

ZEBRA HUNT

Zebra XXIII, Part 2

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In the last issue of the *Journal* the case of a 66-yr-old female patient, with a noncontributory medical history, presented with a 1-cm unilocular radiolucency located in the anterior mandible (Fig. 1). The radiolucency was painless, round, with distinct margins, and was not in contact with the roots of the adjacent teeth. Under local anesthesia the lesion was separated with some difficulty from the bone tissue and enucleated. Macroscopically the lesion had a hard consistency.

The following conditions were considered in the differential diagnosis: periapical granuloma, radicular cyst, periapical cemento-osseous dysplasia in the early lytic stage, traumatic bone cyst, odontogenic fibroma, unilocular ameloblastoma, unicystic ameloblastoma, adenomatoid odontogenic tumor, calcifying odontogenic cyst, ameloblastic fibroma, myxoma, and central giant cell granuloma.

PERIAPICAL GRANULOMA

Periapical granuloma represents the most common type of pathological radiolucency, accounting for approximately one-half of these lesions. Radiographically the lesion is a rather well-circumscribed radiolucency, somewhat rounded in shape, and surrounding the apex of a tooth. The periapical radiolucency may have or may not have a thin radiopaque hyperostotic border.

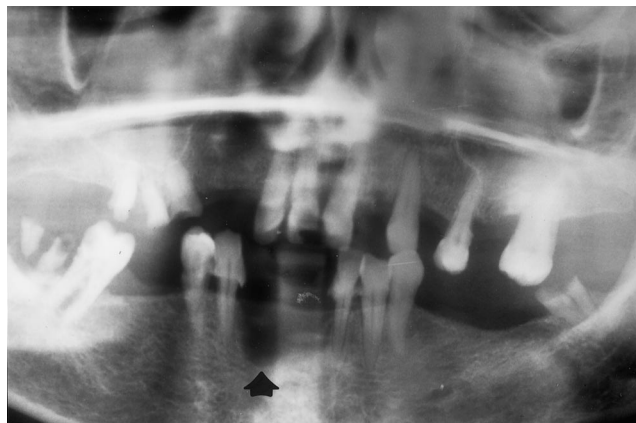


FIG. 1. A small, unilocular radiolucency is present in the anterior part of the mandible (arrow).

RADICULAR CYST

This is the second most common pathological periapical radiolucency after granuloma. The X-ray shows a well-defined periapical radiolucency at tooth apex. A periapical lesion is more likely to be a radicular cyst than a periapical granuloma when the lesion measures more than 1.5 cm in diameter.

PERIAPICAL CEMENTO-OSSEOUS DYSPLASIA IN THE EARLY LYTIC STAGE

The dental pulp of the affected tooth is vital. Radiolucencies, somewhat rounded, with well-defined borders and continuous with the periodontal ligament space, are present. Ninety percent occur in the mandible, with the periapical region of the incisors the most frequently involved site. The lesions may be solitary or multiple, and are completely asymptomatic. They seldom exceed 1 cm in diameter. Middle-aged black women are affected more often than males. It is unusual for a periapical cemento-osseous dysplasia to become large enough to produce a detectable expansion of the cortical plate.

TRAUMATIC BONE CYST

It has a peak frequency in the 2nd decade. About 90% of the cases are located in the mandible, especially in the molar area. Radiographically it is possible to observe a well-demarcated radiolucency with an irregular but defined edge; interradicular scalloping may be present. Sometimes there is minimal external root resorption.

ODONTOGENIC FIBROMA

Radiographically odontogenic fibroma typically appears as sharply defined, rounded areas of lucency in a tooth-bearing area. Small lesions are usually unilocular, whereas larger ones tended to show scalloped margins or multiloculation. All have sclerotic margins. Occasionally it is possible to find small foci of radiopacity, sometimes giving a ground-glass appearance to the lesion. In one third of the cases the roots of teeth in contact with the tumor are resorbed, whereas their displacement is less common. Most odontogenic fibromas are located in the mandible, especially in the

molar and premolar areas. In the maxilla the anterior area is most commonly involved. In about one-fourth of the cases the lesions are associated with a crown of an unerupted tooth, a molar in the mandible, or a premolar or incisor in the maxilla. In some patients it is possible to observe a considerable buccal or lingual expansion.

UNILOCULAR AMELOBLASTOMA

An infiltrating, solid ameloblastoma appears as a multiloculated radiolucency. However when the tumors have a prominent cystic component the bulk of the lesion may appear as a unilocular radiolucent lesion. The clinicians must observe carefully the borders of these unilocular lesions, and very often there will be evidence of peripheral multilocularity.

UNICYSTIC AMELOBLASTOMA

These lesions tend to occur more than one decade earlier than infiltrating ameloblastomas with a peak in the second decade. The tumors are usually asymptomatic, but large lesions can produce a swelling of the affected jaw. The radiographic appearance is that of a demarcated unilocular radiolucency, usually associated with an impacted tooth.

ADENOMATOID ODONTOGENIC TUMOR

It is possible to observe a well-demarcated radiolucency surrounding the crown of an impacted tooth. Small foci of radiopaque material are often present in the radiolucent lesion. Also the tumors that are not associated with an impacted tooth present as a well-demarcated radiolucency containing small-to-moderate amounts of radiopaque material. This tumor is most frequently located in the anterior maxilla.

CALCIFYING ODONTOGENIC CYST

This lesion is found in the tooth-bearing region of the jaws, and most cases are located anteriorly to the first permanent molars. Seventy-four percent of maxillary lesions affect the anterior maxilla, whereas 56% of lesions are in the anterior area. Radiographically the lesions appear as unilocular or multilocular well-defined radiolucencies, and may be associated with an unerupted tooth.

AMELOBLASTIC FIBROMA

This tumor has a peak occurrence in the second decade. Males are more frequently affected. More than 80% of the lesions occur in the mandible, usually in the canine-molar region. It produces an asymptomatic swelling of the jaw. Ameloblastic fibroma does not tend to infiltrate between the bone trabeculae, but it grows by gradual expansion. Radiographically it appears as a unilocular or multilocular radiolucent region with a smooth outline, often with a sclerotic border, associated with an unerupted tooth.

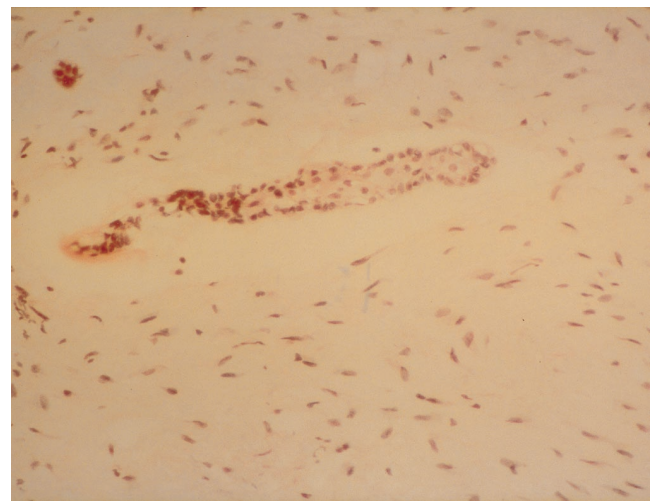


Fig. 2. Microscopic appearance of the tumor. It is possible to observe a fibromyxoid stroma and the presence of cords of odontogenic epithelium. Hematoxylin-eosin $\times 100$.

MYXOMA

A great variation in their radiographic appearance exists; both small unilocular lesions between the roots of teeth and large multilocular tumors which displace teeth and less frequently tend to resorb the roots are found. Expansion of cortical bone is present in the majority of cases. When the lesions are large or multinucleated, their appearance can be similar to an ameloblastoma. Very often it is possible to observe very fine-bone trabeculae inside the radiolucencies. Also the borders show a great variation, and they may be well demarcated or ill defined.

CENTRAL GIANT CELL GRANULOMA

This is a reactive bone lesion that is microscopically characterized by multinucleated giant cells immersed in a stroma composed by spindle-shaped mesenchymal cells. Its most common location is the anterior portion of the mandible, and it affects mainly young patients, especially females. Its radiographic appearance is a unilocular or multilocular radiolucent lesion with distinct margins.

DISCUSSION

The microscopic appearance of the tumor was that of a fibrous connective tissue with a large quantity of ground substance giving a fibromyxoid quality. Cords of odontogenic epithelium were also present (Fig. 2). These cords were composed of small, round epithelial cells not exhibiting stellate reticulum and peripheral palisading. The definitive microscopic diagnosis was odontogenic fibroma. The great variability of radiological appearances in odontogenic fibroma emphasizes that despite its rarity this tumor should be considered in the differential diagnosis of all abnormal radiolucencies of the jaws.

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