MORPHOGENETIC ASPECTS OF BIOMINERALIZATION IN THYROID GLAND TUMOR DISEASES

A. V. Reznik, *NR-1/1*
A. M. Dyadechko, *ELA*

The problem of differential diagnosis and prognosis of thyroid proliferative diseases is extremely important and difficult issue. One unexplored morphological phenomena is biomineralization of tissue. This process accompanies most proliferative processes in the thyroid gland.

The aim of the work was to investigate the process of biomineralization in tumor diseases of the thyroid gland and determine the prognostic value of calcification. We used anatomical method, generally routine histological methods, X-ray diffraction phase analysis to achieve the goal.

Results of work. At the macro- and microscopic examination of 32 thyroid tissue samples, which revealed calcifications, it was found that in 3 cases identified signs of thyroid nodular goiter, in 6 - mixed thyroid goiter and in 17 cases the pathological tissue malignant tumors (14 cases of papillary cancer in 3 of them - follicular carcinoma). During the X-ray diffraction research of biominerals thyroid it was found that the predominant mineral calcificates are hydroxyapatite. In some cases also proving significant proportion of β-tricalcium-magnesium-phosphate. Establishment of biominerals help in further studies to establish the mechanisms of biominerals in the thyroid gland.

Conclusions. Formation of psammom cells in the thyroid tissue can be considered as pathognomonic symptom of papillary cancer. Having unstructured calcificates (formation of biominerals in the matrix of connective tissue fibers capsules node colloidal substances follicles, vessel walls) are more typical for benign proliferative diseases of the thyroid.

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