Total Spontaneous Regression of a Central Giant Cell Granuloma After Incisional Biopsy: A Four-Year Follow-Up Case Report

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Central giant cell granuloma (CGCG) of the jaws represents a localized and benign neoplastic lesion sometimes characterized by aggressive osteolytic proliferation. The World Health Organization defines it as an intraosseous lesion composed of cellular and dense connective tissues that contain multiple hemorrhagic foci, an aggregation of multinucleated giant cells, and occasional bone tissue trabeculae. The origin of this lesion is uncertain; however, factors such as local trauma, inflammation, intraosseous hemorrhage, and genetic abnormalities have been identified as possible causes. CGCG generally affects those younger than 30 years and occurs more frequently in women (2:1). This lesion corresponds to approximately 7% of all benign tumors of the jaws, with prevalence in the anterior region of the jaw. Aggressive lesions are characterized by symptoms, such as pain, numbness, rapid growth, cortical perforation, root resorption, and a high recurrence rate after curettage. In contrast, nonaggressive CGCGs have a slow rate of growth, may contain sparse trabeculation, and are less likely to move teeth or cause root resorption or cortical perforation. Nonaggressive CGCGs are generally asymptomatic lesions and thus are frequently found on routine dental radiographs. Radiographically, the 2 forms of CGCG present as radiolucent, expansive, unilocular or multilocular masses with well-defined margins. The histopathology of CGCG is characterized by multinucleated giant cells, surrounded by round, oval, and spindle-shaped mononuclear cells, scattered in dense connective tissue with hemorrhagic and abundant vascularization foci. The final diagnosis is determined by histopathologic analysis of the biopsy specimen. The preferred treatment for CGCG consists of excisional biopsy, curettage with a safety margin, and partial or total resection of the affected bone. Conservative treatments include local injections of steroids, calcitonin, and antiangiogenic therapy. Drug treatment using antibiotics, painkillers, and corticosteroids and clinical and radiographic monitoring are necessary for approximately 10 days after surgery. There are only a few cases of spontaneous CGCG regression described in the literature; therefore, a detailed case report of CGCG regression in a 12-year-old boy with a 4-year follow-up is presented and compared with previous studies.

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Central giant cell granuloma (CGCG) of the jaws represents a localized and benign neoplastic lesion sometimes characterized by aggressive osteolytic proliferation.[1] The World Health Organization defines it as an intraosseous lesion composed of cellular and dense connective tissues that contain multiple hemorrhagic foci, an aggregation of multinucleated giant cells, and occasional bone tissue trabeculae.[2,3] The origin of this lesion is uncertain[4]; however, factors such as local trauma, inflammation, intraosseous hemorrhage, and

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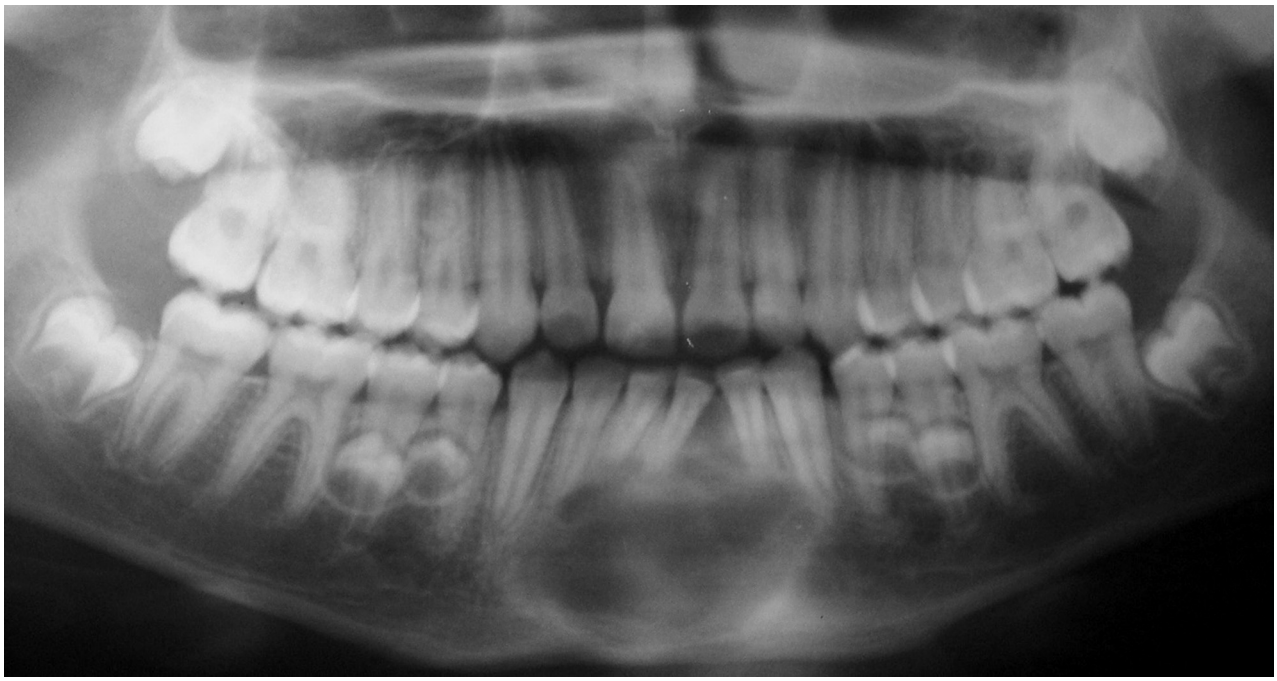

FIGURE 1. Initial panoramic radiograph shows a radiolucent lesion with radiopaque and well-defined areas in the periapical region of the mandibular anterior teeth and the presence of supernumerary teeth.

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genetic abnormalities have been identified as possible causes.[5] CGCG generally affects those younger than 30 years and occurs more frequently in women (2:1).[6] This lesion corresponds to approximately 7% of all benign tumors of the jaws,[7,8] with prevalence in the anterior region of the jaw.[9]

Chuong et al[10] classified CGCGs as aggressive or nonaggressive, depending on the symptomatic and histopathologic characteristics. Aggressive lesions are characterized by symptoms such as pain, numbness, rapid growth, cortical perforation, root resorption, and a high recurrence rate after curettage.[11,12] In contrast, nonaggressive CGCGs have a slow rate of growth, may contain sparse trabeculation,[6,11] and are less likely to move teeth or cause root resorption or cortical perforation.[13,14] Because nonaggressive CGCGs are generally asymptomatic lesions, they are frequently found on routine dental radiographs.[15] Radiographically, the 2 forms of CGCG present as radiolucent, expansive, unilocular, or multilocular masses with well-defined margins.

The histopathology of CGCG is characterized by multinucleated giant cells, surrounded by round, oval, and spindle-shaped mononuclear cells, scattered in dense connective tissue with hemorrhagic and abundant vascularization foci.[16] Because CGCG is generally radiographically and clinically similar to other lesions, the final diagnosis is determined by histopathologic analysis of the biopsy specimen.[17] Some differential diagnoses that must be considered alongside CGCG are the aneurysmal bone cyst and the brown tumor of hyperparathyroidism.[18]

The preferred treatment for CGCG is surgical and consists of excisional biopsy, curettage with a safety margin, and partial or total resection of the affected bone.[11,19] Conservative treatments include local injections of steroids, calcitonin, and antiangiogenic therapy.[20,21] Drug treatment using antibiotics, painkillers, and corticosteroids and clinical and radiographic monitoring are necessary for approximately 10 days after surgery.[19] The CGCG recurrence rate ranges from 13 to 49%, typical of aggressive lesions.[22,23]

Currently, there are only a few cases of spontaneous CGCG regression described in the literature; therefore, a detailed case report of CGCG regression in a 12-year-old boy with a 4-year follow-up is presented and compared with previous studies.

Report of Case

A 12-year old boy was referred by a dentist for the treatment of a radiolucent jaw lesion to the Araçatuba School of Dentistry, Universidade Estadual Paulista (Araçatuba, São Paulo, Brazil). Abnormalities were not observed during the extrabuccal examination. During the intrabuccal examination, a scar tissue line was located in the vestibular fornix in the anterior mandibular region. This finding was a result of a previous biopsy, which was diagnosed as fibrous dysplasia of the bone. A panoramic radiograph indicated a radiolucent