



Surgery to remove an odontoma in a pediatric patient with integrated sedation in dentistry - case report

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1 INTRODUCTION

Odontomas are benign odontogenic tumors formed from epithelial and mesenchymal cells, defined as hamartomas (non-neoplastic disorganized proliferation of cells and tissues) composed of enamel, dentin, pulp and cementum, with different proportions. They usually occur in the permanent dentition and are rarely associated with deciduous teeth (HAMADA, 2021).

They are usually diagnosed in the first two decades of life, through radiographic examinations and are usually associated with disturbances in tooth eruption, causing impaction or delayed eruption. Its etiology is unknown, and may be associated with local trauma, inflammatory and/or infectious processes, mature ameloblasts, dental lamina remnants, and some anomalies and alterations in dental development.

Odontomas are divided according to WHO, as Compound and Complex, being the Compound, a malformation where the dental tissues are characterized by a more ordered pattern than in the Complex, and consists of many tooth-like structures, shaped like small denticles and formed by enamel and dentin. They have variable amounts of cementum and pulp tissue and can occur in any area, but are mainly located in the anterior region of the maxilla. The complex odontoma is a malformation in which all the dental tissues are represented, formed in a more disorganized pattern and occurs as a single amorphous mass formed by enamel and dentin, but may also have a variable amount of cementum and pulp tissue and occurs more commonly in the posterior region of the mandible (MARRA et al, 2021).

The vast majority of odontomas have slow and limited growth, are asymptomatic and often associated with delayed eruption of teeth or impacted tooth, and can cause later, edema, increased cortical bone or pain. They usually have a diameter between 1 and 2 cm, and when larger than 3 cm they are classified as giants. Odontoma treatment is done through surgical excision and can be associated with orthodontic treatment for malocclusion correction or dental traction in cases of teeth impacted by this cause.

Speaking of ASD or Autism Spectrum Disorder, this is defined as a neurodevelopmental disorder characterized by changes and damage in communication and social interaction, behavior, restrictive and repetitive interests and activities (PEREIRA et al. 2020).



People with autism usually have excessive sensory sensitivity and can be overwhelmed by incoming stimuli, such as visual, sound, smell and taste stimuli, which can appear as a real physical pain or can manifest a hyposensitivity to some painful and thermal stimuli, so the patient's response is not predictable. These patients may also have intellectual disabilities and significant behavioral problems, thus making dental care difficult. In these patients it may be necessary to perform conscious or deep sedation, or even general anesthesia, due to sensory sensitivity and or intellectual disability, for dental treatment (NARZISI et al.2020).

Higher levels of dental anxiety may affect the psychological state of the patient and promote several physiological manifestations such as muscle tension, palmar sweating, increased respiratory rate, changes in systolic and diastolic blood pressure, changes in heart rate and oxygen saturation (CAVALCANTE; CUNHA; LUZ; 2020).

The frequency of individuals diagnosed with ASD has increased in recent years, increasing the demand for patients in dental offices. These patients do not present oral health problems specific to the disease, but have a higher risk of caries, periodontal and orthodontic problems, because they generally have motor difficulties and less facial muscle tone. Thus, the dental surgeon needs to increase his knowledge about the particularities of the patient with ASD, associated comorbidities, and the most common oral pathologies, in order to perform an effective therapeutic conduct and return health to the patient. The use of humanized techniques and short appointments is necessary to help in the dental care. It is also important that there is harmony and trust between the parents/caregivers and the dental team. For the autistic individual to become familiar with the team and the environment, more than one session is often necessary. One should try to maintain constancy by always scheduling the appointment on the same day and time, as well as always keeping the team. The patient with autism has difficulty maintaining eye contact, and because of this, the dentist must use means to achieve this communication. The office should be calm and quiet, the professional should stand at the same height as the patient, in order to achieve eye contact, in addition to using colorful vests and caps and larger glasses (ARAUJO et al, 2021).

It is extremely important that during dental care the professional knows the individual and behavioral peculiarities of the autistic patient, satisfactorily meeting their needs and expectations of their caregivers. Tirado-Amador, Madera, and Leal-Acosta (2021) suggest that an approach should be made prior to the appointment in order to help minimize errors and gather information about the taste and preferences of the environment and control factors such as noise, distractions, colors, and office capacity.

Due to fear and/or behavior management problems, some children are unable to cooperate for dental treatment using only local anesthesia and psychological support. Sedation is necessary for these patients, so that dentists can provide high-quality, pain-free dental care. With this, the use of nitrous oxide is indicated, which is a gas with anxiolytic and sedative effects combined with varying degrees of analgesia and muscle relaxation. A common association to nitrous oxide, would be the drug Midazolam, which is a short-acting benzodiazepine with rapid onset of action, has anxiolytic, sedative, hypnotic, anticonvulsant,

and muscle relaxant activity, and often induces anterograde amnesia (ASHLEY; ANAND; ANDERSSON; 2021).

In caring for the patient with ASD, the dentist should conduct a careful interview with the family, gathering as much information as possible about the patient's behavior, likes and dislikes, favorite activities, and triggers for negative behavior. Based on this information, needs and associated comorbidities, the dentist will plan the treatment and oral health management of this patient (PAGANO ET AL, 2022).

2 OBJECTIVE

The aim of this paper is to explain and demonstrate how it is possible to diagnose cases of odontomas in autistic children, their etiology, treatment, as well as clinical and radiographic features. Besides the exposition of a case of compound odontoma in the left maxilla region of a 9 (nine) year old autistic patient, causing impaction of the left second permanent premolar, element 25.

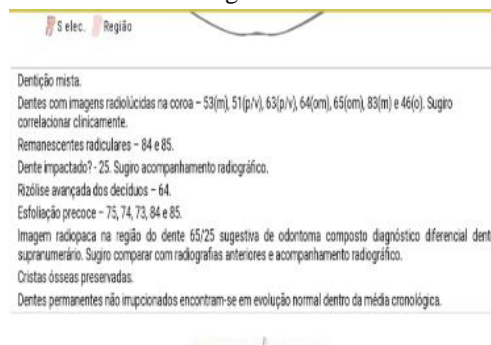
3 CLINICAL CASE REPORT

A 9-year-old male verbal autistic patient presented at the Forma & Sorriso Odontologia Estética clinic, located in the city of Nova Iguaçu, RJ, and was seen by Dr. Robertha Tulio for routine evaluation. In the first appointment, the patient was iatrosed, and after establishing trust in the team, the patient left to be monitored to check vital signs; complete panoramic and periapical radiography with bitewings was requested, for the investigation of the complaint (*figure 1; 1.1*)

Figura 1



Figura 1.1



After the panoramic result, a radiolucent image suggestive of cyst or odontoma was found in the region of tooth 25, and new exams were requested, including pre-surgical labs and Cone Beam CT, to confirm the previous diagnosis of odontoma, initially seen in routine panoramic. (*figure 2; 2.1*)

Figura 2

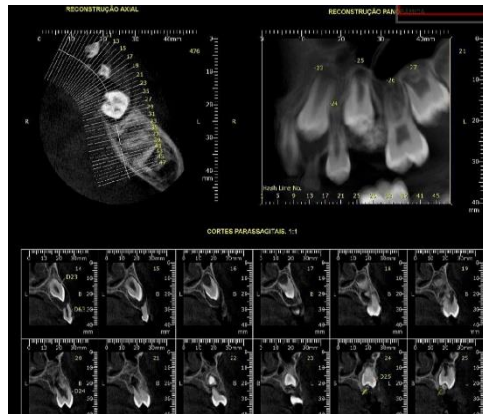


Figura 2.1



Radiographic and tomographic examinations revealed a radiopaque lesion located on the buccal surface along with the eruption of the permanent tooth. Several small tooth-like structures were observed within the lesion. The clinical diagnosis was compound odontoma and scheduled surgical excision and biopsy.

In the second consultation, on a different day, since the patient was autistic and the surgical procedure required tranquility and chair time, we opted for the use of the integrated sedation technique, where initially the following steps were performed:

- Monitoring before sedation, with 100% initial Saturation, 111bpm, (figure 3) and BP. 11x70mmHg;

Figure 3



- Weighing the patient (45kg)
- Administration of 1 (one) tablet of Midazolam 15 mg macerated with 10ml of water and a sachet of honey. (*figure 4*)

Figure 4



After 30 minutes, the patient, already visibly calm, was conditioned in the dental chair and associated with nitrous oxide 70% with 30% O₂, through a nasal mask, with continuous monitoring (*figure 5*).

Figure 5



The surgery to remove the compound odontoma was initiated, performed by the Oral and Maxillofacial Surgeon, and access was made by buccal flap (figure 6) in the region of the 25, and although sedation provided analgesia, 2 tubes of alphacaine 100 anesthetic were used and sutured in 3 simple stitches with resorbable thread (figure 7), and 10 specimens were removed for histopathology and conditioned in 10% formalin (figure 8) and confirmation of the diagnosis.

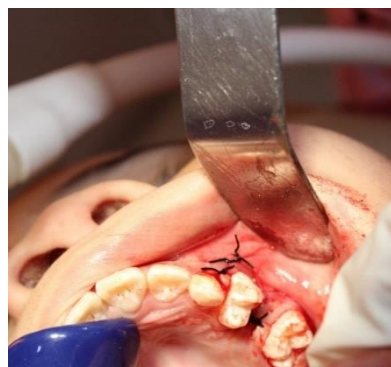
Figure 6



Figure 7



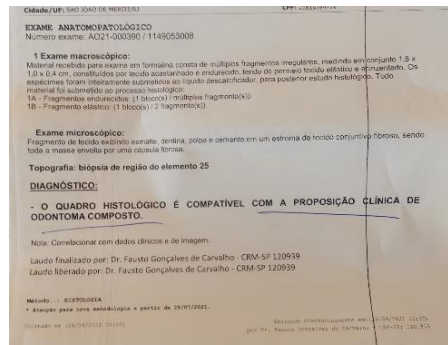
Figure 8



After 70 minutes in the chair, the patient was conditioned for monitoring, and release. Final saturation 99% and 97Bpm, patient awake and with no recollection of the procedure.

After 30 days, the patient returned for delivery of the biopsy report (figure 9), having confirmed the diagnosis of Compound Odontoma, being necessary follow-up to verify if tooth 25 will erupt after impaction by the collected specimens.

Figure 9



4 CONCLUDING REMARKS

Given the above, we see the importance of dental follow-up, physical examination and imaging. The odontoma has no symptoms, being diagnosed by chance in routine examinations. Moreover, it is extremely important that the dental surgeon has the knowledge about the clinical and radiographic characteristics of the odontoma, because this anomaly can bring several damages to the patient, such as: displacement of adjacent permanent teeth, ectopic eruption, impacted tooth, malocclusion, among others, thus being essential the early diagnosis and proper treatment.

Patients with Autism Spectrum Disorder (ASD) may present disorganization to stimuli, especially in the oral cavity. In addition, they may present behavioral or intellectual disabilities. This is why it is important to have individualized care, with a detailed anamnesis, in the presence of the patient, to verify his or her behavior, the medications the patient uses, and the doctors he or she is seeing. Besides getting to know the patient, through iatrosedation, we will gather information about his tastes and preferences, presenting a cozy environment, in order to control factors that bother him, such as colors, noises, and lights. As patients with Autism Spectrum Disorder (ASD) can present non-cooperative behavior, sedation will help in the dental treatment.

The associated sedation is the use of one or more drugs, able to allow the behavioral management, so that the dental treatment is performed in full, with total safety for the patient and the Dentist. The nitrous oxide associated with midazolam, helps to control pain and anxiety of the patient, induces amnesia and allows dental procedures to be performed safely, without pain, trauma and anxiety for the patient.

Thus, it was possible to conclude that the early dental follow-up of patients in the first two decades of life, especially those with autistic spectrum disorder, is extremely important to rule out several diagnoses that cause dental problems. Besides it is clear that the surgery for odontoma removal in pediatric autistic patients, under integrated sedation, is a much calmer, safer treatment, without causing neurological disorganization and trauma, because it does not require forced contention and rudimentary techniques. Humanized and safe dentistry needs to make use of techniques that provide this tranquility, such as the one discussed in this paper.

We conclude then, that patients with ASD may present disorganization to stimuli, lack of behavioral control, and stereotypes. Good iatrosedation enables us to introduce routine dentistry more easily into the



lives of autistic patients and their families. The use of integrated sedation helps a lot in the odontopediatric treatment of these patients, besides contributing to the performance of more invasive procedures, without traumas, pain, and memories, chair time optimization, patient relaxation, and safety in the surgical protocol. The routine follow-up, still in childhood, generating "custom" to the autistic, facilitating the early diagnosis of odontomas and other pathologies, thus avoiding future major problems.



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