



## 69. TOPOGRAPHICAL CHANGES OF THE MANDIBULAR CANAL, CAUSED BY THE RADICULAR CYST. CLINICAL CASE.

**Author:** Eni Ion; **Co-authors:** Sîrbu Dumitru, Eni Stanislav, Sîrbu Daniel.

**Scientific advisor:** Sârbu Dumitru, MD, Associate Professor, Arsenie Gutan Department of Oral-Maxillofacial Surgery and Oral Implantology, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

**Introduction.** The mandibular canal is one of the main anatomical structures, representing the key point of the functionality and vitality of the mandibular anatomical elements. For oral-maxillo-facial practice, the topographic relationships of the lower teeth with the mandibular canal are particularly important. Some pathological processes at the level of the roots of the lower teeth (cysts) can also have harmful consequences on the anatomical elements of the mandibular canal.

**Case statement.** A 64-year-old, male patient came to the SRL "OMNI DENT" clinic with complaints of pain while chewing in the region of tooth 46. Following the clinical and paraclinical, radiological examination through OPG and CBCT, the diagnosis of radicular cyst was established at tooth 46. The topographical changes of the mandibular canal caused by the chronic mechanical pressure exerted by the cystic formation and the perforation of the mandibular lingual cortex at the level of the cyst were also highlighted. Then, the endodontic treatment of the teeth 46,45,44, and the surgical intervention of cystectomy and apical resection of the teeth 46,45,44 roots were performed.

**Discussions.** Pre-operative, immediately post-operative, and at 10 months post-operative, OPG and CBCT were performed, in which the cystic formation was identified, and comparing the topographic ratios of the mandibular canal in quadrant III, with healthy dentition, with the topographic ratios in quadrant IV, topographical changes of the mandibular canal were observed in quadrant IV, mainly under the cystic formation. The measurements were performed in the region of the teeth 36 and 46, being reference teeth. Thus, a deviation of the measured values was observed. As bony landmarks having the basilar margin (BM), the alveolar margin (AM), the vestibular cortex (VC) and the lingual cortex (LC). The dental landmarks being the apexes of the teeth (TA). Pre-operative: – tooth 36: BM= 6.30 mm; AM= 14.66 mm; VC=6.81 mm; LC=1.20 mm; TA=3.85 mm; – tooth 46: BM= 2.98 mm; AM=19.07 mm; VC=3.98 mm; LC=2.70 mm; TA=9.40 mm; Immediately post-operative: – tooth 36: BM=6.48 mm; AM=15.53 mm; VC=7.02 mm; LC=1.43 mm; TA=4.81 mm; – tooth 46: BM=3.17 mm; AM=19.07 mm; VC=4.22 mm; LC=2.62 mm; TA=12.34 mm; At 10 months post-operative: – tooth 36: BM=5.88 mm; AM=15.35 mm; VC=7.22 mm; LC=1.14 mm; TA=4.11 mm; – tooth 46: BM=6.02 mm; AM=16.63 mm; VC=5.23 mm; LC=1.85 mm; TA=10.59 mm; The comparison of these values, obtained from the topographical analysis of the mandibular canal in the regions of teeth 36 and 46, shows us the topographical changes of the mandibular canal towards the basilar edge, and the vestibular cortex of the mandible, in quadrant IV, region of the tooth 46, under the influence of chronic mechanical pressure in the presence of the cyst. Likewise, the topographical changes of the mandibular canal in quadrant IV, can be observed in the dynamics, after 10 months post-operative, returning to the topography similar to quadrant III, in the absence of the cystic formation.

**Conclusion.** Dynamic CBCT monitoring of the patient with a radicular cyst allowed us to evaluate the topographical changes of the mandibular canal under the influence of the pressure exerted by the cyst and later in its absence, thus demonstrating the human body's capabilities for adaptation and bone remodeling.