JOURNAL OF MULTIDISCIPLINARY SCIENCES AND INNOVATIONS
VOLUME 5, ISSUE 03
MONTHLY JOURNALS
ISSN NUMBER: 2751-4390
IMPACT FACTOR: 9,08

TOOTH ENAMEL HYPERPLASIA: CLINICAL AND MORPHOLOGICAL FEATURES, DIAGNOSIS AND TREATMENT

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Annotation.
Enamel hyperplasia is one of the anomalies in the development of hard tooth tissues, characterized by excessive formation of enamel tissue. This pathology is relatively rare and can manifest itself in the form of enamel droplets, enamel nodules or enamel islands on the tooth surface. Despite its benign nature, enamel hyperplasia can contribute to the accumulation of plaque, the development of caries and inflammatory periodontal diseases. The article discusses etiological factors, mechanisms of pathogenesis, clinical manifestations and modern methods of diagnosis and treatment of enamel hyperplasia.
Keywords: enamel hyperplasia, dental malformations, enamel drop, dentistry, diagnosis, treatment.

Introduction. Anomalies in the development of dental hard tissues are an important problem in modern dentistry, as they can affect both the functional state of the dental system and the aesthetic characteristics of teeth. These disorders form during the period of odontogenesis and can manifest as changes in the structure, shape, size and number of hard tissues of the tooth. Among such anomalies, disorders of enamel development occupy a special place, since it is the enamel that is the most mineralized and stable tissue of the human body.

One of the rare but clinically significant abnormalities of enamel development is enamel hyperplasia. This pathology is an excessive formation of enamel tissue that occurs during tooth formation. Enamel hyperplasia is most often manifested in the form of enamel beads, which are located in the area of the tooth neck or root bifurcation, mainly on the molars. Such formations can have different sizes and shapes, which sometimes makes their diagnosis and differential assessment difficult. The relevance of studying this pathology is due to the fact that enamel hyperplasia can create favorable conditions for plaque retention, complicate oral hygiene and lead to the development of inflammatory periodontal diseases.

Etiology of enamel hyperplasia

The etiology of enamel hyperplasia has not been fully studied, but most researchers associate its development with violations of tooth formation processes during odontogenesis.

The main etiological factors include:

1. Violations of differentiation of cells of the enamel organ. If the normal differentiation of cells of the internal enamel epithelium is disrupted, additional foci of enamel formation may form.

2. Genetic predisposition. Some studies indicate the hereditary nature of individual cases of enamel hyperplasia.

3. Disorders of the embryonic development of teeth. The influence of adverse factors such as infections, intoxication, vitamin and mineral deficiencies during tooth formation.

4. Local factors. The pressure of the surrounding tissues, anomalies in the position of the dental rudiments, as well as features of the formation of the root region of the tooth.

5. Systemic diseases of the mother during pregnancy, which can disrupt the normal process of odontogenesis in the fetus.

Pathogenesis.

The pathogenesis of enamel hyperplasia is associated with a violation of the normal process of amelogenesis — the formation of enamel tissue. Normally, the cells of the inner enamel epithelium differentiate into ameloblasts, which synthesize the enamel matrix. With enamel hyperplasia, part of the epithelial cells of the Gertwig root sheath can transform into ameloblasts and begin to produce enamel in atypical areas of the tooth.

As a result, enamel droplets (pearls) are formed — rounded formations on the surface of the root, enamel nodules, enamel islands. These structures may consist solely of enamel or contain dentin and pulp tissue inside.

Such formations are most often localized:

• in the area of bifurcation of the molar roots;
• on the lateral surface of the root;
• in the area of the tooth neck.

The clinical picture

The clinical manifestations of enamel hyperplasia depend on the shape and size of the formation. In most cases, the pathology is asymptomatic and is detected accidentally during a dental examination or X-ray examination. The main clinical signs:

• the presence of small dense formations on the tooth surface;
• Smooth shiny surface;
• rounded or teardrop shape;
• Sizes are usually from 1 to 5 mm.

Enamel hyperplasia is most often localized on the first and second molars of the maxilla, less often on the premolars and incisors.

Although enamel hyperplasia itself does not cause pain, it can lead to a number of complications such as difficulty in oral hygiene, plaque accumulation, caries development, gum inflammation, periodontitis in the area of root bifurcation.

Diagnosis of enamel hyperplasia is based on clinical examination and additional research methods. Basic diagnostic methods:

1. Clinical examination. Dense enamel formations on the tooth surface are revealed.
2. X-ray examination. On an X-ray, an enamel drop is defined as a rounded, intense shadow.
3. Computed tomography (CT). It allows you to more accurately determine the size and location of the formation.
4. Differential diagnosis. It is performed with tartar, cementoma, and other dental malformations.

Modern methods of treatment.

The choice of treatment method depends on the size of the lesion, its location and the presence of complications. With small formations that do not cause clinical symptoms, dynamic monitoring and regular professional oral hygiene are possible. If the formation interferes with hygiene or causes gum inflammation, the enamel drop is carefully sanded and polished using dental drills and abrasive tools. If hyperplasia is located in the area of root bifurcation and periodontitis develops, surgical intervention may be required to remove the formation and treat the root surface. In the presence of inflammatory processes, complex treatment is carried out.:

• Professional hygiene;
• curettage of periodontal pockets;
• Anti-inflammatory therapy.

Prevention of complications includes regular dental checkups, careful oral hygiene, and professional dental cleaning.

Conclusion.

Enamel hyperplasia is a rare anomaly in the development of dental hard tissues that occurs as a result of disorders of the processes of amelogenesis during odontogenesis. This pathology is manifested by excessive formation of enamel tissue, most often in the form of enamel droplets, nodules or islands located on the surface of the tooth root, mainly in the area of bifurcation of molars. Despite the fact that enamel hyperplasia is usually asymptomatic, its presence can create conditions for the accumulation of plaque and the development of inflammatory periodontal diseases. In this regard, timely diagnosis of this pathology is important for the prevention of possible complications.

Modern diagnostic methods, including clinical examination, X-ray examination and computed tomography, make it possible to accurately determine the presence and localization of enamel formations. The choice of treatment tactics depends on the size of the formation, its location and the presence of clinical manifestations. Thus, the study of enamel hyperplasia is important for modern dentistry, as it allows for a better understanding of the mechanisms of formation of dental hard tissues, improves diagnostic methods and increases the effectiveness of prevention of dental diseases.

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