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INFLUENCE OF QUANTITATIVE MORPHOLOGY ON TOPOGRAPHIC FEATURES OF THE LEFT MANDIBULAR CANAL IN CASE OF BONE ATROPHY

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In clinical practice, when analyzing CT studies, the attention of dental surgeons is attracted by topographic and anatomical changes in the mandibular canal depending on bilateral loss of molars (large molars), which cause bone atrophy, even in individuals without obvious effects of somatic pathology or environmental conditions. A detailed description of absolute morphometric values was carried out, based on the average number of "clinical samples" in four people, the topography of the left mandibular canal to the body surfaces and the alveolar part, provided that it is preserved in the projection of the missing 3.6, 3.7 teeth. 3D reconstruction models with the marking of the mandibular canal are presented, which improves the visual perception of its topographic features. In general, for research, the method of "clinical sampling" involved sixty-eight CT scans of the human mandible, which provide the best opportunities for diagnosis and carry proper information content in the task of this work with the division into four age groups, namely: the first group - up to 45 years old, the second group - 46-60 years old, the third group - 61-75 years old and the monitoring group - 25-75 years old, persons with natural dentition. The collection of research materials was conducted after paraclinical examination of digital records of 243 CT cone-digital scans, which were obtained by the Vatech PaX-I 3D Green extra-oral radiography system with a scan size range of 16x9 cm, which minimize the possibility of artifacts caused by patient movement, a focal spot of 0.5 mm (EC60336) on a 14-bit gray scale with a size of 0.2/0.3 voxels and due to the short scanning time, high-quality images were obtained. The analysis was performed using Hewlett-SNCPUM1 computer equipment with 16.0 GB of RAM, 10 Pro Software for Workstations, 2019:00391-70000-00000-AA425. Absolute values of the location of the left mandibular canal in patients of the first study group (control) with a preserved dentition (48 years) in the projection: 1) 3.6 tooth in relation to: the upper edge (UE) of the alveolar part of the mandible is 13.3 mm; the edge of the base (EB) of the lower jaw is 6.6 mm; the buccal surface (BS) of the lower jaw body is 6.5 mm; the lingual surface (LS) of the lower jaw body is 1.9 mm; 2) 3.7 tooth in relation to: UE – 10.3 mm; EB – 7.0 mm; BS – 6.6 mm; LS – 2.3 mm. In the second study group, a 35-year-old patient with a terminal dentition defect, the topography of the left mandibular canal is characterized by morphometric values in the projection of the missing: 1) 3.6 tooth in relation to: UE – 9.8 mm, EB – 5.6 mm, BS – 2.7 mm, LS – 2.7 mm; 2) 3.7 tooth in relation to: UE – 7.6 mm, EB – 7.9 mm, BS - 4.0 mm, LS - 2.2 mm. A 52-year-old patient of the third study group with a terminal dentition defect, the topography of the left mandibular canal is characterized by morphometric values in the projection of the missing: 1) 3.6 tooth in relation to: UE – 10.8 mm, EB – 7.1 mm, BS – 3.9 mm, LS – 4.3 mm; 2) 3.7 tooth in relation to: UE – 11.5 mm, EB – 6.2 mm, BS- 4.7 mm, LS-4.4 mm. Topographic differences in the left mandibular canal are represented in a 64-year-old patient of the fourth study group with a terminal dentition defect, characterized by morphometric values in the projection of the missing: 1) 3.6 tooth in relation to: UE – 11.7 mm, EB – 5.8 mm, BS-5.7 mm, LS-2.1 mm; 2) 3.7 tooth in relation to: UE – 11.1 mm, EB – 6.5 mm, BS – 5.9 mm, LS – 2.4 mm. The topography of the mandibular canal and its neurovascular bundle is a sign for drawing up a treatment plan and choosing rehabilitation procedures in patients with tooth loss, following existing and approved protocols. We understand that even the analysis of the obtained absolute values does not reveal the corresponding patterns of topographic changes in the mandibular canal, depending on bone atrophy caused by the loss of the masticatory teeth, that is, molars, in different age categories. However, it encourages a deeper study of possible variations, with the expansion of the number of research objects and their statistical analysis, according to the classical parameters and characteristics of the variation series. The analysis of modern literature sources did not provide a proper understanding of the problems mentioned above, but it was an impetus for a thorough study of the topography of the human left mandibular canal with bone atrophy caused by terminal dentition defects.