

# Inflammatory dentigerous cyst – a clinical case

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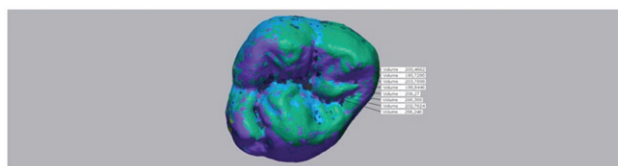
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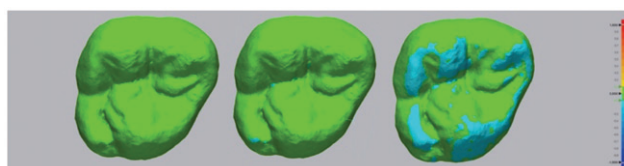
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**Figure 1.** Volume determination.




**Figure 2.** 3D comparison at the baseline, 4 h and 7 h.

**Materials and methods:** Ethical approval was obtained. An extracted sound third molar was cut in the mesiodistal direction, approximately 4 mm above the cementoenamel junction. The apical part was discarded. The coronal part was bonded to a ceramic block with pre-heated composite resin and scanned at baseline with an intraoral scanner (IOS) (3 M True Definition Scanner, 3 M, USA). Erosion was simulated by immersion of the sample in the soft drink Sprite® (not degassed, pH of 2,81), under controlled agitation, 7 times 1 h. A baseline scan was made before erosion and the scans were repeated after each erosive challenge of 1 h. All measurements were made with Geomagic Control (3 D Systems, Darmstadt, Germany). The scans were imported one by one and aligned with a baseline scan. Then with all the scans aligned with the baseline, they were altogether cut at the same plane resulting in 3 D images for which was possible to determine the volume (Figure 1). Wear was calculated using volume change.

**Results:** Calculated volume change after 1, 2, 3, 4, 5, 6, and 7 h erosion was  $-5.63$ ,  $3.48$ ,  $0.02$ ,  $-2.48$ ,  $-3.32$ ,  $-1.62$  and  $-3.12$  mm<sup>3</sup>, respectively. Macroscopic enamel demineralisation was observed with the naked eye after 2 h erosion. Areas of enamel loss were clearly observed in the scans and seemed to increase in area and depth with increasing erosion time (Figure 2).

**Discussion and conclusions:** Under the limitations of this pilot study, it can be concluded that the present protocol allows enamel loss detection with the IOS, and that the customised alignment of the scans is necessary for reliable volume measurements.

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## Inflammatory dentigerous cyst – a clinical case

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### ABSTRACT

**Introduction:** One of most frequent benevolent odontogenic cysts in the jaws is the dentigerous cyst. It usually occurs in the second and third decades of life and it's barely seen in the childhood era [1]. They are unilocular and always

radiolucent. They grow slowly and asymptomatic, unless there is a secondary infection, in this case they are associated with swelling and pain [2]. The dentigerous cyst of inflammatory origin is related with the inflammation present at the root apex of a non-vital primary tooth which spreads to involve the follicle of the unerupted immature permanent successor [3], as is in this case. Therapeutic modalities range from marsupialization and decompression to enucleation [2].

**Materials and methods:** Male, 8 years old, appeared in the emergency appointment with pain and continuous abscess in the region of the second lower left deciduous molar. Extraoral examination revealed facial asymmetry. Intraoral examination revealed mixed dentition and in the lower left vestibule a hard, non-fluctuant swelling extending laterally from mesial surface of the mandibular first deciduous molar to the distal surface of the mandibular second deciduous molar, both with carious lesions and grade II mobility. Orthopantomography, revealed a well-circumscribed unilocular radiolucent lesion in the body of the jaw on the left side, which was associated with the crown of a vertically impacted second premolar with its subsequent displacement. Based on clinical and radiological findings, a provisional diagnosis of dentigerous cyst was made. We obtained the informed consent authorised by the ethics committee signed by the minor parents and let me reinforce that all the clinical case was made accordingly with the Helsinki Declaration of Ethical Principals. Firstly we did the extraction of the first and second lower left deciduous molar under local anaesthesia (2% Lidocaine with 1:1,000,000 Epinephrine), along with cyst enucleation through the extraction socket, preserving the impacted second premolar. The surgical piece was sent to histopathological examination in a tube with formaldehyde 37%.

**Results:** Inflammatory dentigerous cysts was histopathological confirmed. Follow up period was 15 days, 1 month, 5 months and 10 months. After 15 days the patient referred substantial improvements on pain and the disappearing of the facial asymmetry as well as improvement on function, comfort and quality of life. It was then sent to Orthodontic treatment.

At the 10 months follow up, it was removed the lingual arch due the eruption of definitive teeth.

**Discussion and conclusions:** The dentigerous cysts are mostly found on routine radiographic examinations or by enlargement of affected region in the jaw with pain [3]. The pathogenesis of dentigerous cyst is still controversial but, one of the feasible proposed mechanisms is that the follicle of permanent successor might get secondarily infected from either periapical inflammation of a non-vital predecessor or other source leading to a dentigerous cyst formation [3]. Patient age, cyst size, site, involved dentition, and affected vital structures, are criteria which must be considered in the treatment modality, in this case we have a young patient and we opted for enucleation, without extraction of the impacted tooth [2]. This allow alleviation of cyst pressure to permit the retained teeth to erupt normally with root formation. Then the permanent tooth generally would erupt in the oral cavity naturally as this did. Sometimes orthodontic treatment is not needed. The patient should be followed until the complete eruption of permanent teeth in their designated location [3]. In the present clinic case the patience and indication for Ortodontic treatment for other reasons and now, presents the permanent teeth erupted.

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## Influence of acid etching on internal bleaching with 16% carbamide peroxide

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### ABSTRACT

**Introduction:** Tooth bleaching has been an increasing demand [1] since tooth discolorations can have a negative impact on the social and psychological behaviour of patients. Internal bleaching (IB) can be used to treat teeth with endodontic treatment that are quite susceptible to pigmentation. The success of this technique depends on the ability to diffuse the active bleaching agent through pigments [2]. Thus, prior acid etching (PAE) of the pulp chamber has been proposed in order to remove the smear layer and to open the dentinal tubules, allowing a greater penetration of the bleaching agent