RESEARCH JOURNAL OF TRAUMA AND DISABILITY STUDIES

Volume: 2 Issue: 11 | Nov – 2023 **ISSN: 2720-6866**
http://journals.academiczone.net/index.php/rjtds

Assessment of the Clinical Condition of Dental Hard Tissues

F. R. Kamalova, M. Sh. Rabieva
Bukhara State Medical University Department of Pediatric Dentistry Department of Pediatric Dentistry

Abstract

Over the past 15 years, the diagnosis and treatment of dental enamel hypoplasia continues to be an urgent problem in therapeutic dentistry.

Enamel hypoplasia is a developmental defect that occurs when the metabolic processes of the tooth buds are disrupted under the influence of disturbances in mineral and protein metabolism in the body of the fetus or child. Underdevelopment of enamel is an irreversible process and remains for the entire period of life [3]. Hypoplasia of permanent teeth develops under the influence of diseases in children during the period of formation and mineralization of teeth.

Keywords: hypoplasia, hard dental tissues, metabolic disorders, mineralization of teeth, dental status.

The result of dental treatment in a patient with enamel hypoplasia

Over the past decades, the problem of prevention, diagnosis and treatment Non-carious diseases still continue to be one of the most important in modern dentistry [1].

According to a number of authors, enamel hypoplasia is detected in 11.3% of the studied individuals. In 47.1% of cases, patients had a registry They are characterized by a spotted form of hypoplasia, in 29.4% - erosive, in 4.7% - furrowed, and in 18.8% - mixed forms [6]. Whereas, according to other researchers, in children aged 6-12 years, the spotted form of hypoplasia is detected in 60% of cases, erosive and furrowed - in 25%, mixed - in 15% [4].

T. _ P. _ Croll used microabrasion to treat discolored teeth , during which a microscopically thin layer of enamel is removed [5].

Since the percentage of people with non-carious lesions increases every year , diagnosis, primary prevention and treatment of dental discoloration remain one of the leading problems in therapeutic dentistry.

In this regard, the purpose of our study was to assess the whitening effectiveness microabrasions on

Volume: 2 Issue: 11 | Nov – 2023 ISSN: 2720-6866
http://journals.academiczone.net/index.php/rjtds

hard tissues of vital teeth of patients with enamel hypoplasia.

MATERIAL AND METHODS

The study involved 9 people with systemic and local enamel hypoplasia. Before treatment, all patients underwent professional oral hygiene , including removal of hard and soft dental plaque. After which, all study participants underwent 2 microabrasion procedures (a technique modified by us) at an interval of a week using a composition containing hydrochloric acid, carborundum and silicon gel. The abrasive mixture was applied to the teeth using a special attachment. Removal of stains from teeth was carried out using rubber cups. Toothpaste with calcium ("New pearls with calcium", * Sensodyne C, < Oral -B sensitive or "K.O.S.S.") and a 5% suspension of hydroxyapa were used as preventive agents . - tita (15 days).

To determine the hygienic state of the oral cavity, the oral hygiene efficiency index - RHP [8] was used; the condition of periodontal tissues was assessed using the PMA index [7, 9], and dental hyperesthesia was detected using subjective and objective methods. Clinical assessment of changes in tooth color before and after treatment with enamel microabrasion was carried out using our modified Vita scale .We judged what changes occur in the enamel using the method of intravital acid biopsy by V.K. Leont - matchmaker and V.A. Distel (1973) ([2]), which was carried out before and after microabrasion of teeth and the use of prophylactic agents. In the practical implementation of acid biopsy , a piece of adhesive polyethylene film with a round window was glued to the area of enamel under study, treated with 3 % hydrogen peroxide and dried (Fig. 1). On the window of the dosing micropi A drop of demineralizing mixture (pH = 0.37) was applied with a brush , which after 30 seconds was removed with a piece of wedge - shaped filter paper, after which 1 ml of double-distilled water was added, infused for 2 days and examined for the content of chemical substances .

All analyzes were performed automatically com analyzer. The concentration of total calcium in biopsy samples was measured by the complexometric method with the indicator cresolfgolsine (Moorchad and Briggs , 1979). Phosphate content was determined based on following the method described by Daly Eringhausen (1972), modified by Wang [3]

RESEARCH RESULT the study showed that the value of the RHP index in patients with hypoplasia was 1.72±0.13, which indicated an unsatisfactory state of oral hygiene. After the microabrasion procedure, the RHP index significantly ($p < 0.001$) decreased from 1.72±0.13 to 0.72±0.09 . The use of a complex of prophylactic agents contributed to a further decrease in the value of this index to 0.50±0.08 ($p < 0.001$).

The initial dental examination revealed the presence of inflammatory phenomena in periodontal tissues in patients with hypoplasia gap of enamel. After microabrasion of teeth , the value of the PMA

Volume: 2 Issue: 11 | Nov – 2023 ISSN: 2720-6866
http://journals.academiczone.net/index.php/rjtds

index (%) increased from 6.76 ± 0.13 to 7.26 ± 0.13 ($p < 0.02$), and the use of prophylactic agents led to a significant ($p < 0.001$) decrease the indicator of this index is up to 2.51±0.16.

It should be noted that if before bleaching patients with hypoplasia did not note dentin hyperesthesia, then after using the microabrasion agent, hypersensitivity appeared in 22.2% of cases . sensitivity of teeth to mechanical irritants . Carrying out a set of preventive measures activities contributed to the disappearance of the symptom of increased sensitivity density of dentin.

The initial mean value of tooth color for individuals with enamel hypoplasia was 2.89±0.10. After enamel microabrasion, all patients experienced a significant ($p < 0.001$) improvement in tooth color to 1.40 ± 0.16 (Fig. 2). The change in color index was 1.49 shades on the Vita scale. After 12 months and after 3 years, the color value remained unchanged.

The results of analyzes of biopsy specimens showed that in individuals with enamel hypoplasia, the initial value of total calcium yield in biopsy specimens was 0.78 ± 0.02 mmol/l. After the microabrasion procedure, the yield of this macroelement increased to 1.15 ± 0.06 mmol/l ($p < 0.001$), which indicated the demineralizing effect of the drug for microabrasion of tooth enamel. The use of prophylactic agents contributed to a significant ($p < 0.001$) decrease in the concentration of total calcium in biopsy samples to 0.63 ± 0.03 mmol/l.

In individuals with hypoplasia, the value of phosphate release from enamel into biopsy samples was 0.15±0.01 mmol/l. After using a product for microabrasion of teeth, the yield of phosphate from the surface layer of enamel into the biopsy specimen significantly ($p < 0.001$) increased to 0.28 ± 0.02 mmol/l, while the use of prophylactic agents contributed to a decrease in the concentration of phosphate in biopsy specimens to 0.11 ±0.01 mmol/l ($p < 0.001$).

THE DISCUSSION OF THE RESULTS

Analysis of the results showed that the microabrasion method in a dental office is effective for improving the color of vital teeth in patients with hypoplasia. The use of a product for microabrasion of tooth enamel contributed to a change in tooth color by 1.49 shades on the Vita scale, while the whitening efficiency was 51.6%. Thus, during the study period, all patients experienced a significant ($p < 0.001$) improvement in the level of oral hygiene, while after microabrasion of teeth there was an increase in inflammatory phenomena in periodontal tissues by 0.5%, and after the use of preventive means a decrease of 2.9 times.

After treatment, patients with enamel hypoplasia noted in 22.2% of cases tooth hypersensitivity to mechanical irritants, and after using a complex of prophylactic agents, dentin hyperesthesia was not detected.

The use of the drug for microabrasion of teeth was accompanied by an increase in the release of macroelements into biopsy specimens, which apparently indicated an increase in dental permeability.

Volume: 2 Issue: 11 | Nov – 2023 **ISSN: 2720-6866**
http://journals.academiczone.net/index.php/rjtds

The use of toothpaste with calcium and a 5% suspension of hydroxyapatite led to a significant decrease in the yield of all chemical elements in biopsies, since calcium and phosphates, which are part of the preventive agents, penetrate into the microspaces of demineralized enamel and are embedded in it. crystal lattice and promote remineralization and increase the resistance of enamel.

CONCLUSIONS. Analyzing the data obtained, it should be noted that the agent for microabrasion of teeth negatively affects the structure of the enamel, increasing its permeability, which dictates the need for the use of individually selected preventive agents, which include calcium and phosphates, to prevent the occurrence of complications and ensure stability the obtained treatment result.

BIBLIOGRAPHICAL LIST

1. Rakhmatillaevna K. F. Diagnostic value of salivator cytokines in dental diseases in children with diabetes mellitus type 1 //European Journal of Molecular and Clinical Medicine. – 2020. – Т. 7. – №. 3. – С. 1518-1523.
2. Kamalova F. R. Elaboration and evaluation of the effecctiveness of the dental examination program for children with diabetes //Актуальныевызовысовременнойнауки. Сборник научных трудов. – 2020. – №. 2020. – С. 55-56.
3. Rakhmatillaevna K. F., Torakulovich E. G. Early diagnosis and prevention of dentoalveolar anomalies and cariogenic situation in children suffering from diabetes //European Journal of Molecular and Clinical Medicine. – 2020. – Т. 7. – №. 3. – С. 2468-2472.
4. Камалова Ф. Р. Первичная профилактика стоматологических заболеваний у детей страдающих с сахарным диабетом //Новый день в медицине. – 2020. – №. 2. – С. 383-386.
5. Kamalova F. R. et al. The study of anomalies of maxilla-facial system of children's age in the Bukhara region //ACADEMICIA: An International Multidisciplinary Research Journal. – 2019. – Т. 9. – №. 12. – С. 63-67.
6. Axtamovich R. A. et al. To Study and Assess the Condition of the Mouth in Children with Congenital Cliffs of the Lip and Palate //Central Asian Journal of Medical and Natural Science. – 2022. – Т. 3. – №. 5. – С. 378-380.
7. Rahmatillaevna K. F., Umarovich S. S. Consequences Of Early Extraction of Deciduous Teeth in Children //Eurasian Medical Research Periodical. – 2021. – Т. 1. – №. 1. – С. 51-54.
8. Rahmatilloyevna K. F. et al. Improving the Methods of Treatment and Prevention of Complications of Odontogenic Diseases of the Jaws in Children //Eurasian Medical Research Periodical. – 2022. – Т. 6. – С. 168-171.

Volume: 2 Issue: 11 | Nov – 2023 **ISSN: 2720-6866**
http://journals.academiczone.net/index.php/rjtds

9. Rahmatilloyevna K. F. et al. Comparative Characteristics of Surgical Methods for Fixing Bone Fragments of the Zygomatic Bone and Arch //Eurasian Journal of Humanities and Social Sciences. – 2022. – T. 6. – C. 46-48.