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CARIOUS INFLAMMATION IN ADOLESCENTS: CAUSES, FEATURES AND PREVENTION

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Abstract: Carious inflammation is one of the most common dental diseases that occurs due to the destruction of hard tooth tissues. Adolescence is a critical period for dental health, because at this time there is an intensive development of the body, and habits related to oral care are still being formed.

Keywords: carious inflammation, dental decay, tooth enamel, dentin, the oral cavity, dental hygiene, bacterial infection, diagnosis of caries, early caries, deep caries.

Causes of carious inflammation in adolescents

1. Improper nutrition

Teenagers often consume large amounts of carbohydrates, sugary and carbonated drinks. This creates a favorable environment for the reproduction of bacteria that secrete acids that destroy tooth enamel.

2. Violation of oral hygiene

Insufficiently thorough brushing of teeth or its absence contributes to the formation of plaque, which is the main risk factor for the development of caries.

3. Hormonal changes

Hormonal surges during puberty can affect the condition of the oral mucosa, making tissues more vulnerable to infections.

4. Hereditary predisposition

Genetic factors also play an important role in the development of caries. If the parents had dental problems, the teenager is more likely to have them.

5. Low mineralization of teeth

During the formation of permanent teeth, a lack of calcium and fluoride in the diet can lead to enamel weakness, which increases the risk of developing carious inflammation.

Features of caries in adolescents

- Rapid progression. In adolescents, caries can develop faster than in adults due to the structure of young teeth.

- Frequent damage to chewing teeth. Permanent molars are more likely to undergo caries due to their complex anatomical shape and insufficient accessibility for cleaning.
- The psychological factor. Teenagers often postpone a visit to the dentist due to fear of pain or embarrassment, which exacerbates the problem.

Modern methods of diagnosis of carious inflammation

The diagnosis of caries in the early stages is key to the successful treatment and preservation of dental health. Modern technologies make it possible to detect carious inflammation with high accuracy, even in hidden or hard-to-reach places.

1. Visual inspection

This is a basic diagnostic method that a dentist performs using a dental mirror, probe and lamp. However, its accuracy depends on the doctor's experience, and it may not reveal hidden or initial lesions.

Advantages:

- Simplicity and accessibility.
- Does not require special equipment.

Disadvantages:

- Ineffective for detecting latent or initial caries.
- There may be diagnostic errors due to subjectivity.

2. X-ray examination

X-rays can detect hidden foci of caries between teeth, under fillings and in the deep layers of the tooth.

X-ray diagnostic options:

- Panoramic image (orthopantomogram): It is suitable for general assessment of the condition of all teeth.
- Sighting: used to examine a specific tooth or a section of it.
- Bytwing scans: the most effective for detecting interdental caries.

Advantages:

- High accuracy.
- Detection of caries in the early stages, inaccessible for visual inspection.

Disadvantages:

- A small dose of radiation.
- Does not always show superficial caries.

3. Laser diagnostics (diode lasers)

Laser technologies, such as DIAGNOdent devices, are used for non-invasive detection of the initial stages of caries. The laser beam interacts with tooth tissues by measuring their fluorescence level.

Advantages:

- Noninvasiveness and painlessness.
- High sensitivity for the diagnosis of early caries.

Disadvantages:

- Confirmation by other methods is required.
- The cost of the procedure.

4. Photopolymer diagnostics (luminescent diagnostics)

The method is based on the use of special light sources, such as LED lamps or ultraviolet. Under the influence of light, the carious areas change color, which allows them to be visualized.

Advantages:

- Safety and simplicity.
- Identification of superficial lesions.

Disadvantages:

- Not suitable for deep caries.
- Requires high-quality equipment.

5. Electro-dental diagnostics (EDI)

The method measures the response of dental tissues to weak electrical impulses. It allows you to assess the condition of the tooth pulp and identify caries in the deep layers.

Advantages:

- Helps to diagnose complex cases associated with inflammation of the pulp.

Disadvantages:

- Requires professional equipment.
- It is not used for the diagnosis of initial caries.

6. Optical coherence tomography (OCT)

is a modern method for obtaining a three-dimensional image of tooth tissues. OCT reveals even the smallest changes in the structure of enamel and dentin.

Advantages:

- High accuracy.
- Non-invasiveness.
- No radiation exposure.

Disadvantages:

- Expensive equipment.

- Limited availability in dental clinics.

7. Thermography

A method based on measuring the temperature of the tooth and surrounding tissues. Inflamed areas manifest themselves by a change in temperature, which is recorded by special devices.

Advantages:

- Speed of the procedure.
- Absence of pain.

Disadvantages:

- Additional verification of accuracy by other methods is required.

Conclusion

Modern methods of diagnosing carious inflammation make it possible to detect the disease at the earliest stages, significantly increasing the chances of successful treatment. Using a combination of different technologies, such as radiography, laser diagnostics and optical tomography, allows the doctor to create the most accurate picture of the patient's dental condition.

Regular visits to the dentist and preventive examinations using these methods are the key to a healthy smile and minimizing treatment costs!

- Treatment in the early stages. In case of superficial caries, the use of remineralizing drugs is possible, and in later stages, filling is required.

Prevention of carious inflammation in adolescents

1. Proper hygiene. Teenagers should brush their teeth at least twice a day using fluoride-containing toothpaste and dental floss.

2. Rational nutrition. The inclusion of foods rich in calcium, fluoride, vitamins D and C in the diet will help strengthen teeth.

3. The use of fluorolacids. Regular application of fluoride-containing preparations to teeth reduces the risk of caries.

4. Visit to the dentist. A preventive examination every 6 months allows you to detect and prevent the development of caries in a timely manner.

5. Sealing of fissures. The procedure of sealing the chewing surface of the teeth helps to protect them from the accumulation of bacteria.

Carious inflammation in adolescents is not only a medical problem, but also a social one, as it can affect quality of life, self—esteem and academic activity. Timely prevention, proper nutrition and regular visits to the dentist are key factors in preventing this disease.

Take care of your teeth — health begins with a smile!

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