

## **Periapical Cemental Dysplasia**

### **Overview**

Periapical Cemental Dysplasia is a part of a group of disorders that pertain to the benign fibro-osseous lesions of bone, where bone is replaced by fibrous tissue originating from fibroblasts of the periodontal ligament called, cemento-osseous dysplasia. Periapical cemental dysplasia, focal cemento-osseous dysplasia, and florid cemento-osseous dysplasia are the three sub-types of cemento-osseous dysplasia which are based on certain clinical, radiological, and pathological criteria. In particular, periapical cemental dysplasia is a lesion that manifests in the anterior region of the mandible. The World Health Organization defines periapical cemental dysplasia as, “a non-neoplastic lesion affecting the periapical tissues of one or more teeth” (Eversole, 2008).

### **Etiology**

Periapical cemental dysplasia is a rare non-neoplastic condition that arises when normal bone is replaced by fibrous connective tissue that contains abnormal bone or cementum (Nam, 2022). It primarily afflicts the tooth-bearing sites of the anterior area of the mandible near the periodontal ligament around the apex of the tooth.

## **Clinical Presentation**

Periapical cemental dysplasia is an asymptomatic condition that the patient is not usually aware that they have it. The teeth involved are vital and it is usually discovered via routine radiographs where it is made apparent. It can occur as a single bone lesion or in multiple sites. The lesion grows in three stages: osteolytic, cementoblastic, and mature. The lesion usually manifests in the mandible in the area of the root apex of the mandibular incisors and canines.

## **Demographic**

Although periapical cemental dysplasia is uncommon its occurrence is prevalent among Black women between the ages of 30-50 years old.

## **Biopsy / Histology / Radiographs**

A biopsy is usually not needed to ascertain periapical cemental dysplasia. Diagnosis is based on clinical and radiographic presentation. “The histology of periapical cemental dysplasia consists of a fibrous stroma with loose collagen and varying cellularity in association with mineralized tissues. The mineralized portion is composed of woven or lamellar bone, osteoid, and cementum-like material. As lesions mature, they become denser and less cellular” (Nelson, 2019).

Radiographically, in the initial stage (osteolytic stage), circular/elliptical resorption areas are seen at the apex of the root. In the second stage (cementoblastic stage), small calcifications can be seen within the lesion causing a mixed radiolucent/radiopaque image. In the final (mature stage) the lesion becomes completely calcified and exhibits a complete radiopaque image.

## **Differential Diagnosis**

In the early stages of periapical cemental dysplasia, the clinical and radiographic features can resemble the characteristics of a radicular cyst or a radicular granuloma. It is therefore essential that the vitality of the affected teeth be determined to ascertain the proper diagnosis.

### **Treatment**

In the case of periapical cemental dysplasia, there are no treatment options since the phenomenon is self-limiting and will resolve on its own. Granted that the patient is asymptomatic they should have radiographs taken periodically to observe its progression through all three stages.

### **Prognosis**

If the patient remains asymptomatic the prognosis of periapical cemental dysplasia is good since there is no treatment. It is harmless and self-limiting so it will resolve on its own. However, if the patient exhibits any symptoms further tests could be done to determine another probable diagnosis.

### **Professional Relevance**

As a dental hygienist periapical cemental dysplasia is relevant due to its prevalence in middle age Black women. In its early stages, it can be easily confused with a periapical pathology such as a periapical granuloma or periapical cyst. This can be ruled out by deducing if the tooth is vital. Luckily, periapical cemental dysplasia is harmless but it is good to notify the patient of this phenomenon and monitor its progress over time. It is the job of the dental hygienist to be knowledgeable of these types of phenomena so we can explain it to the patient in layman's terms

so that the patient has a better understanding of this particular ailment and be comforted by the fact that it is innocuous even though it is indeed an abnormal occurrence.

## Bibliography

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