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Diagnosis and treatment of chronic apical periodontitis with granulating tissue

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Background: Chronic apical periodontitis with granulating tissue is a chronic inflammatory condition which may develop as a sequela of an untreated acute apical lesion. Clinically, it may present with mild discomfort on biting, the presence of a fistula, and localized mucosal inflammation. It is classified as an infectious osteitis characterized by bone destruction with diffuse contours, visible on radiographs. Effective endodontic treatment aims to eliminate pathogenic agents through mechanical and chemical preparation and a three-dimensional obturation of the canal system.

Objective: To assess the effectiveness of the "Crown-Down" technique with Ni-Ti rotary instruments, calcium hydroxide dressing, and a rigorous irrigation protocol in the endodontic treatment of chronic apical periodontitis with granulating tissue by linking clinical and radiological results.

Materials and methods: The study retrospectively evaluated 6 cases (3 women, 3 men, aged 28–56) diagnosed with chronic apical periodontitis with granulating tissue. After clinical and radiological diagnosis, treatment included rubber dam isolation, "Crown- Down" technique instrumentation with NiTi files, irrigation using 5.25% sodium hypochlorite and 17% EDTA, calcium hydroxide dressing, and final obturation with gutta-percha and AH Plus sealer.

Results: Five teeth showed favorable clinical evolution, with fistula healing and partial periapical bone regeneration after 3 months. CBCT was performed for final and differential diagnosis, proving essential in distinguishing radicular cysts from inflammatory lesions. One patient was diagnosed with a radicular cyst and redirected for surgical intervention.

Conclusions: The protocol combining the "Crown-Down" technique with thorough chemical irrigation and calcium hydroxide medication proved effective for managing chronic apical periodontitis with granulating tissue. This approach ensured both accurate diagnosis and periapical healing, with calcium hydroxide medication aiding canal sterilization and bone tissue repair.

Biography

Bogdan Marginean is a dental student at "Nicolae Testeminanu" University of Medicine and Pharmacy, Chisinau, Moldova. His primary academic and clinical interests lie in endodontics and periodontology. He has been involved in clinical case analysis and research during his studies, focusing on diagnostic and therapeutic protocols for chronic apical periodontitis. He aims to pursue postgraduate specialization in endodontics and contribute to evidence-based dentistry and clinical research. His motivation for participating in scientific events is to gain exposure to international research standards and share his clinical findings with a wider academic community.