TACTICAL APPROACHES IN DIAGNOSTICS AND TREATMENT OF PATIENTS WITH THYROID TUMORS

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Abstract: *according to various sources, from 15 to 40% of the population of Russia suffer from thyroid pathology, while in some regions the percentage of the population in need of treatment is close to 95%. With fine-needle aspiration biopsy of suspicious thyroid nodules, thyroid cancer is detected in the range of 10-50%. Due to the frequent detection of a malignant process among such nodes and the difficulty of making a correct diagnosis at the preoperative stage due to the uninformativeness of the cytological material, decisions are made about surgical intervention for diagnostic purposes, although only in 10-15% of cases, histological examination confirms the malignant process. This article analyzes the case histories of patients with various thyroid pathologies treated in the Department of Surgery of the Republican Clinical Oncological Dispensary named after V.I. S.G. Primushko of the Ministry of Health of the Udmurt Republic (hereinafter RKOD) for the period from 2016 to 2018. Most often, according to the results of the final histological examination, follicular adenoma was detected - 60.5%. The average tumor size was 2.6 ± 1.7 cm. A combination of different variants of thyroid pathology was observed in 5.5% of patients. If thyroid cancer was suspected, hemithyroidectomy was performed in most cases - 84.6%.*

Keywords*: hemithyroidectomy, follicular adenoma, nodular goiter, thyroiditis, pathomorphological examination.*

ТАКТИЧЕСКИЕ ПОДХОДЫ В ДИАГНОСТИКЕ И ЛЕЧЕНИИ БОЛЬНЫХ С ОПУХОЛЯМИ ЩИТОВИДНОЙ ЖЕЛЕЗЫ

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Аннотация: *по различным данным от 15 до 40% населения России страдают от тиреоидной патологии, при этом в отдельных регионах процент населения, нуждающегося в лечении, приближается к 95%. При тонкоигольной аспирационной биопсии подозрительных на рак узлов щитовидной железы рак щитовидной железы выявляется в пределах 10-50%. В связи с частым обнаружением злокачественного процесса среди таких узлов и трудностью постановки верного диагноза на дооперационном этапе ввиду неинформативности цитологического материала, принимаются решения о хирургическом вмешательстве с диагностической целью, хотя лишь в 10-15% случаев при гистологическом исследовании подтверждается злокачественный процесс. В данной статье анализируются истории болезни пациентов с различной патологией щитовидной железы, пролеченных в отделении хирургии Республиканского клинического онкологического диспансера им. С.Г.Примушко Минздрава Удмуртской Республики (далее - РКОД) за период с 2016 по 2018 годы. Наиболее часто по результатам окончательного гистологического исследования выявлялась фолликулярная аденома – 60,5%. Средний размер опухоли составил 2,6±1,7 см. У 5,5% пациентов наблюдалось сочетание различных вариантов тиреоидной патологии. При подозрении на рак щитовидной железы в большинстве случаев выполнялась гемитиреоидэктомия – 84,6%.*
Ключевые слова: *гемитиреоидэктомия, фолликулярная аденома, узловой зоб, тиреоидит, патоморфологическое исследование.*

Introduction. The number of nodular forms of struma requiring surgery has sharply increased in patients with thyroid diseases for the recent 20 years. First of all, it concerns the various forms of follicular adenomas, nodular strumas and follicular tumors [1]. According to I.I. Dedov, A.F.Tsyb 6-35% of the population in Russia have nodular thyroid formations and, as the forecasts show, this number is going to increase. Many authors have stated the significant frequency (from 42 to 98.8%) of nodular forms of struma in patients with thyroid diseases in the recent decade [2]. As the group of such patients is large,

including people of working age, it is required to determine accurately the necessity of surgery and the extent of surgery. The causes of the increasing number of such patients are both deteriorated environment and better diagnostics of thyroid nodes [3, 4].

At the moment there are various algorithms for diagnosis and treatment of thyroid pathologies, but no unified methodology for surgery or the extent of the surgery of thyroid nodes has been established yet. Some surgeons prefer to perform intracapsular resection with ligation of thyroid vessels in an intracapsular way in order to prevent injuring the parathyroid gland and recurrent laryngeal nerve. Other authors believe that surgeries in benign tumors should be minimally invasive in terms of endocrinology, but be ablative in terms of oncology [1, 5].

Only extrafascial surgeries can be considered as meeting the requirements. In case of benign thyroid tumors performance of preserving subtotal resection is possible. However as soon as the results of the emergency biopsy are received and presence of follicular adenoma is suspected, the whole affected lobe together with the isthmus shall be ablated. Some authors recommend performance of extrafascial surgeries in thyroid in case of micronodular struma. Others think that by using subfascial surgeries in patients with nodular strumas it is necessary to preserve maximum extent of unaffected thyroid tissue, while in patients with follicular adenoma the whole affected lobe is traditionally ablated [1, 2, 5].

Most surgeons consider the benign thyroid tumors as the obligate precancer and therewith they justify the early performance of surgery. However, according to recommendations of Russian Association of Endocrinologists, there is a little risk that benign thyroid tumors are malignant in terms of pathologies and prognosis. In this regard, for example, most cases of nodular colloid struma are not subject to obligatory surgery, but instead the monitoring is used [3, 6, 7, 8].

Materials and methods of study. A retrospective single center clinical study of 91 medical records of patients with thyroid pathologies who were treated in the Surgery Department of RCOC within 2016-2018 was carried out. The analyzed cases were the patients of both genders above 40 years old having nodular formations above 1cm in size and having no signs of metastases. Each patient prior to being enrolled in the study got and signed the voluntary informed consent to participate in the clinical study. The patients who participated in the study underwent laboratory tests, surgeries and post-surgery monitoring.

We studied the tactics of surgery and duration of treatment of benign thyroid tumors.

Outcome and discussion. We studied surgical treatment in 91 patients with various thyroid diseases. The relevant details of the patients whose cases were studied are given in Table 1.

Table 1. Details of the patients whose cases were studied

Parameter	Gender (male/female)	Average age, y.o	Average size of neoplasm (cm)
Value	22/69	54	2.4

Types of surgeries carried out in patients are given in Table 2.

Table 2. Surgeries carried out in patients

Type of surgery	**Percentage**
Hemithyroidectomy	66 (72.5%)
Hemithyroidectomy with lymph node dissection	10 (11%)
Soft tissue extirpation	1 (0.01%)
Unilateral lobectomy of thyroid	1 (0.01%)
Resection of both thyroid lobes	1 (0.01%)
Enucleation of thyroid node	1 (0.01%)
Other types of partial thyroidectomy	3 (3.3%)
Subtotal resection of thyroid	1 (0.01%)
Total thyroidectomy	8 (8.8%)

Frequency of the main type of surgery performed in various benign thyroid tumors are given in Table 3.

Table 3. Frequency of hemithyroidectomy in various thyroid diseases

Disease	**Follicular adenoma**	**Nodular goiter**	**Thyroiditis**	**Follicular tumor**
Frequency	56%	25.7%	4.5%	13.6%

Based on the conclusions of the final histological study it was found that 46.1% of patients were diagnosed with follicular adenoma, 13.5% with follicular tumor, followed by 13.2% of patients diagnosed with nodular goiter, other thyroid diseases were distributed as follows: 9.9% – thyroiditis, diffuse nodular goiter, 3.3% - atypical A-cell follicular adenoma, 2.2% – micro-macrofollicular nodular goiter, autoimmune De Quervain’s thyroiditis, atypical follicular adenoma and 1.1% - colloidal goiter, cystic-nodular goiter, microfollicular nodular goiter, Hashimoto's thyroiditis, micro-macrofollicular adenoma. It should be noted that some patients have several thyroid diseases at the same time.

Follicular adenoma, tumor, and various forms of nodular goiter were diagnosed most often as noted above. At the same time nodular goiter had the largest average size of the neoplasm being 3.3 cm (follicular adenoma - 2.5 cm, follicular tumor - 1.8 cm). Nodular goiter is frequently caused by iodine deficiency, which results in defects of iodine metabolism causing decreased concentration of thyroid hormones in the blood, which under the feedback

mechanism is accompanied by enhanced production of thyroid-stimulating hormone, followed by compensatory increased amount of thyroid cells causing a goiter effect, and the study conducted in endemic area fully proves this cause factor.

Surgical approach includes hemithyroidectomy in 72.5% of cases, hemithyroidectomy in combination with lymph node dissection in 11% of cases, followed by total (8%) and partial (3%) thyroidectomy correspondingly, other types (dissection of soft tissue, unilateral lobectomy of the thyroid gland, resection of both lobes of the thyroid gland, enucleation of the thyroid node, subtotal resection of the thyroid gland) were carried out in rare cases amounting to 0.01%. It should be noted that these operations were diagnostic in nature. Most often (56%) hemithyreoidectomy in our study was conducted in patients with follicular adenoma, this surgical approach is also confirmed in other studies. Hemithyreoidectomy is quite often used with resection of isthmus in patients with follicular tumor, where surgical approach includes several stages. The first stage is surgery with urgent intraoperative histological examination of the surgical material. After receiving a conclusion on malignancy the following steps are performed: at T1N0M0 carcinoma – the performed operation is considered radical, at stages T2-4N0 – surgery is repeated, the left part of the gland is ablated, at T2-4N1 – lymphadenectomy is performed. In case of follicular tumor the algorithm of surgery is not fully established, which indicates the need to upgrade the differential diagnosis of thyroid pathology [2]. Most often hemithyroidectomy was performed in different variations (cystic nodular, colloidal, diffuse nodular, micro-macrofollicular) of nodular goiter – 25.7% of patients. In patients with follicular tumor and thyroiditis this operation was performed in 13.6% and 4.5% of cases correspondingly. Active performance of this surgery reduces the probability of true recurrences. And in view of its organ-preserving characteristics it also contributes to a favorable prognosis of patients' lives.

The entire course of treatment lasted from 4 to 21 bed-days, with average duration of hospital treatment of 11 days. Treatment with hemithyroidectomy also had average duration and duration of treatment with total thyroidectomy increased to 12 bed-days, but the treatment course with hemithyreoidectomy in combination with lymph node dissection lasted most of all – 13 days.

Conclusion. As can be seen from the above we analyzed the tactics of surgery in benign thyroid tumors and revealed that hemithyreoidectomy was the main type of surgery in benign neoplasms of thyroid gland used from 2016 to 2018 in RCOC Surgery Department, which was performed in 66 (72.5%) of 91 cases. Most often (56%) hemitireoidectomy was performed in follicular adenoma of the thyroid gland. Active use of this type of surgery is caused by the need to preserve the organ and to avoid severe complications such as atrophy of the anterior neck muscles and impaired swallowing function. It is also established that all operations were of therapeutic and diagnostic nature, and

average duration of treatment was the same as duration of treatment with hemithyroidectomy and totaled 11 bed-days. It was revealed that the longest course of treatment (13 bed-days) is typical for hemithyreoidectomy in combination with lymph node dissection.

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