

The Treatment of a Dental Morphological Anomaly Type Dens in Dente A challenge

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Dens in dente or the amelo-dentinal invagination is met rarely and involves, almost in exclusivity, the upper lateral incisors, usually unilateral, being an invagination in glove finger of the enamel in dentine, on the level of a tooth often dismorphic. The radiologic aspect is of candle flame, occupying the central part of an upper lateral incisor.

Keywords: dens in dente, situs inversus, radiography, incisors coronary morphology

Dens in dente is a dental development abnormality resulting from partial invagination of the enamel organ to variable depths, during its development [1]. A number of other terms have also been used to describe it [2]. For example, according to Sutalo et al (2004) [2,3], in 1897 Busch first suggested the use of *dens in dente* which implies the radiographic appearance of a tooth within a tooth. However, Hunter (1951) suggested the term *dilated composite odontome* which infers an abnormal dilatation of the dental papilla, while Colby (1956) recommends the use of *gestant anomaly*. Other term frequently used is *dens invaginatus*[4]. The varied nomenclature probably reflects the lack of consensus on the formation, aetiology and classification of the condition (Goncalves et al 2002) [2,5].

The literature suggests several aetiological factors [2,4,6]. These are stimulation and subsequent proliferation and ingrowth of cells of the enamel organ into the dental papilla; retardation of a focal groups of cells, with those surrounding continuing to proliferate normally during the dental development; external factors like trauma and infections; and also genetic factors [1,7,8].

Various classifications were propose to describe dental invagination[1] Still, the classification of Oehlers, which is based on the radiological criteria, continues to be the most common used [4,8,9]. Three invagination category were propose by Oehlers to separate the different types of dens invaginatus by the radiographic appearance of invagination: type I: minimal invagination, enamel lined, confined within the crown of the tooth, and does not extend beyond the level of the external amelocemental junction; type II: enamel lined and extends into the pulp chamber, but remains within the root canal with no communication with the periodontal ligament; type III: the invagination penetrates through the root, perforating the apical area and having a second foramen in the apical or periodontal area, but there is no immediate communication with the pulp [9]. Type I is the most common.

The most frequently affected tooth is the maxillary lateral incisor [2,4,10]. In a decreasing order of frequency,

other teeth that develop this anomaly are: the central maxillary incisor, premolars, canine and molars [4,10]. The occurrence of this anomaly in mandibular teeth has been reported in a few cases [4,6,11,12].

Most of the cases of dens in dente are discovered by chance, following an usual radiologic examination with a panoramic radiography or an orthopantomography and completed with a retroalveolar radiography [13].

Clinical, a deep foramen caecum might be the first clinical sign indicated the presence of a dens in dente [14]. According to its morphology, the invagination constitutes a privileged area for plaque formation, being difficult to acces and clean. Moreover, we should not overlook the fact that the thin and hypomineralized enamel also stands out in causing pulpar pathology and complicate any possible endodontic treatment[15, 16-24].

Experimental part

This paper presents a clinical case diagnosed with the coexistence of no less than 3 anomalies of the dental morphology: dens in dente on the level of the upper central incisor that is a dental anomaly of extra number but also of structure, and both upper lateral incisors are nanic (infantile), namely a dental anomaly of less volume. A plus of difficulty is brought also by the fact that the patient from this case report is a child.

The patient, a 14-years-old girl, presented in our clinic acusind recent pains on the level of 1.1

The clinical examination (fig.1) and treatment was conducted with the written informed consent of her mother who was also instructed regarding our intention to include this case in a scientific paper.

Radiological examination

Orthopantomography performed at the presenting of the patient in our clinic reveals the presence in the oral cavity of all the definitive theeth, then intrabony the buds of the teeth 18, 2.8, 3.8 °i 4.8 with the crowns completely mineralized, and at the level of 1.1 dens in dente.



Fig. 1. Lateral right, frontal and lateral left occlusion

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Fig. 2. Orthopantomography

On the level of 1.1 tooth is performed a new radiography (fig. 3) retroalveolar, isometric and orthoradial for the detailed prominence of the supernumerary. With this occasion, is determined that the supernumerary is also in position of situs inversus. The retroalveolar radiography is repeated, this time with digital sensor, with the needles on the channel and, then at the end of the endodontic treatment.

Results and discussions

The case suscitates interest by the coexistence in the oral cavity of a patient of no less than 3 anomalies of the dental morphology: dens in dente at the level of the upper central incisor that is a dental anomaly of extra number and of structure, and both upper lateral incisors are nanic (infantile), namely a dental anomaly of less volume.

The case presents interest also from the point of view of the localization and namely not at an upper lateral incisor, as is most frequently met in the specialty literature, but at an upper central incisor.

Most of the cases of dens in dente are discovered by chance, following an usual radiologic examination performed with a panoramic radiography or an orthopantomography that brings general information and completed with a retroalveolar radiography that will offer detailed information: in our case on the retroalveolar radiography we observe the situation of the supernumerary in situs inversus.

Subjectively, the patients with dens in dente can come for acute pain and inflammation.

The radiological examination performed during the endodontic treatment with needles on the channel is offering precious information regarding the morphology and radiological anatomy of a dens in dente, the endodontic treatment in dens in dente can be complicated.

The radiological examination will be made again at the end of the channel obturation in order to be underlined its correctness.

We remark the importance of the radiological examination in such a case, this being performed at the beginning of the endodontic treatment, during the treatment with needles on channel and of control at the end of the channel obturation.

The remaking of the coronary morphology can be performed only after the patient will have the age of 18. This will concern the improvement of the physiognomic aspect of the patient by the remaking at normal dimensions of the crown of the teeth 1.2 and 2.2. (nanic) and by coronary remodeling at 1.1

After the age of 18, will be reduced the coronary volume of 1.1, and at 1.2 and 2.2 will be added composite material for the remaking at normal dimensions of the crown of the 2 nanic upper lateral incisors or will be used the facets, metallic ceramic crowns or totally ceramic.

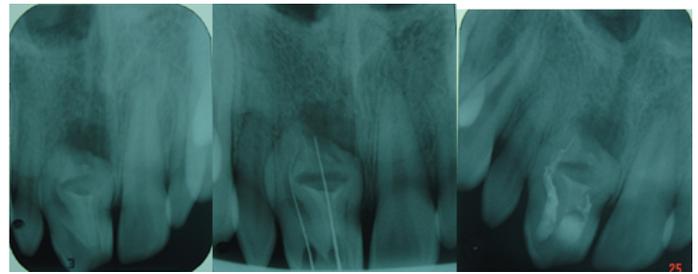


Fig. 3. Retroalveolar radiographies

Conclusions

In the presentation of this case report, the authors intended to highlight the difficulty of the treatment in such a case of dens in dente, the challenge being that the supernumerary tooth was situated in position of situs inversus.

The case presents interest also from the point of view of the localization and namely not at an upper lateral incisor, as is most frequently met in the specialty literature, but at an upper central incisor.

We remark, hence, the importance of the radiological examination in such a case, this being performed at the beginning of the endodontic treatment, during the treatment with needles on channel and of control at the end of the channel obturation.

The treatment of such a case of dental morphologic anomaly of dens in dente type can be a challenge for any experienced practitioner.

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Manuscript received:21.10.2018