

**OPTIMIZATION AND IMPROVEMENT OF CARIES TREATMENT IN THE FIELD OF
PERMANENT TEETH FISSURES IN CHILDREN**

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ABOUT ARTICLE

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Abstract: Dental caries is the most common dental disease in children. The problem of timely diagnosis, prevention and adequate treatment of this pathology occupies one of the leading places in pediatric therapeutic dentistry. However, before applying the sealant, the dentist faces the difficult task of assessing the condition of the fissure, diagnosing a possible latent carious lesion, and choosing adequate tactics for therapeutic and preventive measures. Fissure caries occupies the first place in the structure of carious lesions of the teeth. Based on this, the problem of prevention and treatment of fissure caries is extremely urgent. It has been established that fissure caries occurs immediately after teething. The high incidence of fissure caries is associated with the features of the anatomical structure of the fissures, the accumulation of food residues and the formation of aggressive dental plaque in the natural recesses of the tooth and a longer period of hypomineralization compared with smooth tooth surfaces. There is a direct relationship between the initial level of mineralization of the enamel of fissure teeth and the risk of fissure caries.

INTRODUCTION

The purpose of the study. To improve the effectiveness of prevention and treatment of fissure caries of permanent teeth in children.

Research objectives.

1. To compare the clinical effectiveness of the use of various types of boron for therapeutic and prophylactic fissurotomy. 2. To investigate the effectiveness of the clinical application of various filling materials and techniques for invasive sealing and therapeutic and prophylactic filling of fissures with initial signs of carious lesions. 3. To develop algorithms adapted to the conditions of practical dentistry for assessing the condition of permanent teeth fissures in children, as well as carrying out their preventive sealing and therapeutic and preventive filling. 4. To study the prevalence and intensity, dynamics of fissure caries of permanent teeth in school-age children.

METHODS

To determine the initial level of dental morbidity, the development and clinical and laboratory evaluation of minimally invasive FC treatment methods, the study was conducted in several stages. During the clinical study, dental examination and treatment of fissure dental caries using minimally invasive methods in children aged 6 to 13 years was carried out on the basis of the Faculty of Dentistry at the clinic of the Department of Pediatric Therapeutic Dentistry. The inclusion of patients in the study was carried out on the basis of the developed inclusion criteria and with the informed voluntary consent of the parents. Highly filled composite sealants "Ultrasil" and "Fissurite" were used as sealants, glass ionomer cement (CIC) "Fuji II LS" and liquid-flowing composite "Charisma flow" in combination with highly filled composite sealant "Ultrasil" were used as preventive seals.

RESULTS

The state of oral hygiene in children in all surveyed was approximately the same (the values of the IG-Y indicators were 2.03 ± 0.19 in 6-year-olds, 2.13 ± 0.27 in 10-year-olds, 2.49 ± 0.21 in 13-year-olds) and corresponded to a satisfactory level of oral hygiene. When assessing the condition of periodontal tissues, a significant increase in the indicators of the communal periodontal index CPI was found with the age of children. So if the average value of the CPI index for 6-year-olds was equal to for 7-year-olds - 0.09 ± 0.05 , for 10-year-olds - 0.17 ± 0.09 , and for 13-year-olds it reached 0.56 ± 0.18 . Assessment of the condition of periodontal tissues according to the gingivitis index GI also showed an upward trend in older age groups. Based on the conducted clinical study, the reduction of fissure caries during the preventive filling method was 100%, while the traditional method of filling permanent molars led to a pronounced increase in the intensity of fissure caries - 36.55%. According to laboratory research, when using the preventive sealing technique, the bond strength of a combination of a liquid-flowing composite with a composite sealant is 1.4 times higher than with preventive sealing when combined

with a composite sealant. The developed algorithm for conducting minimally invasive technologies for the treatment of fissure caries of permanent teeth in children made it possible to achieve 95-97% reduction of fissure caries after a 12-month follow-up.

CONCLUSIONS

1. The choice of methods and materials used for the prevention and treatment of caries in the field of fissures of chewing teeth in children is based on a comprehensive assessment of the morphological structure of the chewing surface of teeth, the activity of the course of caries in the patient, the state of his somatic health and the level of oral hygiene. 2. The most important condition for success in carrying out non-invasive sealing of fissures is a reliable assessment of the condition of the hard tissues of the tooth to exclude hidden carious lesions, in cases of "open" fissures, "closed" fissures, provided there is no pigmentation and a delay probe in the lumen of the fissure and compliance with the technological rules for performing therapeutic and preventive measures. 3. When assessing the condition of the hard tissues of permanent teeth in children and adolescents, it is proposed to introduce the index "G" (the presence of sealant). This indicator reflects the availability of preventive measures, the quality of preventive care for children. 4. In order to prevent and treat fissure caries, minimally invasive methods of treating fissure caries should be widely used.

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