

DECOMPRESSION OF DENTIGEROUS CYST IN MAXILLA

GABRIYELA CARMELO DACIULIS¹, JULIANA DUARTE BALDIN², CINTIA DE SOUZA ALFERES ARAÚJO³, PAULO NORBERTO HASSE⁴, EDUARDO AUGUSTO PFAU^{5*}

1. Graduated in Dentistry by University Paranaense – UNIPAR – Umuarama, PR; 2. Undergraduate Student in Dentistry by University Paranaense – UNIPAR – Umuarama, PR; 3. Graduated in Dentistry, Master by FOP-UNICAMP and Professor of the Dentistry Course of the University Paranaense - UNIPAR – Umuarama, PR; 4. Graduated in Dentistry, Master of Surgery by UNESP – Aracatuba and Professor of the Dentistry Course of the University Paranaense - UNIPAR – Umuarama, PR; 5. Graduated in Dentistry, Doctor by Faculty São Leopoldo Mandic and Professor of the Dentistry Course of the University Paranaense - UNIPAR, Umuarama, PR.

* Av. Angelo Moreira da Fonseca n 5651, zona 1A, Umuarama, Paraná, Brazil. CEP: 87504-050. epfau@unipar.br

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ABSTRACT

Dentigerous cysts are considered benign bone diseases associated with odontogenic etiology factors. In most cases, it is seen there is a big highlight in individuals of the male gender, among their first ten years of life. The differential diagnosis of this disease is in the greater amount of time, harder to be reached with common everyday radiography, what makes it way more difficult to obtain the final diagnosis in the dental clinics in the patient's first appointment. Thus, this paper aim to show a Case Report in which the multidisciplinary planning and action were very important to the diagnosis and treatment of the dentigerous cyst located in the maxilla. This way, the limitation of the radiographic images, can many times bring you to many interpretations of the differential diagnosis, that is why exams such as the cone beam, which is a computerized light beam, are so important. In conclusion, even though the dentigerous cysts are a benign disease, sometimes the place and extension of the case, may cause great damage to the patient, that, if treated in the incorrect way may cause deformity that are very difficult to solve. The diagnosis methods like the bean cone and the conservative approach through decompression were extremely important in this case treatment.

KEYWORDS: Dentigerous Cyst, decompression, Cone Bean tomography.

1. INTRODUCTION

The dentigerous cysts are originated from residual epithelial remnants that in order stimuli undergo chemical, traumatic and inflammatory, lead to the follicle degeneration, resulting in a cyst. Considered a benign condition, has no symptoms, and their development is through the accumulation of fluid located between the remaining enamel has formed below the tooth crown, having the cementum enamel junction as a point of union. Is associated with delayed or impacted teeth erupting maxillary^{1,2,3}.

These tissues formation are considered the second most common odontogenic cyst, with 24% of all true cysts of the oral cavity. Observed more frequently in

Caucasian men, in the first and second decade of life, is located predominantly in the jaw. According to the distribution in the arcades is in the lower third molars, canines, second premolars and upper third molars^{4,5}.

The information obtained during anamnesis, clinical examination and radiographic studies are insufficient to establish the diagnosis, because some diseases have similar radiographic features. Among the possible hypotheses can be found: ameloblastoma, epidermoid carcinoma, mucoepidermoid carcinoma, inflammatory periapical cyst, odontogenic keratocyst, aneurysmal bone cyst, one hyperplastic follicle and odontogenic fibroma⁴.

The radiographic characteristics presented are: radiolucency, unilocular and bounded image; may be involving an included element, resembling others pathologies. Thus, to reveal the presence of dentigerous cyst is of critical importance as additional clinical maneuvers aspiration, incisional biopsy and histopathological analysis².

The cone beam computed tomography, known as "cone beam", used in dentistry, has been considered an important tool to aid the diagnosis of various diseases. This consists of an additional examination of better quality in relation to the conventional imaging methods for presenting location of the cyst in three planes in space, being more true to the anatomy of the patient's maxillomandibular complex. The three-dimensionality and the millimetric precision of this technique allow tomographic image slices acquired up to 0.12 mm thick. Therefore, details were provided for a more accurate diagnosis and treatment planning or surgery to be performed⁶.

The literature describes several approaches of dentigerous cysts, but the most cited are enucleation and marsupialization⁷. These treatments were carried out according to the size and the surgical risks of each lesion⁸. The decompression can also be a form used to heal

this.

This article aims to present a case report where the multidisciplinary planning, involving the most advanced imaging techniques, conservative surgical procedures and orthodontic planning were essential for the treatment of dentigerous cyst in the maxilla of a child of nine years old.

2. CASE REPORT

The patient KHJP, male, nine, leucodermic, complained of a volumetric increase in the maxilla and nasal wing on the left side of the face. When extraoral examination, there was a facial asymmetry without the presence of infectious and nociceptive signals (Figure 1).



Figure 1. Extra oral photo showing facial asymmetry.

Examining the intraoral limits was noted the lack of development on the side of the arch in question, and the presence of deciduous teeth 61 and 62. However, will be ob-normality in the color of the mucosa. By palpation could be observed swelling in the background region of the vestibule in the upper left hemi-arch (Figure 2 and 3).



Figure 2. Initial photo. Frontal plane.

The panoramic X-ray analysis revealed a radiolucent

image with involvement of germs of permanent teeth as a central incisor, lateral incisor and canine, all with ectopic location (Figure 4).



Figure 3. Initial photo. Oclusal plane.

Given this condition, and knowing the best quality and the advantages of cone beam CT image, the patient was sent to conduct such additional examination (Figure 5 and 6).



Figure 4. Initial panoramic radiograph.

A needle puncture was performed with a positive result for a brownish color liquid, reinforcing the suspicion of a cyst (Figure 7). The material obtained by puncture was sent for histopathological examination confirmed the diagnosis of dentigerous cyst.



Figure 5. Initial CT.

The incisional biopsy was performed under local infil-

trative anesthesia, which allowed the extraction of deciduous teeth 61 and 62 duos.

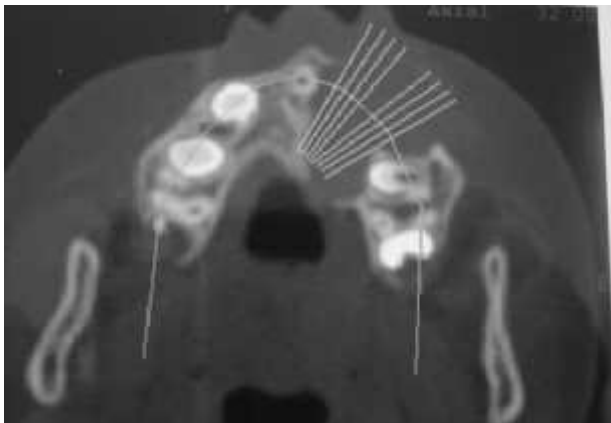


Figure 6. CT section, occlusal view.

Then, an opening in the vestibular region with the purpose of serving as a gateway for the installation of a drain which favored the therapeutic choice tica maid called decompression (Figure 8). The objective of this surgical approach was to regress the size of the lesion and preserve the included permanent teeth.



Figure 7. Needle aspiration.

The communication between the oral cavity and cystic cavity was maintained by drain installed, which allowed the application of dressings of chlorhexidine digluconate 0.12% realized in the form of daily irrigation done using disposable syringes.



Figure 8. Photo after extraction of teeth 61 and 62, and drain installation.

This procedure was performed in order to allow decompression of the cystic cavity and also to keep it away from any food residue.



Figure 9. Installing the apparatus for traction of enclosed tooth.

After 4 months, he was referred for orthodontic treatment, the orthodontic appliance installation of the element 21, which was included (Figure 9).



Figure 10. Orthodontic activation.

The orthodontic movement is underway and the panoramic radiographic examination performed 2 years after the onset of decompression of the cyst, it can be observed regression of bone defect in the area previously affected by the cyst (Figure 10 and 11).

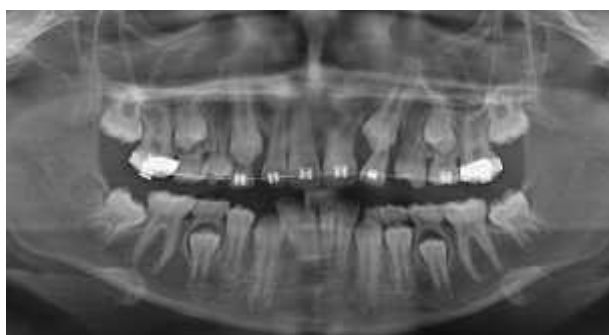


Figure 11. Panoramic radiograph, two years after surgical treatment.

3. DISCUSSION

Although they were considered benign pathologies, the dentigerous cysts can cause consequences to patients. Sapphire (2009)⁸ reported that dentigerous cysts with

large extensions, may have potential for expansion leading to impairment of cortical bone, which can lead to paresthesia of the inferior alveolar nerve, when present in the mandibular region.

In this study the presence of facial asymmetry and dental impaction was observed. Thus one can agree with Costa *et al.* (2011)² who stated that the development of dentigerous cyst has serious clinical complications such as tooth impaction, ectopic eruption, facial asymmetry, displacement and root resorption of teeth. According Vaz (2010)⁹ such cysts have a slow growth in great proportions and asymptomatic, and capable of producing facial edema due to expansion of cortical.

Tortorice (2008)¹⁰ considers the cyst as a common, asymptomatic lesion and can be discovered on routine radiographic examination. However, several diseases can have similar radiographic characteristics⁴. Accordingly, one can agree with Costa (2011)² which considers the clinical maneuvers such as aspiration and incisional biopsy, added histopathological examination are essential for diagnosis of dentigerous cyst. Another important and guiding further examination of dental treatment would be the cone beam CT due to its three-dimensionality and millimeter accuracy⁶.

In this case report we observed that some information covered will meet the publications Grossmann (2007)¹¹ and De Avila (2009)¹² who reported that the manifestation of this cyst occurs in the first decades of life and male individuals. However, there are differences in the sites involved by this injury. While Grossmann (2007)¹¹ claims to be the site of the mandible higher prevalence, our case report showed the dentigerous cyst with involvement of hemimaxilla.

With regard to the groups of teeth more involved in the presence of dentigerous cyst, Sapphire *et al.* (2009)⁸ reported that third molars, maxillary canines and premolars are presenting this higher prevalence. These authors also observed the development occurring in the first decade of life. Hyonoto (2003)¹³ attributes this higher prevalence found in third molars, is due to the fact they present greater possibility of asymptomatic bone retention and behavior.

Neville (2009)¹⁴, Grossmann (2007)¹¹ and Sapphire (2009)⁸, in addition to agreeing with the group of individuals of the same age and the same gender involved also agree and affirm that the dentigerous cyst has a greater predilection by Caucasians. Recently Carvalho *et al.* (2011)¹⁵ in retrospective study, evaluated 192 case report in a period of 18 years, obtained with results the males showed two times more affected than females (2:1), with predominance in Caucasians (56.7%) in the second decade of life (42.4%).

Sun (2009)¹⁶ stated that the radiograph becomes an arbitrary method of diagnosis, where any radiolucent area pericoronal 5 mm in diameter could be considered

suggestive of cyst formation and should therefore be subjected to microscopic examination.

To Piassi (2003)¹⁷, clinical examination should be supplemented with radiographic and histopathologic examinations cos initially periapical radiograph to see if the tooth has involvement with the disease, however, according to the author, occlusal and panoramic radiographs are needed to assist diagnosis. Since Smith (1995)¹⁸ said occlusal radiography reveals the degree of bone growth and justifies the increase in volume of the region, while the panoramic shows the extent of radiolucent lesion involves the periapical region.

Costa (2011)² reported that is extremely important to monitor the mixed dentition and also research into the causes of a possible delayed eruption chronological conducted through periodic examinations, because in these cases it is very likely to be the cause of this retention of origin cystic.

Radiographs are not sufficient to demonstrate the extent of the injury and impairment method. Therefore, Bontrager (2008)¹⁹ suggests that the image of CT shows no distortion, making it possible to measure distances, displacements, diameters and thicknesses using interactive computer graphics. Garib (2007)⁶ reported big advantages to using the method of imaging by computed tomography namely: multiplanar and 3D reconstructions, and reconstructions of two-dimensional radiographs; good sharpness; low contrast between hard and soft tissue and good accuracy.

Computed tomography, in this report, can show not only the location of the canine included, but also the relationship with adjacent structures. As a way of further examination Bastos (2011)²⁰ and Costa (2011)² by means of a positive aspiration, with yellowish liquid and an incisional biopsy, sent for histopathological arrived at the diagnosis of dentigerous cyst. Both cases were reported in patients in the first decade of life, with the apex forming, with great extension of the lesion and the involvement of various elements as in this study, then selecting marsupialization as a treatment, preserving the tooth and the permanent expected regression of the cyst.

For selection of surgical treatment of a dentigerous cyst should previously examine the size of the lesion; communication with adjacent anatomical structures; patient age; location and possibility of access; the stage of root formation; whether there is sufficient interdental space and the degree of potential eruption, in order to preserve the permanent dentition. Much of the time, in adults, is held and enucleation in children and adolescents marsupialization^{2,3,20}. Sapphire (2010)⁸ stated that children have greater bone regeneration capacity than adults and teeth with open apices has great potential outbreak, suggesting in these cases, as treatment marsupialization. Blaya (2010)⁷ emphasizes that enucleation is the treatment of choice when there is no risk of damag-

ing anatomical structures such as dental apex, maxillary sinus and inferior alveolar nerve. Already the marsupialization is performed in order to maintain the germ of the permanent tooth, promoting eruption, being useful for displaced teeth. Santos (2009)²¹ reports that the decompression is the creation of a bony with the installation of a drain, seeking a reduction in the internal pressure of the cyst, this procedure requires patient cooperation because this will have to irrigate the bone cavity daily.

As a similarity in the treatment of a case of Blaya (2010)⁷ plan there is the use of orthodontic traction in search of an ectopic tooth eruption involved in a major injury.

4. CONCLUSION

Through the study presented herein, we conclude that the dentigerous cysts despite being a benign pathology, depending on its location and extent, can cause great harm to the patient and, if handled wrongly, leading to deformities difficult to resolve. It is noteworthy that the diagnostic methods such as CT and cone beam conservative approach by decompression were important in the treatment of this case.

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