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Management of Radicular Cyst Associated with Deciduous Molar: A Case Report

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Abstract

Radicular cysts arises from the cell rest of malasez of periodontal ligament and they comprised about 52.3% of jaw cysts and 62% of cysts of odontogenic origin. About 7-54% of radicular cyst occurs in permanent dentition whereas approximately 0.5-3.3% of the total radicular cyst in both primary & permanent dentition. Their occurrence is very much rare in children. Thus, this case report represents a case of radicular cysts in the mandibular posterior region in primary dentition of a 6 year old boy.

Keywords

Radicular cyst, Dentigerous cyst, Epithelial rest of malassez, Enucleation.

Introduction

Among the cystic lesions affecting the jaw, radicular cysts are the most common. They comprise about 52.3% of jaw cysts and 62% of cysts of odontogenic origin[1]. About 7-54% of radicular cyst occurs in permanent dentition whereas approximately 0.5-3.3% of the total radicular cyst in both primary & permanent dentition[2-4]. As a result of inflammation pulpal necrosis occurs and this cyst originates from epithelial remnants of periodontal ligament by commonly involving the apex of the affected tooth[5]. Dental caries is the etiologic factor of radicular cyst which is frequently seen in primary dentition[6]. Many of the cysts are asymptomatic with nonvital pulp which can be seen only by taking periapical radiographs. Their radiographic appearance showed round or ovoid radiolucencies which is surrounded by a narrow radiopaque margin extending from lamina dura of the tooth involved[7]. Thus, this case report represents a case

of radicular cysts of the mandibular posterior region in primary dentition in a 6 years old boy.

Case Description

A 6 years old boy came to the Department Of Pedodontics & Preventive Dentistry, with a chief complaint of hard swelling in his lower right back teeth region since 1 month. Extraoral examination showed a painless bony-hard swelling in the lower right side of the mandible. Intraoral examination revealed carious tooth with respect to 75, 84, 85 with obliteration of buccal sulcus which is indicative of the expansion of buccal cortical plate at the region of 84, 85 [Figure 1]. The swelling was non tender.

Figure 1: Expansion of buccal cortical plate at the region of 84, 85

Periapical radiograph showed well-defined radiolucency involving the interdental area and extending beyond the confines of the roots of tooth 84 & mesial root of 85. Orthopantomogram (OPG) revealed a radiolucency of 1.5 × 2 cm size, approximately at the apex of 84 and mesial root of 85 [Figure 2]. Based on the clinical and radiographic finding a provisional diagnosis of radicular cyst was made with a differential diagnosis of dentigerous cyst. Enucleation of the cyst followed by extraction of 75 and 85 was planned under local anaesthesia and space management by the use of bilateral band and loop space maintainer on 74, 75 & 84, 85. Two Vertical incisions and a crevicular incision were given from the mesial side of 85 to mesial side of 46 and full thickness flap was raised. The buccal cortical plate was considerably thin on the site of lesion. Removal of bone around the lesion was done and the cyst lining were enucleated [Figure 3] followed by extraction of 85. Thorough irrigation with saline & betadine solution was done followed by suturing. The cystic lining were preserved and sent for histopathological examination.

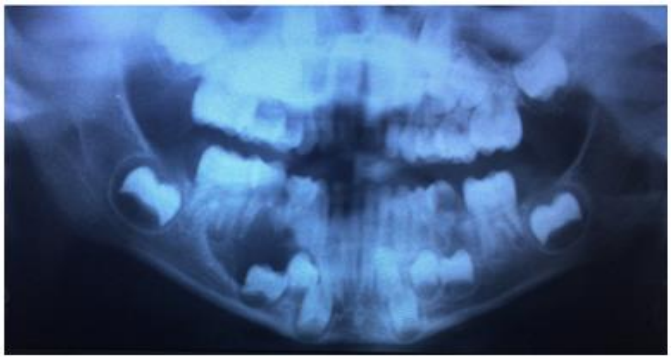

Figure 2: Pre-operative OPG

Figure 3: Enucleated cystic layer

Histopathological examination revealed that the cystic lumen is lined by stratified squamous epithelium supported by connective tissue capsule [Figure 4]. The lining epithelium is thin & hyperplastic at places & the overlying connective tissue capsule consist of loose bundles of collagen fibers interspersed with fibroblasts, endothelial lined blood vessels, dense inflammatory cells infiltrate chiefly and a final diagnosis of radicular cyst was made.

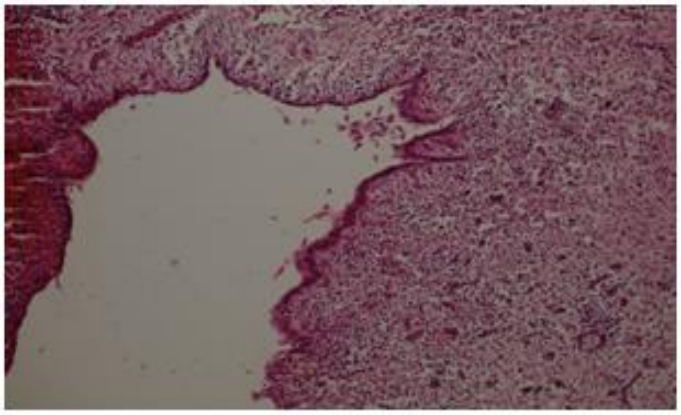

Figure 4: Histopathological image of the enucleated cyst

Figure 5: After the removal of suture

After one week sutures were removed [Figure 5]; OPG was taken [Figure 6] and extraction of 75 was also done which was grossly decayed. GIC restoration with respect to 84 was done followed by bilateral band and loop space maintainer [Figure 7] on 75,36 and 85,46. The healing was satisfactory in 1 month and 6 months and 12 months follow-up [Figure 8].

Figure 6: OPG 1 week post surgery

Figure 7: Bilateral band and loop space maintainer W.R.T. 75, 36 & 85, 46

Figure 8: Post-operative photograph at 12 months follow-up showing eruption of 45.

Discussion

As a result of inflammation, pulpal necrosis occurs and the radicular cyst arises from cell rest of Malasez of the periodontal ligament and they are most commonly found in the apex of the affected tooth[8]. Even though these pathologic lesions are considered to be rare in children, there are some factors which may cause deprecation of the real prevalence of radicular cysts. Often people neglected periapical radiolucencies that are present in primary dentition and in many cases they are often resolved after the extraction of the involved tooth[5]. The most commonly involved deciduous teeth are mandibular molars (67%), maxillary molars (17%), maxillary anterior teeth (13%), followed by mandibular anterior teeth (3%).[9] Cortical bone expansion, large size and rapid growth are the characteristic features shown by some of these cysts.[10] A very less number of radicular cysts arises from deciduous teeth. In a period of 25 years, only 7(0.5%) were associated with deciduous dentition out of overall 1,3000 radicular cysts[8]. While Lustmann et al[11] in an extensive review from 1898 to 1985, found only 28 cases to which they added 23 cases. Nagata et al [9] reported that there were 112 cases reported through 2004. Many of the primary teeth periapical radiolucencies may be diagnosed incorrectly as a periapical granuloma or a dentigerous cyst of the permanent successors. Buccal cortical plate expansion, well-defined radiolucency, thin reactive cortex and displacement of the permanent successor teeth are the common signs of radicular cysts.[8] Buccal/palatal cortical plate expansion is usually seen in maxilla while there is more buccal involvement as compared to the expansion of lingual plate in mandible. Here, in our case it represents mandibular buccal cortical plate expansion with the displacement of permanent tooth bud. At the beginning, a bony hard enlargement occurs and with time, as the the size of the cyst increases the bony covering becomes very much thin and the swelling exhibit sponginess and fluctuant after the cyst has completely destroyed the bone. When the cyst is present in deciduous dentition, it is more frequently observed with mandibular deciduous molar with the expansion of buccal bone and displacement of permanent tooth bud. [12]In this case after a follow up of 6 months, Orthopantomogram(OPG) showed a good amount of bone regeneration and considerable alignment of displaced successive permanent premolar in its original place can be seen.

Conclusion

Non-tender swellings should be thoroughly examined, investigated and evaluated. Clinicians should be aware of dental caries as there is possibility of radicular cyst arising from carious primary teeth. Endodontically treated primary teeth should be followed up regularly at a regular interval of time so as to detect any lesions coming up its way.

References

1. Shear M, Speight PM. Radicular cyst and residual cyst. In: Cyst of the Oral Maxillofacial Region. 4th ed. Oxford: Blackwell Publishing ltd.; 2009. p. 123-42.
2. Neville B, Damm D, Allen C, Bouquot J. Oral and Maxillofacial Pathology. 3rd ed. Chapter 3 Elsevier; 2008.
3. Bhaskar SN. Oral surgery--oral pathology conference No. 17, Walter Reed Army Medical Center. Periapical lesions--types, incidence, and clinical features. Oral Surg Oral Med Oral Pathol. 1966 May;21(5):657–71.
4. Mass E, Kaplan I, Hirshberg A. A clinical and histopathological study of radicular cysts associated

with primary molars. J Oral Pathol Med. 1995 Nov;24(10):458–461.

5. A. C. B. Delbem, R. F. Cunha, A. E. M. Vieira, and D. M. C. Pugliesi, "Conservative treatment of a radicular cyst in a 5-year-old child: a case report," International Journal of Paediatric Dentistry, vol. 13, no. 6, pp. 447–450, 2003.
6. E. Mass, I. Kaplan, and A. Hirshberg, "A clinical and histopathological study of radicular cysts associated with primary molars," Journal of Oral Pathology & Medicine, vol. 24, no. 10, pp. 458–461, 1995.
7. P Venkatalakshmi Aparna**,** S Ramasamy**,** S Leena Sankari**,** F Massillamani**, "**Bilateral radicular cyst of the mandible: A rare case report" Journal of Research in Dental Sciences, 2018; 9(1):37-39.
8. Ramakrishna Y, Verma D. Radicular cyst associated with a deciduous molar: a case report with unusual clinical presentation. J Indian Soc Pedod Prev Dent 2006;24:158-60.
9. Nagata T, Nomura J, Matsumura Y, Yanase S, Fujii T, Oka T, *et al*. Radicular cyst in a deciduous tooth: A case report and literature review. J Dent Child (Chic) 2008;75:80-4.
10. Takiguchi M, Fujiwara T, Sobue S, Ooshima T. Radicular cyst associated with a primary molar following pulp therapy: A case report. Int J Paediatr Dent 2001;11:452-5.
11. Lustmann J, Shear M. Radicular cyst arising from deciduous teeth. Review of literature and report of 23 cases. Int J Oral Surg. 1985 Apr;14(2):153–161.
12. Vinod Vijay Chander, Sridevi Koduri, Seema Basoya, Lavina Arya. Radicular cyst of maxillary primary tooth: Report of two cases. 2014:6(2);61-64.