

COMPREHENSIVE APPROACH TO DIAGNOSIS AND SURGICAL TREATMENT OF THYROID DISEASES

Salakhidinov S.Z,
T. F. N Botaboyev J.M
Associate Professor

Master Tojiboyev Z.Q,
Master Akhmadjonov J.O
Andijan State Medical Institute, Master's Course in Pediatric Surgery 3rd Course

Abstract:

Thyroid diseases can have a significant impact on a person's overall health and well-being. Proper diagnosis and surgical treatment are crucial for effective management of these conditions. In this article, we will explore a comprehensive approach to diagnosing and treating thyroid diseases, ensuring the best possible outcome for patients.

Keywords

thyroid; thyroid nodules; thyroid cancer; follicular neoplasia; thyroid surgery; minimally invasive video-assisted thyroidectomy; minimally invasive non-endoscopic thyroidectomy; endoscopic thyroidectomy.

Introduction

Understanding Thyroid Diseases

The thyroid gland, located in the front of the neck, plays a crucial role in regulating metabolism and hormone production. Thyroid diseases can manifest in various forms, including:

- Hypothyroidism: characterized by an underactive thyroid gland leading to symptoms such as fatigue, weight gain, and depression.

- Hyperthyroidism: marked by an overactive thyroid gland causing symptoms like weight loss, anxiety, and tremors.

- Thyroid nodules: abnormal growths in the thyroid gland that can be benign or potentially cancerous.

Diagnosis of Thyroid Diseases

Accurate diagnosis is vital in determining the appropriate treatment approach. A comprehensive diagnostic process may include:

1. Medical History and Physical Examination

Your doctor will review your medical history and conduct a thorough physical examination to identify any visible signs or symptoms associated with thyroid diseases.

2. Blood Tests

Blood tests, including thyroid-stimulating hormone (TSH), T3, and T4 levels, are commonly performed to assess thyroid function and detect any abnormalities.

3. Imaging Studies

Imaging techniques such as ultrasound and radioactive iodine scans can provide detailed images of the thyroid gland, aiding in the identification of nodules or abnormalities.

4. Fine Needle Aspiration (FNA) Biopsy

If a thyroid nodule is detected, a FNA biopsy may be conducted to obtain a tissue sample for further analysis. This helps determine if the nodule is benign or potentially cancerous.

Surgical Treatment Options

In cases where conservative measures fail to alleviate thyroid diseases or when a malignancy is suspected, surgical intervention may be necessary. Here are some common surgical treatment options:

1. Thyroidectomy

Thyroidectomy involves the partial or total removal of the thyroid gland. It is typically performed in cases of hyperthyroidism, thyroid nodules, or thyroid cancer. The procedure can be done through a traditional open approach or minimally invasive techniques like endoscopic or robotic-assisted surgery.

2. Lymph Node Dissection

If thyroid cancer has spread to nearby lymph nodes, lymph node dissection may be performed. This involves the removal of affected lymph nodes to prevent the further spread of cancer cells.

Examination and treatment of patients suffering from diseases of the thyroid gland (thyroid gland) remains one of the complex problems of endocrinology and endocrine surgery, which is associated with the high frequency and heterogeneity of the pathology of this organ, often requiring surgical treatment, as well as with the difficulties of preoperative -th morphological verification of nodular formations In this regard, in recent years, the optimization of diagnostic algorithms for various thyroid diseases has continued through the introduction of new and improvement of already known methods of laboratory and instrumental examination.

Thus, in clinical practice, modern classification systems are increasingly used for ultrasound examination of the thyroid gland and cytological study of material obtained from puncture fine-needle aspiration biopsy (FNAB) of the thyroid gland, and new non-invasive techniques continue to be developed (elastasonography, double thyroid indicator scintigraphy, positron emission computed tomography) and invasive diagnostics (molecular genetic analysis and immunocytochemical detection of molecular biomarkers

in puncture material). Such improvement of screening programs and comprehensive examination methods leads to an annual increase in cases of detection of PTCs with an uncertain potential for malignancy and early forms of thyroid cancer, and the expansion of technical capabilities for performing surgical interventions against this background contributes to the active implementation of endovideoscopic technologies in thyroid surgery.

The above-described trends in the diagnosis and treatment of patients suffering from surgical diseases of the thyroid gland, associated with the use of innovative technologies, determine the need for scientific research, which, on the one hand, will make it possible to reliably assess the diagnostic significance of modern examination methods in verification of the diagnosis, and on the other hand, to justify the effectiveness and safety of the most optimal open, endoscopically assisted or endoscopic approach for interventions on the thyroid gland.

The purpose of the study is to clarify the results of the use of innovative technologies in the diagnosis and surgical treatment of patients suffering from thyroid diseases by assessing the information content of modern examination methods and the effectiveness of minimally invasive surgical interventions.

MATERIALS AND METHODS

During the clinical and laboratory examination, it was established that 36.2% of patients had no clinical manifestations, 46.2% had signs of compression of the neck organs and a cosmetic defect associated with the large size of the thyroid gland, 12.8% had signs of impaired thyroid status, another 4.8% had a combination of symptoms and syndromes. Analysis of the results of thyroid ultrasound with a description of the sonographic picture within the framework of the international classification system TIRADS allowed us to establish that there were no patients with unchanged thyroid gland (category 1) and cytologically confirmed cancer (category 6) during their initial ultrasound assessment.

Signs of malignant growth (TIRADS categories 4a, b, c and 5) were detected in 156 (47%) patients. When assessing the correlation of ultrasound results in patients of this group with the data of histological examination, it was found that cancer was detected in 81 (51.9%) cases out of 156. Moreover, with an increase in the number of suspicious signs, the sensitivity of the study increased, which confirmed by correlation analysis data (Spearman's rank correlation coefficient (p) is 0.95 ($p = 0.0153$)).

The introduction of the TIRADS classification system into clinical practice made it possible to obtain high information content of ultrasound in the diagnosis of thyroid cancer - sensitivity, specificity, accuracy, positive and negative predictive value were 91.4; 68; 74.1; 51.1 and 95.5%, respectively, which is consistent with data from other studies [5, 7]. Ultrasound results made it possible to formulate indications for performing PTAB of the parathyroid gland in 289 (87%) patients. When assessing the information content of the cytological research method with a description of the conclusions within the TBSRTC

categories, it was found that its sensitivity was 98.2%, specificity - 39.7%, accuracy - 56.5%, positive predictive value - 39.7% , negative predictive value - 98.7%.

The introduction of this system into clinical practice makes it possible to increase the diagnostic significance of this morphological diagnostic technique, which is confirmed by large international studies [4]. A detailed analysis of the accumulation of Tc-99m-pertechnetate and Tc-99m-technetrit during thyroid scintigraphy was performed 28 (15.5%) patients suffering from follicular neoplasia, 4 (2.2%) patients with nodular non-toxic goiter and 7 (3.9%) with papillary thyroid carcinoma in the early and late phases of scanning with the allocation of 3 models of patients made it possible to increase almost all indicators of the information content of the modernized visual technique in comparison with the well-known one, which is consistent with the data of other studies [9].

Thus, the sensitivity of this technique was 70%, specificity - 93.1%, accuracy - 87.2%, positive and negative predictive value - 77.8 and 90%, respectively. A semi-quantitative assessment of the data, based on the calculation of the washout index, revealed a scatter of the latter ranging from 5.3 to 57.3%.

Conclusion

A comprehensive approach to diagnosing and surgically treating thyroid diseases is crucial for optimal patient care. Through a combination of medical history evaluation, physical examination, laboratory testing, and imaging techniques, physicians can accurately diagnose thyroid conditions. Surgical interventions, including total thyroidectomy, partial thyroidectomy, and lobectomy, are performed based on the specific disease and its severity. Advancements in surgical techniques further enhance patient outcomes, ensuring a successful surgical treatment journey for individuals with thyroid diseases.

References:

- 1.Chekmazov IA, Znamenskiĭ AA, Osminskaia ED, et al. High-tech medical care in surgical endocrinology. Pirogov Russian Journal of Surgery. 2014
- 2.Wang C, Feng Z, Li J, et al. Endoscopic thyroidectomy via areola approach: summary of 1,250 cases in a single institution. Surg Endosc. 2015
- 3.Anuwong A, Ketwong K, Jitpratoom P, et al. Safety and outcomes of the transoral endoscopic thyroidectomy vestibular approach. JAMA Surg. 2018
- 4.Vanushko VE, Mel'nichenko GA, et al. Russian Association of Endocrinologists Clinic Guidelines for Thyroid Nodules Diagnostic and Treatment. Endocrine Surgery. 2016
- 5.Haugen BR, Alexander EK, Bible KC, et al. 2015 American Thyroid Association Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer: The American Thyroid Association Guidelines Task Force on Thyroid Nodules.