive measures to avoid complications related to their damage.

Literature:

1. Avanesyan R.A., Sirak S.V., Khojayan A.B., Gevandova M.G., Kopylova I.A. Sociological aspects of diagnosis and prevention of dental implant complications (based on a survey of dentists). Fundamental'nye issledovanii. 2013. № 7-3. C. 495-499.
2. Agazadeh A.R. Corrective therapy and assessment of treatment outcomes in dental implantation. // Vestnik stomatologii. 2009. № 3 (68). C. 49-53.
3. Hakobyan G.V., Khachatryan A.G. Retrospective analysis of the impact of periodontal diseases on implant engraftment and long-term prognosis of implantation // Periodontology. - 2011. - №1. - C. 39-43.
4. . Asson, J-N. TRIPOD - new protocol for immediate loading of implants / J-N. Asson, J. Assid // Dental Tribune Russia. - 2013. - №2 (12). - C.1-3.
5. Akhmadova M.A. Dental implantation using navigational implant template made using CAD/CAM technology / M.A. Akhmadova, A.Y. Ignatov // Dentistry. - 2011. - №2. - C.49-52.
6. Belyakova A.S., Kozlova L.S. Prediction of bone remodeling processes disturbance by saliva microcrystallization test in patients before dental implantation. Dental Forum. 2013. № 3. C. 18-19.
7. Block, M.S. Dental implantology. Surgical aspects. / M.S. Block. - M.: Medpress-Inform, 2015. - 448 c
8. .Shomurodov Kakhramon Erkinovich, Kamalova Malika Ilkhomovna. Proper feeding and precautions during and after feeding of children with

congenital cleft palate and lip. Journal of Biomedicine and Practice. 2021, vol. 6, issue 4, pp. 16-20

9. Shomurodov, K., Khaidarov, N., & Kamalova, M. (2021). The formation and eruption of baby teeth in children. Збірник наукових праць scientia. вилучено із