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Analysis of the results of surgical treatment of thyroid nodule

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Abstract
The terms "nodular (multinodular) goiter" (NG) and "nodal formations" (NF) are widely used in clinical thyroidology and are among the collective concepts that unite all true or false tumors in the thyroid gland that are palpable or detected by ultrasound. The study included 281 patients with thyroid disease who were hospitalized in the Surgery Department of the Samarkand State Medical Institute clinic for surgical treatment from 2008 to 2016. Among the patients were 253 (90.03%) women and 28 (9.97%) men. The average age of the examined was 29 ± 6 years (from 7 to 68 years). The frequency of complications on the thyroid gland during surgery or in the early postoperative period is directly related to the surgeon's experience, the amount of surgery performed by him / year. In a remote postoperative period, 193 of 278 patients were tracked, which was 69.4%. The follow-up period of patients after the operation was from 1 to 5 years. Based on the study of long-term results of treatment of patients with nodular goiter, the optimal volume of surgical intervention is determined for various morphological forms of nodular goiter. Adequate volumes of surgical treatment are hemistrumectomy, ultimately subtotal resection of the thyroid gland and thyroidectomy.

Keywords: nodular goiter, surgical treatment, thyroidectomy, thyroid resection, enucleation of the cyst

Introduction
The terms "nodular (multinodular) goiter" (NG) and "nodal formations" (NF) are widely used in clinical thyroidology and are among the collective concepts that unite all true or false tumors in the thyroid gland that are palpable or detected by ultrasound. They are not a diagnosis and combine various nosological forms of diseases as a nodular (multinodular) colloid in various degrees of proliferating goiter, benign and malignant tumors, nodal forms of chronic thyroiditis, metastatic tumors, and some rare thyroid diseases. NG can be combined with all known common and rare thyroid diseases. NG occupy a leading place among other thyroid pathologies, often being the main and only clinical manifestation. In a physical examination, they are detected in 5-7% of the adult population, according to ultrasound and autopsy - in 40-50% of people at 60 years of age and almost 50% of residents of iodine-deficient regions [3]. There remains a high number of operations with VD, the specific gravity of which is 85-95% of the total number of surgical interventions performed with different thyroid pathologies. Throughout the century, with thyroid nodal formations, the surgical method of treatment, for which the main indication was oncological vigilance, had no alternatives. Absence of absolute confidence in the preoperative diagnosis of the nature of NF for many surgeons and today is the basis for active surgical tactics [2].

At present, there are conflicting data in the literature on factors affecting the prognosis of treatment for nodular goiter. Thus, some authors assert that the histological changes in the thyroid gland are the determining factors in the prediction of the occurrence of a recurrence of nodular goiter [4], others consider the volume of surgical intervention and the adequacy of the conducted thyroid therapy as the main factors [1]. Therefore, it is of great interest to determine the influence of various factors on the incidence of relapse of nodular goiter based on an analysis of the long-term results of surgical treatment of patients with nodular goiter and the development of an individual prediction algorithm for detecting a possible relapse in the long-term period. Long-term results are an objective criterion for the correct choice of tactics for treating patients with nodular goiter.

Purpose of the study
Improvement of surgical treatment of patients with nodular goiter.

Methodology
The study included 281 patients with thyroid disease who were hospitalized in the surgery department of the Samarkand state medical institute clinic (SamSMI) for surgical treatment from 2008 to 2016. Among the patients were 253 (90.03%) women and 28 (9.97%) men. The average age of the examined was 29 ± 6 years (from 7 to 68 years).

The patients were called up in an active way, with the help of letters, and also the archive material of the clinic SamSMI was studied. The patients had a thorough history of the disease. Particular attention was paid to the duration of the disease, drug treatment with thyroid hormone preparations after the operation. Such indicators as volume of operation, complications, outcomes, immediate and long-term results of the surgical method of treatment of diseases of the thyroid gland were studied. All patients underwent general clinical examination including palpation of the thyroid gland, auscultation of the heart and vessels, ultrasound examination of the thyroid gland and regional lymphatic drainage zones in real time (initially and at various times after the operation), determination of the level of thyroid-stimulating hormone

(TSH) (initially And at different times after the operation), the histology of the deleted drug was administered to all patients.

The degree of enlargement of the thyroid gland was assessed according to the classification of by O.V. Nikolaev. On the basis of ultrasound and palpation of the thyroid gland. In 71 (25.3%) the patient was diagnosed with nodular goiter of II-III degree, in 210 (74.7%) nodal goiter of IV-V degree. According to the pathomorphological form (according to by Penchev), diffuse goiter was detected in 44 (15.69%) patients, nodal goiter - in 192 (68.3%), mixed goiter - in 45 (16.01%). The distribution of patients by the degree of increase and pathomorphological form of thyroid diseases is presented in table 1.

Table 1: The nature of the disease and the degree of enlargement of the thyroid gland according to by O.V. Nikolaev's classification.

The degree of increase of thyroid Nature of the disease		II degree	III degree	IV degree	V degree	Total	
Diffuse toxic goiter		-	13	25	6	44	
Nodular goiter	Toxic adenoma	-	4	3	-	7	192
	Nontoxic goiter	1	27	69	1	98	
	Cystic goiter	-	8	74	3	85	
	Thyroid cancer	-	1	1	-	2	
Mixed goiter		-	17	27	1	45	
Total		1	70	199	11	281	

Based on hormonal blood tests (determination of the content of triiodothyronine, thyroxine, thyroid-stimulating hormone), as well as the clinical picture, thyroid status was established in patients (table 2).

Table 2: Functional state of the thyroid gland in the examined patients.

Thyroid status	amount	%
Hyperthyroidism	51	18,2
Euthyroidism	177	62,9
Hypothyroidism	53	18,9
Total	281	100

Of the 278 patients who underwent surgical treatment, 3 patients were not operated because of a severe physical condition. The timing of surgical intervention depended on the functional state of the thyroid gland. 48 (17.1%) patients underwent operative treatment after removal of thyrotoxicosis before euthyroidism (34) and hypothyroidism (14) for 2 to 9 months. 230 (81.8%) patients with eu- and hypothyroid status surgical interventions were performed immediately.

The scope of the operative intervention depended on the pathomorphological form of the goiter. Total thyroidectomy was performed in 7 (2.5%) patients with diffusively toxic goiter and a malignant tumor of the left lobe of the thyroid gland, respectively in 5 and 2 patients. Subtotal resection of the thyroid gland was performed in 81 (28.8%) patients with diffuse and mixed goiter. In most patients, the volume of surgical intervention was limited to one portion of the thyroid gland, and they were 190 (67.6%) patients (table 3).

Table 3: The volume of surgical intervention, depending on the pathomorphological form of goiter.

Pathomorphological Form Volume of surgical intervention	Diffuse goiter	Nodular goiter	Mixed goiter	Total	%
Total thyroidectomy	5	2	-	7	2,5
Subtotal resection of the thyroid gland	36	-	45	81	28,8
Hemithyroidectomy	-	156	-	156	55,5
Subtotal resection of one lobe of the thyroid gland	-	11	-	11	3,9
Enucleation of the cyst from the thyroid gland	-	23	-	23	8,2
Not operated	3	-	-	3	1,1
Total	44	192	45	281	100

Results and its discussion

The frequency of complications on the thyroid gland during surgery or in the early postoperative period is directly related to the surgeon's experience, the amount of surgery performed by him / year. In a remote postoperative period, 193 of 278 patients were tracked, which was 69.4%. The follow-up period of patients after the operation was from 1 to 5 years, which are presented in table 4.

Table 4: Terms of follow-up of patients after surgery.

Terms of observation	up to 1 year	3 years	5 years	total
Number of patients	89	68	36	193

After the call of the patients, we conducted a full scope of the examination including clinical examination, palpation, assessment of the thyroid status with the help of TSH, thyroid hormones and reflexometry. According to the results, 174 patients (90.2%) were found to be in euthyroidism, mild hypothyroidism was found in 6 (3.1%), moderate hypothyroidism in 8 (4.1%), severe hypothyroidism In 5 patients (2.6%), it should be noted that a severe degree of postoperative hypothyroidism was observed in the group of patients who underwent total thyroidectomy for a malignant tumor of the thyroid gland (2) and diffuse toxic goiter (3) (table 5).

Table 5: The state of thyroid function at the time of examination of patients at different times after the operation on the thyroid gland (according to clinical signs).

Thyroid function status	Euthyroidism	Hypothyroidism		
		Light degree	moderate severity	Severe degree
Number of patients (%)	174 (90, 2%)	6 (3, 1%)	8 (4, 1%)	5 (2, 6%)

Summarizing the results of clinical and hormonal studies, the long-term results of surgical treatment of nodular goiter were evaluated. If we consider that the development of hypothyroidism after surgery on the thyroid gland is a logical and normal outcome of the operation, which is easily compensated by the appointment of thyroid hormones, according to this, complete recovery of patients after surgical treatment of nodular goiter is observed in 182 (94.3%) patients (table 6).

Table 6: Long-term results of surgical treatment of thyroid diseases

Outcomes	Number of patients (%)
Recovery	182 (94, 3%)
Relapse of nodular goiter	9 (4, 67%)
Thyroid cancer (according to the final histology)	2 (1, 03%)

Relapse of nodular goiter was observed in 9 patients (4.7%) for 2 to 6 years. All patients with recurrence of nodular goiter did not follow the endocrinologist's recommendations carefully and did not take thyroid hormones after the operation. The results of fine needle aspiration biopsy coincided with the final histological result in all cases. That is, in these patients, the good quality of the remote node (nodules) was confirmed. Outcomes of the operation were successful, and in 30% of these patients atypical cells were detected in the opposite lobe of the thyroid gland, despite the fact that it looked clinically intact.

Conclusions

1. The frequency of postoperative complications of surgical treatment of thyroid diseases is very low: postoperative bleeding 4.7%, a temporary paresis of the recurrent laryngeal nerve 5.8%, resistant paralysis of the recurrent laryngeal nerve 0%, transient hypoparathyroidism 1.15%. Permanent hypoparathyroidism 0%.
2. Based on the study of long-term results of treatment of patients with nodular goiter, the optimal volume of surgical intervention is determined for various morphological forms of nodular goiter. Adequate volumes of surgical treatment are hemistrumectomy, ultimately subtotal resection of the thyroid gland and thyroidectomy.
3. When the adequate replacement thyroid therapy is carried out, the number of relapses of postoperative surgeries is sharply reduced. The highest percentage of relapses, regardless of the morphological form of nodular goiter, was revealed during economical resection and enucleation of the thyroid nodule (4.7%).
4. For the prevention of postoperative relapse of nodular goiter and treatment of postoperative hypothyroidism, replacement therapy with thyroid hormone preparations is necessary under the control of the endocrinologist.

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