



## MULTILOCLULAR VARIANT OF LATERAL PERIODONTAL CYST: A REPORT OF A CLASSICAL OCCURRENCE.

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### ABSTRACT

The lateral periodontal cyst is described as an odontogenic cyst of developmental origin with an unusual nature of occurrence. Mostly, it is primarily diagnosed through a routine radiographic investigation and presents as well circumscribed radiolucent lesion that is in most of the cases either round or teardrop-shaped. In majority of the cases in can be easily misdiagnosed as an endodontic lesion, mainly attributed to its location. Definite diagnosis should therefore be given after carrying out a histopathological investigation. The primary purpose of our writing is to present a report on a classical case of lateral periodontal cyst with an occurrence in the mandibular left posterior to describe in particular the clinico-radio-pathological features of this odontogenic entity. A twenty-eight years old female patient reported to the clinic, complaining chiefly of an asymptomatic swelling in the left posterior mandible extending from the disto-lateral aspect of the root of first premolar to second molar region with a history of extraction in the past in the same region. Radiological investigation disclosed a well circumscribed multilocular radiolucent lesion with an approximate dimension of 3cm x 2cm with a radiopaque margin. The area associated with the lesion was edentulous and the corresponding tooth was vital. The intraoral examination showed a single lesion with no communication between the cystic cavity and rima oris. A total enucleation surgical procedure of the mandibular multilocular lesion was carried out. Histopathological investigations identified the lesion to be a "Multilocular variant of lateral periodontal cyst of developmental origin". There was no further recurrence or complications reported for 12 months of recall and follow-up.

**KEYWORDS :** Periodontal cyst, disto-lateral, odontogenic cyst, mandibular multilocular lesion.

### INTRODUCTION

The World Health Organization describes Odontogenic cysts as inflammatory and developmental on the basis of their origin.<sup>1-4</sup> Lateral periodontal cysts (LPC) are an independent entity and the term 'lateral periodontal cyst' is confined to only those cystic lesions that occur on the lateral aspect of the dental roots. Also a collateral OKC diagnosis has to be excluded on clinical and histological grounds (Shear and Pindborg, 1975).<sup>1-4</sup>

Lateral periodontal cysts are non-keratinized developmental cysts that are non-inflammatory in nature. These cystic entities are usually located adjacent or to the lateral aspect the roots of vital teeth with the most frequent occurrence at the level of mandibular premolars but occurrences in the other regions have also been reported.<sup>5</sup>

Among the odontogenic cysts of developmental origin, LPC have a lower incidence rate. As in most of the cases, pain or other symptoms are rarely reported; the cystic lesion in majority of cases is detected on routine radio-diagnostic procedures. Radio-imaging often reveals a well-circumscribed oval or round radiolucency of less than 1 cm in diameter and sometimes the cystic lesion may be with a sclerotic margin.<sup>5-8</sup>

On histopathological examination, the lateral periodontal cyst specimen shows a characteristic thin, non-keratinized epithelium usually of 1 to 5 cell layers thickness, resembling the reduced enamel epithelium. Focal epithelial thickenings or plaques with clear glycogen-containing epithelial cells are another distinct feature that has often been found associated with LPC. Also a zone of hyalinization is found in the connective tissue subjacent to the epithelium.<sup>9</sup>

Botryoid odontogenic cyst (BOC) is considered to be a polycystic variant of the lateral periodontal cyst (LPC) as the specimen resembled a cluster of grapes. It is a non-inflammatory odontogenic cyst. The BOCs can be unicystic or multicystic. These cysts have potential to extend in the bone and become multilocular and they have a high recurrence rate.<sup>10</sup>

This paper is a report on a classical case of Multilocular variant of Lateral periodontal cyst with an occurrence in the mandibular left posterior region in an 28 years old female patient and review the current literature archives relevant to describe in particular the clinico-radio-pathological features of this odontogenic entity.

### CASE DESCRIPTION

An twenty-eight years old North-Indian female patient reported to the clinic, complaining of a swelling in mandibular left posterior region since almost a year. The patient reported of using a toothpick to a tooth

in this region, shortly after which she underwent an oral surgical procedure and had her posterior teeth extracted. The change and swelling was observed after the surgery, approximately six months ago.

A mild horizontal mobility of the tooth #34 was discovered on intraoral examination. On palpation the edentulous region of the alveolar process in the region of teeth #35 and #37 associated to the swelling was asymptomatic. Vitality test demonstrated vital pulp in association to tooth #34.

Panoramic radiograph was taken that revealed a well-circumscribed, multilocular, radiolucent area with approximate dimensions of 3cm x 2cm, collectively, adjacent to the root of the mandibular left first premolar (Picture 1).

On the basis of these radiographical findings, a clinical provisional diagnosis of Lateral Periodontal cyst was made and under Local anesthesia a total enucleation procedure of the lesion was carried out using a surgical curette. After the surgical enucleation procedure, the surgical specimen was sent for a histopathological examination (Picture 2A). Histopathological investigation revealed the presence of a non-keratinized odontogenic cystic lining, 1-5 cell layers thick, surrounding a lumen. The cells of the cystic lining showed a cuboidal to low columnar morphology with focal thickened plaque of proliferating lining cells evident at certain areas. The connective tissue subjacent to the epithelial lining appeared to be thick fibrous and non-inflamed. Based on the clinicopathological findings a definite diagnosis of Multilocular variant of Lateral Periodontal cyst was given (Picture 2B).

Follow-up of the case was done for fourteen months after the surgery that showed uneventful healing, spontaneous bone regeneration and no recurrence.

### DISCUSSION

Botryoid odontogenic cyst is an unusual and rare type of odontogenic cyst, usually considered a multilocular variant of lateral periodontal cyst. First described in 1973, Botryoid cysts are characterized by a multilocular histologic finding and a higher risk of recurrence than lateral periodontal cysts. According to data on the reviewed cases available, 46 (53.5%)

BOC cases occurred in female patients and 40 (46.5%) BOC cases in male patients; the fractional female predisposition was in accordance with previous studies.<sup>10</sup> The mandible was most frequently affected by BOC, accounting for 70 (83.3%) cases, whereas maxilla was only sporadically affected with 14 (16.7%) cases.<sup>10</sup> According to the

literature, histologic features of BOC are multilocular histologic appearance, presence of microcysts, and thin squamous epithelium with focal plaque-like thickenings, subepithelial hyalinization, and clear cells.<sup>10</sup> Histologic patterns of BOC and LPC are similar yet still presenting a controversial topic. Multilocular histologic appearance distinguishes BOC from LPC. In addition, BOCs are generally larger than LPC and because of that it can be assumed that these distinctive features of BOC add to its more expansive character, making surgical removal more difficult.<sup>10</sup> From our experience of the relatively large BOC, we can confirm that enucleation of BOC was rather difficult. In the literature, BOCs are reported as a type of odontogenic cyst with a relatively high recurrence rate.<sup>10</sup> Mendez *et al.* report on the BOC recurrence rate of 32.4%.<sup>10</sup>The relatively high recurrence rate may be due to the multilocular histologic pattern, which contributes to enucleation difficulty, and the possibly greater BOC growth potential in comparison with LPC.<sup>10</sup>

**CONCLUSION**

By means of our publication we try to conclude that BOCs are a rare and unusual category of odontogenic cysts, usually considered as a multicystic or multilocular variant of Lateral Periodontal Cyst. It shows nonspecific radiographic appearance and therefore, histopathological examination is necessary for verification. Mandible is predominantly affected compared to maxilla. According to the currently available literature, the recurrence rate is relatively high (30.1%), thus long term follow up is required.<sup>10</sup>

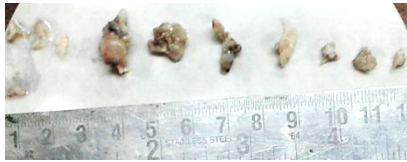
**PICTURES**

**PICTURE 1**



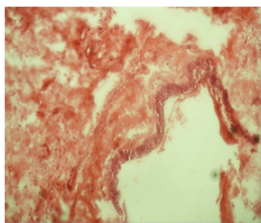
OPG View – a RADIOLUCENT lesion seen i.r.t. 35- 37

**PICTURE 2A**



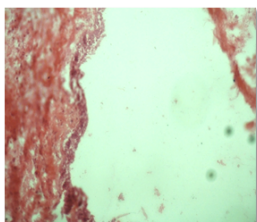
Surgical specimen sent for a histopathological examination.

**PICTURE 2B**



H&E stained sections showing the cells of the lining are cuboidal to low columnar.

**PICTURE 2C**



H&E stained sections reveal 1-5 cell layers thick odontogenic epithelium with Focal thickened plaque of proliferating lining cells evident at certain areas lining a cystic lumen.

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