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THYROID AND PREGNANCY

Khamdamova M.T.

Bukhara State Medical Institute.

✓ ***Resume,***

The goal is to study modern approaches to planning pregnancy after removal of the thyroid gland.

Material, the authors studied modern literature data on the modern approach of pregnancy planning in the surgical treatment of thyroid pathology.

Pregnancy does not contribute to the progression of differentiated thyroid cancer and does not impair the prognosis of differentiated thyroid cancer. The question of the possibility of preserving pregnancy in a patient with differentiated thyroid cancer depends on the stage of the tumor, the plan of therapeutic measures and the duration of pregnancy. After radical treatment for differentiated thyroid cancer, a woman can plan a pregnancy.

Key words: Thyroid gland, pregnancy, tumor, cancer.

ЩИТОВИДНАЯ ЖЕЛЕЗА И БЕРЕМЕННОСТЬ

Хамдамова М.Т.

Бухарский государственный медицинский институт.

✓ ***Резюме,***

Цель изучить современные подходы планирования беременности после удаления щитовидной железы.

Материал, авторами изучено современные литературные данные о современном подходе планирование беременности при хирургическом лечение патологии щитовидной железы.

Беременность не способствует прогрессированию дифференцированного рака щитовидной железы и не ухудшает прогноз течения дифференцированного рака щитовидной железы. Вопрос о возможности сохранения беременности у больной дифференцированным рака щитовидной железы зависит от стадии опухоли, плана лечебных мероприятий и срока беременности. После радикального лечения по поводу дифференцированного рака щитовидной железы женщина может планировать беременность.

Ключевые слова: Щитовидная железа, беременность, опухоль, рак.

КАЛҚОНСИМОН БЕЗ ВА ХОМИЛАДОРЛИК

Хамдамова М.Т.

Бухоро давлат тиббиёт институти.

✓ ***Резюме,***

Илмий тадқиқот мақсади: Қалқонсимон безни олиб ташлаш операциясини ўтказган беморларда ҳомладорликни режалаштириш.

Муаллифлар томонидан қалқонсимон безни олиб ташлаш операциясини ўтказган беморларда ҳомладорликни режалаштириш монеликлари ва муаммолари замонавий масаллари таҳлилий ўрганилган.

Ҳомиладорлик дифференсацияланган тиреоид саратони ривожланишига ёрдам бермайди, дифференсацияланган тиреоид саратони прогнозини ёмонлаштирмайди. Дифференсацияланган қалқонсимон бези саратони билан касалланган аёлларда ҳомиладорлик даврида, даволаш чора-тадбирлар режаси ва ўсимта босқичига боғлик. Дифференсацияланган тиреоид саратони радикал даволанган аёллар ҳомиладорликни режалаштириш мумкин.

Калит сўзлар: қалқонсимон без, ҳомиладорлик, ўсма, саратон.

Actuality

Thyroid cancer is the most common malignant tumor of the endocrine glands. The steady increase in the incidence of thyroid cancer puts this problem in a number of topical issues in world oncology. Various diseases of the thyroid gland in women are 10-17 times more common than in men. Thyroid cancer is 1-1.5% in the structure of cancer pathology, mostly found in women of reproductive age, which is extremely important because the health of the mother directly determines the state of physical and mental health of the younger generation, and the question of planning and preserving pregnancy acquires a special value.

Thyroid gland and pregnancy

Pregnancy has a significant effect on the function of the thyroid gland. The increased proliferation of thyroid epithelium with the formation of new follicles, often manifested by a diffuse enlargement of the thyroid gland, is due to several reasons [3, 13, 15]. First of all, it is associated with chorionic gonadotropin (CG). The placenta produces CG, which has a powerful stimulating effect on the thyroid gland. Chorionic hormone affects the condition of the thyroid gland. By its structure, CG is similar to TSH and, acting on thyroid receptors, stimulates the production of thyroid hormones (T3 and T4), which can also lead to the development of hyperthyroidism. The peak concentration of CG is observed at 10-12 weeks of pregnancy. During this period, the level of TSH falls. As the duration of pregnancy increases, the level of CG

decreases, and the concentration of TSH increases accordingly. In the case of multiple pregnancies, the level of chorionic gonadotropin can be very high, and the TSH is sharply reduced and even suppressed [13, 15]. The proliferation of thyroid epithelium can be stimulated by a high concentration of estrogen [1, 4], which, along with an increase in the level of antibodies to thyroid peroxidase (TPO), leads to a diffuse enlargement of the thyroid gland. Under the influence of estrogens, the synthesis of thyrotropin that binds thyroglobulin (Tg) increases dramatically, and as a result, the level of free thyroid hormones decreases, TSH production increases and the size of the thyroid gland increases. The content of Tg increases from the second week of pregnancy and progressively increases, reaching a maximum by 18-20 weeks. The content of T4 increases already in the 1st trimester, reaches a plateau by 20 weeks and stays at this level until delivery [14].

As a result, serum thyroid hormone levels increase in the first trimester of pregnancy, which in some cases can lead to the development of thyrotoxicosis in pregnant women. An important indicator of the state of thyroid homeostat is the level of antibodies to the TSH receptor, measured at 36 weeks of gestation. The increase in this indicator is a criterion for the risk of transient hyperthyroidism. Usually in the second half of pregnancy, and according to some authors, after 12 weeks, the T4 level decreases. Increased production of TSH may also be a consequence of the fact that estrogens increase the sensitivity of the pituitary thyroid hormone to TSH.

During pregnancy, iodine metabolism changes. First of all, the volume of renal blood flow increases, glomerular filtration increases, which leads to an increase in the excretion of iodine in the urine. The placenta is actively involved in the metabolism of thyroid hormones and in the transfer of these hormones and iodine from mother to fetus. In connection with the transplacental iodine transfer, which is necessary for the synthesis of fetal thyroid hormones, an additional need for iodine develops. Finally, in the placenta, the process of deodiating of T4 of the mother to reverse T3 (rT3) occurs, which is highly concentrated in the amniotic fluid. Released iodine can be an additional source for the synthesis of fetal thyroid hormones. Some iodine deficiency that arises indirectly stimulates the thyroid gland of a pregnant woman and may have a goitogenic effect [5,8]. Approximately 2% of pregnant women develop subclinical hypothyroidism, which is characterized by an increase in TSH at a normal level of free T4. During pregnancy, the titer of antithyroid antibodies may increase. An increased titer of antithyroid antibodies is a risk factor for the development of autoimmune thyroiditis (AIT), hypothyroidism, and leads to frequent abortions of pregnancy. Hypothyroidism during pregnancy, according to some authors, can develop in 25-30%, and it may not appear immediately, but after childbirth. V.V.Fadeev and colleagues found a high titer of antibodies to thyroid peroxidase (Anti-TPO) in 10% of pregnant women.

A large American study showed that 2.2% of all women in the second trimester of pregnancy have serum TSH levels above 6 mU / l. According to Gartner R., 5-18% of all pregnant women have an increased level of thyroid antibodies, but only 0.3% of them develop hypothyroidism and 0.1-0.4% - thyrotoxicosis. The marked variability in the frequency of hypothyroidism can be explained by the difference, both endemic features and criteria for assessing the normal function of the thyroid gland. However, while maintaining the normal level of thyroid hormones on the background of autoimmune thyroiditis, the reserve capacity of the thyroid gland can be reduced, which is manifested when the gland is stimulated, including during pregnancy. Hormone replacement therapy helps to restore disorders of the reproductive system in all women with hypothyroidism. Hypothyroidism compensation is reduced to taking thyroxin. Drug-compensated hypothyroidism is not a contraindication for planning a pregnancy by a woman. Outside of pregnancy, the usual replacement dose of levothyroxine is 1.6-1.8 mcg per 1 kg of body weight (about 100 mcg), and the level of TSH in the range of 0.4-2 mU / L corresponds to adequate compensation for hypothyroidism. If a woman with compensated hypothyroidism is planning a pregnancy, the dose of levothyroxine should be increased immediately after its occurrence by 50 mcg from the baseline, which is 2.3 mcg per 1 kg of body weight per day. According to a study by Loh JA and colleagues, the average dose of L-thyroxine during pregnancy in the case of subclinical hypothyroidism is usually 92.5 ± 32.0 xg / day. During pregnancy, this dose usually increases by 11% in the first trimester, and by 16% in the second and third trimesters. Adsorption of thyroxin occurs in the small intestine, usually absorbed from 50 to 80% of the drug. Selecting the dose of the drug, you need to take into account that many drugs can affect the absorption of thyroxin and therefore you should always monitor the level of TSH and free T4 at least once every 10-12 weeks. However, it must be emphasized that not the level of TSH, but the content of free T4, is crucial for the fetus and for the mother. The goal of treatment is to maintain a low-normal level of TSH and a highly normal level of free T4. Hypothyroidism in pregnant women is dangerous for the development of the fetus, primarily for the development of its central nervous system. The thyroid gland of the fetus begins to function in the 12th week of pregnancy, and before the fetus receives thyroid hormones from the mother. An important component in the prevention of hypothyroidism is the administration of iodine-containing drugs. The recommended dose of iodomarin should be increased to 200 - 250 xg per day, because even a moderate lack of iodine can affect the neurophysiological development of the fetus. The work of Velasco I and co-authors showed that children born to mothers who received 300 xg of potassium iodide each day during the first trimester of pregnancy had the best neurophysiological status.

After birth, the mother, if necessary, may continue to take thyroxin, because it enters the mother's milk in very small quantities and does not adversely affect the baby.

The Association of American, Latin American and European thyroidologists has published a paper, in which, based on their research, the following recommendations are made regarding the management of pregnant women: Monitoring thyroid function during pregnancy is very important, because pregnancy causes numerous changes in the state of the thyroid gland. Maternal thyroid disease affects the condition of the fetus and the course of pregnancy. Maternal hypothyroidism leads to the development of fetal hypothyroidism, in which this may be the cause of the abnormal development of the nervous system. Hypothyroidism can be the cause of an early termination of pregnancy.

Any node found in the thyroid gland during pregnancy should be subjected to a fine needle aspiration biopsy. The use of radioactive isotopes during pregnancy and lactation is prohibited.

Thyroid cancer and pregnancy. As mentioned above, thyroid cancer occurs more often in women than men, and moreover, according to WHO, over the past 20 years, the incidence of thyroid cancer has doubled, and the tendency to an increase in the incidence of this type of tumor persists. This fact can also be illustrated by the number of women diagnosed with thyroid cancer in Bukhara between 1990 and 2015. (tab. 1). The increase in the number of identified thyroid cancer was 91% [14]. The increase in the number of patients with thyroid cancer is due to a true increase in the frequency of these tumors, which is associated, besides common biological causes, with environmental pollution.

Table 1

The incidence of the female population of thyroid cancer in Bukhara in 1990-2016

Years	1990	1995	2000	2005	2010	2015
The number of cases per 100,000 residents	3,5	4,8	5,4	5,6	6,1	6,7

However, the increase in the number of patients with thyroid cancer can be largely explained by the improved diagnosis of these tumors. Extensive use of ultrasound of the thyroid gland made it possible to identify non-palpable nodes smaller than 1 cm, and FNA allows verifying the nature of such a node. Thyroid tumors are often observed in young women. Modern methods of treatment of differentiated thyroid cancer give good long-term results. In papillary thyroid carcinoma after a radical treatment, 10-year survival rate is more than 90% [6]. Naturally, in such a situation, the preservation of genital function is the most important component of rehabilitation. Differential forms of thyroid cancer are not accompanied by a violation of its function. Even with significant tumor sizes, there are no signs of hypothyroidism and the level of thyroid hormones remains within norms.

There is a unanimous opinion that differentiated thyroid cancer is not an obstacle to the onset of pregnancy and its normal development [12]. However, another aspect of this problem is important - can hormonally-metabolic shifts, including in thyroid homeostat, that occur during pregnancy, contribute to the development of a malignant tumor? Theoretically, this possibility was discussed [5, 11]. In practice, however, this does not occur, despite a number of facts indicating the effect of estrogens on the development of thyroid cancer: a high incidence of thyroid cancer among women [2, 9], an increase in the incidence of thyroid cancer during puberty, an increase in the cases of thyroid cancer in the presence of contraceptive pills, a more malignant course of thyroid cancer in women during the menopause period and, finally, the presence of estrogen receptors in differentiated thyroid cancer cells [4]. Probably, it should be assumed that hormonal disorders are not the leading cause of thyroid cancer. More important is the role of exogenous effects - iodine deficiency and, mainly, as mentioned above, the radiation factor [6,14].

Analyzing the possible causes of thyroid cancer, it is necessary to take into account the characteristics of differentiated thyroid cancer. These tumors, especially papillary cancer, grow very slowly, and one may think that the pronounced, but short-term hormonal changes inherent in pregnancy simply do not have time to stimulate the tumor. It should be noted that repeated pregnancies also do not lead to the acceleration of the growth of differentiated thyroid cancer [6].

How often is a combination of thyroid cancer and pregnancy? Such a formulation of the question is not correct. There is no pathogenetic connection between these two biological processes. This is a coincidence. However, a distinct increase in the frequency of differentiated thyroid cancer in women of reproductive age and the high survival rate of patients after radical treatment make the possibility of such a coincidence more and more likely.

The question of the preservation of pregnancy in a patient with thyroid cancer is of great practical importance. This is a problem that doctors of various specialties constantly face. In this case, the doctor must answer a few questions.

Does pregnancy affect differentiated thyroid cancer?

Numerous clinical observations allow us to answer this question in negative way [5,6]. The following facts speak in favor of such a statement. Differentiated carcinomas of the thyroid gland grow slowly and in clinical manifestations for a long time do not differ from nodular non-toxic goiter or adenoma. Before the introduction into clinical practice of ultrasound and FNA, patients with a node in the thyroid gland were often observed for a very long time. According to the data of the regional oncologic dispensary of the Bukhara region, in patients operated on for differentiated thyroid cancer from 1970 to 1980, from the moment the first clinical symptoms of the disease appeared (palpable node in the thyroid gland), the operation took an average of 5.6 years, and 18% of patients - 10 years or more [6]. The average age of patients in this group was 28 years. Naturally, for such a long time, most young women had pregnancies, often repeated (up to 10 pregnancies). None of these women had a pregnancy that resulted in a noticeable growth of the node in the thyroid gland or other signs of disease progression, and by the time of hospitalization all patients were operable. Similar observations lead many clinicians. It can be argued that pregnancy did not lead to the malignancy of a previously existing nodular nontoxic goiter or thyroid adenoma, since these diseases are not a precancer or a stage (stage) of carcinogenesis. Numerous clinical observations accumulated in the following years have allowed to state that pregnancy does not have a significant effect on the course of differentiated thyroid cancer. In turn, a differentiated thyroid cancer does not adversely affect the course of pregnancy and fetal development. There is no information about the violation or spontaneous abortion in patients with thyroid cancer. Not described cases of metastatic lesions of the placenta or any fetal malformations in women suffering from thyroid cancer during pregnancy [5].

What should be the treatment tactics with a combination of thyroid cancer and pregnancy? When deciding on the possibility of preserving pregnancy and

determining the sequence of therapeutic measures, the following circumstances should be taken into account: morphological variant and stage of a thyroid tumor; a plan for upcoming treatment measures for thyroid cancer; obstetric history and gestational age at the time of thyroid tumor detection. When examining a patient with a disease of the thyroid gland, first of all, an ultrasound of the neck area is performed, which allows an objective assessment of the nature of changes in the thyroid gland and lymph nodes of the neck. A node in the thyroid gland cannot be considered as a specific independent disease. This is a clinical manifestation of a number of thyroid diseases. Therefore, when a node is detected in the thyroid gland, FNA is produced under ultrasound control, which allows verification of the morphological nature of the node. Any solitary node is investigated. As a rule, FNA should be exposed to nodes of size ≥1 cm, but modern technology allows to explore smaller formations.

If the material obtained with FNA is insufficient for a diagnosis, the study is repeated. Morphological verification of the tumor is a prerequisite for determining the prognosis and choosing a plan of therapeutic measures. To discuss the possibility of preserving pregnancy or planning pregnancy after treatment is possible only with highly differentiated forms of thyroid cancer (papillary and follicular cancer).

The next question, which is crucial for determining the prognosis and treatment tactics, is the stage of thyroid cancer. The tumor stage is determined by the TNM system according to the sixth edition, adopted by the International Anticancer Union in 2002.

The sixth edition of the classification of thyroid cancer according to the TNM system:

T - Primary tumor

TX - Not enough data to determine the primary tumor

TO - Primary tumor of the thyroid gland is not detected.

T1 - Tumor up to 2 cm in the largest dimension, bounded by thyroid tissue

T2 - Tumor more than 2 cm, but less than 4 cm in the greatest dimension within the thyroid

T3 - Tumor more than 4 cm in the greatest dimension within the thyroid or any tumor with minimal spread beyond the thyroid capsule (for example, germination in short muscles or adjacent fatty tissue)

T4a - Tumor invades the thyroid capsule and spreads to any of the following structures: subcutaneous soft tissue, larynx, trachea, esophagus or recurrent laryngeal nerve.

T4b - Tumor, germinating prevertebral fascia, carotid artery or mediastinal vessels. Multifocal tumors are designated (m), stage T is determined by the diameter of the largest node, for example T2 (m). All undifferentiated thyroid carcinomas are classified as stage T4.

N - Metastases to regional lymph nodes

NX - The presence of regional metastases cannot be assessed.

NO - No signs of metastatic lesion of regional lymph nodes

N1 - There is a lesion of regional lymph nodes

N1a - metastases in lymph nodes of VI level (pretracheal, paratracheal), including the mouth and the lymph node of Delphian

N1b - metastases in the lateral cervical lymph nodes on one or both sides, on the opposite side or in the upper - anterior mediastinal

M - Distant metastases

MX - The presence of distant metastases is impossible to assess

MO - No signs of distant metastases

M1 - There are distant metastases

To determine the stage of differentiated thyroid cancer (papillary and follicular cancer), the age of the patient is important. Patients under 45 years of age, due to the favorable prognosis of the tumor process, were singled out into a special group.

The morphological structure and stage of the tumor make it possible to evaluate the prognosis for a specific patient and determine the plan of therapeutic measures. Radical treatment of differentiated thyroid cancer today involves a complex of therapeutic measures, including surgery, radioiodine therapy (if indicated) and subsequent suppressive hormone therapy [5,7]. The question of the optimal amount of surgery for differentiated thyroid cancer has been the subject of constant debate over the past 20 years. A wide variety of suggestions were made, from economical resections of part of the affected thyroid lobe to mandatory thyroidectomy in all cases [3]. Given the practical importance of a sensible solution to this issue, the European Thyroid Association appealed to the national associations of endocrinologists in Europe in order to develop a consensus on the diagnosis and treatment of thyroid cancer. Experts from 25 European countries at their meeting on May 24, 2005 in Athens expressed their views and adopted the "European consensus on the diagnosis and treatment of differentiated thyroid carcinoma from the follicular epithelium".

This is a fundamental document and is today a guide for clinicians of various specialties in determining therapeutic tactics in patients suffering from differentiated forms of thyroid cancer. The standard operation, the operation of choice for differentiated thyroid cancer, according to these recommendations, is total or subtotal thyroidectomy. Only with small tumors (T1), located in the thickness of the gland, not germinating its capsule, in the absence of regional and distant metastases (N0, M0), in patients without a history of radiation exposure of the neck, smaller operations are possible. In the presence of regional metastases, radical cervical lymphadenectomy is performed. Such active surgical tactics reduce the risk of local recurrence. With the help of radioactive iodine, it is possible to perform the ablation of possible residues of thyroid tissue and further monitor the level of thyroglobulin (Tg), which makes it possible to detect the recurrence of a tumor before the appearance of its clinical manifestations. Modern methods of replacement therapy in the absolute majority of cases provide a stable state of euthyroidism in patients after extirpation of the thyroid gland. It should be noted that, despite the adoption of these important guidelines, the controversy regarding the optimal amount of surgery for differentiated thyroid cancer continues [1,2]. Not all clinicians agree with this standardization of treatment. The question of the possibility of organ-sparing surgical interventions (hemithyroidectomy) for differentiated thyroid cancer remains controversial.

Supporters of such savings operations argue the possibility of their implementation by the following considerations: numerous clinical observations suggest that the prognosis after such interventions, especially in young women, is very favorable, the need for continuous, lifelong replacement therapy after thyroidectomy makes life difficult for patients, the likelihood of such serious

postoperative complications as paresis vertebral nerves and recurrent nerves, parathyroid failure when removing the entire thyroid gland in higher than with hemithyroidectomy, even if the operation is performed by an experienced surgeon with high surgical technique [8].

Considering these circumstances, the conciliation commission, in its clinical recommendations, considers a standard operation for differentiated thyroid cancer, but it is possible to perform hemithyroidectomy for solitary tumors up to 2 cm (T1) in the absence of reliable pre-and postoperative data on regional lymph node lesions or the presence of distant metastases. In a significant number of patients after surgery, radioiodine therapy (RAIT) is carried out, which is an integral part of the modern combined treatment of differentiated thyroid cancer and prevents a possible recurrence of the tumor. The goal of RAIT is to destroy the microscopic tumor foci (or tumor residues after non-radical surgery) remaining after surgery and possible residues of normal thyroid tissue. Such ablation of the tumor and normal tissue of the thyroid gland reduces the risk of a possible recurrence and, most importantly, creates optimal conditions for its early recognition [8, 12]. The indications for RAIT are determined taking into account the stage of the tumor, the volume of the operation performed, which allow to predict the probability of a possible recurrence. These indications can be formulated before surgery, but they are finally determined after surgery, when an individual prognosis is evaluated. According to the conciliation commission, depending on the degree of risk of recurrence of the tumor in patients with differentiated thyroid cancer can be divided into three groups:

1. A low-risk group is a solitary tumor T1N0M0, with no signs of extrathyroid spread.

2. Medium risk group - T2N0M0 tumor or multifocal T1N1M0 tumor.

3. A high-risk group - any T3 or T4, or any T with N1 or M1, as well as patients after palliative surgery.

Radioiodine therapy is indicated for patients with a high risk of recurrence or progression of the disease. Such signs are - invasion of a tumor outside the capsule of the thyroid gland, metastases to the lymph nodes, a non-radically distant tumor, or the presence of distant metastases. A prerequisite for an effective RAIT is the creation of an elevated level of TSH in the patient's body. There are two ways to stimulate TSH in patients after the removal of the thyroid gland [3, 9, 10]. The thyroid hormones are canceled 4-5 weeks before the planned RAIT, which leads to an increase in the concentration of TSH to 30 mU / l or more. To prevent possible pronounced hypothyroidism, there is another way to prepare a patient. 3 weeks prior to RAIT, LT4 is canceled and triiodothyronine is administered, which is canceled two weeks before receiving radioactive iodine. The optimal method of preparing the patient for RAIT is the prescription of recombinant human thyrotropin (rhTSH), a thyrogen, which does not require the abolition of hormone replacement therapy. The patient should receive 0.9 mg rhTSH i / m for two days before RAIT.

Hormone replacement therapy after extirpation of the thyroid gland. All patients operated on for differentiated thyroid cancer receive constant hormone therapy. L-thyroxin is usually prescribed. The dose of L-thyroxine after extirpation of the thyroid gland and subsequent treatment with radioactive iodine should be high - about 175 μg. With thyroid cancer, hormone therapy is not only substitutive in nature, but is suppressive, inhibiting the production of TSH. The dose of L-thyroxine is selected individually, under the control of the concentration of thyroid hormones and TSH in the blood. Suppressive hormone therapy involves taking LT4 at a rate of 2.5 xg / per 1 kg of body weight and is considered adequate at a TSH level of 0.1 mU / L. There is no convincing evidence that greater suppression of TSH (0.05 mU / L or lower) improves the prognosis. Therefore, you should not strive for greater suppression of TSH. The level of TSH is determined after 6 weeks after surgery and the start of hormone replacement therapy, is further adjusted, and when an optimal dose of LT4 is established, it should be monitored every 6-12 months.

Is suppressive hormone therapy recommended for all patients and how long should it be carried out? This question is of very practical importance, since the vast majority of patients with differentiated thyroid cancer are young women and the survival rate after radical treatment is very high. During the first year after the operation, suppressive therapy is performed for all patients.

However, it should be borne in mind that long-term suppressive hormone therapy LT4 may be the cause of drug-induced thyrotoxicosis and is poorly tolerated by patients with concomitant cardiac pathology. When carrying out LT4 hormone therapy, prognostic factors and the patient's age should be taken into account. In women of low and medium risk of possible relapse of thyroid cancer, who are in stable remission for 1-2 years, it can be limited to hormone replacement therapy with a target TSH value of 0.5-1.0 mU / l. Patients from the high-risk group with stable remission for 3-5 years against the background of suppressive hormone therapy can then be transferred to replacement doses of LT4.

Clinical monitoring of patients after surgery for differentiated thyroid cancer. Patients operated on for differentiated thyroid cancer are under constant (lifelong) dispensary observation, tasks, early detection of recurrence or progression of the disease, detection and correction of hormonal disorders In accordance with these objectives, a patient examination plan is drawn up. If the patient underwent thyroidectomy followed by RAIT, then the most informative examination method to detect possible recurrence of thyroid cancer is the determination of thyroglobulin (Tg). Tg is a specific and extremely sensitive tumor marker for differentiated thyroid cancer [12, 14]. Thyroglobulin is produced by normal thyrocytes, as well as papillary and follicular cancer cells. The normal Tg content in blood serum is 3-3.5 ng / ml. It is believed that 1 g of thyroid tissue can correspond to 1 ng / ml Tg. A high titer of antibodies to Tg (TgAb) can reduce the concentration of Tg and lead to false-negative results in its determination. Therefore, when determining the Tg content, it is necessary to clarify the titer of TgAb. After total thyroidectomy and RAIT and in the absence of recurrent thyroid cancer, the level of thyroglobulin in the serum should not exceed 1.0 ng / ml. However, it should be borne in mind that after thyroidectomy, Tg does not disappear immediately and traces of it can be found in serum during the first three months after surgery, therefore, in this period, determining its level has a relative importance. The content of the Tg is not informative and after incomplete removal of thyroid tissue.

If the patient underwent a savings operation (hemithyroideoctomy or subtotal resection of the thyroid

gland), then in the course of follow-up observation, an ultrasound of the neck and a scintigraphy with a tumorotropic drug or radioactive iodine are performed to detect possible recurrence of the tumor. A complete cure for a patient suffering from differentiated thyroid cancer is determined by the following criteria: the Tg level in the blood is less than 1.0 ng / ml; no ultrasound or radiological signs of tumor recurrence and metastases; no foci of radioactive iodine accumulation during full-body scintigraphy.

Therapeutic tactics in patients with differentiated thyroid cancer diagnosed during pregnancy. If a differentiated thyroid cancer is detected against the background of an already existing pregnancy, the nature and sequence of therapeutic measures depends on the stage of the tumor, the patient's age and, consequently, the prognosis, as well as the duration of pregnancy [5]. In this case, we are guided by the basic position - the mere fact that the patient has a differentiated thyroid cancer is not an indication for abortion. Provided that the differentiated nature of the tumor is proven by morphological examination (FNA) prior to surgery. If the patient has stage I and stage II, when only surgical treatment is planned and there are no indications for RAIT, then in the first and second trimesters one should begin with an operation for thyroid cancer and carry out further suppressive LT4 hormone therapy. At the same time, especially with a complicated obstetric history, it is desirable to operate in the second trimester, when the risk of spontaneous abortion is minimal. If the tumor (stage I, II) is diagnosed in the third trimester of pregnancy, then you should wait for the birth and only then operate the patient.

If the possibility of performing a radical operation is beyond doubt, but RAIT is planned (T2, T3 and N1), doctor should wait for the birth and then operate on the patient. With common tumors that go beyond the thyroid gland, as well as in the presence of distant metastases, regardless of the duration of pregnancy, it is interrupted, and then treatment of thyroid cancer is performed. At the same time, if the tumor is diagnosed in the third trimester of pregnancy, especially with a complicated obstetric history, doctor should wait until the fetus is viable, perform a Caesarean section, and then operate the patient for thyroid cancer. The question of the possibility of lactation in women who are operated on for thyroid cancer during pregnancy or shortly after childbirth remains controversial. There is no conclusive evidence that maintaining lactation contributed to tumor recurrence. However, it is known that prolactin and TSH have a common releasing hormone. During lactation, the level of prolactin and TSH increases dramatically. Prolonged, pronounced stimulation of TSH is, of course, highly undesirable. It has been shown that although taking thyroxin has virtually no effect on the level of prolactin, prolonged use of it in suppressive doses may disrupt normal lactation. Therefore, the majority of clinicians believe that lactation should be suppressed by dopamine antagonists immediately after delivery and recommend artificial feeding of the child [16]. It should be noted that operations performed on the background of pregnancy with thyroid cancer did not lead to spontaneous abortions or to any violations of fetal development. A 23-year-old patient is described in Kovacs EM et al., who underwent an extirpation of the thyroid gland for papillary cancer followed by radiation therapy (telecobalt irradiation). Subsequently, the patient developed in addition to hypothyroidism and hypoparathyroidism. The patient received 200-400 xg per day of L-thyroxine and 0.5-1.5 xg of calcitriol. Later, the patient had two normal births, the children were born healthy. The patient was breastfeeding children. During pregnancy, the doses of thyroxine and calcitriol were increased, and during lactation, they were reduced to the level used before pregnancy.

All newborns in the screening for congenital hypothyroidism on the 4-5th day of life is taken blood (from the heel), which determine the level of TSH. If the result is questionable, the study is repeated.

Pregnancy after treatment for differentiated thyroid cancer. After radical treatment for differentiated thyroid cancer, in the absence of signs of disease recurrence, the woman may plan a pregnancy. How long after the end of treatment can you plan a pregnancy? This very crucial issue is always solved individually, taking into account the stage of the tumor, the nature of the treatment, the age of the patient and the risk group due to these circumstances, to which the patient can be attributed. In principle, the longer the remission and the younger the patient, the more confident the pregnancy can be planned. If the patient belongs to the group of low or medium risk of a possible recurrence of the tumor, then the minimum period after treatment (surgery or combined treatment using radioactive iodine) when pregnancy can be planned is at least 1 year [6,15]. It was shown that pregnancy after treatment with radioactive iodine proceeded normally, the number of complications did not increase.

It is advisable for a high-risk woman to wait 2-3 years and plan a pregnancy only against the background of a stable remission. The doctor who is approached by a woman to resolve this important issue must be sure that she is in a state of stable remission and euthyroidism. In such a patient, the concentration in serum of free thyroid hormones (free T3 and T4) and TSH is determined. The question of what level of thyreotropin should be considered normal remains controversial. According to V.V.Fadeev, for healthy people should be considered normal level of TSH in the range from 0.4 to 4.0 mU / l. For pregnant women, the upper level of TSH should not exceed 2.5 mU / L. If a woman has euthyroidism and TSH in the range of 0.5-2.5 mU / l, there is no need to change (increase) the dose of L-tyroxin due to pregnancy. G.A.Melnichenko and V.V.Fadeev believe that if women are operated on for cancer of the thyroid gland and take a suppressive dose of L-thyroxine - 2.5 xg / kg / day, in this case it does not change during pregnancy [13]. According to other authors, the average dose of L-thyroxine for patients operated on for thyroid cancer is 153.2 ± 30.3 xg per day and during pregnancy in the first trimester it increases by 9%, and in the second and third it increases by 21% and 26 % respectively. If there are signs of subcompensated hypothyroidism, with TSH above 2.5 mU, especially in the presence of Anti-TPO, it is necessary to increase the dose of thyroxin. Hypothyroidism, even subcompensated, represents a great danger to the development of the fetus, especially its nervous system. With an increase in the duration of pregnancy, there is no need to increase the hormone dose, since from 10-12 weeks the fetus has its own thyroid gland. Before delivery of hormonal analyzes, in the case of determination of free T4, the preparation of thyroxine is not taken before blood collection. Radioactive iodine 131 therapy during pregnancy is strictly prohibited.

Conclusion

Differential thyroid cancer is not an obstacle to the onset and normal pregnancy and does not pose a threat to the development of the fetus. Pregnancy does not contribute to the progression of differentiated thyroid cancer and does not impair the prognosis of differentiated thyroid cancer. The fact of detecting a differentiated thyroid cancer during pregnancy is not an indication for its termination. The question of the possibility of preserving pregnancy in a patient with differentiated thyroid cancer depends on the stage of the tumor, the plan of therapeutic measures and the duration of pregnancy. After radical treatment for differentiated thyroid cancer, a woman can plan a pregnancy. Pregnancy is possible with proven stable remission for a period of at least one year after the end of treatment and provided that the patient is in a state of euthyroidism.

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