PARTICULARITIES OF DIAGNOSIS AND SURGICAL MANAGEMENT OF RADICULAR CYSTS

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Introduction: Atypical molar extraction may be complicated by infection, periodontal disease, root resorption, caries of adjacent teeth, cysts, and other issues. Radicular cysts can develop from chronic periapical infection due to pulp necrosis, which stimulates the epithelial rests of Malassez, leading to odontogenic cyst formation.
Case presentation: In a patient, a radicular cyst of tooth 15 persisted as a residual lesion after extraction and incomplete removal, subsequently involving the mesiovestibular root of tooth 16 in the vicinity of the maxillary sinus. The shape, dimensions, radiographic margins and topographical relationships with the surrounding anatomical structures were analyzed by Cone Beam Computed Tomography-CBCT. Considering that the cyst was located in the vicinity of the maxillary sinus floor, an individualized approach was needed with detailed planning of the cystectomy. To prevent spillage of the cyst's content, the surgical enucleation of the cyst was performed using Lindemann bur mounted on a surgical handpiece. After cystectomy, the cystic cavity was thoroughly checked for the presence of debris, in order to avoid postoperative complications. For hemostasis and facilitation of tissue regeneration, a collagen-based dressing was applied. The histological examination did not reveal any malignancy. The healing process proceeded without any complications. The follow-up of the patient after cystectomy at an interval of 3 to 6 months, showed normal resorptive activity of the cortical bone and good regeneration capacity of the soft tissues.
Discussion: The most complex cysts are those near the maxillary sinus or mandibular canal, often asymptomatic. Upper molar apical radicular cysts may extend into the maxillary sinus, pterygopalatine and infratemporal fossae, spreading to adjacent head and neck spaces, while lower molar cysts can affect the inferior alveolar neurovascular bundle.
Conclusions: Due to three-dimensional visualization of the anatomical structures, CBCT is a reliable method of diagnosis and treatment planning, ensuring a high level of safety and diagnostic accuracy, required for programming individualized surgical techniques, decreasing the risk of iatrogenic injuries and ensuring a high quality of life after surgery.
Keywords: maxillary sinus, radicular cyst, surgical management