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CASE PRESENTATION

Early detection of composite odontoma as a preventive measure in dental retention. Case report

Detección temprana del odontoma compuesto como medida de prevención en la retención dentaria. Reporte de caso

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ABSTRACT

Introduction: compound odontoma is a benign tumor lesion that can be associated with alterations in the eruption or retention of teeth, revealed through routine radiographic images.
Objective: to report the clinical management of a 10-year-old female patient with a compound odontoma.
Case presentation: complementary studies such as panoramic radiography and computed axial tomography were performed prior to surgical treatment. The imaging examination revealed the presence of a radiolucent mixed lesion with radiopaque areas inside which resemble teeth, delimited, with a radiolucent edge. The presence of the retained upper left canine close to the edge of the lesion was also confirmed. Timely diagnosis was essential and enucleation was optimal; in addition, the patient had a good postoperative evolution.
Conclusions: early diagnosis of the lesion is of utmost importance to carry out successful treatment in enucleation and intercept dental retentions in an early period.

Keywords: Odontoma; Cuspid; Exéresis.

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RESUMEN

Introducción: el odontoma compuesto es una lesión tumoral benigna que se puede asociar con alteraciones en la erupción o retención de las piezas dentales, revelado a través de las imágenes radiográficas de rutina.
Objetivo: reportar el manejo clínico de un paciente de sexo femenino de 10 años de edad con un odontoma compuesto.
Presentación de caso: se realizaron estudios complementarios como radiografía panorámica y tomografía axial computarizada previa al tratamiento quirúrgico, al examen imagenológico se observó la presencia de lesión mixta radiolúcida con zonas radiopacas en su interior las cuales se asemejan a dientes, delimitada, con borde radiolúcido. También se comprobó, la presencia del canino superior izquierdo retenido cercano al borde de la lesión. El diagnóstico oportuno fue indispensable y la enucleación óptima, además, la paciente tuvo buena evolución postoperatoria.
Conclusiones: el diagnóstico anticipado de la lesión es de suma importancia para realizar un tratamiento acertado en la enucleación e interceptar en un periodo temprano las retenciones dentarias.

Palabras clave: Odontoma; Canino; Exéresis.

INTRODUCTION

The term "Odontoma" was used for the first time in 1867 thanks to Paul Broca, a concept originally used to refer to benign tumor lesions of odontogenic origin.[1] Authors mention that in reality odontomas should not be considered true neoplasms, but hamartomatous malformations that contain dental structures, such as enamel, dentin and even cementum and pulp; a consequence of an alteration in the proliferation of fully differentiated odontogenic epithelial and mesenchymal cells, with the capacity to form these tissues.[2,3]

The World Health Organization (WHO) classifies odontomas mainly into compound and complex. In a compound odontoma we will find a complete histodifferentiation of the dental tissues, and they will be represented in an orderly manner, following a morphological pattern similar to that of a small tooth. A complex odontoma is observed as a solid knotty mass of these tissues, which will be completely histodifferentiated, however, arranged in a disordered and disorganized way.[4]

Odontoma is considered one of the most frequent odontogenic tumors, constituting 67 % of the cases related to these lesions; with a greater predominance in the first two decades of life, presenting little or no predilection for a specific sex. Compound odontomas are more frequently found in the anterior portion of the maxilla, as opposed to complex odontomas that have a preference for the posterior sector of the mandible, located above retained teeth.[5]

Odontomas do not usually generate serious complications and are typically asymptomatic, however, they can be related to alterations in the eruption of dental pieces, as in the case of impacted teeth, delayed dental eruption and retention of deciduous or permanent teeth; therefore, their recognition in the clinic is generally when the patient comes for consultation for a late eruption of a permanent tooth and the odontoma is revealed through routine radiographic images. Establishing orthopantomography as the main tool for its discovery and diagnosis.[6]

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Radiographically an odontoma appears initially as a radiolucent image, as it calcifies, radiopaque areas will be found.[7] The compound odontoma is observed as a radiopaque mass, with variations in its shape and size, related to the calcification of multiple structures, adopting a shape similar to a denticle; and surrounded by a thin radiolucent area. This malformation is usually located on the crowns of unerupted teeth or between the roots of erupted teeth. Microscopically it has a similar histological structure corresponding to a tooth of the normal dentition.[8]

Generally this type of lesions can be effectively detected with an orthopantomography or panoramic radiography, being this the diagnostic tool most used by the dentist in clinical practice. However, in some cases a panoramic x-ray will not provide enough information and a computerized axial tomography (CAT) will be performed, which allows a three-dimensional visualization with better resolution of the odontoma, thus, the most adequate treatment plan for the patient can be evaluated and developed.[9]

Although it is true that odontoma does not usually present severe complications and it is considered an asymptomatic pathology, in some cases it can be related not only to a delayed dental eruption, but its size can increase to approximately 1 to 3 cm in diameter, causing facial asymmetry. It is associated with malocclusions and temporomandibular joint (TMJ) disorders. In addition, it can be related to inflammation and infection in the area where it is located, and it can even be associated with a possible development of a tumor or cystic pathology.[6]

The treatment of choice for this type of tumor consists of the total surgical removal of the odontoma and the elimination of the surrounding connective tissue capsule as a conservative measure to allow the natural eruption of the impacted tooth. When the odontoma has completed its calcification stage, the risk of recurrence is minimal. The extracted specimen should be properly prepared for histopathological study in order to reach a definitive diagnosis of the lesion.[9]

In most cases the extirpated odontoma has a small size, compared to a normal tooth, and the impacted tooth will not have a major deviation. In this sense, it is important that after the excision a radiographic evaluation is performed to see the state of the impacted tooth root, if it is still developing, its eruption potential will be sufficient for a favorable prognosis.[10] A first post-surgical control is recommended one month after the procedure, to evaluate the progress of recovery and the state of the retained tooth through a radiographic study. After three months a second control will be performed following the same evaluation dynamics.[2]

CASE PRESENTATION

A 10 year old female patient presented with a retained upper left temporal canine and absence of the permanent and first premolar, with no symptoms. The intraoral examination showed the same symptoms as the patient's grandmother, and palpation did not show any alteration in the morphology of the left upper jaw.

Panoramic radiography is indicated and evaluated in which the presence of a radiolucent mixed lesion with radiopaque areas inside which resemble teeth, delimited, with radiolucent border is observed. The presence of the retained upper left canine close to the edge of the lesion was also observed (Fig. 1). A computerized axial tomography (CAT) is requested, which confirms the presence of a formation in which dental formations can be distinguished adjacent to the piece 23 and 24 of 14,1 x 15 x 10,27 mm in whose edges a radiolucent halo can be seen, being compatible with the suspicion of compound odontoma (Fig. 2).

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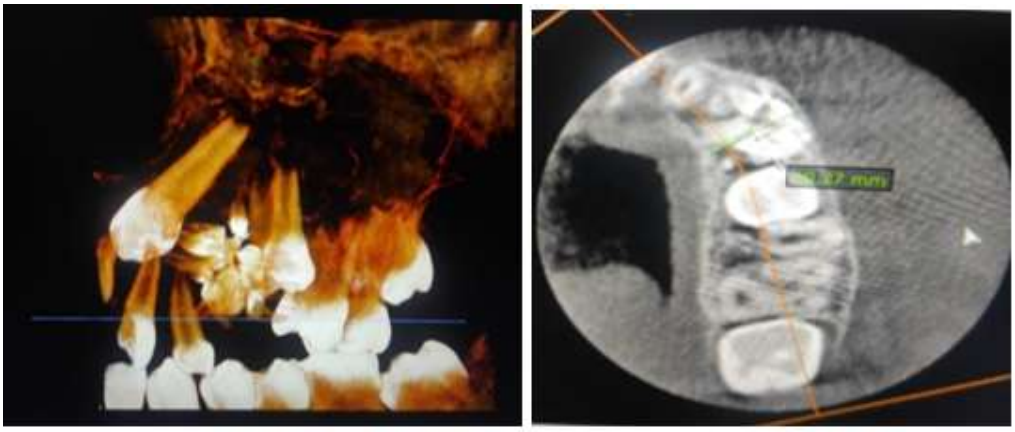
Source: Research team

Fig. 1 The presence of the retained upper left canine close to the edge of the lesion.



Source: Research team

Fig. 2 Computed axial tomography.

The surgical treatment is scheduled, the surgical procedure is explained to the patient and his grandmother (because he is a minor), as well as the corresponding signature on the informed consent form, after evaluation and consultation with orthodontics for the treatment of teeth 23 and 24, concluding the possibility of a traction of the teeth, after the excision of the odontoma; once the corresponding clinical and radiographic evaluation has been carried out.

Asepsis and antisepsis of the extra and intraoral region was performed with gauze moistened with 2 % chlorhexidine, then sterile fields were placed according to protocol. Anatomical landmarks were established, lidocaine was infiltrated with 2 % epinephrine, an infraorbital technique with circuit closure in the nasopalatine nerve using two cartridges of anesthesia. Once anesthesia was established, a Newman incision approach was performed. The flap was decollated with the help of curettes and then access to the cyst was gained by removing the bone covering it, using rotary instruments and abundant irrigation (Fig. 3).

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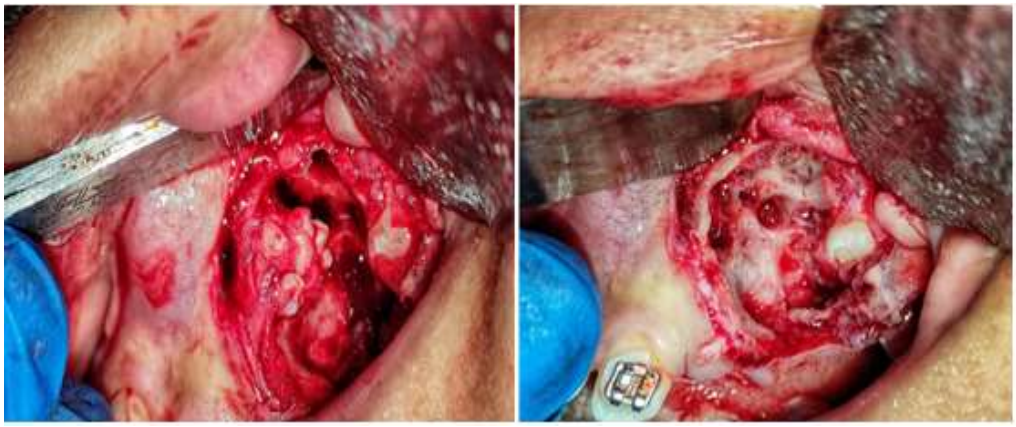

Source: Research team

Fig. 3 Access the cyst by removing the overlying bone.

The encapsulated cystic lesion is observed to be detached and enucleated in its entirety (Fig. 4). Finally, the surgical bed is cleaned with saline and the flap is replaced, facing the edges with simple 4/0 absorbable braided polyglycolic braided stitches.

Source: Research team

Fig. 4 The encapsulated cystic lesion peeling off.

Since the patient weighed 30 kg, in order to reduce edema, infection and postoperative pain, pharmacotherapy was prescribed with amoxicillin at a dose of 25 mg/kg distributed every eight hours for five days and paracetamol at a dose of 15 mg/kg distributed every eight hours for three days. In addition, the following postoperative indications for hygiene and diet were given in writing:

- Apply an ice pack for 20 minutes over the left maxilla waiting another twenty minutes between applications. These intervals can be continued for the next 24 to 48 hours.
- Do not rinse your mouth on the day of surgery.
- Do not spit or manipulate the wound area with the tongue.
- Liquid or soft diet that does not require chewing, during the first 24-48 hours, increasing fluid intake and gradually incorporating a normal diet.

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- Sleep with the head slightly elevated the first day after surgery.
- Maintain a rigorous oral hygiene, brushing the mouth except in the area where the surgery was performed.
- Relative rest 48/72 hours.
- Rinses with chlorhexidine or saline water, previously using a syringe and blunt needle, to wash the manipulated area and the suture threads under pressure with the patient's preferred solution.

Ten days later, in the postoperative review, there was a good evolution of the area with soft tissues in a perfect state of healing.

DISCUSSION

In relation to the review of the literature, odontomas are widely discussed and all agree that odontomas are the most common malformation of their kind, representing between 21 to 67 % of this type of malformation.[11] As can be seen in the review of the case, the odontoma presented multiple small parts, thus being a differentiating factor with the majority of the cases reviewed in the literature.

The odontoma presented in this case was located in the maxilla, in the anterior region at the level of teeth 23 and 24, this being one of the areas where this type of malformation is most commonly seen.[12] We found a similarity with the literature in relation to the fact that compound odontomas are located in most cases in the anterior region, at the level of the incisor teeth or with canines.[13]

Benign odontogenic tumors can appear at any stage. However, Lagarón C et al recognize,[12] in their article that odontomas are more common in pediatric patients. Also, Martinovic G et al,[14] agree that there is no marked difference in prevalence related to sex, but they do mention that odontoma is more frequent in the second decade of life. In the clinical case presented, the patient is female and is in the first decade of life, being a pediatric patient.

Regarding the diagnosis, Irías N and Canales D [15] mention that normally this lesion is diagnosed accidentally through routine radiographs, due to the fact that this anomaly usually presents asymptomatically. In their article the patient arrives at the dental office referred due to the radiographic finding made by the orthodontist by chance. However, in this clinical case there was a cue for radiography and subsequent diagnosis, similar to the case of Maltagliati A et al,[16] where there were also certain complications in their patients that led to the need for radiographic imaging.

Finally, Maltagliati A et al,[16] argue that an Er:YAG laser procedure with a wavelength of 2.940 nm can be performed due to its properties suitable for treating hard tissues.[17] However, the treatment used in their clinical case was conventional surgery by means of a flap decollage in order to reveal the cyst and enucleate the compound odontoma; and it is also recommended by most authors as the appropriate treatment for enucleation of the odontoma.[17]

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CONCLUSIONS

The reason for consultation of a patient with odontoma often manifests itself with a delay in the eruption of the permanent dentition, alteration of the dental position, increase in volume at the site of formation, therefore, it is relevant the timely diagnosis to intervene in the enucleation of this pathological lesion and make consultation with an orthodontist to determine if there is the possibility of a long-term orthodontic treatment of the retained pieces.

Conflicts of interest
No conflicts of interest

Authorship contribution
MRBR: conceptualization, research, administration, draft-writing, methodological review, approval of final manuscript.
AGLM: conceptualization, drafting, drafting, methodological review, approval of final manuscript.
MARS: drafting-drafting, methodological review, approval of final manuscript.
JECS: drafting-drafting, methodological review, approval of final manuscript.

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BIBLIOGRAPHIC REFERENCES

1. Anastasya N, Azhari, Farina P. Panoramic radiography features of complex odontoma in impacted teeth: a scoping review. Jurnal Radiologi Dentomaksilofasial Indonesia [Internet]. 2022 [Citado 03/04/2024]; 6(3). Disponible en: http://jurnal.pdgi.or.id/index.php/jrdi/article/view/889

2. Lagarón C, Lagarón G, Lagarón C. Odontoma compuesto: presentación de un caso. Odontología Pediátrica [Internet]. 2021 [Citado 03/04/2024]; 29(2). Disponible en: https://dialnet.unirioja.es/servlet/articulo?codigo=8202154

3. Mazur M, Di Giorgio G, Ndokaj A, Jedliński M, Corridore D, Marasca B, et al. Characteristics, Diagnosis and Treatment of Compound Odontoma Associated with Impacted Teeth. Children (Basel)[Internet]. 2022 [citado 03/04/2024]; 9(10): 1509. Disponible en: https://www.mdpi.com/2227-9067/9/10/1509

4. Kamlakar K, Kisan S. Management of multiple compound odontomas in maxillary anterior region of jaw: case report. International Journal of Applied Dental Sciences [Internet]. 2023 [Citado 03/04/2024]; 9(2). Disponible en: https://www.semanticscholar.org/paper/Multiple-compound-odontomas-in-the-jaw%3A-case-report-Bordini-Contar/06324b47b9863a492b21fde18b2120911af5845d

5. Thompson LDR. Odontoma. Ear, Nose and Throat Journal [internet]. 2021 [Citado 03/04/2024]; 100(5 suppl). Disponible en: https://journals.sagepub.com/doi/full/10.1177/0145561319890175

ISSN: 1561-3194 **RNPS:** 1877
Rev Ciencias Médicas. 2024; 28(S1): e6479

6. Falkinhoff P, García E. Los odontomas y sus implicancias. Rev Asoc Odontol Argent [Internet]. 2019 [citado 03/04/2024]; 107(1). Disponible en: https://raoa.aoa.org.ar/revistas/revista_abstract?t=25&d=los_odontomas_y_sus_implicancias&volumen=107&numero=1/

7. Chacon O, Cantillo Y, Simons S. Odontoma compuesto. Presentación de un caso. Rev Información Científica [Internet]. 2018 [Citado 03/04/2024]; 97(2): 486-495. Disponible en: https://revinfcientifica.sld.cu/index.php/ric/article/view/1919

8. Preoteasa C, Preoteasa E. Compound odontoma – morphology, clinical findings and treatment. Case Report. Rom J Morphol Embryol [Internet]. 2018 [Citado 03/04/2024]; 59(3): 997-1000. Disponible en: https://pubmed.ncbi.nlm.nih.gov/30534846/

9. Burgos J, Argandoña F, Lara G. Inclusión dentaria por un odontoma compuesto. Revista de Investigación e Información en Salud [Internet]. 2022 [citado 03/04/2024]; 17(43). Disponible en: https://revistas.univalle.edu/index.php/salud/article/view/390

10. Epodes R, Tomé M, Arrascaeta M, Hernández J. Odontoma compuesto como causa de retención dentaria. Presentación de dos casos clínicos. Multimed [Internet]. 2019 [Citado 03/04/2024]; 23(2): 355-363. Disponible en: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1028-48182019000200355

11. Aquino da Silva V, Prado R, Sperandino F, Alves D, Cardi M, Costa J. Odontomas are associated with impacted permanent teeth in orthodontic patients. J Clin Exp Dent [Internet]. 2019 [citado 03/04/2024]; 11(9): e790-e794. Disponible en: http://dx.doi.org/10.4317/jced.56101

12. Cuellar S, Meza B, González A. Odontoma compuesto como factor de retención dentaria. Reporte de un caso. Revista de Investigación & Clínica Odontológica [Internet]. 2022 [Citado 03/04/2024]; 2(1): 32-35. Disponible en: https://revistaodontologica.com/articulo.php?id=116534

13. Bueno N, Bergamini M, Elias FBSP, Ferraz E. Unusual giant complex odontoma: A case report. J Stomatol Oral Maxillofac Surg[internet]. 2020 [Citado 03/04/2024]; 121(5): 604-607. Disponible en: https://pubmed.ncbi.nlm.nih.gov/31904531/

14. Martinovic G, Santorucuato B, Aliste J, Plaza C, Raffo J. Odontoma Compuesto: Diagnóstico y Tratamiente. Reporte de Casos & Revisión de la Literatura. Int. J. Odontostomat [Internet]. 2017 [Citado 03/04/2024]; 11(4): 425-430. Disponible en: https://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0718-381X2017000400425

15. Irías N, Canales D. Impactación dentaria por odontoma compuesto: reporte de caso y revisión de literatura. Odontología Vital [Internet]. 2019 [Citado 03/04/2024]; (32): 7-14. Disponible en: https://www.scielo.sa.cr/scielo.php?script=sci_arttext&pid=S1659-07752020000100007

16. Maltagliati A, Ugolini A, Crippa R, Farronato M, Paglia M, Blasi S, et al. Complex odontoma at the upper right maxilla: Surgical management and histomorphological profile. European Journal of Paediatric Dentistry [Internet]. 2020 [Citado 03/04/2024]; 21(3): 199-202. Disponible en: https://pubmed.ncbi.nlm.nih.gov/32893652/

ISSN: 1561-3194 **RNPS:** 1877
Rev Ciencias Médicas. 2024; 28(S1): e6479

17. Tovar C, Tovar D, Álvarez C. Odontoma compuesto. Revista Tamé [Internet]. 2020 [Citado 03/04/2024]; 8(24): 993-996. Disponible en: https://www.medigraphic.com/cgi-bin/new/resumen.cgi?IDARTICULO=100295