



RESEARCH ARTICLE

LATERAL PERIODONTAL CYST INVOLVING MAXILLARY TEETH: CASE REPORT

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ABSTRACT

Lateral periodontal cyst is a developmental odontogenic cyst, mostly diagnosed radiographically as a well circumscribed or round radiolucency. Its location can often lead to misdiagnosis of having an endodontic origin. We report a classic case of lateral periodontal cyst arising in the canine-premolar region of a middle aged male patient with a brief on clinical features and review of literature.

INTRODUCTION

Lateral periodontal cyst (LPC) is a developmental type of odontogenic cyst located lateral to or between the roots of vital teeth (Barnes, 2005). It is said to arise from cell rests of dental lamina and is an intraosseous equivalent of gingival cyst of adult (Saygun, 2001). The most common location of the cyst is mandibular premolar region. It is usually asymptomatic and is detected on a radiograph presenting as a well defined ovoid radiolucent area with a sclerotic border (Altini, 1992). We report a case of lateral periodontal cyst (LPC) arising in the canine-premolar region of right maxillary portion of jaw in a 35 years old male patient.

Case report

A 33 years old male patient presented with a chief complaint of gingival swelling on right side since 20 days. The swelling was present on the facial aspect of the gingiva i.r.t 24, 25 and was creamish white in color with oval shape, measuring about 1.5 cm in dimensions. The swelling was non tender and painless. The associated tooth was root canal treated. There was no discharge from the swelling. Radiographic examination revealed an ill defined radiolucency around the middle third of the root i.r.t 25, between the roots of 24 and 25, without any

root resorption or deviation. On the basis of clinical and radiographic findings a provisional diagnosis of Radicular cyst or any other inflammatory cyst was made. The case was posted under Local Anesthesia. The cyst capsule was removed from the adjoining bone and the lesion was enucleated. Histopathological examination revealed thin nonkeratinized epithelium which was two to four cell layers thick. The epithelial lining consisted of cuboidal cells with clear and vacuolated cytoplasm. Focal thickened plaques of the proliferating epithelium were seen projecting into the cystic lumen. The underlying connective tissue stroma was moderately dense and free of chronic inflammatory cell infiltrate. The overall features were suggestive of Lateral Periodontal Cyst. The patient was on follow up for one year and no further complications were noted.

DISCUSSION

Lateral periodontal cyst is a developmental odontogenic cyst associated with vital teeth (Barnes, 2005). LPC occurs mostly in 5<sup>th</sup> to 7<sup>th</sup> decade of life with no specific sex predilection (Ortega, 2007). The most common site is mandibular premolars and maxillary anterior region (Shear, 1994). The present case was associated with maxillary first premolar. It is mostly asymptomatic and associated teeth are vital (Barnes, 2005). But the present case was root canal treated. Occasionally a small swelling of alveolar mucosa or gingival may be seen (Ortega, 2007). The present case reported with a

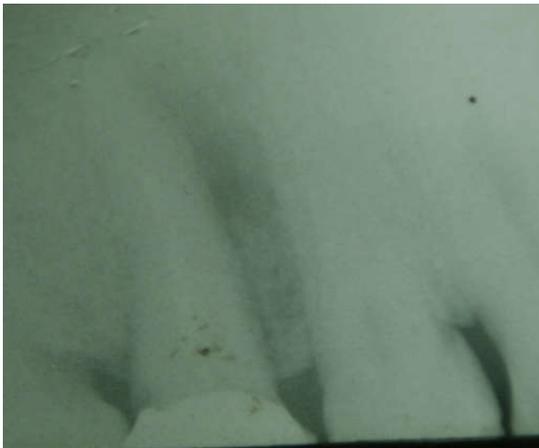
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small swelling in the gingival mucosa. LPC is usually diagnosed on a routine radiograph (Altini, 1992). LPC accounts for 0.8 to 2% of all the odontogenic cysts (Barnes, 2005). Few pathological hypotheses have been suggested for the pathogenesis of LPC which includes reduced enamel epithelium, remnants of dental lamina and cell rests of Malaseez (Barnes, 1994).

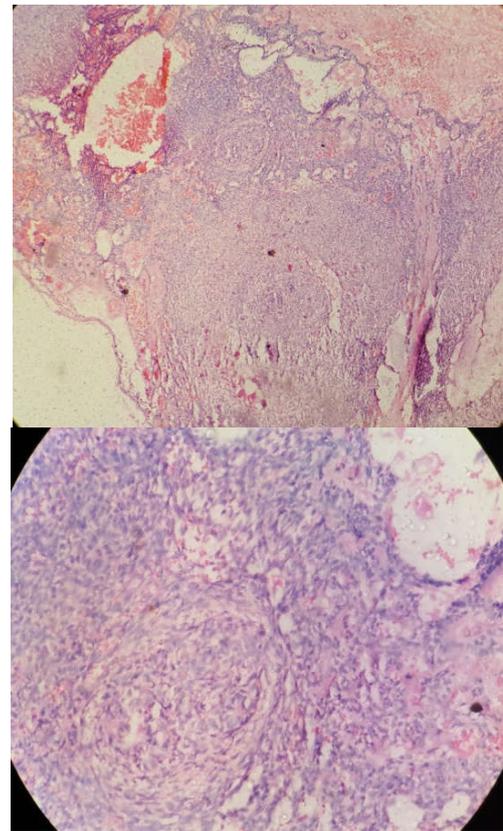


**Fig 1. Intraoral examination reveals gingival swelling associated with maxillary 1<sup>st</sup> premolar**



**Fig 2. Intraoral periapical radiograph reveals ill defined radiolucency associated with mid root portion on the lateral surface of Root canal treated maxillary 1<sup>st</sup> premolar**

The first hypotheses states that the cyst is lined by nonkeratinized epithelium reminiscent of the reduced enamel epithelium. The second theory relates to remnants of dental lamina, supported by the glycogen rich clear cells of LPC which are also seen in dental lamina. Third theory supports the cell rests of Malaseez, present on the root surface which is the prime position of LPC. The diagnosis of LPC is made on the location of the cyst (Eliasson, 1989 and Formoso Senande, 2008). Radiographically, it presents as a well defined radiolucent area with a radiopaque rim not more than 1cm in diameter located laterally on the root surface of a vital tooth. Present case was root canal treated. The multicystic variant of lateral periodontal cyst called as Botryoid cyst is known due to its macro and microscopic features resembling bunch of grape (Eliasson, 1989; Formoso Senande, 2008 and Angeloupoulou, 1990). Differential diagnosis of LPC includes odontogenic keratocyst occupying the lateral position. Odontogenic keratocyst can be differentiated on the basis of its aggressiveness and its recurrence potential and its association with basal cell nevus syndrome. Lateral variant of dentigerous cyst should be differentiated from LPC on the basis of its involvement with an impacted tooth.



**Fig. 3. Photomicrograph showing nonkeratinized epithelium with glycogen rich cells. Also note numerous engorged capillaries with extravasated RBC's. The underlying connective tissue stroma is moderately dense and free of any inflammatory cell infiltrate**

LPC can be differentiated from an inflammatory cyst by its size. The former does not reach fraction of more than 1cm while as latter grows continuously (Myoung, 2001). Histopathology reveals a thin nonkeratinized epithelium 2 to 4 cell layer thick resembling reduced enamel epithelium. The lining epithelium produces thickening referred to as plaques are commonly found. Occasionally, glycogen rich clear cells are noted in the lining epithelium. The underlying connective tissue stroma is free of inflammation and consists of dense collagen fibre bundles. The histopathological variant of LPC known as Botryoid odontogenic cyst shows multilocular cystic appearance in the bone. Microscopically it presents as numerous cystic spaces lined by nonkeratinized stratified squamous epithelium (Hethcox, 2010 and Farina, 2010). The preferred treatment for LPC is enucleation of cyst without any damage to adjacent tooth. The lesion does not recur; but few cases of recurrence have been associated with botryoid variant (Méndez, 2007).

### Conclusion

Lateral periodontal cyst is a rare odontogenic cyst which can be considered in the differential diagnosis of lesion involving the lateral root surface of tooth. Histopathological analysis is essential to confirm the diagnosis. The treatment involves surgical enucleation. Recurrence is quite uncommon.

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