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ODONTOMA COMPOUND PREVENTING DENTAL IRRUPTION AND START OF ORTHODONTIC TREATMENT: CASE REPORT

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ABSTRACT

Odontomas are formed as the most common odontogenic tumors, defined as a benign malformation, wherein the cells reach full differentiation, reaching a stage, in which all dental tissues are shown. Are classified in odontomas complexes and compounds. They are usually asymptomatic and diagnosed through routine radiographic examination. Treatment for this type of injury is surgical excision and the prognosis is excellent. This study report a case of Odontoma a 9-year-old patient where Odontoma, discovered through a radiographic examination, was preventing rhizolysis the mesial root of the tooth 74 and the subsequent eruption of the tooth 35. This radiographic finding It occurred during an appointment with the orthodontist. It was concluded that the excision of odontomas were of fundamental importance to eruption of tooth 35 and consequent start of orthodontic treatment.

KEYWORDS: Odontoma compound, rhizolysis, orthodontic treatment.

1. INTRODUCTION

Odontomas were not reason to study in remote times, probably due to the lack of radiographic practice[1]. However, its existence was proven in a tomb excavation in Lewes, a city located in the American state of Delaware, in which it detected a maxillary odontoma of a man, dating from 500 to 1800 BC. In 1863, the term 'odontoma' was adopted by Paul Broca to report benign tumors of odontogenic origin[2,3,4,5].

Odontomas are the most frequent types of odontogenic tumors[5,6,7]; Representing up to 70% of these[5,3]. It is an anomaly that arises as a result of disorders that affect the dental germ early, and it is accepted that the odontoma represents more hamartomatous malformation than a true neoplasm[8].

According to the World Health Organization (WHO), they are classified into two main types: complex and compound. Composite odontomas are those that originate from an exaggerated proliferation of the dental blade, in which all dental tissues are represented in an organized manner, forming structures similar to denticles. In complex odontomas, in turn, the dental tissues represented are disordered, that is, morphologically they do not refer to the shape of teeth[5,9,10,11].

The incidence of compound odontoma corresponds to 67% of the cases, while the complex to 33%. The composite-type malformation is more frequent in the anterior region of the maxilla involving central, lateral and, mainly, canine incisors. The complex is preferably located in the mandible in premolar and molar regions[1,8].

Histopathologically, in composite odontoma, various tooth-like formations are seen in a loose fibrous matrix, the pulp tissue can be seen in the coronary or root portions of tooth-like structures and, in developing odontomas, there are structures that resemble germs. Complex odontoma consists of a large amount of mature tubular dentin, which surrounds circular crevices or cavities containing mature enamel during decalcification. The spaces may contain small amount of enamel or enamel matrix[12].

The presence of ghost cells in odontomas can also be verified. Immunohistochemical studies have shown that the incidence of these ghost cells in compound odontomas is greater than in complex odontomas, suggesting that the presence of ghost cells is related to the degree of differentiation of these lesions[12].

Radiographic examination is extremely important for the study and diagnosis of odontomas, presenting a characteristic appearance. In the composite type, the radiographic image is pathognomonic. It is observed, in the radiopaque image, dozens of denticles that simulate

teeth of small size surrounded by fine radiolucent area. In complex odontomas, radiopacity is not specifically determined, showing itself as an irregular and disorganized mass surrounded by a narrow radiolucent zone, promoting the need for the differential diagnosis[13,14].

Cases of lesions located between dental roots are included in the differential diagnosis, such as residual focal osteitis, cementoma, calcifying epithelial odontogenic tumor, adenomatoid odontogenic tumor, supernumerary teeth, cementifying fibroma or benign osteoblastoma. If the lesion is located in the pericoronial region, the differential diagnosis includes adenomatoid odontogenic tumor, calcifying epithelial odontogenic tumor, ameloblastic fibrodentinoma or ameloblastoma odontogen. Bone tumors that may resemble radiographically with complex odontoma are osteoma, osteoid, osteoblastoma, cementoblastoma, and cement-ossifying fibroma[3].

Clinically, they are most commonly detected in the first two decades of life, and there is no predilection for gender. Many are asymptomatic, being discovered on routine radiographic examination or when x-rays are taken to determine the reason for failure of a tooth eruption. They present slow evolution, reaching, in most cases, small proportions; But can reach large volumes, causing expansion of the cortical bone and painful sensation due to the compression of noble structures[5,15].

The exact etiologies behind the odontomas were elusive; they may be employed by diverse factors such as local trauma, infections, growth pressure, hereditary and developmental influences. Odontomas are often associated with pathological changes such as: impaction, malposition, aplasia, malformation, and devitalization of adjacent teeth[2].

The presence of odontoma can cause a number of disorders, with problems related to interference in the process of eruption of the tooth, delaying or preventing the eruption movements. And in some cases, provoking ectopic eruption still reports as possible sequels: the displacement and malformation of neighboring teeth, diastema, anodontia and the pressure exerted by the odontoma that can cause pain, devitalization and dental resorptions. Therefore, most authors recommend that, once the odontoma is detected, it must be removed surgically[1].

The treatment is the surgical removal (excision) of the lesion, which is unanimous in the literature. The technique employed for the removal of odontomas generally consists of the same basic surgical principles for extraction of included teeth. Small and medium odontomas can usually be easily enucleated because they are separated from the surrounding bone by a zone of connective tissue. However, access to large odontomas can be problematic, especially for those located in deeper areas. The occurrence of relapse is very remote, but not impossible. Eventually, complications such as fistula with purulent exudate may occur, when its size is large and located near the mucosa and subject to trauma. However, the prognosis is usually good[8,15].

The objective of the present study is to present a clinical case of an exestration of Compound Odontomas that was preventing the eruption of the tooth 34 and consequent onset of orthodontic treatment.

2. CASE REPORT

Patient L.F.V.B., male, 9 years old, leucoderma sought an Orthodontist for dental correction. This professional requested orthodontic documentation and when examining the panoramic radiographic examination (Figure 1), and a radiopaque image suggestive of Odontoma was detected between the teeth 74 and 34, which was confirmed by the radiographic report. Before the radiographic finding, the patient was referred to the surgical service of Clínica Neves Barbosa.

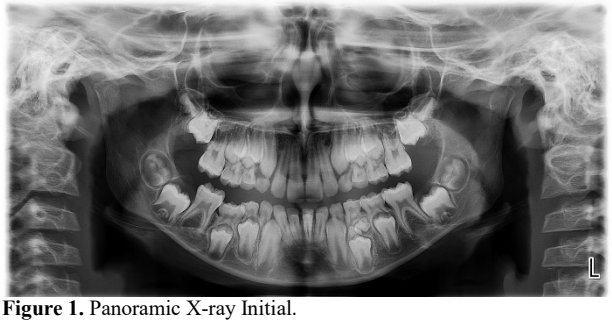

Figure 1. Panoramic X-ray Initial.

After careful anamnesis, intra-oral and radiographic examination, it was observed that the patient was in the mixed dentition phase. It was found that tooth 74 had incomplete root resorption due to tooth 35 being prevented from erupting due to the presence of Odontomas, a diagnosis confirmed by conical beam volumetric tomography with acquisition of 5x5cm volume (Figures 2, 3, 4 e 5).

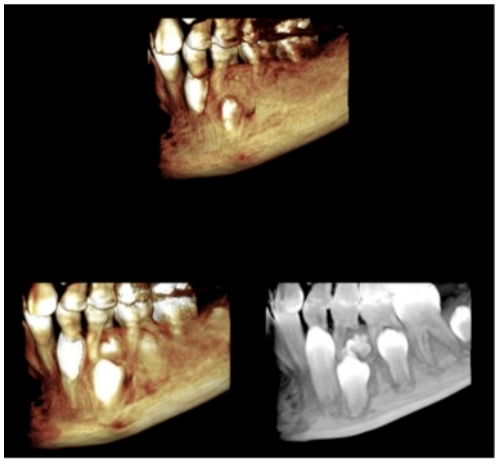

Figure 2. TC Reconstruction 3D.

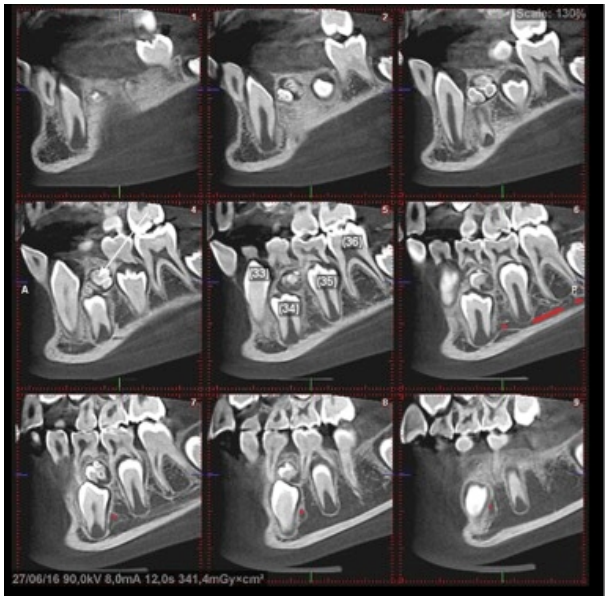

Figure 3. TC Sagittal Cut.

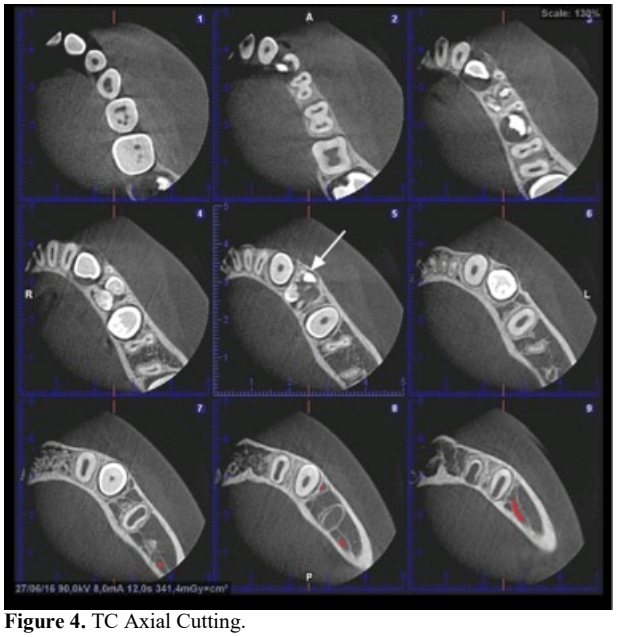

Figure 4. TC Axial Cutting.

Based on the clinical and radiographic examinations, the presence of Compound Odontoma was diagnosed, evidencing the need for a surgical intervention to remove the tooth 74 and Odontomas.

After the surgical marking, the surgical drug protocol was done as follows: Amoxicillin 250/5 mL, 5 mL V.O. Of 8/8 h and Nimesulide drops, 30 drops, V.O., 12/12 starting at 8:00 am the day before surgery.

On the day of surgery, asepsis and face antisepsis were performed with topical 2% chlorhexidine digluconate and 0.12% chlorhexidine digluconate mouthwash.

The mucosa was anesthetized with topical Benzocaine (Figure 6), after which the region was blocked by the mandibular technique with Lidocaine (1: 1000.000), anesthetizing the inferior alveolar nerve and its terminal branches. Soon after detachment the gum with detachable Molt (Figure 7).

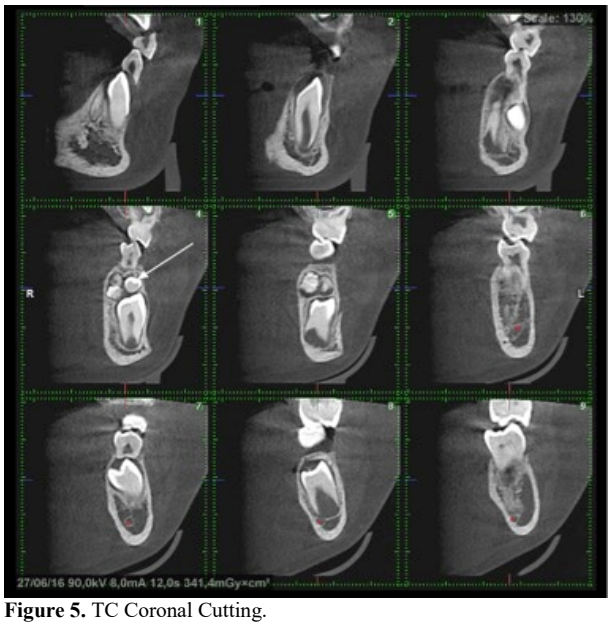

Figure 5. TC Coronal Cutting.

Figure 6. Mucosa Anesthesia.

Figure 7. Gingival Tissue Detachment.

The tooth 74 was withdrawn with the forceps number 06 (Figure 8), next to it was removed the tooth 73 which was completely rhizolized (Figure 9). Subsequently, the osteotomy was performed with a low rotational surgical spherical drill with irrigation to access the 3 odontomas (Figure 10 and 11), which were removed with extractors of Seldin (Figure 12).

Figure 8. Tooth Exodontia 74.

Figure 9. Teeth 73 and 74.

Figure 10. Osteotomy.

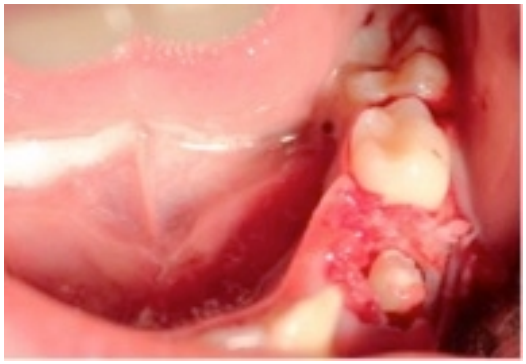

Figure 11. Osteotomy.

Figure 12. Removal of Odontomas.

Figure 13. X-ray Periapical Final.

The surgical shop was then irrigated with 0.9% cold saline and a periapical radiographic outlet was taken to check if the entire lesion had been removed (Figure 13).

The post-operative care was standardized and the preoperative medication was maintained. After 7 days he returned, observing a good cicatrization of the area.

3. DISCUSSION

Odontoma is a pathology that is usually asymptomatic, diagnosed clinically through routine radiographic examinations, or when investigating other events such as delayed exfoliation of deciduous teeth or permanent ectopic position of teeth[16]. The absence or failure of eruption of permanent teeth is the most common clinical manifestation in this pathology[5]. As described in the clinical case, the diagnosis was made through a tomographic examination where the compound odontoma prevented the irruption of the 35 according to the findings described in the literature.

These tumors occur more frequently in the maxilla than in the mandible. Although they may be found in any region of the jaws, the composite type is generally found in the anterior region of the maxilla, whereas complex odontomas develop more frequently in the molar region[2,4,6,8,9,10,11,12,17]. The study disagrees with this statement because composite odontoma was found in the mandible in the region of deciduous molars. Odontomas are asymptomatic pathologies, reaching, in most cases, small proportions. Sometimes they can reach large volumes, causing expansion of the cortical bone and painful sensation due to the compression of noble structures[4,5,18]; being also possible sequels as: displacement and malformation of neighboring teeth, diastema, anodontia and the pressure exerted by the odontoma can generate pain, devitalization and dental resorptions[13]. In the clinical case reported, the odontoma was asymptomatic, of small proportion, presenting as sequela the irruption of the permanent tooth.

Odontomas occur more frequently in the permanent dentition and rarely appear associated with the deciduous dentition. In several cases, the lesion may appear during the mixed dentition period and may remain for a long time without being discovered[16]. This affirmation of the authors comes against the reported clinical case. In the patient the patient was in the mixed dentition phase, and the lesion was only diagnosed through orthodontic documentation to begin treatment.

Radiographically, composite odontomas are characterized as a set of structures similar to teeth, of varying shape and size, surrounded by a radiolucent zone, and their pathognomonic image consists of two or more small dentures. It usually depicts a retained deciduous tooth associated with a permanent non-erupted tooth[2,5,7].

Despite their benign and asymptomatic character, odontomas significantly interfere in the process of eruption of the permanent dental units, with the central incisor being the most frequently involved upper tooth[18]. The study agrees with what was stated, since it evidences the presence of multiple odontomas that changed the chronological order of irruption.

In most cases, odontomas are found in young patients being diagnosed mainly in the second decade of life[2,3,5,19,20]. In the clinical report, the patient was between the first decade of life and thus diagnosed earlier.

Early diagnosis, followed by appropriate treatment, can minimize possible aesthetic and functional damages. Since they are still present in the mixed dentition phase, simple ducts such as radiographic evaluation can be determinant for the diagnosis to be established in time, and for appropriate measures to be taken in order to allow the physiological irruption of the retained units without damage To the development of occlusion[1,19]. The study corroborates these literary findings, since, due to the early diagnosis, no surgical-orthodontic traction intervention was necessary.

The treatment of odontoma is surgical conservative, being relatively simple its removal, by the facility of cleavage[13,14]. Regarding the treatment of impacted tooth after the removal of odontoma, it is recommended that, if the tooth is in the phase of incomplete rhizogenesis, radiographic monitoring of its eruption[16]. This conduct was also advocated in the clinical case.

The odontoma can be treated without the need to remove the adjacent teeth[13]. However, in the clinical case presented, the teeth 73 and 74 were extracted.

4. CONCLUSION

The study concluded that the presence of odontoma causes several disorders to the patient, among them, prevent the dental eruption and thereby change chronology of eruption of the teeth. Based on the physical and radiographic examinations, the surgical removal of any lesion was performed, which is simple to perform and has an excellent prognosis, thus favoring the start of Orthodontic treatment.

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