



Therapeutic procedure odontoma in childhood: report of a case

Conduta terapêutica de odontoma na infância: relato de um caso clínico

Camilla Regina Galvão Bengtson^[a], Antonio Lucindo Bengtson^[b], Nadya Galvão Bengtson^[c]

^[a] Mestre e doutora em Dentística pela Faculdade de Odontologia da Universidade de São Paulo (FOUSP), São Paulo, SP - Brasil.

^[b] Mestre e doutor em Odontopediatria pela Faculdade de Odontologia da Universidade de São Paulo (FOUSP), titular da disciplina de Odontopediatria da Faculdade Odontologia da Universidade Metropolitana de Santos (FOUNIMES), Santos, SP - Brasil, e-mail: al.bengtson@uol.com.br

^[c] Mestre em Odontopediatria pela Faculdade de Odontologia da Universidade de São Paulo (FOUSP), professora Assistente da Disciplina de Odontopediatria da Faculdade de Odontologia da Universidade Metropolitana de Santos (FOUNIMES), Santos, SP - Brasil.

Abstract

Objective: The main goals of this report were to describe the surgical procedure and a three-year clinical/radiographic follow-up of a child with compound or combined odontoma. **Discussion:** In the majority of cases, diagnoses of odontoma are made during the development and eruption of permanent dentition, at the time when the patient is providing the documentation for having orthodontic and/or orthopedic treatment performed. In this case, the diagnosis and treatment were established earlier, before the patient entered the first stage of mixed dentition. This procedure favored normal development of permanent teeth in the maxillary anterior region preventing aesthetic, occlusion and phonation problems. **Conclusion:** The surgical removal of an odontoma diagnosed early (still in primary dentition), after careful clinical and radiographic analysis of the location, stage of formation and position of the teeth, is an approach which, in the majority of cases, favors eruption and alignment of permanent teeth.

Keywords: Odontoma. Odontogenic tumor. Benign neoplasia. Eruption.

Resumo

Objetivo: Os objetivos principais deste relato foram o de descrever o procedimento cirúrgico e o acompanhamento clínico/radiográfico por três anos de criança portadora de odontoma composto ou combinado.

Discussão: Na maioria das vezes, o diagnóstico de odontoma é realizado durante o desenvolvimento e erupção da dentição permanente, no momento em que o paciente está providenciando sua documentação para realização de tratamento ortodôntico e/ou ortopédico. No presente caso, o diagnóstico e o tratamento foram estabelecidos precocemente, antes de iniciar a primeira fase da dentadura mista. Esta conduta favoreceu o desenvolvimento normal dos dentes permanentes da região anterior superior evitando problemas de estética, oclusão e fonação. **Conclusão:** A remoção cirúrgica de odontoma diagnosticado precocemente (ainda na dentição decídua), após criteriosa análise clínica e radiográfica da localização, estágio de formação e posicionamento dos dentes, é uma conduta que, na maioria das vezes, favorece o irrompimento e alinhamento dos dentes permanentes.

Palavras-chave: Odontoma. Tumor odontogênico. Neoplasia benigna. Irrompimento.

Introduction

Detecting dental anomalies in pediatric patients with primary dentition is greatly favored by anamnesis and meticulous clinical exams, associated with complementary exams (radiographic, tomographic and laboratorial exams) required according to professional criteria. These procedures benefit prognosis, due to taking early actions in conditions alter the morphofunctional and aesthetic development of the maxilla of the child.

Among the anomalies that affect children and adolescents, we point out the odontomas, which are the most common odontogenic tumors, totaling around 40% of these lesions (1-3). They may be defined as benign tumors of odontogenic origin and mixed nature, i.e., with epithelial and conjunctive proliferation (3), histologically formed by dentin, enamel, cementum and, in some cases, pulp tissue (3-6). They present slow and painless growth, usually associated with a retained or twisted tooth, and with or without alveolar tumefaction (7, 8). They may be classified into two types: compound or combined and complex odontoma.

Compound or combined odontoma is formed by multiple teeth and/or denticles that may be present in large numbers (3-6). Each denticle is formed of enamel, dentin, pulp tissue and cementum, and it has its own fibrous sac and the whole set is separated from the surrounding bone by a fibrous capsule. This type of lesion is usually situated between the roots and on the crown of the impacted tooth (6, 9).

The complex odontoma is a lesion that contains a mixture of dental tissues, grossly abnormal, which are enveloped by a stroma of fibrous tissue that frequently form a type of fibrous capsule (3-5, 10).

The etiopathogenesis of odontomas may be associated with traumatism during the first dentition, as well as by inflammatory or infectious processes, hereditary anomalies (Gardner's syndrome, Hermann's syndrome), odontoblastic hyperactivity or genetic alterations (5, 9, 11).

With regard to location, compound odontomas are common in the anterior region of the maxilla involving the central and lateral incisors, usually the canine. Complex odontomas are found in the pre-molar and molar regions (9,11). Both may lead to a series of disturbances, with emphasis on problems related to interference in the tooth eruption process, retarding or impeding eruption movements, and in some cases causing ectopic eruption (12,13).

The treatment of choice for this pathology is the surgical removal of the lesion, followed by complementary histological exam to confirm diagnosis (3, 10, 14), which reported that recurrence is rare, but when it occurs it is because the removal of the lesion was performed at a stage in which the tissue was not calcified.

The main goals of this report are to describe the surgical procedure and three-year clinical/radiographic follow-up of a child with compound or combined odontoma, in whom early diagnosis and treatment were fundamental for the correct positioning of permanent teeth.

Case report

Treatment began after documentary consent was given by the guardian of the child and approval was obtained from the Research Ethics Committee of the Metropolitan University of Santos.

The patient, a 5 year old boy (authorization for divulgation granted by the mother), was referred to the Pediatric Dentistry Clinic of the Dentistry Faculty of Santos (FOUNIMES) for routine dental treatment.

During anamnesis no alterations or abnormalities were found. Extraoral physical examination showed a symmetric face, and intraoral examination showed complete primary dentition, maxillary central incisors with small incisal fractures and periodontium with a normal appearance (Figure 1). However, a discrete volume, painless on palpation, was observed in the region of the adhered vestibular mucosa of tooth 51. For this reason, a complementary radiographic exam was requested. The panoramic radiograph showed a radiopaque mass very similar to that of an odontoma at the height of the right central incisor and the periapical radiograph suggested that the radiopaque structures (denticles) were not interfering in the development of the permanent central incisor germ (Figure 2).



Figure 1 - Initial intraoral clinical aspect: note normal color of mucosa, presence of complete primary dentition and discrete curvature in the region of tooth 51



Figure 2 - Periapical radiograph showing the denticles of the compound odontoma

The hypothesis of the presence of a compound odontoma was admitted after the analysis of the clinical and radiographic exams, which also contributed to the indication for removing it surgically. The procedure consisted of: antisepsis, anaesthesia and incision of the Newman type through the vestibular approach, involving teeth 51 and 53. The flap was folded, and osteotomy was performed with the aid of a bur and chisels to reach the bone recess in which the tumor was situated (Figure 3). After removing the calcified structures and several denticles (Figure 4), which were sent to the pathology sector for analysis, the surgical recess was treated by curettage and irrigation with physiologic solution, and the flap was replaced and sutured. The patient was prophylactically medicated for three days with an oral suspension of Amoxicillin 250 mg, at a dose of 5 ml every eight hours and 25 drops of 50 mg Diclofenac Potassium every 6 hours to act on the inflammatory process and minimize the pain. Furthermore, instructions were given with regard to post-operative care, such as: diet of warm food of a semi-pasty consistency, rest and no sporting activities on the first two days. The guardians were requested to return seven days after surgery for removal of the suture and for periodic control and follow-up visits (every six months).

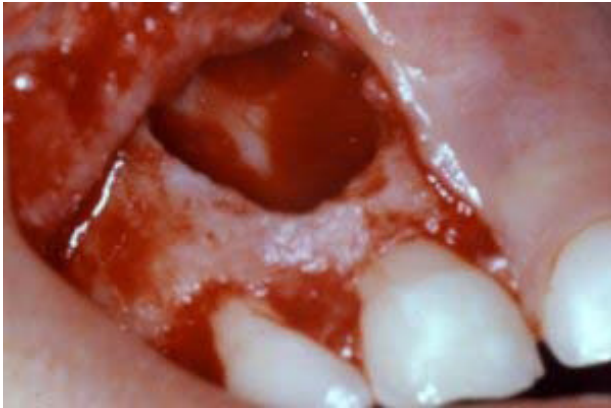


Figure 3 - Cavity with smooth ridge, in which the orthodontogenic tumor was located, in conditions to be covered by the mucosa and sutured



Figure 5 - Intraoral aspect 18 months after surgery, one third of the crown of tooth 11 in the alveolar ridge

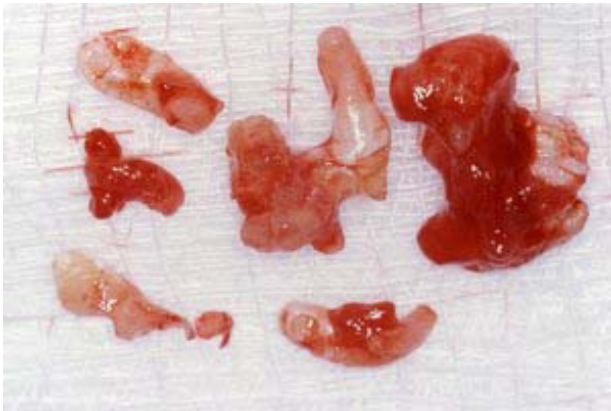


Figure 4 - Denticles and part of the capsule and component structures of the odontoma. Incisors close to exfoliation and rhizogenesis of harmonious central incisors



Figure 6 - Periapical radiograph showing discrete acceleration in the eruption of tooth 11

After one year, complete rhizolysis of the primary central incisors and favorable position of permanent teeth were observed radiographically. Clinical (Figure 5) and radiographic (Figure 6) control after 18 months revealed the presence of the right central permanent incisor erupting in the alveolar ridge line and the incisor on the left side still covered by mucosa. Two years after surgery it could be observed that the two central incisors were almost completely erupted and in the same occlusal line, as shown in clinical (Figure 7) and radiographic (Figure 8) control images.



Figure 7 - Intraoral aspect two years post-surgery, in which it can be observed that the two central incisors are in the same occlusal line

Early diagnosis and treatment enabled eruption to occur within the sequence, allowing the space and alignment of permanent incisors in the maxilla to be maintained, as can be observed clinically (Figure 9)



Figure 8 - Radiographic aspect showing harmonious and proportional development of central incisor roots



Figure 9 - Intraoral aspect after three years of follow-up, in which one can observe that alignment of the permanent incisors is within the acceptable patterns for permanent incisors

and radiographically (Figure 10) after three years of follow-up.

Discussion

Even when facing normal anatomic and functional characteristics in primary dentition, malocclusion problems may occur in the first stage of mixed dentition, sometimes due to non-diagnosed anomalies in the first dentition. Among these manifestations, the most common occurrence is impaction of permanent teeth and retention of deciduous teeth, resulting from different etiologies (3, 4, 10). As can be observed in the case presented, the patient was at the stage of deciduous dentition, and apparently



Figure 10 - Radiograph showing complete formation of permanent incisor roots, after three years of follow-up

within normal patterns, except for the slight volume in the vestibular mucosa of tooth 51, which could easily have been understood as germ of tooth 11 still being in development in the intraosseous phase. Therefore, the complementary radiographic exams requested for better verification of the case were fundamental to enable a diagnosis to be made.

In the majority of cases, diagnoses of pathologies such as odontomas are made during the development and eruption of permanent dentition (7, 8, 15, 16), at the time when the patient is providing the documentation for having orthodontic and/or orthopedic treatment performed. However, in this case, diagnosis and treatment were established earlier, before the patient entered the first stage of mixed dentition. This procedure favored normal development of permanent teeth in the maxillary anterior region preventing aesthetic, occlusion and phonation problems.

The odontoma was confirmed by radiographic examination, in accordance with Yildirim, Yilmaz and Aydin (17), who emphasized that this examination is an important ally in the discovery of intraosseous pathologies. Panoramic radiographs help to locate lesions, and periapical radiographs show details of the affected teeth, bone structure involved

and the peculiar characteristics of the lesions (4). However, anamnesis, and detailed, attentive clinical examination must be appreciated, because in some cases small alterations in volume or shape may represent some pathology which, if treated in the first stages, leads to more favorable prognosis (18), as confirmed in the case presented. Early detection and treatment of the odontoma are procedures that favor the development of the dentition of the patient; therefore, the dentist who attends a child patient, especially pediatric dentists and orthodontists, must be alert to signs of changes from normality.

The decision to surgically remove the odontoma is corroborated by several authors (17, 19, 20). Furthermore, they also agree that the longer the removal of the lesion is postponed, the greater is the chance that the odontoma interferes in the eruption and formation of the adjacent teeth and structures.

In this case, radiographically, the germs of teeth 21 and 11 were under compound odontoma (confirmed by the anatomic-pathologic exam), particularly tooth 11, which was shown to be slightly short of the ridge line when compared with tooth 21. The germs of teeth affected by the lesion presented no morphological or structural alteration. Thus, these conditions contributed to the indication for surgical removal of the odontoma.

One year after surgical intervention, the radiographic exam showed harmonious and proportional development of the central incisor roots, and this condition was maintained until the complete formation of the root. There was discrete acceleration in the eruption of tooth 11 in comparison with 21, and this difference began to disappear until—in the assessment two years later—becoming inexistent.

In the clinical/radiographic follow-up, it was observed that the growth and development of the maxillary anterior region and teeth occurred normally, with preservation of space in the arch, integrity of the supporting structures and good dental alignment, which favored aesthetics and functionality, with the aid of an orthodontic appliance. A similar case was reported, in which the lateral incisor and right maxillary permanent canine were intraosseous, space in the arch preserved and with the direction of eruption following the line of the alveolar ridge, but with difficulty to erupt due to the presence of a compound odontoma (21). Early diagnosis and the surgical treatment plan implemented, after

18 months of follow-up, revealed that eruption of these teeth occurred with natural alignment, avoiding the need for placing an orthodontic appliance.

Surgical removal of an odontoma diagnosed early (still in primary dentition) after careful clinical and radiographic analysis of the location, stage of formation and position of the teeth, is an approach which, in the majority of cases, favors eruption and alignment of permanent teeth.

References

1. Maaita JK. Oral tumors in children: a review. *J Clin Pediatr Dent.* 2000;24(2):133-135.
2. Silva LF, David, L, Ribeiro D, Felino A. Odontomas: a clinicopathologic study in a portuguese population. *Quintessência Int.* 2009;40(1):61-72.
3. Hegde S, Pal S. Erupted compound odontoma associated with impacted maxillary second premolar: a case report. *Arch Oral Res.* 2012;(1):73-6.
4. Batista SS, Montebello Filho A, Junqueira JLC, Tavano O. Prevalência de lesões compatíveis com odontoma em radiografias panorâmicas de uma clínica radiológica. *Rev Gaúcha Odontol.* 2010;58(2):197-202.
5. Chrcanovic BR, Jaeger F, Freire-Maia B. Two-stage surgical removal of large complex odontoma. *Oral Maxillofac Surg.* 2010;14(4):247-52.
6. Sidana S, Poonja K, Galinde J, Poonja LS. Calcifying cystic odontogenic tumor with compound odontoma. *J Contemp Den.* 2013;3(1):36-9.
7. Hidalgo-Sánchez O, Leco-Berrocal MI, Martínez-González JM. Meta-analysis of the epidemiology and clinical manifestations of odontomas. *Med Oral Patol Oral Cir Bucal.* 2008;13(11):730-4.
8. Díaz JCQ, Campos LA, García MV, Acosta YA, Giralt MQ. Comportamiento clínico-patológico de odontomas. *Rev Cubana Estomatol.* 2012;49(3):215-22.
9. Amado CS, Gargallo AJ, Berini AL, Gay EC. Review of 61 cases of odontoma. Presentation of an erupted complex odontoma. *Med Oral.* 2003;8(5):366-73
10. Advani S, Sogi S, Hugar S, Patil S. An unerupted primary cuspid and a permanent lateral incisor associated with a compound odontoma. *Indian J Oral Sci.* 2012;1(3):34-8.

11. Güngörmüş M, Yolcu U, Aras MH, Halicioğlu K. Simultaneous occurrence of compound odontoma and arrested root formation as developmental disturbances after maxillofacial trauma: a case report. *Med Oral Patol Cir Bucal*. 2010;15(2):398-400.
12. Serra-Serra G, Berini-Aytés L, Gay-Escoda C. Erupted odontomas: a report of three cases and review of the literature. *Med Oral Patol Cir Bucal*. 2009;14(6):299-303.
13. Delbem AC, Cunha RF, Bianco KG, Afonso RL, Gonçalves TC. Odontomas in pediatric dentistry: report of two cases. *J Clin Pediatr Dent*. 2005;30(2):157-60.
14. Magnabosco Neto AE, Capella DL. Tratamento conservador de grande odontoma complexo em mandíbula. *RFO*. 2011;16(3):317-21.
15. Tomizawa M, Otsuka Y, Noda T. Clinical observations of odontomas in Japanese children: 39 cases including one recurrent case. *Int J Paediatr Dent*. 2005;15(1):37-43.
16. Fernandes AM, Duarte EC, Pimenta FJ, Souza LN, Santos VR, Mesquita RA, et al. Odontogenic tumors: a study of 340 cases in a Brazilian population. *J Oral Pathol Med*. 2005;34(10):583-7.
17. Yildirim D, Yilmaz HH, Aydin U. Multiple impacted permanent and deciduous teeth. *Dentomaxil Radol* 2004;33:133-5.
18. Mehrotra D, Kamboj M. Recurrent odontogenic myxofibroma of the mandible in a 12 year old: an illustrative case report. *J Clin Pediatr Dent*. 2008;32(4):309-12.
19. Vianna AP, Monini AC, Machado AW, Gandini Júnior LG. Alternativa de tratamento simplificado e integrado da retenção intraóssea de incisivo central superior, associada a odontoma: relato de caso. *Rev Odontol Bras Central*. 2012;21(56):484-8.
20. Teruhisa U, Murakami J, Hisatomi M, Yanagi Y, Asami J. A case of unerupted lower primary second molar associated with compound odontoma. *Open Dent J*. 2009;3:173-6.
21. Bengtson, AL, Bengtson, NG, Benassi, LRDC. Odontomas em pacientes pediátricos. *Rev Odontopediatr*. 1993;2(1):25-33.

Recebido: 05/06/2013
Received: 06/05/2013

Aceito: 30/06/2013
Accepted: 06/30/2013