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Periapical cemento-osseous dysplasia: Case report

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ABSTRACT

Background: Periapical cemento-osseous dysplasia (PCOD) is an asymptomatic non malignant lesion which is rare where healthy bone is replaced by fibrous tissue, with meta-plastic bone and neo-formed cement. Its pathogenesis remains unknown it can represent a reactive and dysplastic process, so that dentist should have knowledge about this lesion to avoid inappropriate approaches which can compromise the patient's health. *Case report:* Patient report to the clinic complaining of numbness in the right lower lip. Clinical examination reported no H/O swelling & pain in relation to 46. IOPAR shows 46 root canal treated tooth with satisfactory obturation & radiolucency in periapical region of distal root of 46 & 47. Due to patient's discomfort Cone beam computed tomography [CBCT] was taken, which showed large radiolucent lesion with irregular & discontinuous borders with diagnosis as Periapical cemento-osseous dysplasia. *Conclusion:* Periapical cemento-osseous dysplasia can mimic other types of cemento-osseous dysplasia and benign lesions where the dentists need to be aware of asymptomatic intra osseous lesions and should have conventional therapeutic approach.

Keywords: Periapical Cemento-Osseous Dysplasia, CBCT, Cemento-Osseous dysplasia

1. INTRODUCTION

Periapical cemento-osseous dysplasia is a pathological entity resulting from bone and cementum which affects periapical region. It is a self limiting problem where osseous cortex is not expanded and progressive growth is rare. It is also defined as a reaction and non neo plastic process developing in periapical tooth area characterized by normal bone replacement by fibrous tissue and meta-plastic bone. Francine Samie Morika had mentioned in their study that Ever sole et al categorize the lesion cement osseous dysplasia in to focal and florid cement osseous dysplasia (Francine Samie Morika et al., 2012). Florid cemento-osseous dysplasia characterized by multi focal involvement of the jaw (Marco Roghi et al., 2014). Radio graphically it appears as sclerotic masses located in multiple area's involving two /more quadrants usually in tooth bearing area's often confined to the alveolar bone. Management of this type of lesion may be strenuous and unsatisfactory (Dagistan et al., 2007). Focal cemento-osseous dysplasia is a single lesion involving tooth bearing or

edentulous area. Two or more teeth in the mandibular arch are affected and radio graphic appearances vary depending on the site of development.

PCOD and Focal cement osseous dysplasia are two different forms of same condition with different location (Pasha Zameer et al., 2013). PCOD is a rare asymptomatic lesion whose pathogenesis is unknown, where the lesion undergo self healing. The lesion was usually radio graphically detected and requires no treatment. Since the fibro osseous lesion's tends to have wide range of presenting clinical and radio graphic appearance, the aim of this case report is to present the clinical and radio graphic findings of PCOD which helps in diagnosis and treatment planning for the practioner's.

2. CASE REPORT

A female patient of age 46 year's came to clinic with history of RCT in relation to 46 & Fixed partial denture in relation to 44, 45, 46, 47 & 48. Patient complaints of partial numbness and paresthesia in the right half of the lower lip. Patient gives H/O no pain, no systemic disease and communicable diseases. No H/O any medications. No any family member in her family had similar complaint or problem. Patient gives H/O partial numbness and sensation loss only after root canal treatment procedure. There was no any H/O discomfort or numbness in the particular region. During clinical examination it was noticed that root canal treatment was done in relation to 46 and fixed partial denture was given in relation to 44, 46 and 48. 45 and 47 were missing, non tender on percussion and palpation and no any oral signs (extra oral/intraoral swellings, vestibular obliterations), nor any other lesions were present. IOPAR was taken and a radiolucent image was noticed in the periapical region of root canal treated tooth in relation to 46 & obturation was satisfactory.

To evaluate the lesion patient was advised to get CBCT in relation to 46 & 47 tooth bearing areas. CBCT image revealed radiolucent lesion as shown in (Figure 1) in the periapical region in relation to 46 & 47. The lesion as shown in (Figure 2 & 3) was extending in the periapical region of 46 & 47, measuring mesiodistally about 12mm, bucco lingually the lesion appears perforating the buccal cortical plate and the lesion measures 5-9mm. Supero inferiorly lesions measures about 12mm. Margins of the lesion was irregular and had discontinuous borders. The internal structure of the lesion is not uniform and present with radiolucency interspersed with radiopacities. The lesion was seen close to the inferior alveolar canal, breach in the walls of inferior alveolar nerve canal resulting in partial loss of sensation of the lower lip. Apart from that the lesion shows perforations of the buccal cortical plate. The lesion appears as a well defined periapical rarefaction with radiolucency and radiopacity. The provisional diagnosis was calcified periapical cyst and periapical cement osseous dysplasia.

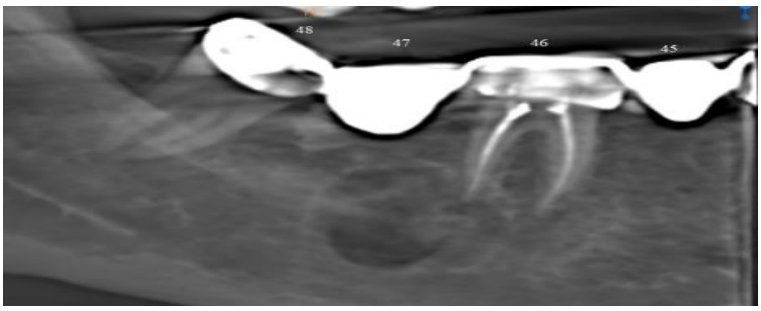

Figure 1 Shows radiolucency in the periapical region of 46 & 47

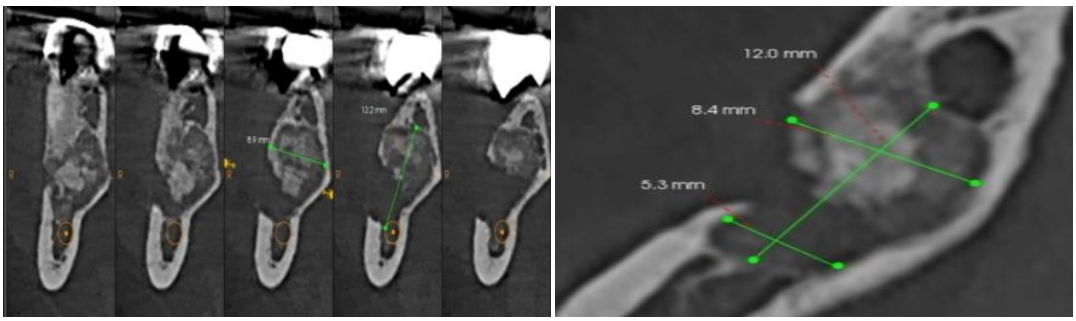

Figure 2 & 3 lesion shows perforating the buccal cortical plate & breaching the inferior alveolar nerve

To combat the loss of sensation the patient was advised to take tab pregabalin 75mg once daily for 10days and kept under observation. Patient was recalled after 2 months for clinical follow up. Patient was gaining sensation & she was advised to take

same medication for another 10 days and recalled after 3 months. Patient was advised to get an OPG (Figure 4) the panoramic radio graph shows radiopaque lesions in periapical region of 46 & 47. The patient had completely recovered from paresthesia. Therefore the diagnosis was Periapical cemento-osseous dysplasia.

Figure 4 Shows Mixed radiopaque & radiolucent lesion in the periapical region in relation to 46 & 47

Surgical intervention was planned for the lesion, since it was asymptomatic and previous literature documented regarding conventional therapeutic approach the treatment plan gave priority for conventional technique rather than surgical intervention. Since the lesion was healed and patient was recovered from paresthesia surgical intervention & biopsy procedures were not applied. Since the patient had regular follow up interval it was not much difficult for the clinician to record the signs and symptoms of the lesion and to take decision regarding the therapeutic approaches.

3. DISCUSSION

Benign fibro osseous lesions are disturbances in bone metabolism where healthy bone is substituted by connective tissue matrix (Zenioun et al., 2014). Periapical cemento-osseous dysplasia is a clinical condition where there is no pain whose etiology remains inconclusive. In this present case report, female patient came after root canal treatment where lesion was diagnosed radio graphically. PCOD exhibit radiolucency in the initial stage which is considered as osteolytic stage and after 6 months follow up lesions appeared as radiopaque as in maturative stage. The diagnosis of our case is done radio graphically & biopsy is not indicated as few authors considered it to be contraindicated (Senia and Sarao, 2015). During the initial stage the diagnosis can be misdiagnosed as apical periodontal cyst, chronic osteomyelitis. During cementoblastic stage the differential diagnosis would be ossifying /cementing fibroma, odontoma & osteoblastoma. But in this case the clinical findings and radio graphic interpretations confirm the diagnosis as PCOD (Francine Samie Morika et al., 2012). After the follow up patient did not report any discomfort at the lesion where the lower lip respond to the external stimuli and panoramic radio graph shows increased radiopacities & patient was not subjected to histopathological analysis.

Histopathological analysis in PCOD is contraindicated as such procedure may result in inoculation of bacteria into the lesion where the arteries, veins, capillaries are not able to pierce the thick cortical margins surrounding the lesion (Sethusa et al., 2009). Author's also mentioned that when the lesion comes in contact with external environment such as tooth extraction, surgical biopsy and erosion of overlying mucosa lesion get's infected. Therefore mode of treatment should be conservative unless lesion is symptomatic (Zenioun et al., 2014). It is a common fibro osseous lesion encountered during clinical practice where it is clearly demarcated from other benign fibrous osseous lesions such as fibrous dysplasia, ossifying fibroma, paget's disease and sclerosing osteomyelitis on the basis of combined clinical, radio graphic and histopathological features.

Paget's disease of the bone has a cotton wool appearance. It affects the bone and shows loss of lamina dura. It is polystotic, involving other bone such as spine, femur, skull, pelvis and sternum. During this stage it shows increase in alkaline phosphate levels (Dagistan et al., 2007). Chronic diffuse sclerosing osteomyelitis extends from lower body of the mandible and may penetrate the ramus and entire body of the mandible (Smith et al., 1988; Groot et al., 1996). The Cementoma appears radio graphically as a well defined radiopaque dense mass with a radiolucent margin, enveloping the root portion of a tooth that usually shows signs of resorption and fusion with the lesion (Marco Roghi et al., 2014). The most accepted hypothesis of PCOD origin is from periodontal ligament. Melrose (1976) states that it is associated with teeth and confined to the alveolar process superior to the inferior alveolar canal strongly suggesting it has an odontogenic origin. Some of the authors suggest that it occurs due to hormonal imbalance as it is

high in middle age females. Based on these findings diagnosis of PCOD is essential, in which most of the cases doesn't require treatment (Macdonald Jankowski et al., 2008).

Limitations of the study

The clinical and radio graphical finding of particular lesions doesn't give adequate information about the lesion. Histopathological examination results give much information about the lesion so that the final concluding remarks will be based on clinical, radiological and histopathological examinations. But in this study histopathological examination was not carried out due to previous case report studies contraindicated the biopsy procedures in PCOD cases.

4. CONCLUSION

The concomitant occurrence of PCOD is unusual. This case report gave a unique finding's to diagnose PCOD through radio graphic interpretation. It would be also beneficial to study the histopathological features after the maturative stage. It is very important for the clinician to identify and differentiate COD lesions**.**

Informed consent

Inform consent was obtained from the patient for publication of this report and accompanying images.

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Conflict of interest

The authors declare that there is no conflict of interests

Data and materials availability

All data associated with this study are present in the paper.

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