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Methods of Treating Caries of Permanent Teeth in Children with Unformed Roots

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Abstract

The origin of dental caries in children is naturally the same as in adults. The leading factor in the development of caries is the caries-forming microflora of the lower respiratory tract, with a more thorough examination of dental caries and chronic infectious diseases, leading to an imbalance of multiple risk factors and protective factors. The main factors playing a role in the development of dental caries in childhood are the structure of the teeth of temporary attachment and saliva, carious bacteria, easily fermentable carbohydrates and the temporary factor.

Keywords: dental, World Health Organization, hygiene, dentist, stomatophobia

Introduction

In recent years, studies have emerged indicating that the state of the goiter-jaw system is considered as an indicator of somatic health. Such a daughter of vision corresponds to the ideas about the unity of the structure and functions of the human body system.

The age period from 7 to 14 years is the age period for children. During this period, permanent teeth continue to erupt and baby teeth are replaced. Roots are formed in erupted teeth. Typical problems of this period are an increase in the carious process, due to poor hygiene, children go to school and parental control weakens. According to the World Health Organization, 80% of children of this age suffer from periodontal diseases, the cause of which is poor hygiene.

Timely diagnosis and correct choice of treatment method for dental caries helps to reduce weakened forms of the disease, which in turn is the prevention of the occurrence of foci of odontogenic infection. The methods of treatment of dental caries that have developed to date offer traditional preparation of carious cavities using drills. Children, when visiting a dentist, experience fear and pain during the preparation process, children are capricious, this affects their behavior, becomes the cause of stomatophobia, and this has been reported in a number

of publications.

The issues of the specifics of treating caries in permanent teeth with incomplete mineralization of tissue hardness in the physiological period of development of children aged 6-11 years during the formation of core teeth do not lose their relevance.

Materials and Methods

In search of optimal methods of dental caries treatment, researchers and literature report new methods of treatment, maximum preservation of natural tooth tissues, as well as after the treatment procedure, filling the carious area with SIT with modern restorative composite materials. One of the new proposals of researchers is the method of minimally invasive therapy using SIT.

Among the many factors determining the remineralization of hard dental tissues is fluoride. It is known that glass ionomer cements (GIC) have the maximum release of fluoride ions; scientists are actively developing GICs with increased fluoride content. In addition, GICs provide a higher level of connection with dental tissues.

Results and Discussion

When treating teeth in children with medium and deep caries and reduced caries resistance of enamel, the method of deep fluoridation of enamel and dentin with the drug Gluftored before filling the teeth was used for remineralization. The drug, including a one-time use after treatment, is difficult to use.

How to use Gluftored: degreased carious layer, soaked with an applicator soaked in liquid for the first burr and put for 30 seconds. Air-conditioned room. After 30 seconds, the image will be loaded twice. There is also a stream of cool air.

When using the drug Gluftored, due to the high solubility of microcrystals on the surface of the teeth, high local concentrations of fluoride ions (about 100 m/l) are created. Since the rate of remineralization is proportional to the square of the concentration of fluoride ions, deep fluoridation leads to an increase in the rate of remineralization 100 times greater than other fluoride salts. When searching for a method, use other lining materials [2.4.6.8.10.12.14.16.18.20].

The deep fluoridation method is repeated 2-3 times with an interval of 1 week. The carious layer is sealed with aqueous dentin. After the end of remineralizing therapy, after 2-3 weeks, the aqueous dentin is replaced with a permanent filling SIT Argion Molar ATs.

A distinctive feature of the method is minimally invasive intervention and early diagnosis of carious disease, and minimal surgical intervention in tooth tissue.

Preparation of hard dental tissues with a minimally invasive method is carried out under the control of a caries detector. The principle of operation of the caries detector is based on the varying degree of staining of the dentin layers and the focus of carious lesion. Since the outer layer of demineralized dentin is completely destroyed and consists of a mixture of pathologically altered collagen phylocones and odontoblasts, they are stained in a bright color, the inner layer is partially demineralized and is stained much lighter, preserving the ability to remineralize. The caries detector contains a 0.5-1.0% solution of basic fuchsin dissolved in propylene glycol.

The use of a caries detector facilitates a gentle method of removing only non-viable dental tissues and maximum preservation of dental tissues capable of remineralization, thereby ensuring maximum duration of tooth viability.

When using minimally invasive therapy methods, it is necessary to use modern filling materials that are resistant to physical stress, effective mixed saliva, with a low elasticity modulus, high adhesiveness, and good radiopacity.

These requirements are met by the SIT company VOCO Argion Molar AC, which contains brain and releases ions of active fluoride for a long time.

VOCO used in minimally invasive dental filling methods.

Argion is a stop-fixing glass ionomer filling material containing silver. The presence of finely dispersed parts of the brain has a bactericidal effect, increases not only mechanical reliability, but also guarantees high radiopaque indices (up to 400% AC). Argion is distinguished by the content of active fluoride ions, which are released constantly, preventing the formation of totic caries, as well as good chemical adhesion to dentin and tooth enamel [1.3.5.7.9.11.13.15.17.19], where 5 main criteria were used, with the first 3 criteria being used:

1. Marginal seal of the filling;
2. Secondary (recurrent) caries;
3. Violation of the anatomical shape of the filling.

Methodology for using complete "Gluftored" and delayed filling.

Developed in 2005, the dental kit "Gluftored" is used for deep fluoridation of enamel and dentin, in the prevention and treatment of primary and secondary caries, caries in the pit stage, as well as in the prevention of caries, sealing of fissures, treatment of hypersensitive areas of the tooth, after preparation of the cavity and pulp, treatment or periodontitis.

And the dental kit "Gluftored" includes liquid and suspension. Liquid - a blue solution containing fluorine and copper ions. Suspension is a finely dispersed calcium liquid in distilled water with the addition of a stabilizer.

And as a result of subsequent alternate application of liquid and suspension, sealing of enamel microcracks, dentine canals and cement, the newly formed substance is a high-molecular polymer of silicic acid with submicroscopic crystals of calcium fluoride, magnesium

fluoride and copper fluoride deposited in it. This substance is alkaline in nature and very dense, which creates effective protection of dentine and pulp from the effects of acids and monomers contained in restorative materials.

A characteristic difference of conventional fluoridation is that with deep fluoridation, microcrystalline calcium fluoride of less than 1 μm in size is formed directly in the dentinal canals and damaged enamel, which creates more effective and long-lasting protection against caries.

Conclusion

Microcrystalline fluoride calcification is a permanent source of fluoride ions, capable of providing long-term remineralization and reliable sealing of hard tissues. With deep fluoridation, the copper compounds involved in it create effective protection of hard dental tissues from cariogenic microorganisms. Long-term content of copper and fluoride ions in hard dental tissues helps restore the alveolar-dentine system. Deep fluoridation does not reduce the adhesion and retention of filling materials. Treatment of deep cavities and fleshy teeth should begin with the use of calcium hydroxide suspension. Calcium hydroxide protects the pulp from the effects of fluoride complexes that have not yet disintegrated.

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