Case report

LATERAL PERIODONTAL CYST– A CASE REPORT AND LITERATURE REVIEW

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ABSTRACT

Background: Lateral periodontal cyst (LPC) is a rare example of a developmental odontogenic cyst. LPC may clinically be diagnosed as a radicular cyst, keratocyst, ameloblastoma, odontogenic fibroma, odontogenic myxoma or as other types of odontogenic cysts and tumours.

Purpose: The aim is to present an unusual two clinical cases of LPC of the upper and lower jaw.

Material and methods: We present two cases with histologically proved LPC. The X-ray revealed radiolucent well-defined, circular in shape homogeneous formation around the root of the affected tooth.

Results: The treatment of choice was surgery- enucleation of cyst formation. The complete removal of the cysts was successfully performed. The result of the pathophysiological examination of both cases showed LPC. Since after the operation regular follow up was performed and till now there was not any signs of recurrence.

Conclusion: LPC is a rare odontogenic cyst of developmental origin, which should be timely diagnosed and surgically removed.

Keywords: LPC, odontogenic cyst, developmental cyst, treatment,

BACKGROUND:

A lateral periodontal cyst (LPC) is a noninflammatory cyst on the lateral surface of the root of a vital tooth [1]. It is rare in young people under 30 years and affects mostly individuals between the fifth and seventh decade of life [2]. LPC occurs more often in the mandible, especially on the lateral aspect of premolar-canine root surfaces. LPC may clinically be diagnosed as a radicular cyst, keratocyst, ameloblastoma, odontogenic fibroma, myxoma or as other types of odontogenic cysts and tumours. [3] It is generally asymptomatic and presents a round or oval uniform lucency with well-defined borders radiographically. The radiographic characteristics of LPC are not pathognomonic and can resemble an odontogenic keratocyst, lateral radicular cyst or benign tumour formation. [4, 5]

Histologically, LPC is composed of a cystic lesion with a connective tissue wall with nonkeratinized squamous epithelial lining of 1-5 cell thickness and is generally without inflammation. [6]

Untreated all of the odontogenic cysts may cause root resorption, tooth displacement, expansion of alveolar bone

and pain in some cases. [6]

Treatment of LPC includes removal of the lesion surgically by enucleation and follow-up the patient clinically and radiographically to monitor for recurrence even the recurrences are uncommon. During the healing period, bone regeneration will occur within the bony defect. Different regenerative approaches, including guided tissue regeneration (GTR) technique using xenograft, allograft- decalcified freeze-dried bone allograft (DFDBA) and platelet rich plasma (PRP) technique have been used in the treatment of intraosseous cystic cavities [7, 8].

PURPOSE:

The aim is to present two unusual clinical cases of LPC of the upper and lower jaw.

MATERIAL AND METHODS:

We present two patients with histologically proved LPC. The X-ray revealed radiolucent well-defined, circular in shape homogeneous formation around the affected root.

Case 1

A 38-year-old female patient refers to our department with a well-defined swelling 1 cm in diameter in area of 35 tooth with a duration of two months (fig. 1). The mandibular lesion was located vestibular of the root of the left lower second premolar and is not well evidenced during radiographic examination (fig. 4). After local anesthesia, aspiration was made and surgical excision of the lesion was performed (fig. 2, 3). Microscopically, there was detected a cystic cavity lined by simple squamous epithelium, compatible with LPC. During the 2 years follow up no clinical or radiological recurrence was detected.

Fig. 1. Clinical assessment prior to surgery

Fig. 2. Triangular mucoperiosteal flap was reflected

Fig. 3. The mandibular lesion was exstirpated

Fig. 4. Radiograph of the affected tooth

Case 2

A 36-year old male patient was submitted to our outpatient clinic to decide treatment options of a maxillary radiolucency that was found by his general practitioner

dentist on a panoramic radiograph performed prior to treatment for abscess formation in the area of 13 tooth (fig. 5). Upon admittance, the patient was in good general health. He hadn't any generalized periodontitis with no remarkable horizontal loss of bone. The right upper canine reacted adequately to stimuli to prove its sensitivity. On the radiograph, a radiolucent lesion of oval shape was located around the lower half of the root. The lesion showed no radiopaque structures inside the cavity, but the margins appeared well defined. (Figure 6).

Following the application of local anesthetics, a mucoperiosteal flap was detached from the alveolar process on the lateral side of the maxilla, and the cystic lesion was excised after raising the thin cortical layer that covered part of the lesion. (fig. 7) The mucoperiosteum flap was replaced and sutured. The tooth was splint for 3 months after surgery. Wound healing was uneventful.

Fig. 5. Radiograph examination reveals radiolucency lesion of upper jaw around right canine. PST was positive-6 mA.

Fig. 6. Radiograph examination reveals radiolucency lesion of upper jaw around right canine. PST was positive-6 mA

RESULTS:

The treatment of choice was surgery - enucleation of cyst formation. The complete removal of the cyst was successfully performed, but in both cases without any regenerating procedures- GBR, because of unclear preliminary diagnosis and many possible differential diagnoses. The result of the histological examination showed LPC in both cases. Since after the operation regular follow up was performed and till now there were not any signs of recurrence.

DISCUSSION

LPC is an unusual odontogenic cyst and presents a marked predilection for occurring in the mandible between the roots of canines and premolars and is quite unusual around the maxillary canine. Published reports have indicated that they occur most frequently in the 5th to 7th decades, that there is a male preponderance [9]. Accurate clinical, imaging and histological exams should be performed for a correct approach and diagnosis. Histopathological, the lateral periodontal cyst lining is characterized by a thin cuboidal to the stratified squamous non-keratinizing epithelium, ranging from one to five cell layers and presence of one or more epithelial thickenings or plaques. Surgical enucleation is the treatment of choice. No grafting or barrier techniques were used after the enucleation in both cases

because of unclear preliminary diagnosis. Differential diagnosis is of importance because misdiagnosis may lead to false or unnecessary treatment of the lesion. The clinicians must be aware of odontogenic keratocysts occupying a lateral periodontal position frequently and that keratocysts must be differentiated from the LPC because of their aggressiveness and a high potential for recurrence following surgical removal (especially these with parakeratosis). Gingival cyst, lateral radicular cyst, pseudocysts and radiolucent odontogenic tumors must also be considered in the differential diagnosis of LPC. [9, 10, 11, 12] The patients are advised to be followed radiographically to monitor for recurrence and regeneration of bony defect.

We report two cases of LPC where successful surgical therapy had initialized osseous restoration. We discuss the value of histological findings to substantiate a clinical and radiological diagnosis so some tumours can mimic LPC.

CONCLUSION:

LPC is a rare odontogenic cyst of developmental origin, which should be timely diagnosed and surgically removed. Sometimes it has unusual clinicoradiographic presentation and careful histological examination should be performed in all cases.

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