Case Report
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Odontogenic Keratocyst Imitating Lateral Periodontal Cyst: A Case Report

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ABSTRACT

Collateral Odontogenic Keratocyst (OKC), a rare variant of OKC, is usually present in the mandibular premolar area and is often confused with lateral periodontal cysts due to common features. A 58-year-old male patient presented with painless swelling in mandibular left premolar area. The clinical and radiographical features were suggestive of lateral periodontal cyst. Surgical enucleation followed by peripheral ostectomy was performed and sample was sent for histopathological examination. The histopathological study demonstrated typical features of OKC. Owing to the high recurrence rate, the patient is kept on regular follow-up. During follow-ups, there have been no clinical and radiographical signs of recurrence.

Keywords: Histopathology; lateral periodontal cyst; odontogenic keratocyst.

INTRODUCTION

Odontogenic Keratocyst (OKC) is a distinctive form of developmental odontogenic cyst which was first described by Philipsen in 1956. It is the third most common odontogenic cyst which is frequently observed in the mandibular angle and ramus area. It is locally aggressive, often leading to bone expansion and soft tissue invasion.[1] Collateral OKC is a variant of OKC introduced by Main in 1970, which is usually found in between the roots of mandibular premolars. It is often indistinguishable clinically and radiographically from lateral periodontal cysts, however can be differentiated histopathologically.[2] It is believed to arise from remnants of dental lamina.

CASE REPORT

A 58-year-old male reported to the Department of Periodontology and Oral Implantology with the chief complaint of painless gum swelling in the lower left back region of the jaw for six months. Four months back, he had visited a dental clinic where the content of the swelling was removed. It resolved for one month, however, the swelling reappeared and was slowly increasing. Extraoral examination did not reveal any facial asymmetry or lymphadenopathy.

Upon clinical examination, a well-circumscribed, nodular swelling measuring about nine millimetres in diameter, was observed at the junction of the buccal attached gingiva and alveolar mucosa in between the teeth 34 and 35 (according to two-digit tooth numbering system, Figure 1). The swelling was fluctuant and non-tender. The overlying mucosa and gingiva were seen to be normal. On periodontal examination, periodontal pocket, gingival recession, and tooth mobility were not detected in the associated region. Both the premolars were vital upon electric pulp testing and showed normal response to thermal tests.

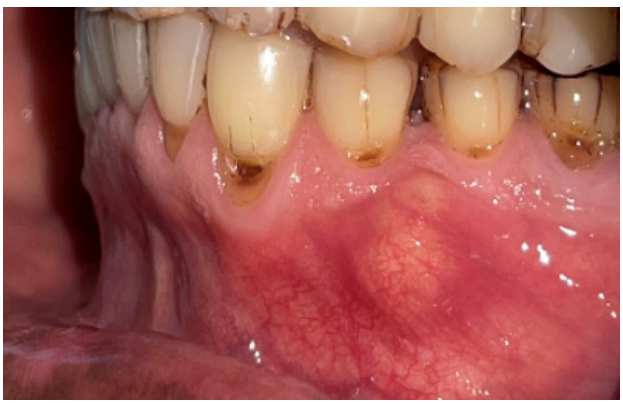

Figure 1: Clinical view showing nodular mass between premolars.

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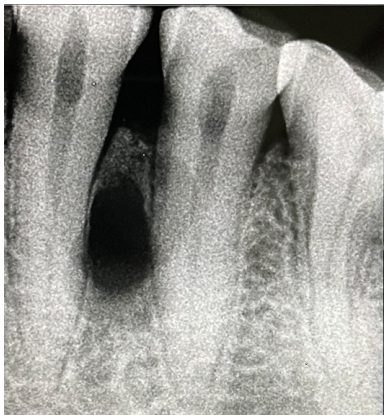

Figure 2: Baseline radiograph showing pear-shaped radiolucency between roots of the premolars.

An intraoral peri-apical radiograph (IOPAR) of the area revealed a pear-shaped radiolucency located between the cervical and middle thirds of the roots of the premolars (Figure 2). Loss of adjacent lamina dura was observed while roots showed no evidence of resorption. Based on clinical and radiographical findings, a provisional diagnosis of a lateral periodontal cyst was made.

In the initial phase, full mouth supragingival and subgingival scaling were performed. Routine blood investigation was performed and results were within normal range. Surgical enucleation of the mass followed by histopathological examination was planned.

After getting informed consent from the patient, the operative site was anaesthetised (Inferior alveolar nerve block) using 2% Lignocaine with 1:200,000 adrenaline. Using Bard Parker blade number 15, a crevicular incision was made on the buccal aspect extending from the canine to the first molar. Vertical releasing incision was made on mesiobuccal line angle of the first molar. Full thickness mucoperiosteal flap was reflected exposing the entire lesion (Figure 3).

The cystic capsule was detached from the neighbouring bone, and a complete enucleation of the lesion was done using a surgical curette. Peripheral ostectomy was performed in the bony cavity and the sharp bony edges were smoothened using slow speed handpiece and round carbide bur (Figure 4). The surgical site was irrigated with a povidone-iodine saline solution. The excised mass was placed in 10% neutral buffered formalin and sent for histopathological examination. Interrupted sutures were placed using a 4-0 silk suture (Figure 5).

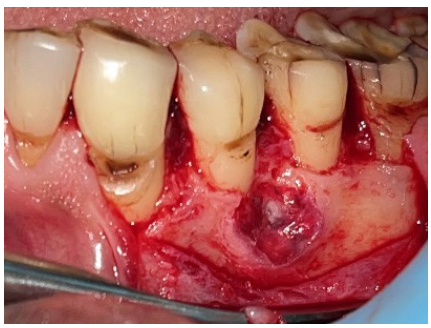

Figure 3: Soft tissue mass after flap reflection.

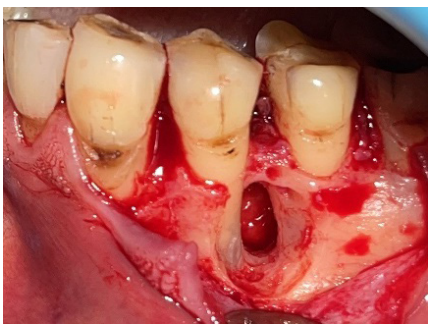

Figure 4: After enucleation of cystic mass.

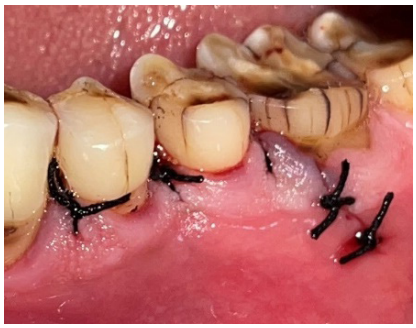

Figure 5: After suturing.

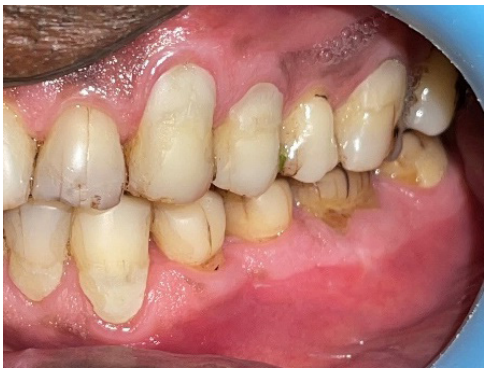

Figure 6: Clinical view at six months follow-up.

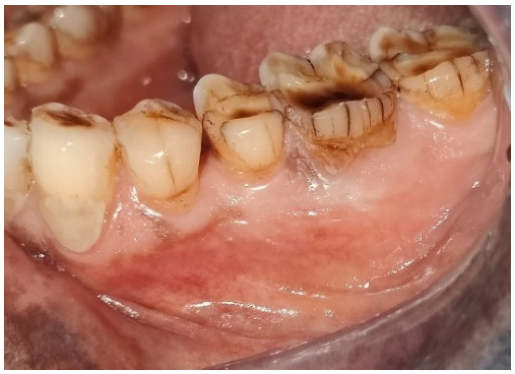

Figure 7: Clinical view at one-year follow-up.

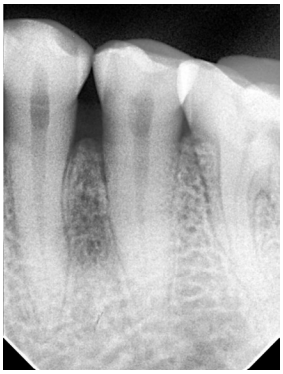

Figure 8: Radiographic view at one-year follow-up.

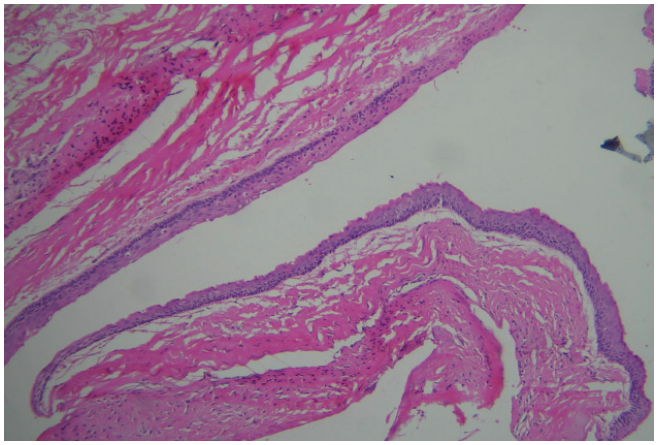

Figure 9: Histopathological section at 10X magnification.

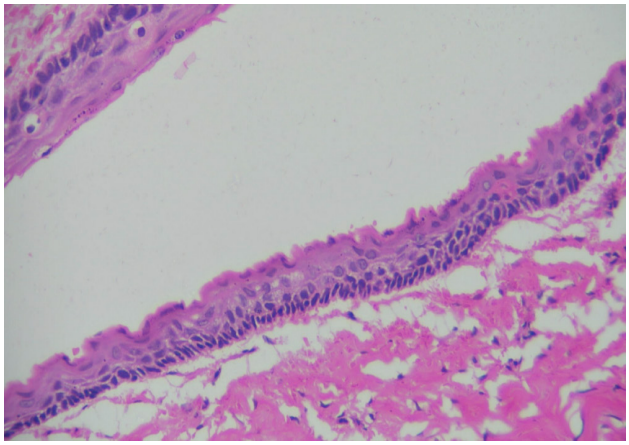

Figure 10: Histopathological section at 40X magnification.

Post-operative instructions were provided. The patient was prescribed analgesic (Ibuprofen 400 mg every eight hours) for three days and mouth rinse (Chlorhexidine 0.2%) for two weeks. Sutures were removed after one week and healing was found to be uneventful.

The patient was recalled after one, three, six months, and one year post-operatively (Figures 6, 7). There were no signs of recurrence. Radiographs at six months and one year revealed a progressive increase in radio-opacity signifying bone fill (Figure 8). The patient is kept under regular follow-up.

The histopathological examination revealed parakeratotic stratified squamous epithelium along with surface corrugation and flat epithelial-connective tissue interface. Basal layers of epithelium showed a palisading pattern. Underlying connective tissue was loose fibro-cellular with few inflammatory cells infiltrates predominantly lymphocytes and plasma cells (Figures 9, 10). Based on clinical, radiographical, and histopathological features, a final diagnosis of odontogenic keratocyst was made.

DISCUSSION

Odontogenic keratocysts represent 10-15 % of all odontogenic cysts. It can be of primordial origin (60% of total cases) when it arises from remnants of dental lamina and is not associated with teeth. It can occur at any age but is most frequently observed in the second and third decades of life with a male predominance of 1.4 compared to females.[3] In the above case, it was observed in a male in his sixth decade.

A small lesion of OKC is unlikely to be diagnosed on routine examination and is detected accidentally on radiographical examination. It normally extends in the medullary cavity along the path of least resistance rather than expanding the cortex. In later stages, the patient complains of swelling, pain and discharge.[4] In the present case, even the small lesion

caused resorption of the buccal cortical plate which is contrasting to the usual presentation.

Radiographically, OKC normally presents as either multilocular or unilocular radiolucency with sclerotic margin.[5] In this case, it was unilocular, pear-shaped radiolucency lacking sclerotic border which is not frequently observed.

OKC shows a characteristic 'picket fence' or 'tombstone appearance' of the basal layer of epithelium on histological examination, which was observed in this case.

Management of OKC may be done by a conservative or aggressive approach. The treatment modality is determined based on cystic size, patient age, proximity to nerve, and surrounding cortical bone perforation. The conservative approach involves simple enucleation, curettage or marsupialisation. The aggressive approach involves peripheral ostectomy, chemical curettage using Carnoy's solution, cryotherapy, and resection.[6] Studies have shown that treatment of an odontogenic keratocyst with peripheral ostectomy with or without the use of Carnoy's solution, resulted in a reduction in the rate of recurrence equally.[7] In this case, surgical enucleation with peripheral ostectomy was performed.

Odontogenic keratocyst is known for its aggressive behaviour and high recurrence rate (2.5-62.5%).[8] The high recurrence rate of OKC can be attributed to its incomplete removal as it is difficult to enucleate completely owing to its thin and fragile capsule. Other reasons are the presence of satellite cysts and epithelial islands.[9] Cases of malignant transformation have been reported.[10] In the present case, no signs of recurrence were observed till one year of follow-up probably due to early and aggressive intervention.

Conflict of interest: None.

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