Florid Cemento-osseous Dysplasia: A Case of Misdiagnosis

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Abstract

Florid cemento-osseous dysplasia (FCOD) belongs to the group of fibro-osseous lesions in which normal bone is replaced by fibrous connective tissue and calcified cementum tissue of the avascular type. Among the various types of fibro-osseous lesions, FCOD is one of the most commonly encountered diseases in clinical practice and may involve 3 or 4 of the quadrants. FCOD is located in the periapical regions of teeth, and the lesions are predominantly radiolucent (osteolytic phase), become mixed over time (cementoblast phase), and ultimately become radiopaque (osteogenic phase) with a thin radiolucent peripheral halo. The characteristics of FCOD in the initial stages are similar to those of periapical lesions of inflammatory origin, which may lead to misdiagnosis. A 38-year-old woman sought dental care because of complaints of pain on the right side of her face. A clinical examination revealed no marked alterations; a panoramic radiograph was therefore requested and revealed the presence of radiolucent lesions associated with the periapical regions of some of the lower teeth. Thus, the professional referred the patient for endodontic treatment of the associated teeth with the justification that the lesions were of endodontic origin. However, the endodontist found that the teeth responded positively to a sensitivity test. The initial diagnosis could have resulted in unnecessary root canal treatment, but after careful clinical, radiographic, and tomographic assessments by different professionals, FCOD was diagnosed, conservatively treated, and regularly monitored. It is important that dentists have a basic knowledge of the various injuries that affect the jaw bones to prevent errors in diagnosis and treatment and to promote oral health. *(J Endod 2015;41: 1923–1926)*

Key Words

Differential diagnosis, florid cemento-osseous dysplasia, misdiagnosis, periapical lesion, pulp sensitivity test

The current classification of bone-related lesions launched in 2005 by the World Health Organization is based on sex; age; location; and the clinical, radiographic, and histopathological characteristics of the lesion. This classification includes cemento-ossifying fibromas, benign cementoblastomas, and benign fibro-osseous lesions (1).

Among fibro-osseous lesions, cemento-osseous dysplasia is the most commonly found in clinical practice (2). Cemento-osseous dysplasia is characterized by the replacement of normal bone tissue with fibrous tissue that contains newly formed mineralized tissue (2, 3). Although its etiology is unknown, it is known that this lesion is benign (4) and originates from the proliferation of periodontal ligament cells (5). Cemento-osseous dysplasia is divided into 3 subtypes according to its clinical and radiographic features: periapical cemento-osseous dysplasia (PCOD), focal cemento-osseous dysplasia, and florid cemento-osseous dysplasia (FCOD) (6). If the lesion affects 3 or 4 quadrants, it is generally considered to be FCOD (1). However, there is still controversy in the literature regarding the exact classification of the lesions (7–10).

In severe cases, FCOD can result in bone expansion accompanied by pain and facial deformity (11). However, in most cases, the injuries are asymptomatic and can thus be diagnosed by routine radiographic examinations. When detected, a differential diagnosis that includes other bone lesions such as Paget disease, ossifying fibroma, and periapical lesions of inflammatory origin should be performed (12). Radiographically, the presence of lesions in the periapical regions of the teeth is observed; in the initial stages, these lesions are predominantly radiolucent (osteolytic phase), become mixed over time (cementoblast phase), and finally become radiopaque (osteogenic phase) with a thin radiolucent peripheral halo (2). Histologically, these lesions exhibit anastomosed trabecular bone and layers of calcification that are similar to cementum and are incorporated into a fibroblast matrix (13). Because of misdiagnoses, some cases of FCOD are referred to endodontic or even surgical treatment (14). This study describes the case of a patient with FCOD in which the lesions were initially confused with chronic inflammatory periapical lesions and later confused with odontomas or central osteoma. The aim of this case report was to highlight the clinical and radiographic features of FCOD to alert clinicians of the need to establish criteria for correct diagnosis and improved treatment.

Case Report

In June 2011, a 38-year-old woman sought dental care in a basic health unit of her city because of complaints of pain on the right side of her face, particularly in the morning. The patient was referred to the Center for Dental Specialties in Araranguá, Santa Catarina, Brazil, for evaluation by an oral surgeon. Because extra- and intraoral clinical examinations revealed no alterations, the oral surgeon requested a panoramic radiograph (Fig. 1) and a bilateral temporomandibular joint radiograph. The panoramic radiograph report indicated the "presence of a multilobular radiolucent image with

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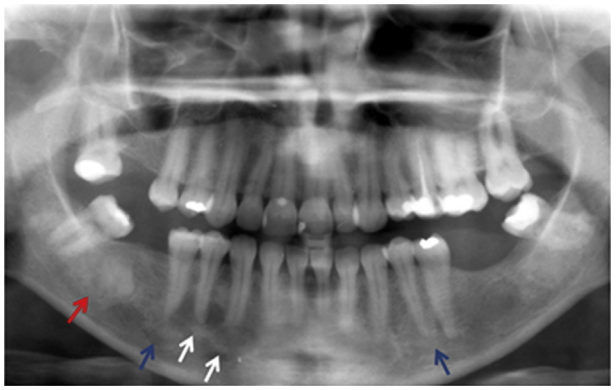

Figure 1. Panoramic radiograph (June 2011) showing the "presence of a multilobular radiolucent image with clear and regular contours located in the apical region of teeth #27, 28, and 29 compatible with odontogenic keratocysts or ameloblastoma." Note the evidence of radiolucent foci (*white arrows*), foci with mixed radiopacity (*blue arrows*), and another radiopaque focus (*red arrow*) in the jaw.

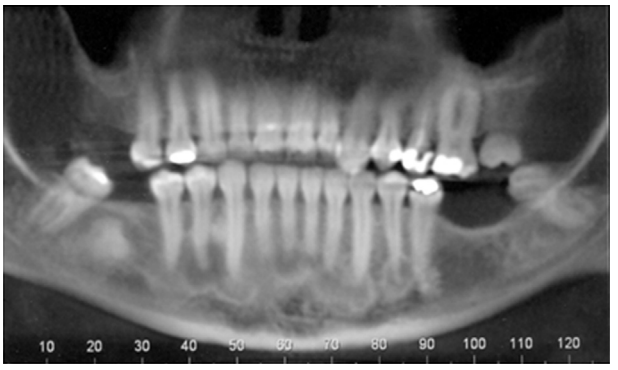

Figure 3. Jaw CBCT scan (May 2013) showing "hypodense images surrounding the root apex of teeth #21, 22, 23, 24, 25, 26, 27, and 28 compatible with periapical fibrous dysplasia and a hyperdense image located on the alveolar bony ridge referring to tooth #31 (absent), with clear and defined limits, compatible with central osteoma or complex odontoma." The CBCT scan reveals multiple foci of bone dysplasia in different stages of evolution in the periapical regions of the anterior and posterior teeth.

clear and regular contours located in the apical region of teeth #27, 28, and 29 compatible with odontogenic keratocysts or ameloblastoma." The temporomandibular joint radiograph revealed an "impaction of the right mandibular head inside the mandibular fossa causing anatomical changes."

Based on these reports, the oral surgeon performed periapical radiography (Fig. 2*A* and *B*). Based on the analysis of the acquired images, the professional referred the patient to an endodontist to perform endodontic treatment of the associated teeth with the justification that the lesions were of endodontic origin. The endodontist found that teeth #27, 28, and 29 exhibited normal responses to pulp sensitivity and percussion tests. The patient was advised to return a few days later for reassessment by the oral surgeon. Because the symptoms disappeared, the patient only returned to the basic health unit in May 2013 with complaints of recurrence of the discomfort. Upon this return, the patient was seen by a periodontist who, based on a review of the data presented in medical records as well as the presence of symptoms and the absence of clinical signs, requested a jaw cone-beam computed tomographic (CBCT) scan (Fig. 3) to aid in the diagnosis. The CBCT scan indicated the presence of hypodense areas surrounding the apices of the first premolars and most of the anterior teeth that were compatible with periapical fibrous dysplasia. Additionally, the CBCT scan indicated a hyperdense image in the alveolar bony ridge of tooth #31 (absent) with clear and defined limits that were compatible with a central osteoma or a complex odontoma. The case was then referred to the oral surgeon who, based on this information, indicated the need for surgery in the posterior mandible region to remove the supposed central osteoma or odontoma and referred the patient for histopathological examination.

The lesion was not removed because, fortunately, another endodontist was consulted regarding the case. This endodontist studied the existing documentation and requested laboratory tests (ie, blood count, serum and urinary calcium, phosphorus, vitamin D, parathyroid hormone, and serum alkaline phosphatase levels) and a jaw CBCT scan to aid in the diagnosis. The laboratory tests indicated no alterations. The upper jaw CBCT scan provided evidence of "hypodense images located on the alveolar bony ridge of incisors and teeth #14 and 15 (visible in the cross section, not shown), consistent with PCOD, and mucosal

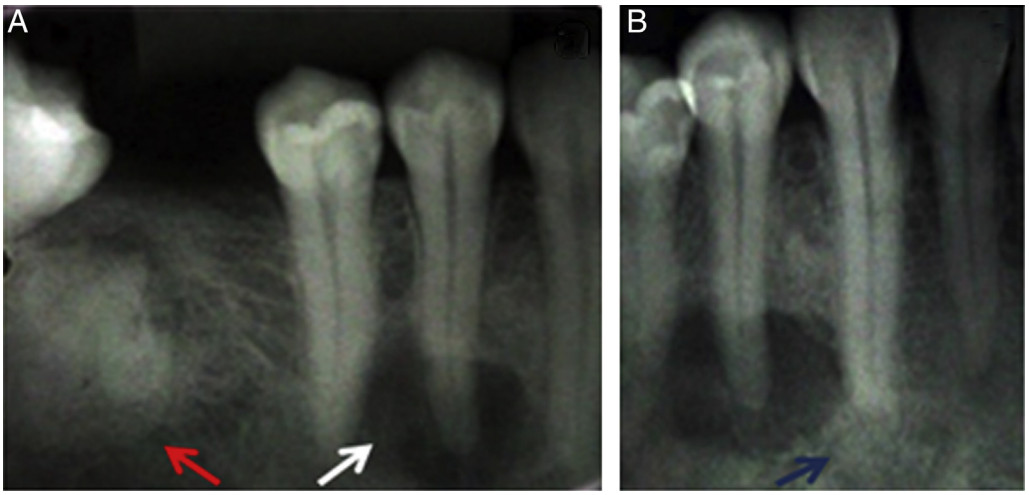

Figure 2. Periapical radiographs (June 2011) of (*A*) teeth #28 and 29 and (*B*) teeth #27 and 28. (*A*) shows a radiopaque focus with a radiolucent halo in the alveolar bony ridge related to tooth #31 (absent) (*red arrow*) and a radiolucent focus on the periapical region of tooth #28 (*white arrow*). (*B*) shows mixed radiopacity in the periapical region of tooth #27 (*blue arrow*).