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PECULIARITIES OF PERIODONTAL TISSUE DURING MIXED AND PERMANENT BITE

ANNOTATION

Periodonta**l** is the main dental disease in children of primary school age, a distinctive feature of which is that once started, the carious process does not stop and requires constant treatment and supervision [Sarap L.R., 2012]. This is the most common chronic disease of mankind, which is the main cause of premature tooth loss [Allais G., 2008].

The incomplete process of enamel mineralization, being a factor of increased risk of caries, leads to a sharp increase in this disease in permanent teeth in children 8-12years old. 86% of permanent molars are affected by caries in the first 8-12 months after the onset of eruption [Kiselnikova L.P., 2007; Suntsov V.G., Voloshina I.M., 2011; Satygo E.A., Danilov E.O., 2011; Terekhova T.N. et al., 2011].

The increased risk of caries in the area of tooth fissures is associated with their complex geometric shape and morphological structure, low mineralization compared to other areas of the crown [Kiselnikova L.P. et al., 2009]. Hypomineralization is especially pronounced in the enamel of molars that erupted earlier or later than the average time, as well as in the teeth of children with a high risk of developing caries [Terekhova T.N. et al., 2010]. Insufficient self-cleaning of chewing surfaces from plaque during eruption due to the absence of occlusive contacts with antagonistic teeth also contributes to the development of caries in the fissures

Key words: Periodontal of children, fissures, sealing, mineralization, prevention.

Currently, there is a fairly wide range of different means and methods for preventing dental caries, but none of them gives a full guarantee of its prevention [Sarap, L.R., 2012]. Therefore, it is very important to increase the effectiveness of anti-caries preventive measures, taking into account the individual risk of developing this disease.

One of the preferred methods for preventing caries of the occlusal surface of the tooth is fissure sealing. When using it, the risk of developing a carious lesion in this area is reduced by 35 - 55% [Ahovuo-Saloranta, A. et al., 2013]. However, the effectiveness of this method of prevention depends on the correctness and completeness of all its stages [Seow, WK., 2009].

Since the infectious factor plays a leading role in the development of caries, an important step in fissure sealing is the antiseptic treatment of hard tissues before sealing [Bezrukova I.V., 2008]. The sterility of tissues under the sealant is a guarantee of preventing the appearance of caries in the fissure [Borovsky, E.V., Suvorov, K.A., 2011].

Another problem for the quality of fissure sealing is the lack of cooperation between the child and the doctor, caused by fear of dental procedures, especially preparation. The anxiety of children and the negative experience of dental treatment forms their non-cooperative behavior at the dental appointment. According to V.F. Vygorko (2001), 92% of preschoolers and 88% of younger schoolchildren need behavior management.

Purpose: to optimize the prevention of Periodontal in permanent teeth in children aged 8-12 years by carrying out a set of measures based on the results of assessing their dental and behavioral status.

Materials and methods of research

To solve the tasks set, a dental examination, therapeutic and preventive measures and dynamic observation of 118 children were carried out, of which 40 children are 6 years old, 40 children are 7 years old, 38 children of 8 years old who applied for dental care at the Children's Dental Clinic in Samarkand in about various dental

diseases. Exclusion criteria: children with established severe somatic and mental illnesses (diabetes mellitus, bronchial asthma, mental retardation, etc.). The minimum sample size was 108 children (36 in each group) calculated for a threshold confidence level of 5%, a statistical power of 80% and the prevalence of the studied conditions and the minimum significant differences established in pilot studies (SampleSize module of the WinPEPI 12.04 ® J.H.Abramson program) A simple random sampling method. All children were randomly divided into 4 groups, homogeneous in sex and age: the main group - 51 people, three comparison groups - 49 people; a group of children was recruited separately, with non-cooperative behavior at the dental appointment - 18 people (table 1).

The study involved children of I and II (a, b) health groups permanently residing in the city of Samarkand. Information about the state of health was specified according to the child's medical records for educational institutions (form 046 / y).

Group No. 1 consisted of 51 children aged 8-12 years, whose fissure sealing of the first permanent molars was carried out using the classic glass ionomer cement Ketac Molar EasyMix (3M ESPE) with preliminary treatment of hard tissues with ozone.

Group No. 2 - 20 children aged 8-12 years, whose fissure sealing of the first permanent molars was carried out using the classic glass ionomer cement Ketac Molar EasyMix (3M ESPE) without treatment of hard tissues with ozone.

Group No. 3 – 14 children aged 8-12 years, whose fissure sealing of the first permanent molars was carried out using the Filtek Supreme XT flowable composite (3M ESPE) and the 6a generation self-etch adhesive Adper Easy One (3M ESPE) with preliminary treatment of hard tissues with ozone.

Group 4 - 15 children aged 8-12 years, whose fissure sealing of the first permanent molars was carried out using the Filtek Supreme XT flowable composite (3M ESPE), the 6a generation self-etch adhesive Adper Easy One (3M ESPE), without treatment of hard tissues with ozone.

By gender, the children were distributed as follows: 50 girls and 68 boys.

Separately, a group of children 8-12 years old (18 people, 9 girls, 9 boys) with non-cooperative behavior at the dental appointment was randomly recruited from the patients of the clinic (group No. 5). To change their behavior in the course of treatment in this group, we used the algorithm developed by us for managing the behavior of children of primary school age at a dental appointment, including anxiety reduction and the use of minimally invasive preparation of dental hard tissues.

We examined the state of hard tissues and performed fissure sealing in 419 permanent molars (128 teeth in 6-year-olds, 196 teeth in 7-year-olds, 95 teeth in 8-year-olds).

All diagnostic and treatment methods used are included in the list of basic diagnostic and treatment methods. All treatment-and-prophylactic and diagnostic measures were carried out in compliance with sanitary and hygienic rules and norms.

Examination and therapeutic and prophylactic manipulations of children were performed with the informed consent of their parents (legal representatives) and comply with the ethical principles required by the Helsinki Declaration of the World Medical Association (2000).

A simplified oral hygiene index (IGR-U, OHI-S), Green J.C., Vermillion J.K., was used as an indicator characterizing the hygienic state of the mouth in children. (1964).

When determining the simplified index of oral hygiene (OHI-S) after staining with a solution of curaprox plaque finder (Curadent) vestibular surfaces 16, 26, 11 and 31, lingual surfaces 36 and 46, the area of dental plaque was determined. Given the age of the examined children, staining was carried out only for fully erupted teeth.

Codes and criteria for assessing plaque:

0 - no plaque detected;

1 - soft plaque covering no more than 1/3 of the tooth surface or the presence of dense brown plaque (any amount);

2 - soft plaque covering more than 1/3, but less than 2/3 of the tooth surface;

3 - soft plaque covering more than 2/3 of the tooth surface.

The index was calculated by summing the codes, followed by dividing the sum by the number of examined surfaces.

Evaluation criteria:

Index value Hygiene level

0-0.06 good

0.7-1.6 satisfactory

1.7-2.5 unsatisfactory

≥ 2.6 bad

The patient's oral hygiene was assessed every

Method for assessing the condition of the gums

In children of all study groups, during the primary and repeated studies, the condition of the gums was assessed using the papillary-marginal-alveolar index (PMA). When determining this index, the gingiva on the vestibular surface was conditionally divided into three sections: the gingival papilla, the marginal margin, and the alveolar gingiva. Visually assessed her condition in each tooth in points:

0 - no inflammation

1 - inflammation of the gingival papilla (P)

2 - inflammation of the marginal gums (M)

3 - inflammation of the alveolar gums (A)

The PMA index was calculated according to Parma (1960).

Calculation formula:

$$PMA = \frac{score \times 100\%}{3n} \quad (1)$$

Where: n is the number of teeth.

Index Evaluation Criteria:

Up to 30% - mild gingivitis;

From 31% to 60% - moderate gingivitis;

60% and above - severe gingivitis.

The PMA index was assessed at each visit to the child.

Results: The effectiveness of the dental caries prevention program in children aged 8-12 years was assessed by the index of hygiene, the number of permanent teeth in which new carious lesions appeared. The analysis of the safety of the sealing coatings of the first permanent molars was carried out using the retention index (RI) and the sealant edge contact index (ICKG) proposed by us.

Conclusion: Decompensated form of dental caries in children 8-12 years old who applied to the children's dental clinic was detected by traditional methods in every fifth child (22.5% in children 8 years old, 20% in children 9years old, 18.8 % - in children 10 years old), however, after using a laser-fluorescent assessment of the state of hard tissues, this form of caries was found in every second (47.5% - in children 11 years old, 42.0% - in children 12 years old, 48% - in children 12 years old).

Ozonation of hard tissues before sealing the fissures of the first permanent molars and the use of classical glass ionomer cement as a sealant in a comprehensive program for the prevention of dental caries in children aged 8-12 years with its decompensated form has a high clinical efficacy. The complete safety of sealing coatings was 100% after one year and 85% after two years of observation.

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