and COF components.[5,6,17] The second theory is that the lesion begins as a COF, then a CGCG-like lesion is induced by an event, such as trauma or vascular compromise.[19] Evidence supporting this theory includes a reported history of trauma as well as predominance of the COF component in some cases.[7,14,15] In the third theory, the lesion begins as a CGCG, which stimulates odontogenic epithelial proliferation, possibly by growth factors secreted from giant cells.[6,9] The predilection for the mandible and the reported recurrence rate are factors that seem to favor this theory.

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CLINICAL PATHOLOGIC CONFERENCE CASE 4: A PAINLESS GINGIVAL SWELLING IN THE AREA OF TEETH #23 AND #24

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Clinical Presentation: A 36-year-old female presented to the general dentist with a painless gingival swelling, which had been present for 8 months in the region of the lower left lateral and central incisors. The patient had a negative medical history besides seasonal allergies and elevated cholesterol, treated with diet modifications. She had previously undergone orthodontic treatment. Clinical examination revealed crowding of the mandibular anterior teeth. Purplish-red swellings of the mandibular facial interdental papillae from canine to canine were noted, but this change was most obvious in the region of the lower left lateral and central incisors (Figure 1). The discoloration extended to the area below the attached gingiva from canine to canine as well. The crestal gingiva was red, and there was bleeding, which may have been spontaneous or caused by provocation. Periapical radiography showed a radiolucent area with an ill-defined border, localized mainly to the lower left lateral and central incisors (Figure 2). The trabecular pattern was completely lost, and the epicenter appeared to be located between the lower left lateral and central incisors at the vertical mid-portion of the roots. The lesion was causing divergence of the roots. Additionally, there was loss of the lamina dura on both roots, as well as irregular, nondirectional external resorption on both roots. The pulp canals appeared normal. A sagittal cone beam computed tomography (CBCT) scan showed apparent loss of cortical bone (Figure 3). The radiolucency extended from below the apices of the incisors to the crowns of the incisors. The axial CBCT showed the radiolucency thinning and effacing the facial and lingual cortex of the mandible, with tumor expansion on the facial aspect (Figure 4).

Differential Diagnosis: On the basis of these findings, the lesion could be odontogenic or non-odontogenic in origin and could be related to an infection, cyst, or tumor. Divergence and resorption of roots is often seen in a benign process. In this case, the cortical plate was effaced, and this implied that the lesion was growing quickly, not allowing time for new periosteal bone formation. This type of rapid growth is seen in a more aggressive process. The differential diagnosis falls into two categories: an aggressive benign process and malignancy.

Fig. 1. Purplish-red swelling in the area of teeth #22 to #27 and crowding of anterior teeth.

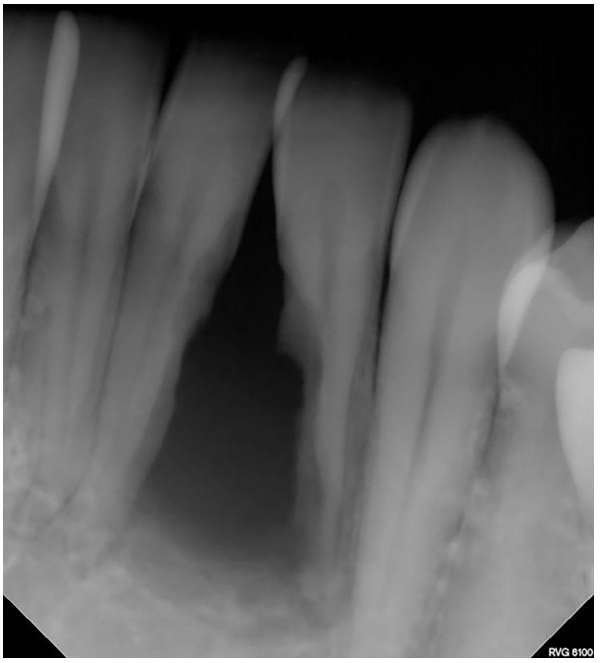

Fig. 2. Radiolucency with ill-defined borders causing divergence of the roots in the area of the lower left lateral and central incisors.

An aggressive benign process was favored in this case because of divergence of the roots. The radiographic findings, in particular divergence of the roots, and the color of the soft tissue supported the notion that this lesion could represent an aggressive central giant cell granuloma (CGCG; termed "central giant cell lesion" according to the World Health Organization classification).[1] Histopathologic features of the reactive lesion—that is, peripheral giant cell granuloma—are virtually identical to those of the CGCG and impart the often-seen purplish-red color to the mucosa overlying a peripheral giant cell granuloma.[2]

Another possibility to consider with this clinical/radiographic presentation is aggressive infection of bone. Osteomyelitis, which most often occurs in the mandible, can affect the cortical bone or the medullary spaces. Radiographically, it can appear radiolucent, with associated radiopacities that are ill-defined, and show irregular erosions of bone or complete loss of the bony trabeculae. The periodontal ligament may be lost, and there may also be loss of the lamina dura. Root resorption can occur. Infection can lift the periosteum from bone, and new bone can form parallel to the surface of the existing bone (peripheral periostitis).[3] The divergence of the tooth roots in the current case would not be consistent with aggressive infection. Additionally, the cortical plate was missing, implying that the lesion was growing quickly and not allowing time for new bone formation.

Although rare, metastatic disease can present in the jaws, most often the mandible. The most common cancers to do this are meta-

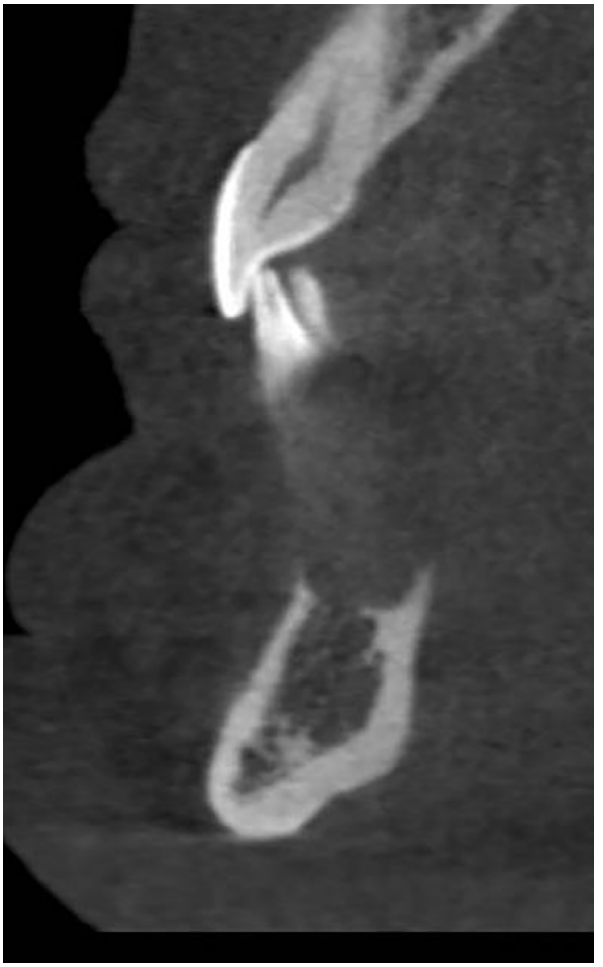

Fig. 3. Sagittal cone beam computed tomography (CBCT) scan showing loss of cortical bone.

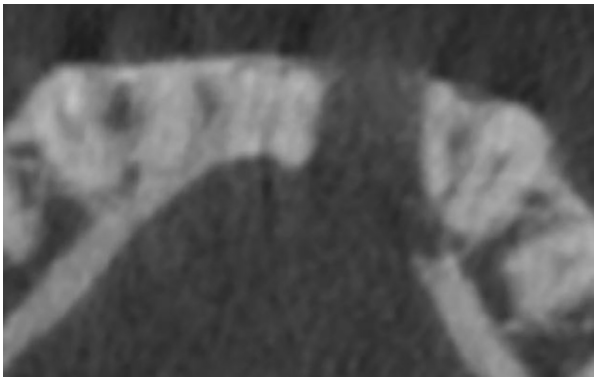

Fig. 4. Axial cone beam computed tomography (CBCT) scan showing radiolucency thinning and effacing the facial and lingual cortex of the mandible, with tumor expansion on the facial aspect.