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IMPROVING METHODS TO PREVENT CARIES OF THE PERMANENT TOOTH FISSURE AREA IN CHILDREN

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ABSTRACT

This article describes the caries of the permanent fissure area in children and its causes, diagnosis and prevention. The problem of caries fractures is a leader in cariesology because Fissura caries ranks first in the frequency of carious lesions in other localizations. The high prevalence of fissure caries is characterized by the anatomical shape of the cracks, their long cooking time compared to the smooth surfaces of the teeth, retention of food debris, the area of cracks due to lack of high quality dental hygiene, labor-intensive The diagnosis is often made subjectively.

KEYWORDS: *Dental Plaque, Enamel, Fissure, Children, Teeth, Saliva, Food*

INTRODUCTION

Dental caries is the demineralization and erosion of the hard tissue of the teeth, which creates a gap in the tooth. Pigmented yellow-brown spots on the enamel of the teeth, bad breath, pain when eating sweet, salty, bitter, cold or hot products.

As a result of deepening of caries may develop cysts, pulpit is, and later peridontitis. Failure to treat caries in a timely manner can lead to tooth loss. Caries can also lead to acute or chronic illness. Dental caries is the destruction of the hard enamel layer of the tooth, the integrity of the bone layer under the influence of ditrophic or infectious factors. The disease is one of the most common pathologies among the population.

According to WHO statistics, caries occurs in 80% to 98% of people in different countries and between different races. Over the past two years, the disease has become more prevalent among children, with varying degrees of caries, especially in economically underdeveloped countries. Dental caries is not an independent disease, it is a pathology caused by general changes in the body. For example, decreased local and general immunity, changes in the gastrointestinal tract play an important role in the formation of caries.

The main cause of caries (tooth decay) is bacteria that produce acids that cause fluoride and calcium to leach out of the tooth tissue. Microorganisms begin to multiply and damage the tooth 1-2 hours after cleaning the oral cavity, causing tooth decay.

Lack of saliva secretion can also contribute to the development of caries. In fact, the minerals in saliva are able to partially eliminate the acids produced by bacteria. When saliva is scarce, acids begin to erode teeth quickly. In addition, saliva partially washes out the eyes. Xerostomia ("dryness in the mouth") can develop as a result of various diseases, such as diabetes, hypertension, nasal breathing disorders.

Frequent consumption of sweets can also cause tooth decay, and this does not depend on how much glucose is consumed, but on how long it has been in contact with the teeth, i.e., the duration of "sticking" to the teeth. Improper nutrition affects not only the teeth, but also the health of the oral cavity in general.

Currently, there are more than 400 theories explaining the cause of caries. However, in most theories, if the oral cavity is not maintained for personal hygiene, plaque will form on the tooth enamel, which can lead to cavities. Dental prostheses develop as a result of incomplete or improper cleaning of the teeth, especially in places where the edges of the teeth rarely touch (side surfaces of the teeth, wisdom teeth).

Plaque is firmly covered with a layer of tooth enamel and is considered favorable for bacteria (streptococcal flora). Minerals in saliva harden. This type of plaque is called plaque.

In the composition of carious lesions of the teeth, the first place is occupied by fracture caries. The high prevalence of fracture caries is due to the peculiarities of the anatomical structure of fractures, the accumulation of food debris and the formation of aggressive plaque in natural tooth cavities and a longer period of hypo mineralization of relatively smooth tooth surfaces. Based on this, the problem of prevention and treatment of fracture caries is very relevant.

Fracture caries is a pathological process localized in the area of cracks, they are very diverse in shape (stinks, conical, drip, polypoid, multi-horned). Cracks are located on the chewing and lateral surface of the molars and premolars, as well as on the lingual surface of the front teeth. The depth of the cracks is 0.25-3 mm, the width along the bottom is 0.1-1.2 mm, the width at the mouth is 0.006-1.5 mm. The thickness of the enamel layer on the walls of the crack and in its lower part ranges from 1.3 to 0.01 mm. The enamel covering the crack is generally structurally indistinguishable from adjacent enamel, but the gaps between the prisms expand more. At the bottom, the cracks form a dense network - an accumulation of organic matter. As a rule, enamel plates extend from the bottom of the crack to the border of enamel and dentin and into the interprismatic material of enamel and dentin. Due to the peculiarities of the structure and shape of cracks, they are the most vulnerable places and a favorite localization of caries.

Symptoms of Fissura Caries: The symptoms of caries lesions of fissures are the same as other types of caries. First of all, patients notice the appearance of black spots on the chewing surface of the teeth. If left untreated, the process can penetrate deeper layers and affect the dentin. In this regard, there is a reaction to temperature and chemical stimuli. However, the absence of pain is not excluded, as the sensitivity of the teeth depends on individual characteristics.

Fissure caries can be diagnosed in three ways:

1. Visual inspection. The doctor can only diagnose fracture caries using a dental probe. True, this only applies to open cracks. When inspecting closed cracks, only a narrow entrance is visible, which usually extends into a wide deep cavity. Therefore, caries in closed fractures is diagnosed by other methods;

2. X-ray diagnostics. With the help of radiographs, any carious lesions can be detected, even if the patient has no clinical manifestations at all. This is a great way to diagnose caries in closed fractures. However, X-ray diagnosis in the early stages rarely detects this disease;

3. Hardware research. The use of a dental laser fluorescent device is the most optimal method of diagnosing fracture caries. With its help, you can detect the disease even in the early stages.

The problem of caries fractures is a leader in cariesology because Fissura caries ranks first in the frequency of carious lesions in other localizations. The high prevalence of fissure caries is characterized by the anatomical shape of the cracks, their long cooking time compared to the smooth surfaces of the teeth, retention of food debris, the area of cracks associated with the lack of high-quality dental hygiene, a lot of work the diagnosis required is often subjective.

Prevention of fissure caries is closely related to complete enamel formation. It is now known that after tooth extraction, the process of accumulation of calcium and phosphorus in the enamel, changes in the crystal lattice, a decrease in the volume of micro-pores, which leads to an increase in its density. Therefore, knowledge of the mechanisms of enamel maturation is important in terms of determining the optimal timing of its implementation, the composition, regimen and frequency of preventive measures to prevent Fissura caries.

It was found that the appearance of the initial forms of Fissura caries in almost all cases (99.03%) begins in the first year after the eruption of the enamel. In most fractures (51.31%) caries occurs in the defective stage in the first year of enamel maturation, in 22.68% in the second year of maturation, and in 20.37% in the initial stage of caries enamel. after the end of the ripening process. During this period, natural remineralization of some of the cracks is possible (4.62%) The pathogenesis of primary caries of cracks is associated with:

1. Hypomineralization and increased solubility of hard tissues of cracks,

2. Formation of acid production zones near cracks. , self-cleaning and remineralization in cracks.

The presence of a number of exogenous and endogenous factors for the occurrence of fissure caries, as well as the anatomical nature of the fractures, require a complete diagnosis of the condition of the hard tissue and a differential choice of prevention and treatment. Due to the morphological structure of the chewing surface of the teeth, there are great difficulties in identifying the initial forms of Fissura caries. Tooth cracks are enamel folds that are pushed to the surface of the teeth, resembling the spaces between the premolars and the molar tubercles.

The depth and width of the cracks can vary from 0.006 to 3.0 mm. Depending on the shape of the crack: funnel-shaped, conical, droplet-shaped, polypoid, testicular, several-horned. Depending on the shape of the outer holes are divided into 4 types of cracks: round, oval, triangular and others. Their average diameter is 0.17 mm. Leusoum P.A. the classification of cracks is proposed: 1) open cracks, 2) closed cracks, 3) grooves, 4) smooth surface. Most often, caries occurs in open cracks in 64.5% of cases. Diagnosis of the condition of cracks is carried out by the following methods: visual (inspection, TER-test), tactile (sounding), radiological, electrometric. The

electrometric method is based on the ability of hypomineralized tissue to conduct different amounts of electric current from the time of tooth eruption when a reliable connection is established between the active surface of the electrode and the examined tooth surface using an electrolyte solution.

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