

RECENT TRENDS IN MANAGEMENT OF SOLITARY THYROID NODULE

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surgery**

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List of abbreviations

<i>AIDS</i>	Acquired Immunodeficiency Syndrome
^{99}Tc	Technetium- 99 pertechnetate
<i>ATC</i>	Anaplastic Thyroid Carcinoma
<i>ATP</i>	Adenosine Tri-Phosphate
<i>AUS</i>	Atypia of Undetermined Significance
<i>CCH</i>	Clear-Cell Hyperplasia
<i>CEA</i>	Carcinoembryonic Antigen
<i>CFD</i>	Color-Flow Doppler
<i>CT</i>	Calcitonin
<i>DLBCL</i>	Diffuse Large B-Cell Lymphoma
<i>DTC</i>	Differentiated Thyroid Cancer
<i>FMTC</i>	Familial Medullary Thyroid Carcinoma
<i>FNA</i>	Fine Needle Aspiration
<i>FNAB</i>	Fine Needle Aspiration Biopsy
<i>FNAC</i>	Fine Needle Aspiration Cytology
<i>HPT</i>	Hyperparathyroidism
<i>MALT</i>	Mucosa-Associated Lymphoid Tissue
<i>MEN 1A</i>	Multiple Endocrine Neoplasia type 1A
<i>MTC</i>	Medullary Thyroid Carcinoma
<i>N/C</i>	Nuclear/Cytoplasmic ratio
<i>PDTC</i>	Poorly Differentiated Thyroid Carcinoma
PET	Positron emission tomography
<i>PTC</i>	Papillary Thyroid Carcinoma

<i>CBNs</i>	Cold Benign Nodules
<i>ILP</i>	Interstitial Laser Photocoagulation
<i>PEI</i>	Percutaneous Ethanol Injection
<i>CBNs</i>	Cold Benign Nodules
<i>DLBCL</i>	Diffuse Large B-Cell Lymphoma
<i>RFA</i>	Radiofrequency Ablation
<i>RIA</i>	Radioimmunoassay
<i>RRA</i>	Radioactive Iodine Remnant Ablation
<i>WDTC</i>	Well Differentiated Thyroid Carcinoma
<i>FDG-PET</i>	Fluorodeoxyglucose-Positron Emission Tomography
<i>EBRT</i>	External-Beam Radiation Therapy
<i>PTL</i>	Primary Thyroid Lymphoma
<i>NPV</i>	Negative Predictive Value

<i>PTL</i>	Primary Thyroid Lymphoma
<i>STN</i>	Solitary Thyroid Nodule
<i>TBSRTC</i>	The Bethesda System for Reporting Thyroid Cytopathology
<i>TFT</i>	Thyroid Function Test
<i>Tg</i>	Thyroglobulin
<i>TGFB</i>	Transforming Growth Factor B
<i>TPA</i>	Thyroid Peroxidase Antibodies
<i>TPO</i>	Thyroid Peroxidase
<i>TSH</i>	Thyroid Stimulating Hormone
<i>US</i>	Ultrasonography
<i>VEGF/VPF</i>	Vascular Endothelial Growth Factor/Vascular Permeability Factor

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Introduction

Solitary thyroid nodule represent special entity as all thyroid pathology can presented by solitary nodule . Moreover all types of investigations includes laboratory thyroid profile , ultrasound isotope scanning and even needle biopsy are used for diagnosis of its pathology .

Solitary thyroid nodule are found in 4%-8% of adults by palpation and in 13%-17% when ultrasound examination is used and in 6% of persons at an average age of 40 years. They are more common in females than males. (*Burguera & Gharib, 1998*)

As with all assessments, a thorough history and examination is required in patients who present with a thyroid nodule. Most nodules are asymptomatic and are often discovered serendipitously by the patient or their primary medical practitioner when being examined for another problem. (*Mitchell & Parangi, 1998*)

Solitary thyroid nodule may present a multitude of thyroid diseases, and a thorough knowledge of the epidemiology of thyroid diseases is of paramount importance, Medical history and physical examination of the patient adds significantly to the determination of the nature of the thyroid nodule. (*Welker, 1998*).

Solitary thyroid nodules include benign condition such as multinodular goiter, hashimoto's thyroiditis, subacute thyroiditis , follicular adenoma and simple or haemorrhagic cyst and malignant condition such as papillary carcinoma, follicular carcinoma ,hurthle cell carcinoma , medullary carcinoma, anaplastic carcinoma, primary thyroid lymphoma and metastatic malignant lesion . (*Bareen shah et al 1998*)

Nodules may also be classified as Functioning nodules (or Hot Nodules) or as Non-functioning (or cold), based on the results of radionuclide imaging studies (thyroid scans). Hot nodules are almost always benign (more than 90% of the time) and usually do not need to be

investigated with needle biopsies unless they exhibit abnormal features and/or large size . (*Massimo Tonacchera et al* , 2004)

Although Thyroid cancers are rare- accounting for only 1.1% of all cancers in most populations and 0.5% of all cancer deaths -The concern with thyroid nodules is the possibility of malignancy. (*Hegedus* , 2004)

The prevalence of thyroid cancer has been shown to be similar in patients with a solitary nodule and patients with multiple nodules (*Frates et al.*, 2005)

Investigation of thyroid nodules should begin with assessment of the functional status of the thyroid. Tests include serum thyroid stimulating hormone (TSH), free thyroxine, and free tri-iodothyronine. Measurement of TSH is the most useful initial step. With the availability of highly sensitive TSH assays, it is possible to detect subtle thyroid dysfunction with this test alone (*Gharib & Papini* , 2005) .

All patients who present with a thyroid nodule should undergo ultrasound evaluation of the nodule, thyroid gland, and cervical lymph nodes, if indicated. Ultrasound is an inexpensive, readily available, and noninvasive investigation. (*Marqusee et al.*, 2005) .

An ultrasound examination should focus on the size of the nodule, its composition, the presence of additional nodules, and any sonographic appearance suggestive of malignancy. Patients with multiple thyroid nodules have the same risk for malignancy as those with solitary thyroid nodules (*Papini et al.*, 2005) .

Ultrasound is an accurate and sensitive imaging modality for the detection of cervical lymph node metastasis and recurrence (*Wang et al.*, 2005)

The ultrasound features of cervical lymph nodes associated with thyroid nodule carrying the highest risk for cancer include a heterogeneous echotexture, calcifications, no hilus, a rounded appearance, cystic changes, and chaotic hypervascularity. These lymph nodes should always be biopsied