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Specific clinical aspects of the dental caries in deciduous teeth

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ABSTRACT

This paper reviews the clinical aspects of dental caries in primary teeth. The specific aspects of carious processes in deciduous dentition are: the progress of dental caries quickly leads to pulp complications; the intake of hydrocarbonate is high in children, and the presence of the bacterial dental plaque is favored, especially with in the conditions of poor oral hygiene in children; the lack of information and education of the parents regarding the importance of the dental carious treatment in temporary teeth often leads to the point of completely irreparable tooth.

Key words: dental caries; clinical aspect; deciduous tooth

Introduction

The deciduous or primary dentition has 20 teeth, 5 each for each half of dental arcade: a central incisor, a lateral incisor, a canine, a first molar, and a second molar. The highest frequency of dental caries occurs in the temporary teeth in the lateral areas of the dental arches, respectively at the level of the two primary molars [1].

The eruption of temporary molars ends the sequence of the deciduous dentition eruption and occurs between 1 year and 4 months (temporary mandibular first molar) and 2 years and 4-5 months (the second temporary maxillary molar).

The moment of eruption on dental arcade is:

- first temporary mandibular molar: 1 year and 4 months;
- first temporary maxillary molar: 1 year, 4 months and 2 weeks;
- second temporary mandibular molar: 2 years and 3 months;
- second temporary maxillary molar: 2 years and 4-5 months.

Deciduous lateral teeth can be frequently and prematurely affected by dental caries as a result of some special clinical aspects involved:

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- Their appearance and existence on the dental arcade in young children, when the tooth brushing techniques and oral dental hygiene are not completely and correctly acquired and applied [2];
- Locating on the dental arcades in the lateral area, the coronal surfaces being harder to handle by brushing by the child [3];
- Coronal relief is retentive, especially the occlusal face.

The presence of dental caries in primary teeth has multiple pathological implications by affecting all the functions they exercise [4].

The functions of temporary teeth are:

- they participate in performing the dento-maxillary functions: aesthetic, phonetic and masticatory function. The role of temporary molars is predominantly within this last function.
- the lateral teeth together with the frontal dental teeth participate in the development of the dental arcades, as well as for the other structures of the dento-maxillary apparatus (mobilizing muscles).
- they participate in the establishment of the first primary occlusal relationships in child (achieved when first deciduous molars erupts), as well as the stabilization of the occlusion (by the eruption of the secondary mandibular molars). This creates conditions for dental arcades development and favors the correct eruption of permanent dentition.
- through the masticatory function which they perform, temporary lateral teeth contribute to the diversification of nutrition and thus to the harmonious somatic development of the child[5].
- temporary teeth presence in oral cavity is the first step in acquiring the habits of dental hygiene that will need to be maintained throughout life for a healthy dentition.
- contributes to the social integration of the child and its psycho-emotional development.

By exercising the most important function, the masticatory one, temporary molars allow the ingestion of foods with high consistency. This diversification of diet, which means a more complete, varied and balanced nutritional intake, offers huge benefits, both for the body of the child, which develops more

rapidly and more harmoniously, but also for the components of the digestive system whose functions are stimulated by the active participation in the function of food import. Making a proper mastication of the food in the oral cavity prepares the food bowl for subsequent absorption of the active principles in the digestive system and thus favors the growth of the child [6].

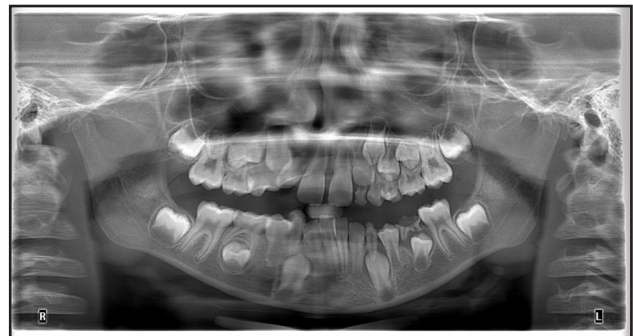


Figure 1 - Dental caries located on second deciduous left mandibular molar

Specific clinical aspects of the dental caries in deciduous teeth are a consequence of the anatomical and topographic features of these teeth, as follows:

- the volume of hard dental tissues is smaller than the volume of enamel and dentin in permanent teeth; basically the pulp chamber is more superficial, therefore, the progression of the dental carious quickly leads to pulpal complications [7];
- the overall volume of temporary teeth is smaller than the permanent teeth and thus a carious process that can be considered “superficial” in the definitive teeth is medium or even deep in the primary teeth;
- in children the hydrocarbonate intake is high and also the intake frequency is increased, which creates the conditions for apparition of the bacterial dental plaque as a result of the metabolism of residual food remains from the dental surfaces [8];
- hygiene of the oral cavity is often improbable in children, both because they are not well-guided and due to a lack of maturation at the age of childhood;
- lack of parent’s information and education can

contribute to the early loss of temporary teeth as they are not aware of the extremely important roles that these teeth play in their child's local and general development; the fact that these teeth are being replaced at one point makes it difficult for the parents not to take seriously the pathology of the temporary teeth [9];

- late identification and diagnosis of carious processes on temporary lateral teeth is the consequence of their posterior position on the dental arches of the child; also, the degree of sensitivity to various stimuli of caries on temporary teeth is much diminished compared to that on permanent teeth due to the incomplete differentiation of the local sensitive receptors. Very often the child is brought to the dentist when the temporary teeth exhibit massive coronal destruction (which causes the occlusion to collapse when several teeth are affected), massive pulp complications or when the teeth are completely irreparable.

Even though the dental caries are the most frequent pathology in temporary teeth, during their presence into the oral cavity they are also affected by the phenomena of dental wear [10]. This is even more evident in deciduous dentition than in permanent one due to the fact that the height of the temporary molars is smaller than the permanent teeth. The wear phenomena is not a result of a special mechanical characteristic of primary tooth enamel, but a consequence of a smaller thickness of the hard tissue layers (enamel and dentin) characteristic for the temporary teeth.

The phenomenon of occlusal wear in the form of dental attrition which is specific to primary dentition, especially in the posterior teeth, has the following clinical implications:

- the degree of retention of the occlusal faces is diminished and in this way the risk of dental caries apparition is lower;
- determines the axial decrease of the size of the dental crown, which causes changes in the occlusal arcades relationship of the child, creating the premises for further development of the dento-maxillary system.

The temporary frontal teeth are very commonly affected by the dental caries and exposed to dental

trauma: crown and crown-root fractures; in general these traumas occurring while children are playing with a toy, run, ride a bike, etc.

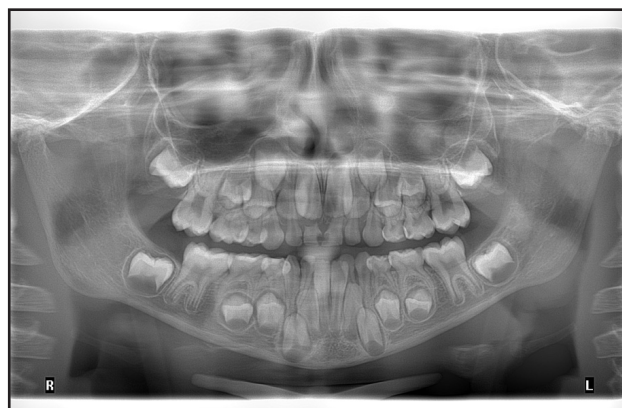


Figure 2 - Dental caries located on deciduous central maxillary incisors

The restoration of the hard dental tissues loss due to the evolution of dental caries in temporary teeth is accomplished through direct coronal restorations [11]. The principles of restorative treatment are the same as in adult, for permanent dentition:

- remove the altered tissues completely;
- specific treatment of dentinal surface for pulp tissue protection;
- tooth restoration both of his shape and function.

The treatment of dental caries in children has specific particularities due to the following aspects: the treatment are performed on a small area (both dental arches and primary teeth have small dimensions), the opening of the mouth is limited and the small patient does not have the patience to undergo dental treatments.

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