CLINICOPATHOLOGICAL CORRELATION IN THE DIAGNOSIS OF BILATERAL PARADENTAL CYSTS: TWO CASE REPORTS

CORRELAÇÃO CLÍNICA-PATOLOGICA NO DIAGNÓSTICO DE CISTO PARADENTARIO BILATERAL. RELATO DE DOIS CASOS CLÍNICOS

Nataira Regina Momesso[1]

Ricardo Alexandre G Senko[1]

Beethoven Estevão Costa[2]

Mariza Akemi Matsumoto[3]

Andréia Aparecida da Silva[1]

Paulo Domingos Ribeiro Júnior[1]

[1] Universidade Sagrado Coração – Bauru – Brasil

[2] Universidade de Itaúna – Minas Gerais – Brasil

[3]Faculdade de Odontologia da Universidade Paulista - UNESP/ARAÇATUBA - Brasil

natairar@gmail.com

RESUMO

O cisto paradentário (CP) é uma lesão odontogênica que ocorre próximo à margem cervical da face lateral da raiz, como consequência de um processo inflamatório. Geralmente, localiza-se nas faces vestibular e distal de terceiros molares inferiores parcial ou totalmente erupcionados. O objetivo deste artigo é relatar dois casos clínicos diagnosticados como cisto paradentário bilateral em terceiros molares inferiores a partir de exames clínicos e radiográficos. O diagnóstico de cisto paradentário foi definido após correlação dos achados radiográficos, cirúrgicos e microscópicos.

Palavras-chave: Extração Dentária. Pericoronarite. Terceiro Molar.

ABSTRACT

A paradental cyst (PC) is an odontogenic lesion, which occurs near the cervical margin of the lateral surface of the root because of an inflammatory process. Generally, they are located on the buccal and distal faces of completely or partially erupted third molar teeth. The purpose of this article is to discuss two clinical cases of a bilateral PC in a third molar, diagnosed from clinical and radiographic examinations. The diagnosis of a PC was established following correlation of radiographic, surgical, and microscopic features.

Key words: Tooth extraction. Pericoronaritis. Third molar.

INTRODUCTION

A paradental cyst (PC) is defined as an odontogenic cyst, which develops near the cervical margin because of an inflammatory process in a periodontal bag[1-3].

PCs are usually located adjacent to vital, partially erupted mandibular third molars; they present in the third decade in two-thirds of the cases, and they are associated with a history of pericoronitis [4,5]. The signs and symptoms of PCs include discomfort, tenderness, moderate pain and, in some cases, suppuration through the periodontal sulcus[1,2,6,7,8]. They can also lead to extraoral edema, volumetric expansion, halitosis, and trismus[1,2,9]. The size of the lesion can vary between 10 mm and 15 mm in diameter[2].

Radiographically, the periodontal ligament space[10] and the hard tooth surface involved are intact, with continuity around the root, because the inflammatory component is not of endodontic origin [9,11]. The lesion can present as a unilocular radiolucency in the distal tooth involved. The radiolucent semilunar, crescent or flame-shaped area is often superimposed on the tertiarymolar root involved, and radiolucency often simulates a periapical pathology[2].

The histopathological observations of PCs are identical to that of radicular cysts and other inflammatory odontogenic cysts 8. Microscopically, they are covered by stratified squamous epithelium, keratinized non-hyperplastic, and supported by a wall of granulation tissue and fibrous connective tissue 12,2,9,13. Therefore, a histopathological diagnosis requires the union of clinical and radiographic findings[14].

The frequency of the lesion reported in studies ranges from 3% to 5%, which suggests its rarity). However, it is believed that the actual incidence is substantially greater, as many of these lesions are diagnosed as dentigerous, radicular, or lateral periodontal cysts[10].

The aim of this article was to report on two cases of PCs, without signs of pericoronitis, and demonstrate the importance of the association of clinical, radiographic, and histopathological features.

CASE REPORT

CASE 1

A male patient, aged 31 years, was referred to the Bucomaxillo facial clinic atto Sagrado Coração Univeristy for the evaluation of panoramic radiographs. Following clinical examination and examination of the panoramic radiographs, a unilocular radiolucent area was identified, measuring approximately 12 mm, associated with the 38 and 48 teeth distally and semi enclosed in a vertical position. A computerized tomographic scan was requested, and the resulting image was hypodense and well delineated in the cervical region of the distal root of the third molar (Figure 1). The patient presented with no complaints and history of pericoronitis and an intraoral examination within the normal range. The treatment provided was dental extraction of the element associated with the cystic enucleation. The specimen was sent for histopathological analysis, which revealed that the cystic cavity was lined by hyperplasic, stratified squamous epithelium, with a dense, mixed inflammatory cell infiltrate (Figure 2 a and b) compatible with a PC.

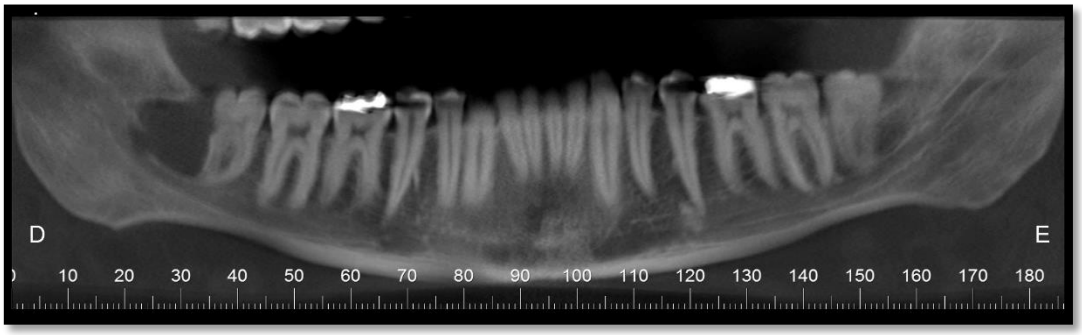

Figure 1: Computerized tomographic scan was requested, and the resulting image was hypodense and well delineated in the cervical region of the distal root of the third molar.

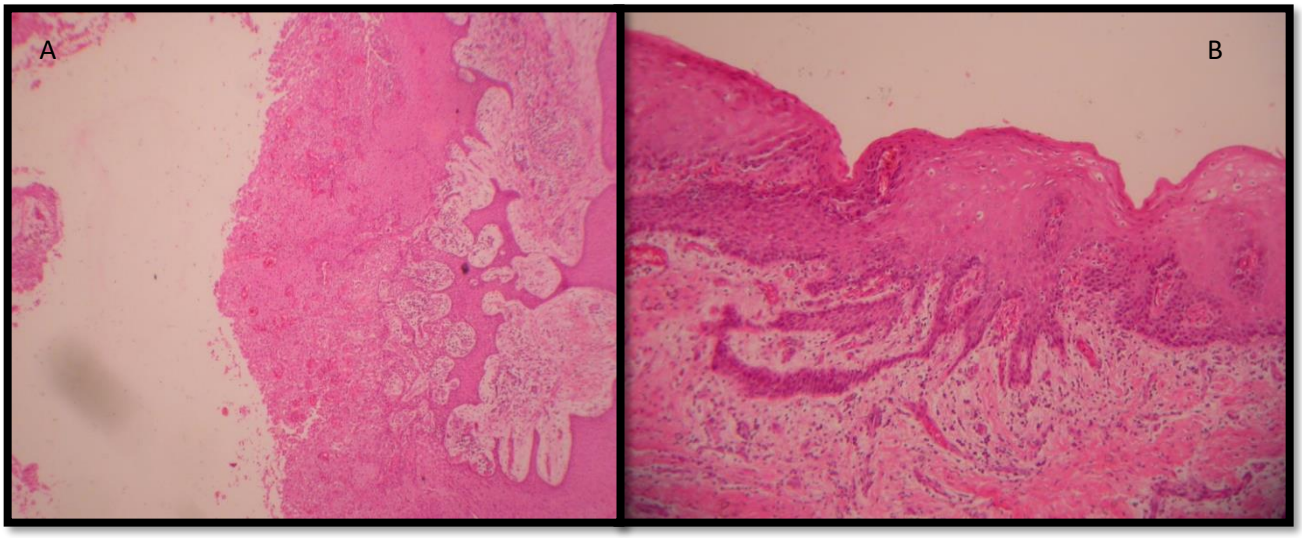

Figure 2 a and b: Cystic cavity was lined by hyperplasic, stratified squamous epithelium, with a dense, mixed inflammatory cell infiltrate

CASE 2

A male patient, aged 29 years, attended a private clinic reporting a history of pain compatible with pericoronarits. The patient presented without signs of infection and with a normal adjacent mucosa. In the panoramic radiograph (Figure 3), a well-defined, unilocular radiolucency was identified, measuring approximately 10 mm in the region of the 38 and 48 teeth. The treatment provided was dental extraction of the dental elements associated with the cystic enucleation. The specimen was sent for pathological analysis, which revealed a hyperplasic, stratified epithelium lining the fibrous capsule, with a dense inflammatory infiltrate (Figure 4a and b), confirming the diagnosis of a PC.

Figure 3: Panoramic radiograph

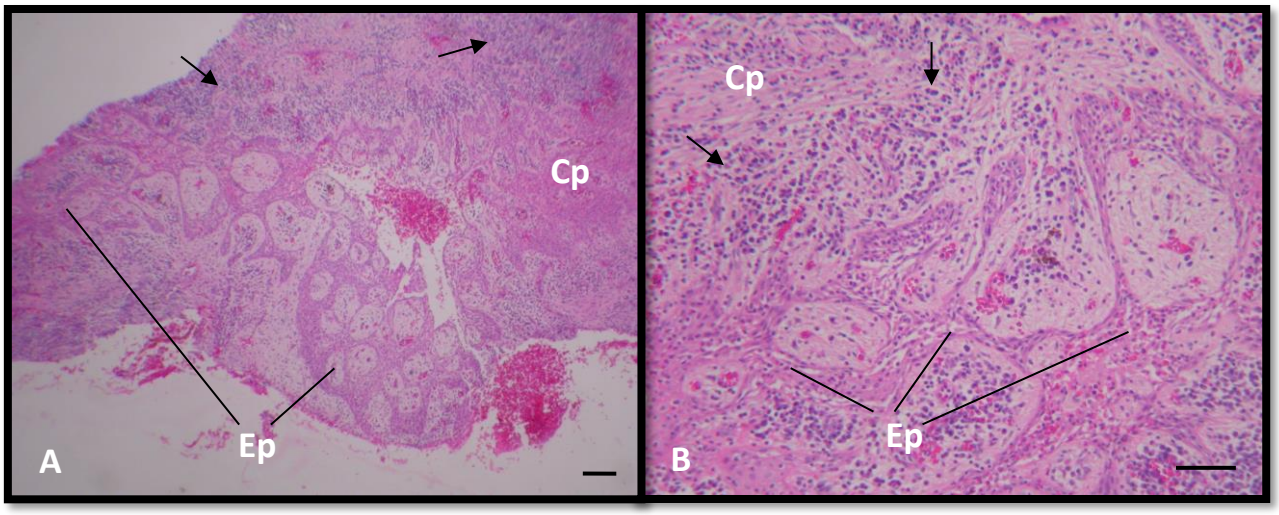

Figure 4a and b: The pathological analysis, which revealed a hyperplasic, stratified epithelium lining the fibrous capsule, with a dense inflammatory infiltrate.

DISCUSSION

PCs were classified by the World Health Organization (WHO) as a histological type of odontogenic tumor for the first time in 1992, although it has been described in several clinical pathological reports since 1970 [4,5,15,16,17].

The prevalence of PC is low, compared with other cysts, representing 3–5% of all odontogenic cysts[4,8,12,18,19] which classifies them, within a rare group of lesions[3]. However, it is believed that PCs have been erroneously diagnosed as radicular cysts, dentigerous cysts, lateral or pericoronitis, or other entities related to inflammatory conditions of the dental follicle[20]. Another

possible reason for the limited diagnoses of a PC is that histopathological analysis of the follicle removed is limited[8].

The etiology of PC appears to be inflammatory in origin. The stimulus penetrates the gingival sulcus of the tooth involved; and proliferation of the dental follicle occurs 6,8. However, although the etiopathogenesis of PCs has been discussed extensively, the origin of PCs requires further investigation [13].

The predilection of PCs in males has been described in previous studies[4,16,17], as in our present report. A study by Sousa et al. (2001) [19] reported that 61 cysts occurred in women. Vedtofte and Pratetorius (1989) [21], and Magnusson and Borrman (1995)[26] observed no significant differences in genres in their studies[8]. According to Ackermann et al. (1987)[4], no satisfactory explanation could be found for this distribution, provided that there was no difference between men and women in the incidence of food impaction or pericoronitis [19]. The age range of patients with a PC located in the lower third molar is approximately 25–30 years of age, with the distal or vestibular tooth affected; the location is bilateral in only 4.1% of cases 11Considering the low prevalence of PCs (3–5% of all odontogenic cysts), bilateral occurrence is particularly rare[8].

PCs occurs most commonly on the bucal and disto bucal face of erupted or partially erupted third molar teeth represent the most common clinical form. These cysts are usually associated with periodontal inflammatory processes, such as pericoronarits. At this location, except in cases of acute infection, the clinical signs are rare[13]. In the two case reports discussed here, both patients presented with the lesion in the distal portion of the crown of the third molar, with the absence of signs of infection and normal overlying mucosa. In the first case, no discomfort or previous episodes of infection were reported. In the second case, the patient reported discomfort during chewing and previous pericoronitis. In both cases, the cyst was identified with the support of radiographic examinations, which confirm that, in some cases, the patient may not report any discomfort or episodes of pericoronitis, and the identification of the cyst can be performed during routine radiographic examination[4].

The histological characteristics of PCs are identical to those of radicular cysts and other inflammatory odontogenic cysts [6,16,19,22,23]. The features include dense connective tissue and infiltration of chronic inflammatory cells, and they are covered by a stratified squamous epithelium, which is not thick or keratinized, and the morphology varies, according to the degree of inflammation[8]. The histopathological characteristics of the cases presented here correspond to the literature, as noted on microscopic examination of the lesions, which were curetted with dental extraction of the third molars, revealing a cystic cavity lined by squamous epithelial hyperplastic and the presence of a fibrous capsule with moderate mononuclear inflammatory infiltrate.

Surgical removal of the tooth and the CP is considered the treatment of choice when the tooth involved is a third molar[1,2,21]. The enucleation of the lesion with the tooth involved may be indicated when the first or second molar is involved[1,2,5,24,22]. In all cases, relapse is rare, assuming the lesion has been completely removed [3,11,17,21,25].

A PC may present with significant clinical and radiographic changes[5,16]. For a correct final diagnosis, the combined interpretation of clinical, radiographic, and microscopic findings is important.

The differential diagnosis of PCs includes radicular cysts, lateral periodontal odontogenic cysts, keratocysts, gingival cysts, dental follicles, and dentigerous cysts[13]. In the two reported cases, the clinical and radiographic features presented no challenge in forming a clinical diagnosis; however, the final diagnosis was confirmed following histopathological examination.

Lack of knowledge regarding the existence of PCs has led to errors in diagnosis and treatment, caused by similarities in their various parameters with other pathologies. It is concluded that PCs are usually related to partially erupted teeth with a history of pericoronitis, and confirmation of the diagnosis can be made through examination of pathology through clinical and radiographic findings.

REFERENCES

1. Bsoul SA, Flint DJ, Terezhalmy GT, et al. Paradental cyst (inflammatory collateral, mandibular infected buccal cyst). **Quintessence Int**. 2002;33:782–3.

2. Philipsen HP, Reichart PA, Ogawa I, Suei Y, Takata T. The inflammatory paradental cyst: A critical review of 342 cases from a literature survey, including 17 new cases from the author's files. **J Oral Pathol Med**. 2004; 33:147-55.

3. Morimoto Y, Tanaka T, Nishida I, Kito S, Hirashima S, Okabe S, et al. Inflammatory paradental cyst (IPC) in the mandibular premolar region in children. **Oral Surg Oral Med Oral PatholOral RadiolEndod.** 2004; 97:286-93.

4. Ackermann G, Cohen MA, Altini M. The paradental cyst: A clinicopathologic study of 50 cases. **Oral Surg.** 1987; 64: 308-12. 10.1016/0030-4220(87)90010-7

5. Borgonovo, et al. Paradental cyst of the first molar: A report of two cases. **J Indian SocPedod Prevent Dent.**2010; 28: 116-20.

6. Stoneman DW, Worth HM. The mandibular infected buccal cyst – Molar area. **Dent RadiogrPhotogr**. 1983; 56: 1-14.

7. Chrcanovic BR, Reis BMMV, Freire-Maia B. Paradental (Mandibular InflammatoryBuccal) Cyst. **Head and Neck Pathol.** 2011; 5: 159-64.

8. Borgonovo AE, et al. paradental cyst of the first molar: Report of a rare case with bilateral presentation and review of the literature. **J Indian SocPedod Prevent Dent**. 2012; 30: 343-8.

9. Kanno CM, Gulinelli JL, Nagata MJ, et al. Paradental cyst: report of two cases**. J Periodontol**. 2006;77:1602–6. 10.

10. Mufeed A, Chatra L, Shenai P. Diagnostic features of the paradental cyst and report of a case. **Dentomaxillofacial Radiol**. 2009; 38: 125-6. 10.1259/dmfr/20760562

11. David LA, Sándor GKB, Stoneman DW. The buccal bifurcation cyst: is non-surgical treatment an option? **J Can Dent Assoc**. 1998;64: 712–6.

12. Colgan CM, Henry J, Napier SS, Cowan CG. Paradental cysts: A role for food impaction in the pathogenesis? **Br J Oral MaxillofacSurg.** 2002;40:162-168.

13. Castro AL, et al. Cisto paradental – uma atualização e relato de caso. **RFO**. 2008; 13: 61-5.

14. Carvalho RWF, et al. Cisto paradentário: relato de caso clínico. **Rev. bras. odontol**. 2008; 65: 238-41.

15. Main DM. Epithelial jaw cysts: A clinicopathological reappraisal. **Br J Oral Surg.** 1970;8:114-25.

16. Craig GT. The paradental cyst: a specific inflammatory odontogenic cyst. **Br Dent J.** 1976;141:9-14.

17. Fowler CB, Brannon RB. The paradental cyst: a clinicopathologic study of six new cases and review of the literature. **J Oral MaxillofacSurg.** 1989;47:243-8.

18. Waller JH, Malden N. Rapid cystic involvement of a lower third molar. **Dent Update.** 1999; 26:166-7.

19. De Sousa SO, Corrêa L, Deboni MC, de Araújo VC. Clinicopathologic features of 54 cases of paradental cyst. **Quintessence Int.** 2001; 32:737-41.

20. Lindh C, Larsson A. Unusual jaw-bone cysts. **J Oral MaxillofacSurg.** 1990; 48:258-63.

21. Vedtofte P, Praetorius F. Recurrence of the odontogenickeratocyst in relation to clinical and histological features: A 20-year follow-up study of 72 patients. **Int J Oral Surg.** 1979;8: 412-20.

22. Packota GV, Hall JM, Lanigan DT, Cohen MA. Paradental cysts on mandibular first molars in children: Report of five cases. **Dentomaxillofac Radiol.** 1990; 19: 126-32.

23. Wolf J, Hietanen J. The mandibular infected buccal cyst (paradental cyst). A radiographic and histological study**. Br J Oral MaxillofacSurg.** 1990;28:322-5.

24. Martinez-Conde R, Aguirre JM, Pindborg JJ. Paradental Cyst of the Second Molar: Reporto f a Bilateral Case. **J Oral Maxillofac Surg**. 1995; 52: 1212-14.

25. Pompura JR, Sándor GK, Stoneman DW. The buccal bifurcation cyst: a prospective study of treatment outcomes in 44 sites. **Oral Surg Oral Med Oral Pathol Oral RadiolEndod**. 1997; 83: 215-21.

26. Magnusson B, Borrman H. The paradental cyst a clinicopathologic study of 26 cases. **Swed Dent J**. 1995;19:1-7.