Problems in the diagnosis of follicular thyroid cancer

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Introduction: According to data from fine needle aspiration biopsy (FNAB), the prevalence of follicular neoplasia constitutes 10-15% among all thyroid nodules. In the vast majority of cases, the type of neoplasms is benign. And only in 1 out of 10-15 cases, follicular neoplasia turns out to be malignant (well-differentiated follicular cancer). Currently, the main method of preoperative differential diagnosis of thyroid nodules is a cytological examination of the material obtained by fine-needle aspiration biopsy. The accuracy of the cytological diagnosis is 80-92%, whereas the frequency of "indeterminate" cytological response can reach 20%.

In order to stratify the results of FNAB, cytological conclusions are ranked according to the international Bethesda System 2017 (TBS) for Reporting Thyroid Cytopathology (TBSRTC). According to this classification, three types of "indeterminate" diagnoses are distinguished: atypia of indeterminate significance/follicular changes of indeterminate significance - category III; follicular neoplasia/suspected follicular neoplasia – category IV; suspected cancer - category V. According to modern protocols for the treatment of thyroid tumors, in case of an indeterminate response, diagnostic surgical intervention - hemithyroidectomy can be recommended, and in the case of category V - thyroidectomy with paratracheal lymph node dissection. Malignancy of the nodule in the final morphological analysis is confirmed in 10–40% of cases after diagnostic hemithyroidectomy in patients with TBSRTC III and IV, while the number of specific complications such as laryngeal paresis or parathyroid insufficiency occurs in 3–10% of cases.

Materials and methods: We analyzed 54 patients (47 women and 7 men) examined at the Moscow Clinical Scientific Center named after A.S. Loginov for thyroid neoplasms in the period from March to July 2022. In this cohort, 17 people women anderwent surgery. The volume of surgical intervention was as followed: 12 hemithyroidectomies, 4 thyroidectomies and 1 thyroidectomy with central cervical lymph node dissection. All patients underwent laboratory and instrumental examinations at the preoperative stage. We analyzed levels of thyroid-stimulating, T3 and T4 hormones, antibodies to thyroid peroxidase (Ab-TPO). Cytological conclusion was drawn up based on the results of ultrasound of the thyroid gland and FNAB.

Results: 1 sample was classified as non-informative (I category TBS), 27 samples - colloid goiter (II category TBS), 17 samples were classified as follicular neoplasia (IV category TBS), 5 and 2 samples as suspicion for malignancy (V category TBS) and malignant tumor (VI category TBS), respectively.

According to the morphological analysis, among patients diagnosed with follicular neoplasia (17 individuals), 6 patients (35%) were diagnosed with malignant thyroid tumor, of which 4 patients were found to have a follicular variant of papillary thyroid cancer, 1 case of follicular thyroid cancer and 1 case of Hurthle cell thyroid carcinoma of the right lobe. 11 patients (65%), were diagnosed with benign neoplasms, of which 7 cases were follicular adenomas of the thyroid and 4 cases were nodular colloid goiter.

Therefore, among operated patients diagnosed with follicular neoplasia, malignancy of the neoplasm was confirmed in 35% of cases, whereas 65% of patients were diagnosed with benign neoplasms.

Conclusions: Accurate preoperative differential diagnosis of thyroid follicular neoplasms is of great clinical interest and determines a precision approach to the choice of surgical tactics.

Conflict of interest: The authors declare no conflict of interest.

Recent Publications

1. Bodunova N, Vorontsova M, Khatkov I, Baranova E, Bykova S, Degterev D, Litvinova M, Bilyalov A, Makarova M, Sagaydak O, Danishevich A. A Unique Observation of a Patient with Vulto-van Silfhout-de Vries Syndrome. Diagnostics. 2022; 12(8):1887.

Speaker Biography

Bodunova N.A. is currently the head of the center for personalized medicine, a gastroenterologist. She graduated from the Moscow Medical Academy named after I.M. Sukhanov with a degree in medical science in 2011. From 2011 to 2013, she completed residency training at the central research institute of gastroenterology. In 2013, she trained at the university hospital of Geneva, Switzerland. Her internship experience include advanced training courses under the guidance of one of the leaders of metabolic surgery in the USA, Kelvin Higa, and then - in California (USA) from the President of the American society of metabolic surgery Ninh Nguyen (2014), and liver diseases at Hadassah hospital, Israel (2014). In 2015, she defended her Ph.D. thesis on "vitamin malabsorption after bariatric surgery". She completed her residency in "Endocrinology" at the Moscow state medical university after A.I. Evdokimov in 2016. She took advanced training in the specialty "Pharmacogenetics and personalized medicine" at the Russia Russian medical academy of postgraduate education n medical academy of postgraduate education (2017). Since 2011, she has been working at the Central Research Institute of Gastroenterology (GBUZ MCSC named after A.S. Loginov MHD). Her area of professional competence is diseases of the intestine, stomach, and biliary system, observation of patients after bariatric operations, development of methods for the prevention of nutritional disorders, correction of vitamin and trace element deficiencies, and treatment of malabsorption syndrome after various surgical interventions. She is the author of more than 90 scientific publications in Russian and foreign publications.

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