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DISEASES OF DENTAL HARD TISSUES AND THEIR IMPORTANCE IN THE HUMAN BODY

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Abstract: In this article, we review common dental hard tissue diseases, such as caries, dental erosion, and endemic fluorosis, highlighting their impact on the oral cavity and the importance of early detection and intervention in maintaining dental integrity. By examining the specific characteristics and treatment options of these hard tissue diseases, we can increase knowledge and awareness of oral diseases that require attention and prompt treatment to maintain healthy teeth and gums.

Keywords: dental hard tissues, enamel, dentin, caries, dental erosion.

The health of dental hard tissues, including enamel, dentin, and cementum, plays a crucial role in maintaining oral health and overall well-being. Various diseases can affect these dental structures, leading to oral health problems and complications. Understanding the etiology, symptoms, diagnosis, and treatment of dental hard tissue diseases is essential for dentists to provide effective care and prevent further deterioration of oral health.

1. Dental caries is one of the most common diseases of the oral cavity. When caries occurs, the tooth enamel is first damaged, and if left untreated, it damages the dentin (hard tissue of the tooth). Caries comes from the Latin word caries, which means “rotting”, and among the people, caries is called “tooth decay”, “tooth worm”, the use of the latter term is somewhat incorrect from a medical point of view. The first sign of caries is the appearance of dark spots on the tooth enamel. If these spots are ignored, the diameter of the caries increases and the pathology can spread deeper into the tooth tissues, forming a “hole”. When caries damages and penetrates the tooth enamel and dentin, it reaches the pulp (soft tissue of the tooth) and can cause very severe pain. Inflammation of the pulp is called pulpitis. Depending on the degree of tooth damage, caries is divided into stains (discoloration on the surface of the tooth), superficial caries (surface damage), medium caries (the upper part of the dentin is damaged) and deep caries (the dentin is almost completely damaged and reaches the pulp). In addition, caries of the enamel, dentin and root cementum are classified separately - in root cementum caries, the disease occurs under the gum.

2. Endemic fluorosis - this disease, which is noted in the hard tissues of the teeth, occurs as a result of the entry of more than the norm of the element fluorine (dissolved in water) into the body from the external environment through drinking water. We will not be mistaken if we say that fluorosis is a hypoplasia that can be caused by the element fluorine. The daily requirement of the human body for fluorine is about 3.5 mg. This requirement is mainly satisfied by the fluorine contained in drinking water. To satisfy such a requirement of the body, it is enough to have 0.8-1.2 mg of fluorine in 1 liter of drinking water. In cases where the amount of fluorine in drinking water exceeds the specified value, fluorosis is observed. Fluorosis manifests itself in 5 different forms.

3. Enamel erosion - Erosion occurs on the teeth as a result of the gradual loss of some part of the enamel and dentin. The cause is unknown. There are assumptions that it may be due to the effect

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of toothbrushes and toothpaste, or the juice of fresh fruits. Erosion of the teeth has been observed in nervous, mental illnesses, gout, endocrine diseases, especially thyrotoxicosis. Erosion of the teeth occurs in middle-aged and elderly people (40-80 years old), most often in the upper molars, and can also occur in the premolars. A round or saucer-shaped defect - a pit - forms mainly on the vestibular surface of the teeth. First, the enamel is damaged, then the dentin. The bottom and the periphery of the erosion are hard and smooth. In the initial stage of erosion, when the enamel is advanced, the enamel and dentin are damaged. Tooth erosion is divided into 3 stages: Enamel surface. All of the enamel. Enamel and dentin are also damaged. Dental erosion can be active acute and stabilized chronic and can pass into each other. This is observed in the recurrence of thyrotoxicosis. The hardness of the enamel decreases. On average, it is 295 kg mm2, the norm is 395 kg mm2. The hardness of the dentin increases slightly, it is -70 kg mm2, the norm is 359 kg mm2. In the area of erosion on the tooth, the nasmite layer thins, there is a change in the prisms, demineralization. The enamel contains trace elements such as copper, zinc, iron, cobalt.

4. Pathological tooth decay is the loss of hard tooth tissue beyond the physiological limit, which develops under the influence of mechanical, chemical or functional factors. Its main types are:

1. Abrasion - tooth decay as a result of mechanical impact. This condition is usually observed as a result of hard toothbrushes, abrasive toothpastes or poor hygiene habits. It also occurs in people who come into contact with dust, metal and abrasive particles in their professional activities.
2. Attrition - occurs when the teeth rub against each other as a result of physiological chewing movements or pathological bruxism. Often, high stress levels and psychological stress lead to bruxism and accelerate tooth decay.
3. Erosion - occurs as a result of long-term exposure to chemicals, especially acidic drinks and foods. Also, the constant impact of stomach acid on the tooth surfaces as a result of gastrointestinal diseases (reflex, bulimia) causes increased erosion.

Pathological tooth erosion often develops under the combined influence of various factors. For example, in an acidic environment, enamel softens and then, under mechanical influence, it is more quickly destroyed.

Conclusion: It is necessary to have information about the symptoms of these diseases of the hard tissues of the teeth and their complications, seek professional dental care and follow oral hygiene, limit sugary and acidic foods, as well as a rational diet, and undergo regular dental examinations.

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