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MODERN APPROACHES TO THYROID CANCER DIAGNOSTICS (LITERATURE REVIEW)

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Thyroid cancer (TCC) is endocrine glands the widest widespread dangerous growth cancer of the disease general 1-1.5% in its composition does. Last in years of thyroid cancer stable growth, especially young and middle years old among screening programs, as well as a single diagnostic tactic absence this the problem world of oncology current problems in line introduces [6]. Literature information analysis that shows that QB S diagnostics one row serious related to difficulties. On the one hand, to the clinic was in phase Osmani traditional determination by methods often difficult, some in cases and possible not. Other side, thyroid of the gland wide widespread in the form's tumor of the process real duration and his/her neck around with members attitude always exactly by designating does not happen [12].

Non-oncological in hospitals knotted derivatives to be operated on suffering from thyroid cancer patients between from surgery previous correct diagnosis only in 54-61% of cases is placed, this often not radical surgery their interventions to do to increase take will come This is the case thyroid is dangerous of tumors early forms to determine directed further effective diagnostic algorithms work exit and current verb the need bringing releases Thyroid tumors primary in diagnosis information literacy and convenience level according to ultrasound inspection (UTT) leader the place occupies. Method non-invasive is high spatial separate to take to the ability owner and ultrasound from diplography when using tumor of the knot dimensions, structure, as well blood of the stream characteristics assessment possible gives [11].

Modern ultrasound devices 2 mm in thyroid tissue groping impossible liquid derivatives, 4 mm solid derivatives determination possible gives, as a result, in clinically " healthy " individuals knotted derivatives determination The frequency of this disease reaches 10-40% [9]. However, to this day shield of the gland safe and dangerous with a stove derivatives high to distinguish clearly possible giving final sonographer criteria work not issued. Cyst wall in the literature carcinoid transformation of adenomas cyst degeneration, as well as inflammation and autoimmune processes of glandular tissue change circumstances described Follicular adenoma and of thyroid cancer ultrasound in appearance noticeable similarity exists is histological under investigation follicular tumors about 20 percent follicular thyroid cancer that is determined [7, 8].

Thyroid cancer ultrasound of semiotics variety good qualitative knotted more with derivatives detailed differential diagnosis transfer the necessity demand At the same time, a row of the authors said ultrasound scanning combined with a puncture biopsy other intrascopic from methods pillar and not only cancer existence, but its histological option also estimated with 73-93.5% confidence to do possible gives.

Tumor of the knot dimensions, structure, contours, peripheral of the border existence and echo signal dorsal increase assessment to the possibility despite ultrasound inspection known

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to restrictions have in particular, the method always QB S for pathognomonic was to oneself characteristic the signs to determine possibility At the same time, UTT is not a threat. indirectly signs the sum of assessment possible gives Echo graphic of symptoms expressed tumor structure, dimensions and morphological changes to the character related. Dangerous don't grow ultrasound landscape to be different possible: nodes hypo -, iso- or hyperechoic to be formed owner to be, integral, mixed or cyst to be can Thyroid tumors the most typical signs hypo echogenicity, unclear contours and calcinates existence is considered.

G. To the data of Messina according to cancer node in 60-70% of cases hypoechoic to be formed has, hyper e hogen knots and isoechoic only in 2-4% of cases knots and in 15-25% of cases is determined; mixed structure relatively rare (5-10%). Other of researchers according to the hypoechoic solid structure itself cancer determinant sign does not count and the greatest diagnostic value of micro calcinates to the existence to be given need. R. Gorges according to micro calcinates ultrasound signs between the highest accuracy and to oneself to the property owner is, is suitable gradually reaches 76% and 93%. At the same time, a row of the authors in my opinion according to the, the ultrasound appearance pathognomonic to the features owner not and safe to the knots imitation to do possible, structure, contours and of calcinates existence like parameters strict solution doer not.

In the literature dangerous tumors ultrasound landscape their morphological to the option dependency about also information given. Known Papillary cancer is the most common one sexy not hypoechoic expressed by the structure.

Elastography - different densities in fabric known a color spectrum record to do based on real time on a scale is a new technology. In this study dense including tissue dangerous tumor blue in color, soft fabrics red and green in color it seems Elastography tissues elasticity ultrasound with the help of very promising assessment method is considered Thyroid of the gland knotted derivatives diagnosis and comparative in diagnosis from elastography use according to one row works there is Elastic properties of thyroid gland derivatives to study according to initial information given. So even ultrasound diagnosis modern from the methods use both are clear about the QB C diagnosis possible it doesn't give, this and diagnosis the most educated methods search the need bringing releases Sonography important addition is, and its informativeness noticeable to the extent increasing shield of the gland thin needle punk ts ion aspiration biopsy (IP AB). It is ts itological and other of the kind research for cell material to take the most simple method is thyroid in the gland knotted derivatives exists when and in regional lymph nodes changes when detected mandatory diagnostic procedure is considered IP AB -UTT method shield glandular untouchable from derivatives also, palpable in knots interest from the fields also enough cytological material collection possible gives In thyroid puncture cytological conclusion efficiency is in the range of 58.2-82% changed stands, IP AB-UTT sensitivity exceeds 78%, to itself specificity - 62%. Ultrasound control under to do increased from biopsy later serious complications development danger simple needle from biopsy later noticeable low level. Thyroid of the gland knotted derivatives radioisotope research in diagnosis methods importance last in years noticeable to the extent decreased. This is the first in turn, combined with the Central Directorate ultrasound research methods It is related to the spread of. Therefore despite, tireoss ts actigraphy still also the most wide widespread regularly from inspections one is considered Method ultrasound to check than less to be precise owner and less the image gives, but exactly s ts intigraphy functional activity of the thyroid tissue about information giving only radiation is a method (everyone in the institution exists no PET to account if not). However, this method thyroid diseases the importance of screening in diagnosis lost and high to the extent differentiated cancer recurrence or metastases determination

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for active is being used. 99mTs-pertechnetate and Thyroidectomy with technetium (99mTs-MIBI) of the gland two phase s ts intigraphy method medicine in practice wide widespread, but its diagnostic capabilities assessment not the same.

Of two- indicator s ts integration the highest diagnostic efficiency shield of the gland papillae cancer in determining determined. The lowest diagnostic efficiency follicular cancer and macro- microfollicular in adenomas shown. of the method sensitivity varies from 55 to 90% standing, papillary cancer reaches 100% in diagnosis. In thyroid cancer to oneself specificity is 87.3%, accuracy is 71-93.4% does Positron emission tomography (PE T) of nuclear medicine the most promising from directions one is, it is cell-molecular to the extent normal and pathological changed of fabrics metabolism and perfusion about unique information to take possible giving modern visualization method is considered Last in years suffering from thyroid cancer the patients On the role of 18-fluoro-deoxyglucose (18-FDG) PET in the examination publications appearance it happened QB metastases and local recurrent P E T sensitivity in detection and to oneself characteristic suitable 72% and 43 % respectively PET combined with CT (PET / CT) radioisotope accumulation otherwise a radical operation was performed QB relapses in patients and metastases diagnosis for method is used high sensitivity (85%) and to oneself has specificity (95 %). the patients under investigation tumor of the process spread assessment, do not grow your neck other anatomical with their derivatives attitude determination important task is considered of the neck echography and radioisotope testing breast behind located shield of the gland with stove in pathology enough information does not give In these cases inclusion of computed tomography (CT) or magnetic resonance imaging (M R T) in the diagnostic algorithm of the study further more complete information gives, from this except this methods high chest interval of members to the process attraction to be done assessment for is applied.

Spiral CT own solution to do ability according to shield of the gland small carcinoma in determining ultrasound from the inspection noticeable low. At the same time, it is retrotracheal, thoracic behind and blood vascular - nerve bundles along located primary and metastatic tumor knots about valuable information to give possible [11].

Magnetic resonance imaging has a number of advantages over other types of non-ionizing diagnostic methods - high inter-tissue contrast and high spatial resolution, study of the object in three mutually perpendicular planes, absence of cyto-, hepato-, nephrotoxic and other negative effects resulting from the introduction of contrast agents, non-invasiveness, absence of ionizing radiation and radiation dose load.

The introduction of high-field MRI scanners (1.5-3T), capable of obtaining high-resolution tomograms with a slice thickness of 1-2 mm, into medical practice has made it possible to detect the smallest structural changes and carry out gradation of the tumor process, starting from the T1 stage. Magnetic resonance imaging is successfully used to examine the neck region and, in particular, the thyroid gland. However, the assessment of the role of MRI in the diagnosis of thyroid diseases, especially in comparison with other radiological diagnostic methods, is quite controversial, which is to some extent due to the availability of such a convenient and effective imaging method as ultrasound. Therefore, the question of the role of MRI in diagnostic algorithms for thyroid tumors remains controversial, and a number of authors deny the need for its use in this pathology. Other researchers, demonstrating the ability to obtain information about the morphological structure of thyroid nodules and the effectiveness of differential diagnosis of benign and malignant foci, recommend assessing the thyroid gland during any MRI examination of the neck, regardless of the diagnostic orientation. In addition, it is believed that MRI of the thyroid gland should be performed in nodular formations of the organ located behind the sternum.

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Due to the presence of structures close in density in this area, CT distinguishes anatomical elements worse, contrast enhancement can slightly improve its effectiveness, but even in this case, CT lags behind MRI in terms of data. Magnetic resonance imaging is important during treatment (conservative treatment of the thyroid gland or radiation therapy of the thyroid gland), in the postoperative period - to determine the degree of success of surgical intervention, to detect recurrences (gland or tumor), as a method of monitoring the condition of the thyroid gland in cases where anatomical and topographic changes do not allow to determine the relationship of the neck structures according to the data of the CT scan. MRI allows to assess the retrotracheal and retrosternal spread of the thyroid gland, to detect clinically undetected metastases in the cervical and mediastinal lymph nodes. The main reason that prevents the widespread introduction of MRI into clinical practice is the high cost of the study. Nevertheless, MRI has taken its place in the algorithms for studying the thyroid gland, and its role is increasing. Thus, modern possibilities for diagnosing thyroid tumors require a comprehensive diagnostic approach based on clinical radiological data, the results of scanning the gland, ultrasound, CT, MRI, targeted puncture of the tumor and subsequent cytological examination of the puncture. In "hidden cancer", the final stage of diagnosis is often a wide opening and examination of the thyroid gland. The prevalence and growth of thyroid pathology in general, in particular, the high probability of malignancy of benign neoplasms, the difficulty of diagnosing early stages due to the absence of pathognomonic symptoms, give special importance to the problem under consideration.

References

1. Askarov X.A., Rakhimov B.B. In diseases of the thyroid gland ultrasound diagnosis. - Tashkent : Medicine, 2019. - 156 p.
2. Yusupov Sh.A., Karimov M.M. In endocrinology light diagnosis methods. – Tashkent, 2020. – 212 p.
3. Abdullaeva D.K. The thyroid gland is nodular complex approach to differential diagnosis of derivatives. // Medicine newsletter. – 2021. – No. 4. - B. 45–49.
4. Tursunov O.O. In thyroid cancer modern visualization methods // Uzbekistan medicine magazine. – 2022. – No. 2. - B. 37–42.
5. Saidova N.R. In diseases of the thyroid gland diagnostic value of elastography. // Pediatrics and children surgery magazine. – 2023. – No. 1. - B. 58–63.
6. Dedov I.I., Melnichenko G.A. Endocrinology: national guide. - M.: GEOTAR-Media, 2022. - 1112 p.
7. Ternovoi S.K. Luchevaya diagnosis and therapy of painful schitovidnoy signs. - M.: GEOTAR-Media, 2020. - 304 p.
8. Kotlyarov P.M., Pasha S.P. Ultrasound diagnosis of painful thyroid symptoms. - M., 2018. - 248 p.
9. Georges R. Sovremennye ultrazenkovye kriterii zlokachestvennosti nozlov shchitovidnoy zhelety. // Medical visualization. – 2019. – No. 3. - S. 15–21.
10. Messina G. Exograficheskaya semiotics raka shchitovidnoy zhelevy. // Journal of radiology and radiology. – 2017. – No. 5. - S. 28–34.
11. Kaprin A.D., Starinsky V.V. Zlokachestvennye novoobrazovaniya v Rossii. - M., 2023. - 250 p.

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 6. No 02. February ,2026

12. American Thyroid Association. 2015 American Thyroid Association Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer. Thyroid. 2016;26(1):1–133.
13. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Thyroid Carcinoma. Version 2024.
14. World Health Organization. WHO Classification of Tumors of Endocrine Organs. 5th ed. Lyon : IARC; 2022.
15. Haugen BR, Alexander EK, Bible KC, et al. 2015 ATA Guidelines for Management of Thyroid Nodules and Differentiated Thyroid Cancer. Thyroid. 2016;26(1):1–133.