

The Peculiar Presentation of A Blue Lesion

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ABSTRACT

Background: The lateral periodontal cyst (LPC) is an uncommon but well recognized type of developmental odontogenic cyst found chiefly in adults with a mean age of 54 years with a slight male predilection. The most frequently reported location is the mandibular premolar area followed by the anterior maxilla. They do not present distinctive clinical symptoms; the associated teeth are vital, unless secondarily infected and is usually discovered during routine radiographic examination. Final diagnosis should be based on the histopathological examination. This is a case report of an unusual bluish lesion adjacent to lower left premolar-molar region, mimicking a vascular lesion clinically. The lesion exhibited negative aspiration. Radiographic and histopathologic examination confirmed the diagnosis of LPC. LPC can be considered in the differential diagnosis when a radioloucent lesion appears adjacent to the roots of vital teeth. The treatment of choice is surgical removal and subsequent histological evaluation is essential to confirm the diagnosis.

Keywords: Developmental odontogenic cyst, epithelial plaques, bluish lesion.

INTRODUCTION

Cysts have been defined as a pathological cavity having fluid, semi fluid or gaseous contents and which is not created by the accumulation of pus¹. Cysts of the jaws can be classified as odontogenic and non-odontogenic². Since the last maxillary cyst classification of the World Health Organization (WHO), in 1992 Lateral Periodontal Cysts(LPC) have been regarded as an independent condition¹.They are defined as non-keratinized, non-inflammatory developmental cysts located adjacent to or lateral to the root of a vital tooth³.

LPCs are more prevalent in adults in their 5th and 6th decades, with a male predilection³, and are rare in young individuals below 30 years of age. The most frequently reported location is mandibular canine – premolar region⁴. The

overlying mucosa is normal⁵ and the diagnosis is primarily based on histopathology features. The purpose of this article is to report a case of an unusual bluish presentation of a LPC located in a rare site between the lower second premolar-molar region in a twenty-three-year-old male patient, clinically mimicking an intravascular blood lesion or an amalgam tattoo.

CASE REPORT

A 23 old male reported to the outpatient division of Department of Periodontics, KMCT Dental College, Calicut, Kerala with the chief complaint of a painless swelling present between the lower left back teeth since 6 months. The patient reported that the swelling was an accidental finding in his mouth which was of the same size since 6 months with no previous trauma or pain from the

Received: Jan. 19, 2016: Accepted: Mar. 25, 2016

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Fig 1: Blue swelling between #35 and #36.



Fig 2: Periapical radiograph showing circumscribed radiolucent area located between #35 and #36.



Fig 3: A full-thickness mucoperiosteal flap elevated.



Fig 4: Appearance of the bone cavity after enucleation of the cystic lesion.

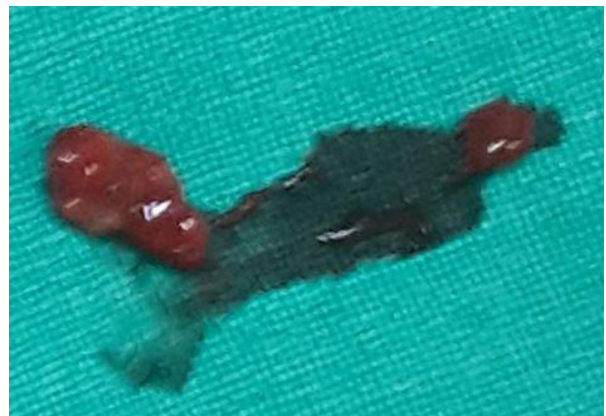


Fig 5: Excised mass.

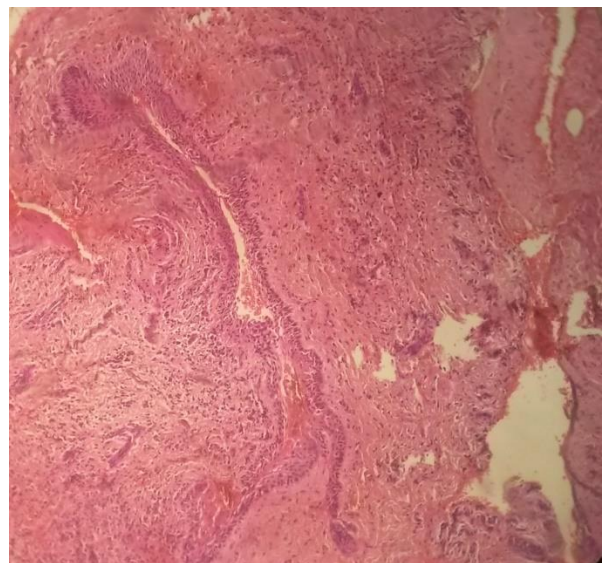


Fig 6: Histological appearance of epithelial plaques confirming the diagnosis of LPC.

site. Patient is systemically healthy and does not have a family history of any diseases. On examination a 1×1cm bluish swelling was seen between #35 and #36 region (Figure-1). Palpation of vestibular surface of the alveolar process in the region of teeth #35 and #36 was asymptomatic. Lymph nodes were not enlarged; the involved teeth had no caries and also were not discolored. Vitality test demonstrated vital pulp of teeth #35 and #36.

Intra oral periapical radiographic examination revealed a well-circumscribed, unilocular, ovoid radiolucent area, approximately 1 cm in diameter adjacent to the roots of #35, #36 without the roots being displaced (Figure-2). Aspiration done to rule out the presence of any vascular lesion was negative. On the basis of clinical and radiographic findings, a provisional diagnosis of lateral periodontal cyst (LPC) was made. No other pathological findings were present. For a final diagnosis, excisional biopsy was done. Under local anesthesia a full-thickness mucoperiosteal flap was elevated (Figure-3). The cystic capsule was detached from the adjacent bone. A total enucleation of the lesion was done using a surgical curette (Figure-4). After enucleation, the specimen was sent for histological evaluation (Figure-5).

Histopathology revealed a thin non-keratinized, stratified squamous epithelium, with a lining layer of one to five cell thickness, resembling reduced enamel epithelium (REE). The lining exhibits focal thickenings or plaques, where the cells contain glycogen. The cystic wall was fibrous, with a few fibroblasts and endothelial lined vascular channels (Figure-6). The histological findings supported the diagnosis of lateral periodontal cyst of developmental origin.

DISCUSSION

LPCs are considered as developmental odontogenic cyst with unusual occurrence that may be associated with vital teeth. LPCs represent approximately 0.8% to 0.5%⁷ of all odontogenic cysts. The pathogenesis of the lateral periodontal cyst is not fully known three possible origins: 1. The reduced enamel epithelium of an erupting tooth (there is a morphologic similarity between the cyst lining and reduced enamel epithelium) 2. Rests of the dental lamina. 3. Rests of Malassez. These structures are characteristically present in the

periodontal ligament⁷. Another concept of pathogenesis of lateral periodontal cyst is the possible origin as a primordial cyst of a supernumerary tooth germ. This possibility is supported by the high incidence of supernumerary teeth in the mandibular bicuspid region which corresponds well with the predilection of the lateral periodontal cyst in the same area².

Clinically, LPC is more prevalent in adults of 5th - 6th decades, with mean age of 54 years, and has a male predilection³. The most frequently reported location is the mandibular premolar area, followed by the anterior region of maxilla⁸. The overlying mucosa is normal⁵. In most cases the LPC does not present distinctive clinical symptoms; the associated teeth are vital, unless secondarily infected⁷. Hence, they are often discovered on routine radiographic examination. In this case, LPC showed a bluish appearance in a site distal to the usual area that is between the premolars, and in an individual who is in the third decade of life.

Radiographically these cysts present as a well circumscribed round or teardrop-shaped radiolucent area (generally not exceeding 1 cm in diameter) with a radiopaque rim, located laterally to the root of a vital tooth. In most cases the border is definitive and is even surrounded sometimes by a thin layer of sclerotic bone⁹. The periodontal ligament space as a rule is not enlarged and there must not be a communication between the cyst's cavity and the oral environment. The radiographic features may be inconclusive relative to the diagnosis.

Histologically LPC is characterized by a thin layer of non-keratinized epithelium usually 1 – 5mm thickness, which resembles the REE. Two main characteristic features, being: a) The presence of epithelial thickenings or “plaques”, which, arise from odontogenic epithelium under pathological conditions; b) Foci of glycogen-rich clear cells interspersed either in “plaques” or among the lining epithelium¹⁰. The connective tissue subjacent to the epithelium exhibits a zone of hyalinization¹¹. Inflammation is not a feature and the walls of the cyst consist of mature collagen fibrous tissue.

Differential Diagnosis is of paramount importance, since misdiagnosis may lead to extraction of teeth or unnecessary periodontal

treatment⁷. In cases of a vital tooth, LPC can still be clinically confused with cysts that develop in cases of advanced periodontal disease. Radicular cysts, in a view of their high frequency is characterized by necrosis of the affected tooth, as a result of which vitality testing proves negative. Follicular or dentigerous cysts are always associated to an impacted tooth (particularly a lower third molar), while primordial cysts are mostly located in the ascending mandibular ramus.

Anatomic radiolucencies that mimic these lesions are mental foramen, maxillary sinus and the nutrient canals;. It may resemble a cyst that develops laterally through a side channel accessory in a non vital tooth. Soft tissue variant of LPC corresponds to gingival cyst of the adult. Finally, the importance of diagnosis is especially related to the differential diagnosis with keratocystic odontogenic tumour due to its aggressive and infiltrative growth leading to high recurrence rates which requires a more invasive treatment¹². Enucleation is the treatment for LPC, which can often be done without injury to adjacent teeth¹².

CONCLUSION

As this case has shown, the clinical impression and radiographic picture are not distinctive enough to be used as the sole criterion for rendering a diagnosis of LPC. Cysts occurring in a lateral periodontal location may have a variety of etiology, and final diagnosis of these lesions should be made with a histopathologic assessment. One of the features of greatest importance in the differential diagnosis is the fact that the associated teeth are vital. The treatment of choice is surgical removal and histological evaluation to confirm the diagnosis. Relapses are infrequent.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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