



Early Diagnosis of Pathologies at the Exit of Teeth in a Young Child and its Peculiarities

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Abstract: The article presents materials on the age, regional features of teething and bite formation in children, describes the factors that lead to the development of pathology. Also given are data on methods for early diagnosis of the pathology of teething and the formation of bite in children.

Keywords: children, teething, bite formation, dentoalveolar system, pathology of teething and bite formation.

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Teething is the axial movement of the non-functional position in the jaw bone into a functional occlusion. The dynamics of this process depends on the degree of formation of the root, periodontal and is closely related to the development and growth of the craniophatic complex [1]. Teething is a physiological stage process, characterized by the appearance of dairy, then permanent teeth in children. Depending on the current mechanism of tooth eruption, impaction and an eruption are classified.

In the world, a lot of work is being done on the development of the pathological process as a result of the risk factors affecting the period of teething and the formation of the bite in children born with facial defects. For this reason, despite the large number of works carried out by local and foreign researchers on this topic, it remains urgent and necessary to develop methods for early diagnosis and prognosis of the course and end of pathologies of teeth eruption and bite formation in children. Researches are devoted to the study of risk factors affecting the period of tooth eruption and teeth formation in children with congenital cleft lip and palate, characteristics of transition, changes in other organs and systems of the body. According to the World Health Organization, "...cleft lip and palate are among the most common defects in the development of children, their relative weight is 96.9%, the frequency of a typical facial cleft in the population is 1:1000-1:700 newborns per year constitutes a baby". The period of eruption and formation of teeth is a physiological process that is considered one of the important indicators of a child's health and physical development, and serves as an indirect indicator of a child's proper development. The physiological process of teeth eruption does not cause pathological conditions, it is directly related to the general state of the child's health, the growth of teeth on time and in a certain sequence indicates that his organism is developing normally.

Impact is a delay in the eruption of the tooth, due to the presence of a mechanical obstacle. The cause of this pathology may be a shortage of space in the dentition on the background of crowding, the

presence of a mucous barrier, overcomplete teeth and others. An eruption is the primary violation of the process of eruption of non-ankylosed teeth with complete or partial lack of growth [10].

The dental rudiments appear in the fetus at about 6-week of intrauterine life. For 1.5 months, the process of mineralization of bone tissue takes place. During this period, the fetus takes from the mother's body the calcium, phosphorus, protein and other substances necessary for its teeth [11]. In this period, various diseases, malnutrition, the taking of certain medicines by a woman causes fetal anomalies in the number and shape of dental crowns, break the strength and color of their enamel.

By the time the baby is born, crowns of 20 milk teeth are located in the depth of the alveolar processes of the jaws in a fully formed state. The process of their eruption is a kind of gradual increase in their volume and pushing outward, in which they overcome the resistance of bone tissue, mucous membranes. At this time, the gums become swollen and sensitive [17].

Teeth erupt in a certain sequence, the order of teething is disturbed in rickets, genetic syndromes, the absence of a bookmark of dental rudiments as a result of a complicated course of pregnancy, endocrine pathology [8].

Deviations in the structure of the teeth, their location and development can occur due to various reasons (12): the absence of a tooth root, the incorrect location of the tooth axis (horizontal and curved), as a result of which it protrudes outside the arc of the tooth row or remains in the layer of the jawbone, the tooth itself - the size, shape, condition, color are formed incorrectly, a crack is formed in the enamel coating.

With research, it has been determined that bite anomalies are caused by irregular growth of the jaws and, in the simplest case, constant sucking. Anomalies of the location of the teeth appear due to constitutional reasons (small size of the jaw), due to injuries, congenital disorders in the exchange of connective tissue, tumors of the alveolar growth of the jaw (9).

It is known that the roots of the teeth appear in the fetus, in the womb in about 6 months. During the next 1.5 months, the process of mineralization of bone tissue takes place. During this period (up to 13 weeks of pregnancy), the fetus receives calcium, phosphorus, protein and other substances necessary for its teeth from the mother's body.

Zakharova I.N. et al. [8] believe that various factors influence the eruption of milk teeth. The main importance in the process of dentition is the human genotype, its constitution, and the role of various environmental factors can not be ruled out. The authors believe that the teeth of children of elderly parents erupt earlier than those of young parents. In the first-born, teeth begin to erupt earlier than in the second and third children, girls have a direct relationship between the degree of preterm infancy and the terms of eruption of the baby teeth earlier than in boys. Features of the course of pregnancy in the mother also affect the physiology of teething.

Disturbance of the processes of eruption and change of teeth can be noted in pathology of the pituitary gland, refusal from breastfeeding, frequent acute respiratory infections, pneumonia, neonatal sepsis [19, 9].

According to Yatsenko A.K. et al. [15] at the present stage, the study of age-sex and regional features of eruption of permanent teeth as an important indicator of biological maturity and the state of children's health remains important. This is necessary when planning, implementing measures to prevent violations of biological development among children. Vatlin A.G, Chuchkov V.M also came to this opinion. [11].

Arkhipova Yu.A., Timchenko V.V. [4] determined the timing of dentition of 156 children of the first year of life, born of HIV-positive women. It has been established that perinatal HIV infection identify

somatic abnormalities and concomitant malformations and to carry out the necessary correction of abnormalities in the preoperative period. After the examination of the child, surgical and therapeutic measures were carried out, depending on the degree of deformation. The control group consisted of 16 practically healthy children of the same age. The study of the level of cytokines IL-2, IL-6, IL-18, MCP-1 and IL-4 in the blood serum was carried out by the ELISA site (Vector Best CJSC, St. Petersburg). Static processing of the received data was carried out on a personal computer using a standard package of application programs

RESULTS AND DISCUSSION: Of the 46 children surveyed, there were 28 girls (60.8%) and 18 boys (39.2%). When studying the clinical data of children, the following concomitant diseases were identified: dysbacteriosis, allergic diseases (diathesis, stomatitis), diseases of the ENT organs. The majority of women who gave birth to children with HRVNG had a 2nd or 3rd birth. During the first pregnancy, 14 children (30.4%) were born, while during the 4th pregnancy, 6 children (13.04%) were born. In most of the women who gave birth to children with HRVNH, pregnancy proceeded with toxicosis phenomena of 1 and 2 halves, 26.3% of women had various complications of the course of pregnancy, 28% of women in the first trimester had influenza. The study of cytokine levels in children with CRVGN showed that the concentration of IL-18 was 3.5 times higher than the values of the control group and averaged 1045.7 ± 12.6 pg / ml ($P < 0.01$). Interleukin-18 (IL-18) or γ -interferon-inducing factor plays an important role in the immune response. It is produced mainly by macrophages, but can also be expressed by kupferon cells, microglia, keratinocytes, osteoblasts, and astrocytes. It stimulates the formation of various subpopulations of T-helper cells, has pro-inflammatory activity, and plays a role in the development of a pathological condition. Elevated levels of IL-18 were detected in sick children with more pronounced symptoms of inflammation, who had a more severe clinical course of the pathological process. According to the literature, under the action of IL-18 in macrophages, the enzymes cyclooxygenase NO-synthase are induced, and the synthesis of proinflammatory cytokines and chymokines is activated. IL-18 is no less effective in stimulating the synthesis of Th2-type cytokines, in particular IL-4. The analysis of the results showed that the level of ID-4 was increased in children with HRVNG (9.01 ± 0.5 pg / ml versus 6.95 ± 0.43 pg/ml in the control group) ($P < 0.05$). Therefore, ID-18 acts as a polyclonal activator acting together with other cytokines. When analyzing the level of MCP-1, its increased content was also observed in sick children (566.6 ± 11.7 pg / ml versus 176.4 ± 9.7 pg/ml in the control) ($P < 0.01$). MCP-1 is the most important factor of monocyte chemotaxis in the focus of inflammation. The source of MSP-1 synthesis is a wide range of cells: fibroblasts, monocytes and macrophages, endotheliocytes, leiomyocytes, intestinal epithelial cells, osteoblasts, melanocytes, mesotheliocytes, bone marrow stroma cells, astrocytes, etc. In children with HRVGN, the level of IL-6 was significantly increased compared to the control group (67.5 ± 3.1 pg/ml versus 19.9 ± 2.0 pg/ml) ($P < 0.01$), while the level of IL-2 was slightly lower than the control values (2.51 ± 0.1 pg/ml versus 2.7 ± 0.1 pg/ml in the control group).

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