

ASSESSMENT OF THE STATE OF PARODONT TISSUES IN CHILDREN WITH THYROID PATHOLOGIES

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ANNOTATION

There is an increase in the number of thyroid diseases all over the world. Thyroid pathology ranks second among all endocrine diseases after diabetes mellitus. This is due to the influence of exogenous factors: lack of iodine in the environment, the effect of various strumogenic factors, deterioration of the environmental situation, improved diagnosis of thyroid nodules.

Hypothyroidism revealed a high incidence of inflammatory periodontal diseases. Experiments on laboratory animals showed that the highest level of periodontal tissue damage was in animals with experimental hypothyroidism (Shabrov I.O. et al., 2015). The study of the effect of thyroid pathology on the condition of periodontal tissues is also important due to the fact that one of its diseases – hypothyroidism of the thyroid gland - is quite widespread, especially in regions with a lack of a number of natural focal factors - iodine and fluorine.

A lot of data has been accumulated on the combination of generalized inflammatory periodontal lesions with various diseases of internal organs. Maksimov M.Yu. (2016), and Startsev A.L. (2018) in their works confirm the effect of iodine deficiency on periodontal tissues.

However, studies proving the relationship of lesions of the hard tissues of periodontitis teeth with hypothyroidism and the effectiveness of its prevention and treatment in such patients are few.

Purpose of the study: Clinical assessment of the state of dental hard tissues in children with concomitant thyroid pathology, including diffuse non-toxic goiter (DNG).

Materials and methods: 180 children aged 12 years were examined. Four observation groups were formed: group I — somatically healthy children (n = 30); group II: children with diffuse non-toxic goiter of stage Ia (n = 50); group III: children with diffuse non-toxic goiter of stage Ib (n = 50); group IV: children with diffuse non-toxic goiter of stage II (n = 50). Oral hygiene was assessed using the simplified Green-Vermillion Oral Hygiene Index (OHI-S). Periodontal tissues of children of the studied groups were evaluated by establishing the prevalence and structure of periodontal pathology, establishing periodontal indices (PMA, CPI), analyzing the main etiological factors of periodontal tissue diseases under these conditions.

The results. Our study yielded the following results. The prevalence of periodontal tissue diseases in somatically healthy children was 63.3% and was approximately 12% lower than in people receiving DNG, with a significant difference from all the studied groups.

The most common periodontal tissue disease is chronic catarrhal gingivitis (HCG) (Table. 1) with a prevalence of 92% and 94% in groups II and III, respectively.

The disease was mainly chronic in nature with an exacerbation of the process in 10.5% of the examined. Acute catarrhal gingivitis was diagnosed only in 1 child (3.33%) of the control group and in 6 children with thyroid pathology (4.0%). Chronic gum inflammation was clinically accompanied by congestive hyperemia, edema, bleeding gums.

Table 1

The structure of periodontal tissue diseases in children of control groups

Group	Chronic catarrhal	Chronic hypertrophic	periodontit
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	gingivitis	gingivitis	is
Control	86,7%	13,3%	0
DNG Ia	92%	8%	0
DNG Ib	94%	6%	0
DNG II	88%	10%	2%

Signs of periodontitis were found only in 2% of group IV children. In other groups, this disease was not found.

The PMA index turned out to be almost the same (about 35%) in groups II and III. With an increase in the severity of thyroid disease pathology, it increased to 42.8% compared to the control value of 20.3%.

Bleeding gums in children of groups II–III increased by 28.11%, in group IV — by 74.13%; plaque indicators increased by 2.5 and 4 times, respectively. The data obtained once again emphasized the bias of the visual examination and the lower accuracy of the severity assessment compared to the point interpretation. In this regard, the prevalence and severity of the process observed during examination seem to be lower than they actually are.

Table 2

The degree of damage to periodontal tissues in sextants, $M \pm m$

Group	Subgroups by Пол	bleeding	Dental plaque	Schiller–Pisarev's Test	Healthy gums
Control	common	2,01±0,18	0,02±0,001	2,45±0,23	3,55±0,29
	boys	1,82±0,15	0,01±0,002	2,42±0,19	3,58±0,31
	girls	2,2±0,23	0,03±0,001	2,48±0,21	3,52±0,23

DNG Ia	common	2,45±0,21	0,08±0,003	2,89±0,25	3,11±0,20
	boys	2,3±0,19	0,07±0,005	2,63±0,17	3,37±0,32
	girls	2,6±0,22	0,09±0,003	3,15±0,30	2,85±0,23
DNG Ib	common	2,7±0,23	0,06±0,002	3,8±0,27	2,2±0,18
	boys	2,5±0,19	0,05±0,005	3,4±0,29	2,6±0,23
	girls	2,9±0,28	0,07±0,006	4,1±0,35	1,9±0,14
DNG II	общий	3,5±0,24*	0,1±0,02*	4,3±0,41*	1,7±0,12*
	boys	3,4±0,30*	0,08±0,01*	3,8±0,28*	2,21±0,23*
	girls	3,6±0,36*	0,12±0,07*	4,7±0,36*	1,3±0,09*

Note: * - significant difference from the control group, $p < 0.05$.

The results obtained indicate a significant increase in all periodontal indices and tests, which indicates a deterioration in the condition of periodontal tissues in children with concomitant thyroid pathology. It is known that periodontal pathologies have a multifactorial nature with a predominance of inflammatory or dystrophic processes. In order to establish the etiological and pathogenetic mechanism of periodontal tissue pathology in DNG conditions, an analysis of possible risk factors for periodontal pathology was carried out.

Oral hygiene according to the OHI-S index is unsatisfactory in all study and control groups and can be a trigger for the formation of a diffuse inflammatory process in the gums. In particular, the average values of the simplified index were 1.83 ± 0.12 in group II, 1.69 ± 0.4 in group III, 1.93 ± 0.14 in group IV and had no significant difference with the control group (1.74 ± 0.16).

Conclusions: With regard to the structure of orthodontic pathology, an indicative fact is the relatively high prevalence of anomalies of single teeth, including defective eruption and an abnormal number of teeth, in children of the studied groups compared with the control group. The remaining general trend is the

predominance of such dentoalveolar anomalies and deformities as crowding of teeth and narrowing of the upper jaw. Bite anomalies were observed with the same frequency both in somatically healthy children and in children with thyroid pathology.

Thus, the children with DNG examined by us have the necessary provoking factors of the inflammatory process in the gums, both local and diffuse, however, the atypical clinical picture of chronic catarrhal and chronic hypertrophic gingivitis, severe bleeding, and frequent relapses of the disease allow us to conclude that the process gingival inflammation occurs in morphologically and functionally altered periodontal tissues.

We do not exclude the possibility of violation of local and systemic mechanisms of protection of the oral cavity in children with thyroid pathology.

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