CEMENTO-OSSEOUS DYSPLASIAS

Displasias cemento-ósseas

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Abstract

Cemento-osseous dysplasia is a benign condition of the jaws that may arise from the fibroblasts of the periodontal ligaments. Cemento-osseous dysplasias are further classified into three main groups: periapical (surrounds the apical region of teeth), focal (single lesion) and florid (sclerotic symmetrical masses) cemental dysplasias. The etiology of the condition is unknown, although it has been suggested to occur as a result of mild chronic trauma or traumatogenic occlusion. Cemento-osseous lesions are asymptomatic and no treatment is required. In this article, we discuss these different types of cemento-osseous lesions in light of four presented cases.

Keywords: Cemento-osseous dysplasia; Periapical cementoma; Cementoblastoma.

Resumo

A displasia cemento-óssea é uma condição benigna dos maxilares que pode originar-se de fibroblastos do ligamento periodontal. São classificadas em três grupos principais: periapicais (circundam a região apical dos dentes), focal (lesões isoladas) e displasias cementárias floridas (massas escleróticas simétricas). A etiologia da condição é desconhecida, embora tenha sido sugerido que resulta de trauma crônico leve ou oclusão traumática. As lesões cemento-ósseas são assintomáticas e não requerem tratamento. Neste artigo, discutem-se os diferentes tipos de lesões cemento-ósseas, à luz da apresentação de quatro casos.

***Palavras-chave**: Displasia cemento-óssea; Cementoma periapical; Cementoblastoma.*

INTRODUCTION

The classification of cemento-osseous lesions within jaws has long been a debatable topic for pathologists and clinicians. The literature displays a wide range of terminology in order to define the similar-looking lesions (1, 2, 3). The most recent classification of cemento-osseous lesions was released in 1992 by the World Health Organization based on the location of the lesion as well as age, sex, histopathological, radiographical and clinical characteristics. This classification includes cemento-osseous dysplasia, cemento-ossifying fibroma and benign cementoblastoma (4).

Cemento-osseous dysplasias are probably the most common type of fibro-osseous lesions encountered in clinical practice. The pathogenesis of the cemento-osseous dysplasias is unknown, although they appear to represent some form of reactive or dysplastic process. On the basis of their clinical and radiographic features, this type is further divided into three groups: periapical, focal and florid cemento-osseous dysplasia (5).

Periapical cemento-osseous dysplasia (PCOD) is an asymptomatic benign lesion. The term *cementoma* is often used for this condition, although, it is not a neoplasm (6). PCOD occurs most commonly in the anterior mandible of patients older than 30 years of age. It is more common in women than in men, and there is a predominance in black women (6, 7). Solitary or multiple lesions may occur but multiple lesions are present more frequently (8). Related teeth are almost invariably vital (5).

PCOD appears in radiographs taken for other reasons (5, 9). It displays three different characteristics according to its period. In the first period, which is also called osteolytic period, circular and elliptical resorption areas are seen in the place where the lesion is located. In the second period, which may also be called as cementoblastic period or intermediate period, small calcifications occur within the lesion. A mixed radiolucent and radiopaque appearance emerges. In the third period, lesions display massive calcifications. Solitary lesions may rarely widen to 10 cm in diameter, but not widen to the cortex (5, 9).

Focal cemento-osseous dysplasia (FCOD) is a benign lesion that occurs between the periapical and florid cemento-osseous dysplasia. Although both periapical and florid types represent similar features, they have different clinical and radiographical characteristics. About 80 percent of cases occur in females, between 30 and 50 years of age, and it is more common in white than in black patients (10). FCOD may occur in any area of the jaws, although the posterior mandible is the predominant site (6).

Radiographically, the lesion may appear as completely radiolucent or completely radiopaque. Most commonly, however, there is a mixed pattern. Usually, the patient has only one lesion. Once a diagnosis has been established, no treatment is necessary (5, 6).

Florid cemento-osseous dysplasia (FLCOD) has been described as a condition that usually manifests as multiple radiopaque cementum-like masses distributed throughout the jaws. This condition has also been classified as gigantiform cementoma, chronic sclerosing osteomyelitis and sclerosing osteitis. It occurs most often in black women older than 40 years of age (1, 4, 11). The condition usually involves multiple quadrants (6). The process may be totally asymptomatic and, in such cases, the lesion is detected when radiographs are taken for other purposes (12).

Radiographically, the lesions appear as multiple sclerotic masses, located in the maxilla or mandible. The diagnosis of florid cemento-osseous dysplasia is usually made on the basis of the characteristic radiographic appearance. No treatment is indicated. The most common complication is the development of osteomyelitis in patients who wear full or partial dentures (6).

REPORT OF CASES

Case I

A 40-year-old female patient applied to our clinic due to lack of teeth. The patient had no systemic disease. In the extra-oral examination, no abnormal symptoms were observed. After intra-oral examination, a panoramic radiograph was taken. A radiopaque lesion surrounded by a radiolucent halo was observed in the apical area of the lower left canine (Figures 1 and 2). The vitality test was positive. Based on the clinical examination and radiographic evaluation, a diagnosis of mixed period of PCOD was made.

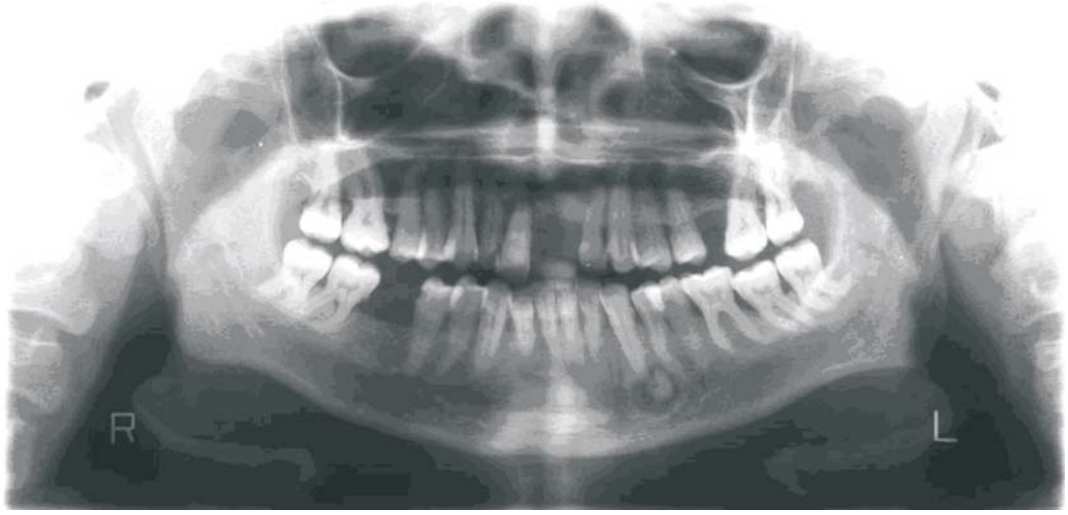

FIGURE 1 - Radiopaque lesion surrounded by radiolucent halo in the apical area of the lower left canine

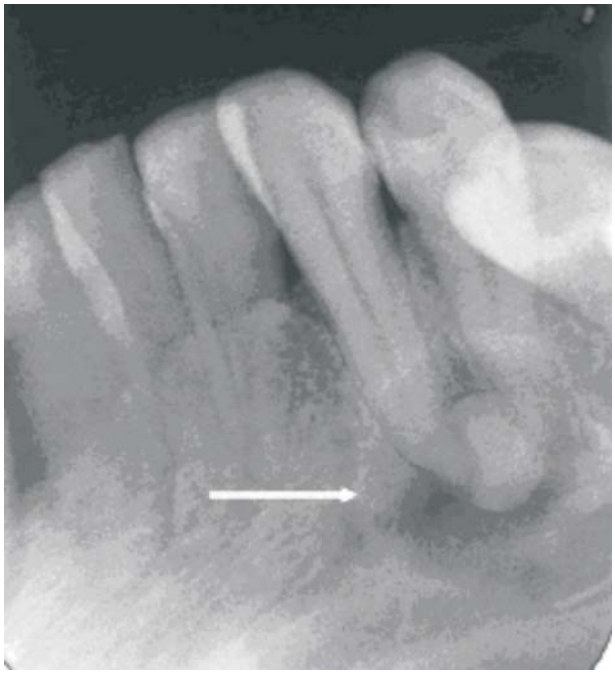

FIGURE 2 - Radiopaque lesion in the periapical area of the lower left canine

Case II

A 32-year-old female patient applied to our clinic with wisdom teeth complaints. The patient had no systemic disease. In the extra-oral examination, no abnormal symptoms were observed. After intra-oral examination, a panoramic radiograph was taken. A radiopaque lesion surrounded by a radiolucent halo was observed in the distal apical area of the lower left first molar (Figures 3 and 4). The vitality test was positive. Based on the clinical examination and radiographic evaluation, a diagnosis of FCOD of mixed stage was made.

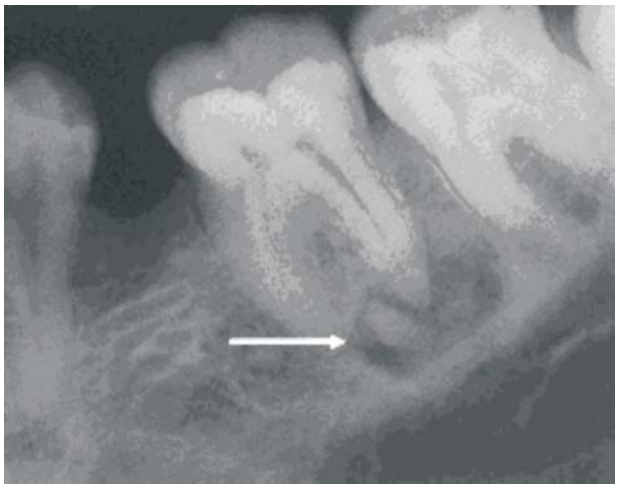

FIGURE 3 - Radiopaque lesion surrounded by a radiolucent halo in the distal apical area of the lower left first molar

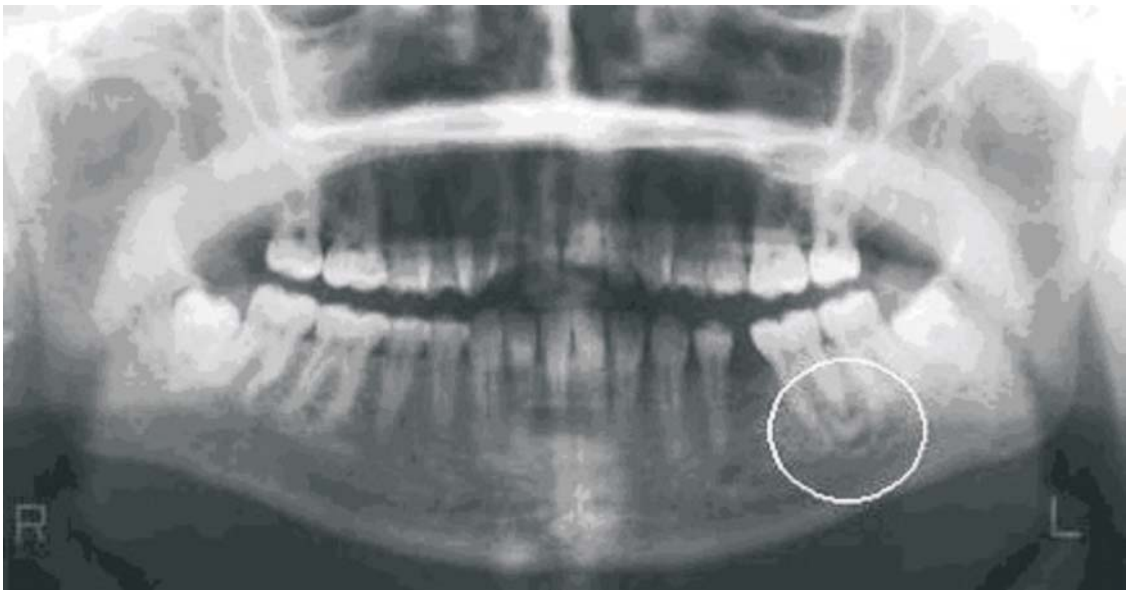

FIGURE 4 - Radiopaque lesion surrounded by radiolucent halo in the distal apical area of the lower left first molar

Case III

A 21-year-old male patient applied to our clinic for routine control. The patient had no systemic disease. Upon extra-oral examination, no abnormal symptoms were observed. After intra-oral examination, a panoramic radiography was taken. A radiopaque lesion surrounded by a radiolucent halo was observed in the apical area of the lower left first premolar. Another lesion that was totally radiopaque was observed in the apical area of the mesial root of the lower right first molar (Figure 5). Vitality tests for both teeth were positive. Based on the clinical examination and radiographic evaluation, a diagnosis of FCOD of mixed and end stage, respectively, was made.

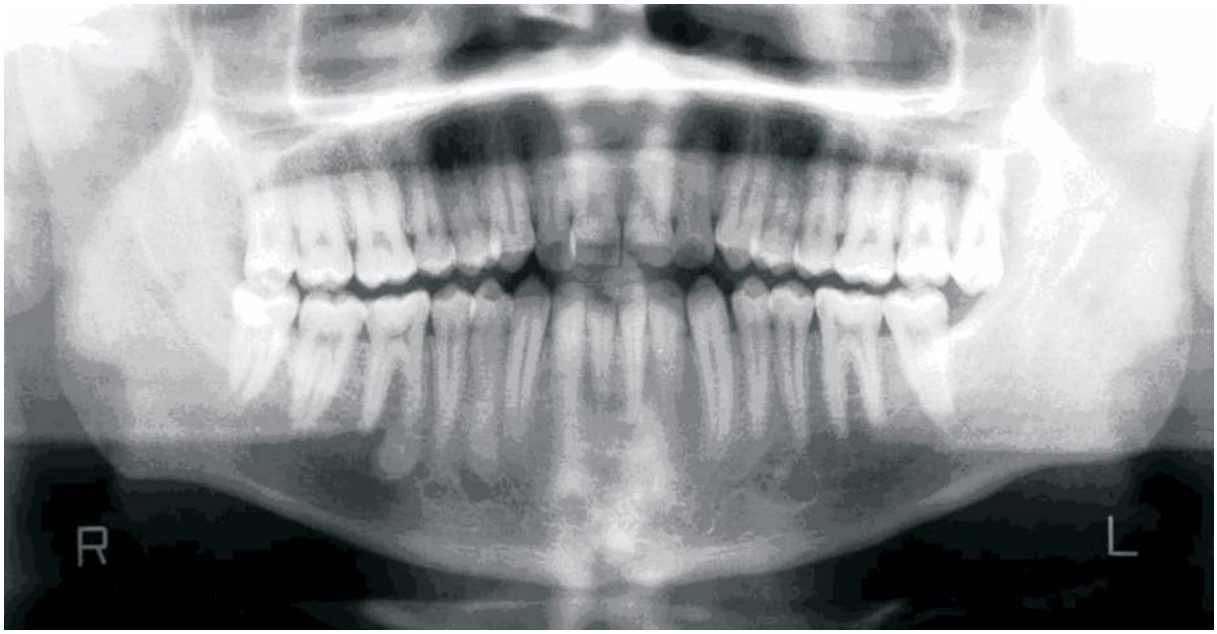

FIGURE 5 - Radiopaque lesion surrounded by a radiolucent halo in the apical area of the lower left first premolar. Another totally radiopaque lesion in the apical area of the mesial root of the lower right first molar

Case IV

A 47-year-old female patient applied to our clinic for a dental care. She was systemically healthy and the extra-oral examination was within normal limits. An intraoral examination revealed a partially edentulous area and the overlying gingiva and mucosa were normal without any clinical signs of inflammation. There was no marked expansion in the mandible. A panoramic radiography was obtained. Multiple sclerotic masses with radiolucent borders were found in the mandibula (Figures 6 and 7). A diagnosis of FLCOD was made, but was not confirmed, as the patient declined a biopsy.

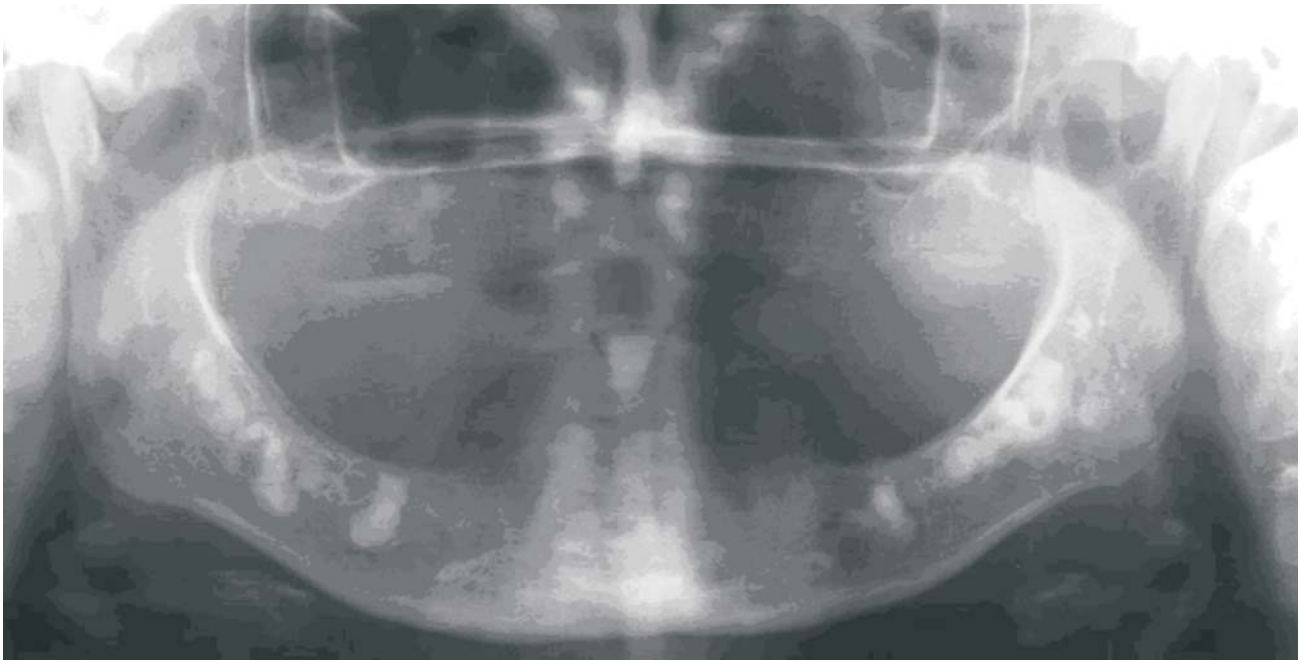

FIGURE 6 - Multiple sclerotic masses with radiolucent borders in the mandible

FIGURE 7 - Radiopaque lesions confined within the alveolus in the regions of the lower right premolar

DISCUSSION

Cemento-osseous dysplasias are probably the most common types of fibro-osseous lesions encountered in clinical practice. The pathogenesis of the cemento-osseous dysplasias is unknown, although they appear to represent some form of reactive or dysplastic process. On the basis of their clinical and radiographic features, cemento-osseous dysplasias are divided into three groups: periapical, focal and florid cemento-osseous dysplasia (5).

The observations revealed that periapical and focal cemento-osseous dysplasias share the same histopathological and clinical characteristics (13). Although FCOD is most common seen in the posterior mandible, PCOD is generally seen in the anterior mandible (6, 7). Additionally, FCOD is more common in white men compared to black men (10). The localization of lesions in our second and third cases diagnosed with FCOD was in agreement with the literature. The fact that two different stages appeared together makes the third case more different. Particularly, the differential diagnosis of the lesion, located on the apical area of the right first molar, should be performed with cementoblastoma, which has a pathognomic radiographic appearance of well-defined solitary circular radiopacity with a radiolucent halo (14). However, there was no radiolucent halo in this case.

Periapical cemental dysplasia is usually detected upon routine radiological examination (15). Although PCOD is a commonly diagnosed lesion, it may be mixed with periapical cyst, granuloma and chronic osteomyelit during the first phase of lesion, and the patients may be misdirected. Therefore, vitality tests are especially important (12). Chronic sclerosing osteomyelit, ossifying/cementifying fibroma, odontoma and osteoblastoma should be considered in distinctive diagnosis at mixed and radiopaque (II. and III. period) phases (10). The etiology of the periapical cemento-osseous dysplasia is unknown, although it has been suggested to occur as a result of mild chronic trauma or traumatogenic occlusion (1, 5). Familial periapical cemental dysplasia has been reported previously (16). Zegarelli et al (17) studied 230 cases and determined that lesions occur in multiples and within the lower jaw in 70% and 94% of cemento-osseous dysplasias, respectively. In those cases, 85% of the patients were females and 71% of the patients were black. Moreover, they did not encounter any trauma or infection in related teeth. Site predilection of periapical cemento-osseous dysplasia is the mandibular incisors (7). Although lesions generally appear in multiple forms, they may be also observed in a single form. Related teeth are almost invariably vital. The lesion is slow growing and usually asymptomatic (12, 18). There was no history of orofacial trauma in all subjects. The localization of the lesion in the first case with the diagnosis of the PCOD was in agreement with the literature.

FLCOD exhibit a sclerotic appearance similar to that of other lesions on conventional radiographs. Paget's disease of the bone may have a cotton-wool appearance (19). However, this condition affects the bone of the entire mandible and shows loss of lamina dura, whereas florid cemento-osseous dysplasia is centered above the inferior alveolar canal and its cervical two thirds are normal. Additionally, Paget's disease is often polyostotic (1, 20), while no other bone involvement was found in the present case.

Cemento-osseous dysplasia is a condition that do not require treatment, but periodic observation is advisable. Biopsy may be required in some cases that do not present with the characteristic radiographic features (21).

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