



Periapical Cemento-Osseous Dysplasia – A Case Report

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Abstract:

The diagnosis by an oral pathologist is frequently challenging for benign fibro-osseous lesions that include fibrous dysplasia, ossifying fibroma and cemento-osseous dysplasia. Though their microscopic appearance may be similar, they have differences in management and prognosis. Hence, an accurate correlation of the history, clinical presentation, and radiologic findings with the histopathology is crucial for a definitive diagnosis. In this case report, we present a lesion of cemento-osseous dysplasia in the mandibular anterior region in a 47-year old female.

Keywords: *Cemento-Osseous Dysplasia, Fibro-Osseous Lesion, Mandibular Anterior Region, Peri-Apical*

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1. Introduction

Benign fibro-osseous lesions constitute a group of conditions that share clinical, radiological and histopathological features. Fibrous dysplasia, Ossifying fibroma and Cemento-osseous dysplasia are three major forms frequently encountered in practice. The oral pathologist should correlate multiple factors to diagnose these lesions accurately as they show fibrous stroma with varying amounts of mineralized product. ^[1, 2] A methodical assessment is crucial to arrive at the appropriate diagnosis.

Summerlin and Tomich coined the term “Focal cemento-osseous dysplasia”. It is given to lesions in the periapical region of vital teeth in the posterior quadrant of the jaws. If the same lesion is seen in the periapical region of anterior teeth, it is called Periapical cemento-osseous dysplasia (PCOD). ^[3]

It is usually asymptomatic and identified during routine radiographs. If they present in close contact to the roots, it can create confusion between periapical diseases or similar lesions requiring histopathological confirmation. ^[4]

2. Case Report



A 47-year-old female reported to the outpatient department of Oral surgery with mild but continuous pain the lower right front and back region for the past one month. The pain was aggravated on chewing and got relieved by taking pain killers. Past medical history, surgical history and dental history was non-contributory. Intra-oral examination revealed poor oral hygiene. Root stumps were present in 37. Few missing teeth and fixed bridge was also noted. A round swelling with smooth margin measuring approximately 1x1.5 cm in size extending from 42 to 44 region. It was also tender on palpation. 42, 43 and 44 were vital and responded to pulp testing.

Radiographic examination revealed an irregular radiopacity surrounded with a well-defined radiolucent border in the periapical region of 42, 43 and 44. (Figure 1) It was provisionally diagnosed as ossifying fibroma. An incisional biopsy was sent to the Department of Oral pathology for histopathological evaluation.

Gross finding revealed multiple hard tissue bits that were kept of decalcification in 5% Nitric acid before regular tissue processing. Histopathological findings include numerous bony trabeculae of variable size and shape along with amorphous mineralized material dispersed in a cellular fibrous stroma (Figure 2 & 3).

Correlating the clinical, radiological and histopathological findings, a final diagnosis of Periapical cemento-osseous dysplasia (PCOD) was made.

The patient was advised regular follow-up to monitor the lesion.

3. Discussion

PCOD belongs to the group of non-neoplastic reactive lesions. It can occur in the periapical region of vital teeth or in the sites of prior extractions. [5]

The osteolytic stage present as initial radiolucency. It changes into a mixed radiolucent-radiopaque appearance with poorly defined borders in the osteosclerotic stage. The gross findings of multiple fragments aided in definitive diagnosis of PCOD. Ossifying fibromas which are neoplastic but present with a capsule that can be removed in toto. [4]

Ginger root pattern of bony trabeculae along with diffuse hemorrhage delineates PCOD from Ossifying fibroma [4,5]

No specific treatment is required for PCOD. But a biopsy is mandatory for definitive diagnosis. Regular followup is crucial to monitor the progress to florid variety that can involve multiple sites in the jaw bones. [4,5]

Differentiation of endodontic and non-endodontic origin of the radiolucent lesion in the periapical region is crucial to avoid unnecessary endodontic treatment. Cemento-osseous dysplasia usually involves middle aged Asian females, often recognized in advanced stage and many lesions close spontaneously. It is divided into three subtypes – periapical, focal and florid [6].

In the 4th edition of WHO classification of Head and Neck tumours, cemento-osseous dysplasia was classified in the fibro- and chondro-osseous lesions under the group of benign odontogenic tumors and allied lesions. [7] This highlights the odontogenic origin arising from the undifferentiated fibroblasts of the periodontal ligament and it specifically occurs in the tooth-bearing region of the jaws [6]

PCOD connects the root apex region of the premandibular teeth, affects one or more teeth and is usually asymptomatic. It often leads to a false diagnosis, which may cause unnecessary intervention. [8]



Differential diagnosis includes various forms of periodontitis, periapical disease, Paget's disease, Fibrous dysplasia, Ossifying fibroma, cementoblastoma and chronic sclerosing osteomyelitis.^[6]

4. Conclusion

We present a case of PCOD in this case report. Patient should have adequate oral prophylaxis and good maintenance to avoid periodontal disease. If the involved site is planned for implants, the lesion must be surgically removed.

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Figures & Legends:

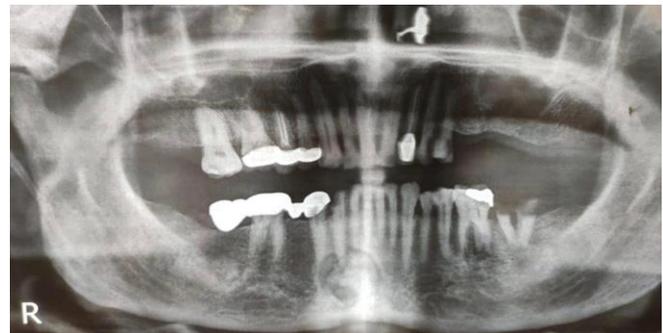


Figure 1: the orthopantomograph with periapical lesion in 42-44 region

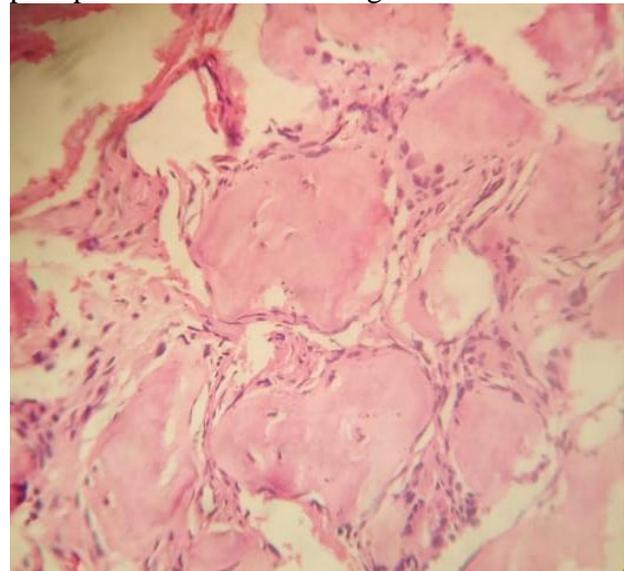


Figure 2: photomicrograph depicting cellular fibrous connective tissue stroma with irregular bony trabeculae (H & E 20x)

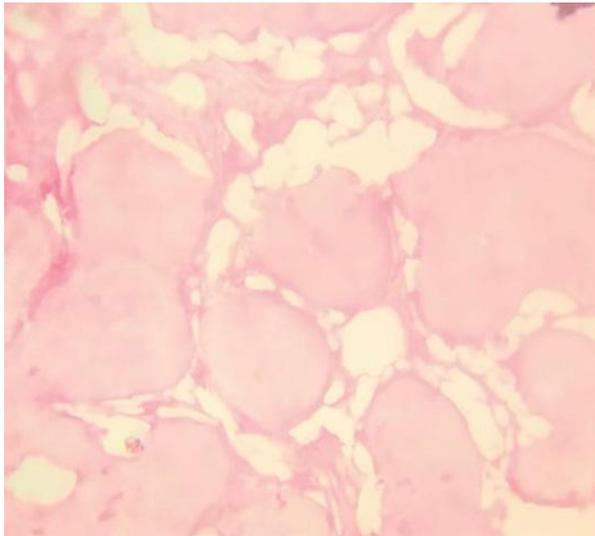


Figure 3: photomicrograph depicting amorphous mineralized deposits (H & E, 20x)