

## Temmuz – Ağustos - Eylül 2014 Seçilmiş Yayın Taraması

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# TIROID

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# ADRENAL

## RETROSPEKTİF

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5. Surgical considerations for removal of giant tumor of the right adrenal. [▶](#)
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7. A retrospective study of laparoscopic unilateral adrenalectomy for primary hyperaldosteronism caused by unilateral adrenal hyperplasia. [▶](#)
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9. Adherence to adrenal incidentaloma guidelines is influenced by radiology report recommendations. [▶](#)

# ADRENAL

## VAKA SUNUMU

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# NET

## DERLEME

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5. SEOM clinical guidelines for the diagnosis and treatment of gastroenteropancreatic neuroendocrine neoplasms (GEP-NENs) 2014. [▶](#)

# NET

## RETROSPEKTİF

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6. Surgical Resection Provides an Overall Survival Benefit for Patients with Small Pancreatic Neuroendocrine Tumors. [▶](#)
7. Well-Differentiated Neuroendocrine Neoplasia: Relapse-Free Survival and Predictors of Recurrence after Curative Intended Resections. [▶](#)
8. Clinical, pathological and prognostic characteristics of gastroenteropancreatic neuroendocrine neoplasms in China: a retrospective study. [▶](#)

# NET

## VAKA SUNUMU

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1. Neuroendocrine tumors of the gastrointestinal tract: Case reports and literature review. [▶](#)

# TİROİD

## DERLEME / METAANALİZ

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1. [J Clin Endocrinol Metab.](#) 2014 Sep 19;jc20142811. [Epub ahead of print] **IF:7.02**

### **Medullary Thyroid Cancer in the Era of Tyrosine Kinase Inhibitors: To Treat or Not to Treat-And with Which Drug-Those Are the Questions.**

[Cabanillas ME](#)<sup>1</sup>, [Hu MI](#), [Jimenez C](#).

#### **Author information**

#### **Abstract**

Context: Medullary thyroid cancer (MTC) is a rare form of thyroid cancer comprising approximately 4% of all thyroidcancers. The majority of patients have a relatively good prognosis; however, a subgroup of patients will require systemic therapy. Large, phase III randomized trials led to the approval of two drugs- vandetanib and cabozantinib-for progressive or symptomatic MTC. The decision regarding which drug to initiate first is not entirely clear and is a common concern amongst treating physicians. Evidence Acquisition and Synthesis: A review of the literature in English was conducted and data were summarized and integrated into a decision matrix. Conclusions: The decision regarding which drug to initiate first for progressive MTC should be based on a careful review of the medical history, physical examination findings, medication list, EKG, laboratory results, and tumor characteristics. It is necessary to consider the relative contraindications when choosing which drug to initiate first.

PMID: 25238206

2. [J Nucl Med.](#) 2014 Sep;55(9):1485-1491. Epub 2014 Aug 11. **IF: 5.01**

### **Radioiodine Therapy for Thyroid Cancer in the Era of Risk Stratification and Alternative Targeted Therapies.**

[Pryma DA](#)<sup>1</sup>, [Mandel SJ](#)<sup>2</sup>.

#### **Author information**

#### **Abstract**

Differentiated thyroid cancers are typically iodine-avid and can be effectively treated with radioiodine. In most patients, radioiodine treatment is done for ablation of residual tissue, and in these cases the focus should be on using the minimum effective dose. Adjuvant therapy can be done to reduce the risk of recurrence, but optimal patient selection and dose are unclear. Patients with advanced disease benefit most from treatment with the maximum-tolerated dose. Recent research has focused on better patient selection and reduced radioiodine doses for remnant ablation. There are emerging targeted therapeutic approaches in patients who are appropriately shown to have iodine-refractory disease, with 1 drug approved by the Food and Drug Administration. Numerous trials are ongoing to assess targeted therapeutics alone or in combination with radioiodine.

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#### **KEYWORDS:**

iodine-refractory disease; multitargeted kinases; radioiodine therapy; thyroid cancer

PMID: 25134528

3. [Oncologist](#). 2014 Sep 26. pii: theoncologist.2014-0182. [Epub ahead of print] **IF:4.76**

## **Novel Approaches in Anaplastic Thyroid Cancer Therapy.**

[Hsu KT](#)<sup>1</sup>, [Yu XM](#)<sup>1</sup>, [Audhya AW](#)<sup>1</sup>, [Jaume JC](#)<sup>1</sup>, [Lloyd RV](#)<sup>1</sup>, [Miyamoto S](#)<sup>1</sup>, [Prolla TA](#)<sup>1</sup>, [Chen H](#)<sup>2</sup>.

### **Author information**

#### **Abstract**

Anaplastic thyroid cancer (ATC), accounting for less than 2% of all thyroid cancer, is responsible for the majority of death from all thyroid malignancies and has a median survival of 6 months. The resistance of ATC to conventional thyroid cancer therapies, including radioiodine and thyroid-stimulating hormone suppression, contributes to the very poor prognosis of this malignancy. This review will cover several cellular signaling pathways and mechanisms, including RET/PTC, RAS, BRAF, Notch, p53, and histone deacetylase, which are identified to play roles in the transformation and dedifferentiation process, and therapies that target these pathways. Lastly, novel approaches and agents involving the Notch1 pathway, nuclear factor κB, Trk-fused gene, cancer stem-like cells, mitochondrial mutation, and tumor immune microenvironment are discussed. With a better understanding of the biological process and treatment modality, the hope is to improve ATC outcome in the future.

©AlphaMed Press.

#### **KEYWORDS:**

Anaplastic thyroid cancer; Clinical trials; Histone deacetylase inhibitors; Kinase inhibitors; Notch; Thyroid cancer

PMID: 25260367

4. [Ann Surg Oncol](#). 2014 Sep 6. [Epub ahead of print] **IF:4.33**

## **Rare Metastases of Well-Differentiated Thyroid Cancers: A Systematic Review.**

[Madani A](#)<sup>1</sup>, [Jozaghi Y](#), [Tabah R](#), [How J](#), [Mitmaker E](#).

### **Author information**

#### **Abstract**

#### **BACKGROUND:**

A minority of metastatic well-differentiated thyroid cancer (WDTC) patients present with end-organ disease other than in the lung, bone or lymph nodes. These metastases tend to be overlooked because of their low incidence, and this results in delayed diagnosis. The purpose of this study was to perform a systematic review of the clinical and histologic features of unusual WDTC metastases.

#### **METHODS:**

A systematic literature search of bibliographic databases, reference lists of articles, and conference proceedings was performed up to 2013. Studies were included if they reported on adult patients with WDTC and pathology-proven metastases to end-organs other than lung, bone, or lymph nodes. A total of 238 studies were included in a qualitative analysis. Data is expressed as N (%) and median [interquartile range].

#### **RESULTS:**

A total of 492 patients (median age, 62 years [50-70 years]) were identified in 197 case reports and 42 case series. There were 22 different end-organ metastatic sites documented with either papillary [255 (57 %)], follicular [172 (39 %)], or Hürthle-cell [18 (4 %)] histology. A total of 181 (41 %) patients presented with solitary metastasis and 54 (93 %) with elevated serum thyroglobulin. Positron emission tomography and whole-body radioactive iodine scans revealed hypermetabolic foci in 28 (97 %) and 50 (81 %) cases, respectively. Disease-free interval following the initial diagnosis of the primary thyroid cancer was highly

variable, ranging from synchronous presentation [66 (33 %)] to metachronous disease after 516 months [mean 86 months (SD 90)].

#### **CONCLUSIONS:**

WDTC can manifest with highly variable and unusual clinical features. Rare sites of metastases should be considered in the absence of the more common extra-cervical disease recurrence locations.

PMID: 25192681

5. [Crit Rev Oncol Hematol](#). 2014 Sep 16. pii: S1040-8428(14)00148-6. doi: 10.1016/j.critrevonc.2014.08.007. [Epub ahead of print]

## **The evolving field of kinase inhibitors in thyroid cancer.**

[Marotta V](#)<sup>1</sup>, [Sciammarella C](#)<sup>2</sup>, [Vitale M](#)<sup>3</sup>, [Colao A](#)<sup>2</sup>, [Faggiano A](#)<sup>4</sup>.

#### **Author information**

#### **Abstract**

Most of the genetic events implicated in the pathogenesis of thyroid cancer (TC) involve genes with kinase activity. Thus, kinase inhibitors (KIs) are very relevant in this field. KIs are considered the most suitable treatment for patients with iodine-refractory differentiated TC; these patients comprise the subgroup with the poorer prognosis. To date, only sorafenib has been approved for this indication, but promising results have been reported with several other KIs. In particular, lenvatinib has demonstrated excellent efficacy, with both progression-free survival and objective tumour response being better than with sorafenib. Despite being considered to be well tolerated, both sorafenib and lenvatinib have shown a remarkable toxicity, which has led to dose reductions in the majority of patients and to treatment discontinuation in a significant proportion of cases. The role of KIs in differentiated TC may be revolutionised by the finding that selumetinib may restore a clinical response to radioactive iodine (RAI). Vandetanib and cabozantinib have been approved for the treatment of advanced, progressive medullary TC (MTC). Nevertheless, the toxicity of both compounds suggests their selective use in those patients with strong disease progression. Treatment with the mTOR-inhibitor everolimus, alone or in combination with somatostatin analogues, should be studied in metastatic MTC patients with slow progression of disease, these representing the vast majority of patients. KIs did not significantly impact on the clinical features of anaplastic TC (ATC).

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#### **KEYWORDS:**

Anti-angiogenetic therapy; Cancer therapy; Kinase inhibitors; Protein kinases; Thyroid cancer

PMID: 25240824 [Makale sayfası](#)

6. [Thyroid](#). 2014 Sep 23. [Epub ahead of print] IF: 4.23

## **Management of Recurrent/Persistent Nodal Disease in Patients with Differentiated Thyroid Cancer: a Critical Review of the Risks and Benefits of Surgical Intervention versus Active Surveillance.**

[Tufano RP](#)<sup>1</sup>, [Clayman G](#), [Heller KS](#), [Inabnet WB](#), [Kebebew E](#), [Shaha AR Md](#), [Steward D](#), [Tuttle RM Md](#).

#### **Author information**

#### **Abstract**

Background: The primary goals of this interdisciplinary consensus statement are to define the eligibility criteria for management of recurrent and persistent cervical nodal disease in patients with

differentiated thyroid cancer (DTC) and to review the risks and benefits of surgical intervention versus active surveillance. Methods: A writing group was convened by the Surgical Affairs Committee of the American Thyroid Association and was tasked with identifying the important clinical elements to consider when managing recurrent/persistent nodal disease in patients with DTC based on the available evidence in the literature and the group's collective experience. Summary: The decision on how to best manage individual patients with suspected recurrent/persistent nodal disease is challenging and requires the consideration of a significant number of variables outlined by the members of the interdisciplinary team. Here we report on the consensus opinions that were reached by the writing group regarding the technical and clinical issues encountered in this patient population. Conclusions: Identification of recurrent/persistent disease requires a team decision-making process that includes the patient and physicians as to what, if any, intervention should be performed to best control the disease while minimizing morbidity. Several management principles and variables involved in the decision making for surgery versus active surveillance were developed that should be taken into account when deciding how to best manage a patient with DTC and suspected recurrent or persistent cervical nodal disease.

PMID: 25246079

7. [Thyroid](#). 2014 Sep 22. [Epub ahead of print] IF: 4.23

## **Prognostic Value of Genetic Mutations in Thyroid Cancer: A Meta-Analysis.**

[Pak K<sup>1</sup>](#), [Suh S](#), [Kim SJ](#), [Kim IJ](#).

[Author information](#)

### **Abstract**

#### **BACKGROUND:**

Genetic mutations have been found to be associated with thyroid cancer. Previous studies have been focused on relation between genetic mutations and thyroid cancer. We aimed to evaluate the prognostic value of three most common genetic mutations (BRAF, RAS, and RET) in patients with thyroid cancer.

#### **METHODS:**

Sources from MEDLINE (inception to December 2013) and EMBASE (inception to December 2013) were searched. Studies of thyroid cancer with results of genetic mutations and studies that reported survival data were included and two authors performed the data extraction independently. Any discrepancies were resolved by a consensus.

#### **RESULTS:**

Fourteen studies with BRAF mutation, 6 with RAS mutation, 4 with RET mutation, and 1 with both BRAF and RAS mutations were included in this meta-analysis. Patients of PTC with BRAF mutation showed 1.59-fold higher risk of events or 2.66-fold higher risk of death than patients of PTC without BRAF mutation. Also, patients with RAS mutation showed 2.90-fold higher risk of deaths by thyroid cancer than patients without RAS mutation. In addition, patients of MTC with RET mutation showed 5.82-fold higher risk of deaths by the disease than without RET mutation.

#### **CONCLUSIONS:**

Genetic mutations should be considered as a poor prognostic marker in thyroid cancer and may lead to better management for individual patients. However, the use of genetic mutations as prognostic markers should not be generalized, but individualized in the specific clinic setting.

PMID: 25244593

8. [Thyroid](#). 2014 Sep 29. [Epub ahead of print] IF: 4.23

## American Thyroid Association Statement on Preoperative Imaging for Thyroid Cancer Surgery.

[Yeh MW](#)<sup>1</sup>, [Bauer AJ](#), [Bernet VA](#), [Ferris RL](#), [Loevner LA](#), [Mandel SJ](#), [Orloff LA](#), [Randolph GW](#), [Steward DL](#).

[Author information](#)

### Abstract

Background: The success of surgery for thyroid cancer hinges on thorough and accurate preoperative imaging, which enables complete clearance of the primary tumor and affected lymph node compartments. This working group was charged by the Surgical Affairs Committee of the American Thyroid Association to examine the available literature and to review the most appropriate imaging studies for the planning of initial and revision surgery for thyroid cancer. Summary: Ultrasound remains the most important imaging modality in the evaluation of thyroid cancer, and should be used routinely to assess both the primary tumor and all associated cervical lymph node basins preoperatively. Positive lymph nodes may be distinguished from normal nodes based upon size, shape, echogenicity, hypervascularity, loss of hilar architecture, and the presence of calcifications. Ultrasound-guided fine-needle aspiration of suspicious lymph nodes may be useful in guiding the extent of surgery. Cross-sectional imaging (computed tomography with contrast or magnetic resonance imaging) may be considered in select circumstances to better characterize tumor invasion and bulky, inferiorly located, or posteriorly located lymph nodes, or when ultrasound expertise is not available. The above recommendations are applicable to both initial and revision surgery. Functional imaging with positron emission tomography (PET) or PET-CT may be helpful in cases of recurrent cancer with positive tumor markers and negative anatomic imaging.

PMID: 25188202

9. [Ann Surg Oncol](#). 2014 Aug 5. [Epub ahead of print] IF: 4.21

## Lymph Node Metastases do not Impact Survival in Follicular Variant Papillary Thyroid Cancer.

[Schneider DF](#)<sup>1</sup>, [Elfenbein D](#), [Lloyd RV](#), [Chen H](#), [Sippel RS](#).

[Author information](#)

### Abstract

#### INTRODUCTION:

Follicular variant of papillary thyroid cancer (FVPTC) is the most common and fastest growing subtype of papillary thyroid cancer (PTC) with features of both PTC and follicular thyroid cancer (FTC). The purpose of this study was to determine the patient and tumor features associated with lymph node metastases (LNM) in FVPTC.

#### METHODS:

This was a retrospective review of adult ( $\geq 18$ ) patients with histologically confirmed diagnoses of FVPTC within the SEER database between 1988 and 2009. LNM were defined by at least two lymph nodes with metastatic disease. To determine factors associated with LNM, we constructed a multivariate logistic regression model from significant variables ( $p < 0.05$ ) identified on univariate analysis. Similarly, we used a Cox proportional hazards model to understand the relative importance of LNM in determining disease-specific mortality (DSM).

#### RESULTS:

Of the 20,357 cases of FVPTC with lymph node data available, 1,761 (8.7%) had LNM; 61.1% of these LNM were located in the central neck and 38.9% were in the lateral neck. Extrathyroidal extension (odds ratio [OR] 2.6, 95% confidence interval [CI] 2.2-3.0,  $p < 0.01$ ) and multifocality (OR 3.0, 95% CI 2.5-3.6,

p < 0.01) were the strongest predictors of LNM. Importantly, LNM did not independently predict DSM (p = 0.52). Tumor size >4 cm (hazards ratio [HR] 5.3, 95% CI 2.2-12.8, p < 0.01) and extrathyroidal extension (HR 8.2, 95% CI 3.0-22.0, p < 0.01) were the strongest predictors of DSM.

#### **CONCLUSIONS:**

LNM occur in less than 10% of patients with FVPTC but do not impact DSM. Instead, DSM in FVPTC is related to size and local invasion.

PMID: 25092163

10. [Eur J Endocrinol](#). 2014 Aug;171(2):R33-46. doi: 10.1530/EJE-14-0148. Epub 2014 Apr 17. IF: 4.08

## **Thyroglobulin measurement using highly sensitive assays in patients with differentiated thyroid cancer: a clinical position paper.**

[Giovannella L](#)<sup>1</sup>, [Clark PM](#)<sup>2</sup>, [Chiovato L](#)<sup>2</sup>, [Duntas L](#)<sup>2</sup>, [Elisei R](#)<sup>2</sup>, [Feldt-Rasmussen U](#)<sup>2</sup>, [Leenhardt L](#)<sup>2</sup>, [Luster M](#)<sup>2</sup>, [Schalin-Jääntti C](#)<sup>2</sup>, [Schott M](#)<sup>2</sup>, [Seregni E](#)<sup>2</sup>, [Rimmele H](#)<sup>2</sup>, [Smit J](#)<sup>2</sup>, [Verburg FA](#)<sup>2</sup>.

#### **Author information**

#### **Abstract**

Differentiated thyroid cancer (DTC) is the most common endocrine cancer and its incidence has increased in recent decades. Initial treatment usually consists of total thyroidectomy followed by ablation of thyroid remnants by iodine-131. As thyroid cells are assumed to be the only source of thyroglobulin (Tg) in the human body, circulating Tg serves as a biochemical marker of persistent or recurrent disease in DTC follow-up. Currently, standard follow-up for DTC comprises Tg measurement and neck ultrasound combined, when indicated, with an additional radioiodine scan. Measurement of Tg after stimulation by endogenous or exogenous TSH is recommended by current clinical guidelines to detect occult disease with a maximum sensitivity due to the suboptimal sensitivity of older Tg assays. However, the development of new highly sensitive Tg assays with improved analytical sensitivity and precision at low concentrations now allows detection of very low Tg concentrations reflecting minimal amounts of thyroid tissue without the need for TSH stimulation. Use of these highly sensitive Tg assays has not yet been incorporated into clinical guidelines but they will, we believe, be used by physicians caring for patients with DTC. The aim of this clinical position paper is, therefore, to offer advice on the various aspects and implications of using these highly sensitive Tg assays in the clinical care of patients with DTC.

© 2014 The authors.

PMID: 24743400

[Makale sayfası](#)

11. [Cancer Cytopathol](#). 2014 Jul;122(7):536-45. doi: 10.1002/cncy.21425. Epub 2014 Apr 18. IF:4.01

## **Risk stratification in follicular neoplasm: a cytological assessment using the modified Bethesda classification.**

[Ustun B](#)<sup>1</sup>, [Chhieng D](#), [Van Dyke A](#), [Carling T](#), [Holt E](#), [Udelsman R](#), [Adeniran AJ](#).

#### **Author information**

#### **Abstract**

#### **BACKGROUND:**

The 2007 Bethesda classification for thyroid cytology defines follicular neoplasm as a category of cases with cellular specimens demonstrating abundant follicular cells arranged in a microfollicular pattern with little or no colloid. The current recommendation for the management of these cases is diagnostic

lobectomy. There has been great difficulty and variability in triaging and reporting follicular neoplasm. To increase diagnostic accuracy, at the study institution, this category is subclassified further into 3 categories: 1) microfollicular-patterned neoplasm (MN); 2) Hürthle cell neoplasm (HN); and 3) follicular lesion with some features suggestive of but not diagnostic of the follicular variant of papillary thyroid carcinoma (FL). The authors reviewed the cases of follicular neoplasm observed over a period of 5 years to document the follow-up trend using this modified classification.

#### **METHODS:**

A search of the cytology records was performed for the period between January 2008 and December 2012. All thyroid fine-needle aspiration cases were reviewed and those with a diagnosis of follicular neoplasm (including Hürthle cell neoplasm) were identified. Correlating follow-up surgical pathology reports were reviewed.

#### **RESULTS:**

A total of 399 cases of follicular neoplasm with surgical follow-up were identified. Malignancy was identified in 32% of all cases of follicular neoplasm and was found to be disproportionately higher in the FL category (73%). A cytological diagnosis of FL is more likely to be called malignant (73%) than benign neoplastic (9%) or benign nonneoplastic (18%). A cytological diagnosis of MN or HN is more likely to be benign neoplastic (46% and 46%, respectively) than malignant (29% and 26%, respectively) or benign nonneoplastic (25% and 28%, respectively). Of the cytological features examined, 2 (nuclear enlargement and nuclear grooves) were significantly associated with the follicular variant of papillary thyroid carcinoma.

#### **CONCLUSIONS:**

The results of the current study clearly indicate that follicular lesions with even subtle nuclear atypia have a high positive predictive value for malignancy and therefore should be distinguished from other follicular lesions because these cases require more aggressive surgical management. The current study also raises an important issue concerning the current thyroid classification based on the 2007 Bethesda classification for thyroid cytology. Future thyroid fine-needle aspiration classification schemes should consider subclassifying follicular neoplasms for the purpose of risk stratification.

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#### **KEYWORDS:**

Hürthle cell neoplasm; cytological diagnosis; fine-needle aspiration; follicular neoplasm; papillary thyroid carcinoma

PMID: 24753500 [Makale sayfası](#)

12. [Cancer Cytopathol.](#) 2014 Aug;122(8):611-9. doi: 10.1002/cncy.21436. Epub 2014 May 28. **IF:4.01**

## **The value of second opinion in thyroid cytology: a review.**

[Gerhard R<sup>1</sup>](#), [Boerner SL](#).

### **Author information**

#### **Abstract**

#### **BACKGROUND:**

Second-opinion diagnosis (SOD) on pathological material is an accepted practice before definitive therapy is considered for referred patients. The thyroid gland is an anatomical site prone to diagnostic disagreement between pathologists. We performed a review of the literature that addressed the role of interinstitutional SOD on thyroid fine-needle aspirations (FNAs).

#### **METHODS:**

Nine studies comprising second opinions on thyroid FNAs were selected. The parameters analyzed included: discordances between the initial diagnoses (IDs) and SODs; cytohistologic correlation; changes

in the clinical management of the patients with thyroid nodules after SOD. The same parameters were applied to the "indeterminate" diagnostic category comprising cases initially reported as "atypia," "atypia of undetermined significance/follicular lesion of undetermined significance," "suspicious for a follicular neoplasm," "follicular neoplasm," "suspicious," and "suspicious for malignancy."

#### **RESULTS:**

A total of 7154 thyroid FNAs were retrieved, showing an overall discordance rate between ID and SOD of 28.6%. In general, SOD was better supported by clinical follow-up and histological diagnosis, showing higher diagnostic accuracy in comparison with ID. Almost one-third (30.4%) of the discordant cases resulted in changes in the clinical management of patients with thyroid nodules. Numerous thyroid FNAs initially categorized as "indeterminate" were definitively classified as benign or malignant by SOD, with an overall diagnostic resolution rate of 42.5%, sensitivity of 97.9%, and diagnostic accuracy of 73.7%.

#### **CONCLUSIONS:**

Second-opinion review of thyroid FNA improves diagnostic accuracy and potentially changes clinical management. SOD also demonstrates a significant rate of diagnostic resolution for thyroid FNAs originally diagnosed as "indeterminate."

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#### **KEYWORDS:**

clinical management; cytology; second opinion; thyroid fine-needle aspiration

PMID: 24890980

[Makale sayfası](#)

13. [Biochim Biophys Acta](#). 2014 Sep 11;1846(2):468-476. doi: 10.1016/j.bbcan.2014.09.002. [Epub ahead of print] IF: 3.89

## **Familial nonmedullary thyroid cancer: Screening, clinical, molecular and genetic findings.**

[Navas-Carrillo D](#)<sup>1</sup>, [Ríos A](#)<sup>1</sup>, [Rodríguez JM](#)<sup>1</sup>, [Parrilla P](#)<sup>1</sup>, [Orenes-Piñero E](#)<sup>2</sup>.

#### **Author information**

#### **Abstract**

Thyroid cancer, the commonest of endocrine malignancies, continues increasing in incidence being the 5th more prevalent cancer among women in the United States in 2012. Familial thyroid cancer has become a well-recognized, unique, clinical entity in patients with thyroid cancer originating from follicular cells, that is, nonmedullary thyroid carcinoma. Hereditary nonmedullary thyroid cancer may occur as a minor component of familial cancer syndromes (familial adenomatous polyposis, Gardner's syndrome, Cowden's disease, Carney's complex type 1, Werner's syndrome, and papillary renal neoplasia) or as a primary feature (familial nonmedullary thyroid cancer [FNMTC]). Although there is some controversy, some epidemiologic and clinical kindred studies have shown that FNMTC is associated with more aggressive disease than sporadic cases, with higher rates of multicentric tumours, lymph node metastasis, extrathyroidal invasion, and shorter disease-free survival. This way, preventing screening will allow earlier detection, more timely intervention, and hopefully improved outcomes for patients and their families. On the other hand, in the last years, an important number of genetic studies on FNMTC have been published, trying to determine its genetic contribution. However, the genetic inheritance of FNMTC remains unclear; but it is believed to be autosomal dominant with incomplete penetrance and variable expressivity. This paper provides an extensive overview of FNMTC from several points of view. Firstly, the impact of early detection on prognosis, secondly, the management and follow-up of FNMTC patients, and finally, the role of susceptibility loci, microRNAs (miRNAs) and telomerases in recently identified isolated cases of FNMTC.

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#### **KEYWORDS:**

Familial nonmedullary thyroid cancer; Screening; Susceptibility loci; Telomerase; miRNA

PMID: 25218916 [Makale sayfası](#)

14. [Front Endocrinol \(Lausanne\)](#). 2014 Jul 15;5:108. doi: 10.3389/fendo.2014.00108. eCollection 2014.

IF: 2.69

## Neurological complications in thyroid surgery: a surgical point of view on laryngeal nerves.

[Varaldo E](#)<sup>1</sup>, [Ansaldo GL](#)<sup>2</sup>, [Mascherini M](#)<sup>2</sup>, [Cafiero F](#)<sup>1</sup>, [Minuto MN](#)<sup>1</sup>.

### [Author information](#)

#### Abstract

THE CERVICAL BRANCHES OF THE VAGUS NERVE THAT ARE PERTINENT TO ENDOCRINE SURGERY ARE THE SUPERIOR AND THE INFERIOR LARYNGEAL NERVES: their anatomical course in the neck places them at risk during thyroid surgery. The external branch of the superior laryngeal nerve (EB) is at risk during thyroidsurgery because of its close anatomical relationship with the superior thyroid vessels and the superior thyroid pole region. The rate of EB injury (which leads to the paralysis of the cricothyroid muscle) varies from 0 to 58%. The identification of the EB during surgery helps avoiding both an accidental transection and an excessive stretching. When the nerve is not identified, the ligation of superior thyroid artery branches close to the thyroid gland is suggested, as well as the abstention from an indiscriminate use of energy-based devices that might damage it. The inferior laryngeal nerve (RLN) runs in the tracheoesophageal groove toward the larynx, close to the posterior aspect of the thyroid. It is the main motor nerve of the intrinsic laryngeal muscles, and also provides sensory innervation to the larynx. Its injury finally causes the paralysis of the omolateral vocal cord and various sensory alterations: the symptoms range from mild to severe hoarseness, to acute airway obstruction, and swallowing impairment. Permanent lesions of the RNL occur from 0.3 to 7% of cases, according to different factors. The surgeon must be aware of the possible anatomical variations of the nerve, which should be actively searched for and identified. Visual control and gentle dissection of RLN are imperative. The use of intraoperative nerve monitoring has been safely applied but, at the moment, its impact in the incidence of RLN injuries has not been clarified. In conclusion, despite a thorough surgical technique and the use of intraoperative neuromonitoring, the incidence of neurological complications after thyroid surgery cannot be suppressed, but should be maintained in a low range.

#### KEYWORDS:

dysphagia; dysphonia; inferior laryngeal nerve; morbidity; neuromonitoring; superior laryngeal nerve; thyroidsurgery

PMID: 25076936 [Makale sayfası](#)

15. [Surgeon](#). 2014 Jul 26. pii: S1479-666X(14)00091-2. doi: 10.1016/j.surge.2014.06.009. [Epub ahead of print] IF: 2.37

## Thyroid incidentalomas on PET imaging - Evaluation of management and clinical outcomes.

[Elzein S](#)<sup>1</sup>, [Ahmed A](#)<sup>2</sup>, [Lorenz E](#)<sup>3</sup>, [Balasubramanian SP](#)<sup>2</sup>.

### [Author information](#)

#### Abstract

#### OBJECTIVES:

1. To determine the incidence of 'thyroid incidentaloma' in patients undergoing PET/CT in Sheffield. 2. To assess the distribution of cancer type, stage and short term outcomes of incidentally detected thyroid cancer in this cohort.

## **METHODOLOGY:**

Patients with an unexpected thyroid radio-isotope uptake on reports of whole body nuclear imaging performed in Sheffield Teaching Hospitals NHS Foundation Trust for 'non-thyroid' indications from April 2008 to March 2011 were identified. Patients who have undergone PET imaging were then selected. The management, clinical and pathology details and short term 'thyroid-related' outcomes of patients with thyroid incidentaloma on PET scans were analysed.

## **RESULTS:**

1730 PET nuclear imaging studies were performed in this period. Thyroid incidentalomas were detected in 65 (3.8%) of these scans. Two thyroid cancers were detected in this cohort, both demonstrated focal uptake on the PET scan. Histology showed papillary thyroid cancer (TNM classification; pT1N1Mx and pT1bNxMx).

## **CONCLUSION:**

The risk of cancer in PET detected thyroid incidentaloma in this series (3%) is low compared to published literature (5-50%). Potential reasons are discussed. The low rate of thyroid cancer in our incidentaloma cohort will influence decision making regarding management of these lesions. Only two thyroid cancers were detected in our cohort, limiting the narrative on type, stage of PET detected thyroid cancer and outcomes. Further observational research is required to study the natural history of these lesions in settings where there is a clear protocol for imaging, biopsy and treatment.

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## **KEYWORDS:**

Incidentaloma; Nuclear imaging; PET CT; Thyroid

PMID: 25073933

[Makale sayfası](#)

16. [Endocrine](#). 2014 Sep 4. [Epub ahead of print] **IF:2.24**

## **Diagnostic values of thyroglobulin measurement in fine-needle aspiration of lymph nodes in patients with thyroid cancer.**

[Pak K<sup>1</sup>](#), [Suh S](#), [Hong H](#), [Cheon GJ](#), [Hahn SK](#), [Kang KW](#), [Kim EE](#), [Lee DS](#), [Chung JK](#).

### **Author information**

#### **Abstract**

We aimed to evaluate the diagnostic performance of measuring the concentration of thyroglobulin (Tg) in the washout fluid of the needle aspiration (FNA-Tg). We performed a systematic search of MEDLINE (inception to October 2013) and EMBASE (inception to October 2013) for English publications using keywords "thyroid", "aspiration", "washout", and "thyroglobulin". All searches were limited to human studies. We included studies of FNA-Tg measurement in the washout fluid rinsed with 1 ml of normal saline. Eight studies including 843 lymph nodes (LNs) were eligible for this study. The pooled sensitivity and specificity of preoperative studies are 0.89 [95 % CI 0.82-0.95], 0.60 [0.49-0.70], and those of postoperative studies are 1.0 [0.83-1.0], 1.0 [0.92-1.0]. To determine best cutoffs from each preoperative and postoperative study, the distance between the point (0, 1) and each observed cutoff values (1-specificity, sensitivity) was calculated, and the distance is minimal when the cutoff value of 32.04 for preoperative studies and of 0.9 for postoperative one are selected. FNA-Tg can be used for both preoperative and postoperative evaluation of LN metastasis. Although the cutoff values for the FNA-Tg has not been standardized, preoperative values of 32.04 ng/ml and postoperative values of 0.9 ng/ml are recommended for identifying neck LN metastasis.

PMID: 25185721

17. [Endocrine](#). 2014 Jul 6. [Epub ahead of print] IF:2.24

## Low versus high radioiodine activity to ablate the thyroid after thyroidectomy for cancer: a meta-analysis of randomized controlled trials.

[Du P](#)<sup>1</sup>, [Jiao X](#), [Zhou Y](#), [Li Y](#), [Kang S](#), [Zhang D](#), [Zhang J](#), [Lv L](#).

[Author information](#)

### Abstract

It is not known whether low-dose radioiodine is as effective as high-dose radioiodine for treating patients with differentiated thyroid cancer after surgery. This study compared ablation success rates of different doses of radioiodine in patients with differentiated thyroid cancer after thyroidectomy. Fifteen randomized controlled trials were obtained from PubMed, Embase, and Cochrane Library (1966 to February 2013). Stata version 12.0 was used to pool the outcomes. Mantel-Haenszel (MH) and inverse variance (IV) methods were used in a fixed-effects and random-effects model, respectively. The relative risk (RR) with 95 % confidence interval (CI) was used to compare the success rates of different doses of radioiodine. There were a total of 3,046 patients. The pooled RR for comparing ablation success with low- and high-dose radioiodine was 0.90 (95 % CI 0.83-0.98, IV). Excluding a study with a distinctive outcome, sensitivity analysis showed that the pooled RR was 0.95 (95 % CI 0.92-0.99, MH). In subgroup analysis, the pooled RR of three studies that only administered radioiodine to patients with pT2-4 cancer was 0.93 (95 % CI 0.83-1.04, MH); the pooled RR of five studies with total thyroidectomy for all patients was 0.96 (95 % CI 0.92-1.00, MH); and the pooled RR of four studies that used thyrotropin  $\alpha$  to stimulate serum thyrotropin was 0.96 (95 % CI 0.90-1.02, MH). The pooled RRs for comparing ablation success for moderate-dose versus high-dose and low-dose radioiodine were 0.94 (95 % CI 0.85-1.04, IV) and 0.87 (95 % CI 0.73-1.04, IV), respectively. Low-dose radioiodine can be used in patients undergoing total thyroidectomy. For those who receive insufficient surgical treatment, high-dose radioiodine is more appropriate.

PMID: 24997645

18. [Endocr Pract](#). 2014 Aug 1;20(8):832-8. doi: 10.4158/EP13435.RA. IF:2.12

## The differential diagnosis of central compartment radioactive iodine uptake after thyroidectomy: anatomic and surgical considerations.

[Reis LL](#)<sup>1</sup>, [Mehra S](#)<sup>2</sup>, [Scherl S](#)<sup>1</sup>, [Clain J](#)<sup>1</sup>, [Machac J](#)<sup>3</sup>, [Urken ML](#)<sup>4</sup>.

[Author information](#)

### Abstract

#### OBJECTIVE:

Foci of increased radioactive iodine (RAI) uptake in the thyroid bed following total thyroidectomy (TT) indicate residual thyroid tissue that may be benign or malignant. The use of postoperative RAI therapy in the form of remnant ablation, adjuvant therapy, or therapeutic intervention is often followed by a posttherapy scan. Our objective is to improve the clinician's understanding of the anatomic complexity of this region and to enhance the interpretation of postoperative scans.

#### METHODS:

We conducted a comprehensive review of the literature evaluating RAI uptake in the central compartment following thyroid cancer treatment and literature related to anatomic nuances associated with this region. Thirty-eight articles were selected.

#### RESULTS:

Through extensive surgical experience and a literature review, we identified the 5 most important anatomic considerations for clinicians to understand in the interpretation of foci of increased RAI uptake in the thyroid bed on a diagnostic scan: 1) residual benign thyroid tissue at the level of the posterior thyroid ligament, 2) residual benign thyroid tissue at the superior portion of the pyramidal lobe and/or superior poles of the lateral thyroid lobes, 3) residual benign thyroid tissue that was left attached to a parathyroid gland in order to preserve its vascularity, 4) ectopic benign thyroid tissue, and 5) malignant thyroid tissue that has metastasized to central compartment nodes or invaded visceral structures.

#### **CONCLUSION:**

By correlating anatomic description, medical illustrations, surgical photos, and scans, we have attempted to clarify the reasons for foci of increased uptake following TT to improve the clinician's understanding of the anatomic complexity of this region.

PMID: 24793917 [Makale sayfası](#)

19. [Int J Endocrinol](#). 2014;2014:790834. doi: 10.1155/2014/790834. Epub 2014 Aug 21. IF: 1.78

## **Update on anaplastic thyroid carcinoma: morphological, molecular, and genetic features of the most aggressive thyroid cancer.**

[Ragazzi M](#)<sup>1</sup>, [Ciarrocchi A](#)<sup>2</sup>, [Sancisi V](#)<sup>2</sup>, [Gandolfi G](#)<sup>2</sup>, [Bisagni A](#)<sup>1</sup>, [Piana S](#)<sup>1</sup>.

#### **Author information**

#### **Abstract**

Anaplastic thyroid carcinoma (ATC) is the most aggressive form of thyroid cancer. It shows a wide spectrum of morphological presentations and the diagnosis could be challenging due to its high degree of dedifferentiation. Molecular and genetic features of ATC are widely heterogeneous as well and many efforts have been made to find a common profile in order to clarify its cancerogenetic process. A comprehensive review of the current literature is here performed, focusing on histopathological and genetic features.

PMID: 25214840 [Makale sayfası](#)

20. [Otolaryngol Clin North Am](#). 2014 Aug;47(4):545-56. doi: 10.1016/j.otc.2014.04.004. IF: 1.75

## **Management of the neck in thyroid cancer.**

[Schoppy DW](#)<sup>1</sup>, [Holsinger FC](#)<sup>2</sup>.

#### **Author information**

#### **Abstract**

The management of regional lymph nodes in thyroid carcinoma is guided by preoperative evaluation, histologic subtype, and often a consideration of data for potential benefit and morbidity of a neck dissection. The goal of lymphadenectomy is complete surgical resection of grossly evident metastatic disease and the removal of regional lymph node groups at highest risk for microscopic disease. Surgery should achieve disease eradication but preserve voice, airway, swallowing, and parathyroid function. This article discusses recommendations for addressing cervical lymph nodes in thyroid carcinoma, discusses current literature regarding the common histologic subtype (papillary carcinoma), and details our operative approach.

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#### **KEYWORDS:**

Neck dissection; Paratracheal; Thyroid cancer

PMID: 25041957 [Makale sayfası](#)

21. [Acta Otorhinolaryngol Ital.](#) 2014 Aug;34(4):223-229. IF:1.55

## Meta-analysis of recurrent laryngeal nerve injury in thyroid surgery with or without intraoperative nerve monitoring.

[Rulli F](#)<sup>1</sup>, [Ambrogi V](#)<sup>1</sup>, [Dionigi G](#)<sup>2</sup>, [Amirhassankhani S](#)<sup>1</sup>, [Mineo TC](#)<sup>3</sup>, [Ottaviani F](#)<sup>1</sup>, [Buemi A](#)<sup>4</sup>, [Di Stefano P](#)<sup>5</sup>, [Mourad M](#)<sup>4</sup>.

[Author information](#)

**Abstract**

in [English](#), [Italian](#)

Intraoperative nerve monitoring (IONM) aimed at reducing the injuries of recurrent laryngeal nerve during thyroidectomy is controversial. We conducted a meta-analysis to assess the incidence of nerve injuries with or without IONM. Studies published from January 1994 to February 2012 in English language on humans were identified. Heterogeneity of studies was checked by the Higgins test. Summary estimates of predictive values of injury were made using the Mantel-Haenszel test based on the fixed-effects model. Publication bias was assessed by a funnel plot and Egger's method. Eight articles were selected accounting a total of 5257 nerves at risk. IONM revealed a significant impact in preventing transient injuries (positive predictive value = 5% [95% CI: 2-8], negative = 96% [95% CI: 91-100], relative risk = 0.73 [95% CI: 0.54-0.98],  $p = 0.035$ ), whereas they failed to demonstrate effect on permanent injuries (positive predictive value = 2% [95% CI: 0.6-3.8], negative 99% [95% CI: 97-100], relative risk = 0.73 [95% CI: 0.44-1.23],  $p = 0.235$ ). This meta-analysis demonstrated the merit of IONM in preventing transient injury during thyroidectomy. No advantage was found in permanent injuries.

### KEYWORDS:

Intraoperative neurostimulation; Meta-analysis; Recurrent laryngeal nerve; Thyroid surgery

PMID: 25210215

22. [Laryngoscope.](#) 2014 Jul;124(7):1724-34. doi: 10.1002/lary.24583. Epub 2014 Feb 10. IF:1.32

## Lateral neck dissection for well-differentiated thyroid carcinoma: a systematic review.

[Madenci AL](#)<sup>1</sup>, [Caragacianu D](#), [Boeckmann JO](#), [Stack BC Jr](#), [Shin JJ](#).

[Author information](#)

**Abstract**

### OBJECTIVES/HYPOTHESIS:

Management of the lateral neck in well-differentiated thyroid carcinoma (WDTC) remains a topic of ongoing debate. A systematic review was performed to determine if patients with WDTC who undergo lateral neck dissection (LND) have significantly different survival, recurrence, or procedure-related complication rates, as compared to those who do not.

### DATA SOURCES:

A computerized search of MEDLINE from 1966 to October 2012 was performed, supplemented with manual searches.

### REVIEW METHODS:

A priori criteria were used to evaluate 924 studies. Data extraction was performed by independent reviewers and focused on survival, recurrence, postoperative complications, study designs, and potential confounders.

### RESULTS:

Forty-seven criterion-meeting studies included 24,153 participants. Stage-specific data were limited. The small volume of data specific to the N0 neck (n=3 studies, 6.3%) demonstrates no difference in disease-free survival (DFS) or recurrence with versus without LND. The data regarding the N+ neck (n=14 studies, 29.2%) were mixed with regard to the impact of LND on DFS and recurrence. The preponderance of data was reported in analyses of mixed or unreported nodal status (n=31 studies, 64.6%). Among these studies, the majority reported no difference in overall survival, DFS, disease-specific survival, or recurrence, but overall data were mixed and subject to confounding by indication and limitations in power.

**CONCLUSIONS:**

Data regarding the impact of LND on survival, recurrence, and postoperative complications are mixed. Routine prophylactic LND for WDTC does not have a clearly advantageous risk-to-benefit ratio.

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**KEYWORDS:**

Thyroid carcinoma; intraoperative complications; neck dissection; outcomes assessment; postoperative complications; systematic review

PMID: 24390830

[Makale sayfası](#)

23. [J Nucl Med Technol.](#) 2014 Sep;42(3):170-180. IF:0.88

## **Radioiodine Scintigraphy with SPECT/CT: An Important Diagnostic Tool for Thyroid Cancer Staging and Risk Stratification.**

[Avram AM.](#)

[Author information](#)

**Abstract**

Staging and risk stratification predicate the postoperative management of thyroid cancer patients, determining not only the need for <sup>131</sup>I therapy or alternative options (conservative management without ablation, surgical reintervention, or external-beam radiation therapy) but also the long-term follow-up strategy. This paper presents the progress made in the field of thyroid cancer imaging by application of SPECT/CT technology to radioiodine scintigraphy in both diagnostic and post-therapy settings and reviews the impact of fusion radioiodine imaging on staging, risk stratification, and clinical management of patients with thyroid cancer. In addition, this paper addresses the role of preablation radioiodine imaging and provides nuclear medicine physicians with the background knowledge required for integrating information from fusion imaging into the clinical and histopathologic risk stratification for developing an individualized treatment plan for patients with thyroid cancer.

© 2014 by the Society of Nuclear Medicine and Molecular Imaging, Inc.

**KEYWORDS:**

radioiodine fusion imaging; thyroid cancer; thyroid cancer staging and risk stratification

PMID: 25190758

24. [Adv Clin Exp Med](#). 2014 July-August;23(4):645-655. IF: 0.47

## Ultrasound Elastography - Review of Techniques and its Clinical Applications.

[Zaleska-Dorobisz U](#), [Kaczorowski K](#), [Pawluś A](#), [Puchalska A](#), [Inglot M](#).

[Author information](#)

### Abstract

Sonoelastography is a modern ultrasound method, which enables the representation of tissues and organs with the evaluation of their elasticity, "stiffness". The principle of elastography is to use repeated, slight pressure on the examined organ with the ultrasound transducer. Changes in elasticity and deformation of tissues arising whilst the compression is processed and presented in real time with color-coded maps, is called elastograms. The method is applicable mainly in diagnosing malignant lesions. Tumor tissues have different elasticity and undergo different deformations under pressure than healthy tissues. As a result of computer analysis, images in various colors are generated. Based on the nature of areas of normal and increased stiffness classifications of the images in point scales have been developed. Ultrasound devices equipped with sonoelastography option enable more accurate imaging and evaluation of the nature of lesions situated at small depth, e.g. breast, thyroid, testicles, prostate, some groups of lymph nodes. They increase the accuracy of ultrasound in diagnostics and the evaluation of the stage of malignant lesions. This also helps to indicate more precisely the areas that require the biopsy.

PMID: 25166452

25. [Indian J Surg](#). 2014 Aug;76(4):293-6. doi: 10.1007/s12262-013-0810-y. Epub 2013 Mar 9. IF: 0.35

## Differentiated thyroid cancer and pregnancy.

[Varghese SS](#)<sup>1</sup>, [Varghese A](#)<sup>2</sup>, [Ayshford C](#)<sup>3</sup>.

[Author information](#)

### Abstract

Thyroid cancer is second most common malignancy diagnosed during pregnancy. Differentiated thyroid cancer (DTC) is more common in reproductive age group due to its association with oestrogen and human chorionic gonadotropin. Evaluation and management of DTC has changed from an aggressive approach, now, to a more conservative approach. Management of DTC must be coordinated among the different specialists which include the surgeon, endocrinologist, radiologist, pathologist and, in pregnant patients, the obstetrician. Generally, DTC can be postponed till delivery, but exceptions include airway compromise, aggressive cytologic features, invasion of surrounding tissue, extracapsular spread and poor prognostic factors.

### KEYWORDS:

Cytology; Differentiated thyroid cancer; Pregnancy; Risk stratification; Ultrasonography

PMID: 25278653

[Makale sayfası](#)

# TİROİD

## PROSPEKTİF

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1. [Lancet](#). 2014 Jul 26;384(9940):319-28. doi: 10.1016/S0140-6736(14)60421-9. Epub 2014 Apr 24.

IF: 24.37

### **Sorafenib in radioactive iodine-refractory, locally advanced or metastatic differentiated thyroid cancer: a randomised, double-blind, phase 3 trial.**

[Brose MS](#)<sup>1</sup>, [Nutting CM](#)<sup>2</sup>, [Jarzab B](#)<sup>3</sup>, [Elisei R](#)<sup>4</sup>, [Siena S](#)<sup>5</sup>, [Bastholt L](#)<sup>6</sup>, [de la Fouchardiere C](#)<sup>7</sup>, [Pacini F](#)<sup>8</sup>, [Paschke R](#)<sup>9</sup>, [Shong YK](#)<sup>10</sup>, [Sherman SI](#)<sup>11</sup>, [Smit JW](#)<sup>12</sup>, [Chung J](#)<sup>13</sup>, [Kappeler C](#)<sup>14</sup>, [Peña C](#)<sup>13</sup>, [Molnár J](#)<sup>13</sup>, [Schlumberger MJ](#)<sup>15</sup>; [DECISION investigators](#).

[Collaborators \(85\)](#)

[Author information](#)

#### **Abstract**

#### **BACKGROUND:**

Patients with radioactive iodine (<sup>131</sup>I)-refractory locally advanced or metastatic differentiated thyroid cancer have a poor prognosis because of the absence of effective treatment options. In this study, we assessed the efficacy and safety of orally administered sorafenib in the treatment of patients with this type of cancer.

#### **METHODS:**

In this multicentre, randomised, double-blind, placebo-controlled, phase 3 trial (DECISION), we investigated sorafenib (400 mg orally twice daily) in patients with radioactive iodine-refractory locally advanced or metastatic differentiated thyroid cancer that had progressed within the past 14 months. Adult patients (≥18 years of age) with this type of cancer were enrolled from 77 centres in 18 countries. To be eligible for inclusion, participants had to have at least one measurable lesion by CT or MRI according to Response Evaluation Criteria In Solid Tumors (RECIST); Eastern Cooperative Oncology Group performance status 0-2; adequate bone marrow, liver, and renal function; and serum thyroid-stimulating hormone concentration lower than 0.5 mIU/L. An interactive voice response system was used to randomly allocate participants in a 1:1 ratio to either sorafenib or matching placebo. Patients, investigators, and the study sponsor were masked to treatment assignment. The primary endpoint was progression-free survival, assessed every 8 weeks by central independent review. Analysis was by intention to treat. Patients in the placebo group could cross over to open-label sorafenib upon disease progression. Archival tumour tissue was examined for BRAF and RAS mutations, and serum thyroglobulin was measured at baseline and at each visit. This study is registered with ClinicalTrials.gov, number NCT00984282, and with the EU Clinical Trials Register, number EudraCT 2009-012007-25.

#### **FINDINGS:**

Patients were randomly allocated on a 1:1 basis to sorafenib or placebo. The intention-to-treat population comprised 417 patients (207 in the sorafenib group and 210 in the placebo group) and the safety population was 416 patients (207 in the sorafenib group and 209 in the placebo group). Median progression-free survival was significantly longer in the sorafenib group (10.8 months) than in the placebo group (5.8 months; hazard ratio [HR] 0.59, 95% CI 0.45-0.76; p<0.0001). Progression-free survival improved in all prespecified clinical and genetic biomarker subgroups, irrespective of mutation status. Adverse events occurred in 204 of 207 (98.6%) patients receiving sorafenib during the double-blind period and in 183 of 209 (87.6%) patients receiving placebo. Most adverse events were grade 1 or 2. The most

frequent treatment-emergent adverse events in the sorafenib group were hand-foot skin reaction (76·3%), diarrhoea (68·6%), alopecia (67·1%), and rash or desquamation (50·2%).

#### **INTERPRETATION:**

Sorafenib significantly improved progression-free survival compared with placebo in patients with progressive radioactive iodine-refractory differentiated thyroid cancer. Adverse events were consistent with the known safety profile of sorafenib. These results suggest that sorafenib is a new treatment option for patients with progressive radioactive iodine-refractory differentiated thyroid cancer.

#### **FUNDING:**

Bayer HealthCare Pharmaceuticals and Onyx Pharmaceuticals (an Amgen subsidiary).

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#### **Comment in**

PMID: 24768112

[Makale sayfası](#)

2. [J Clin Endocrinol Metab.](#) 2014 Jul;99(7):E1283-6. doi: 10.1210/jc.2013-2967. Epub 2014 Mar 31.

IF: 7.02

## **Laser ablation and 131-iodine: a 24-month pilot study of combined treatment for large toxic nodular goiter.**

[Chianelli M<sup>1</sup>](#), [Bizzarri G](#), [Todino V](#), [Misischi I](#), [Bianchini A](#), [Graziano F](#), [Guglielmi R](#), [Pacella CM](#), [Gharib H](#), [Papini E](#).

#### **Author information**

#### **Abstract**

#### **CONTEXT:**

It is normally recognized that the preferred treatment in large toxic thyroid nodules should be thyroidectomy.

#### **OBJECTIVE:**

The aim of the study was to assess the efficacy of combined laser ablation treatment (LAT) and radioiodine 131 (131I) treatment of large thyroid toxic nodules with respect to rapidity of control of local symptoms, of hyperthyroidism, and of reduction of administered 131I activity in patients at refusal or with contraindications to surgery.

#### **DESIGN AND SETTING:**

We conducted a pilot study at a single center specializing in thyroid care.

#### **PATIENTS:**

Fifteen patients were treated with LAT, followed by 131I (group A), and a series of matched consecutive patients were treated by 131I only (group B).

#### **INTERVENTION(S):**

Laser energy was delivered with an output power of 3 W (1800 J per fiber per treatment) through two 75-mm, 21-gauge spinal needles. Radioiodine activity was calculated to deliver 200 Gy to the hyperfunctioning nodule.

#### **MAIN OUTCOME MEASURE(S):**

Thyroid function, thyroid peroxidase antibody, thyroglobulin antibody, ultrasound, and local symptoms were measured at baseline and up to 24 months.

#### **RESULTS:**

Nodule volume reduction at 24 months was:  $71.3 \pm 13.4$  vs  $47.4 \pm 5.5\%$ , group A (LAT+131I) vs group B (131I), respectively;  $P < .001$ ). In group A (LAT+131I), a reduction in radioiodine-administered activity was obtained ( $-21.1 \pm 8.1\%$ ). Local symptom score demonstrated a more rapid reduction in group A (LAT+131I). In three cases, no 131I treatment was needed after LAT.

#### **CONCLUSIONS:**

In this pilot study, combined LAT/131I treatment induced faster and greater improvement of local and systemic symptoms compared to 131I only. This approach seems a possible alternative to thyroidectomy in patients at refusal of surgery.

PMID: 24684455

[Makale sayfası](#)

3. [Ann Surg Oncol](#). 2014 Sep 12. [Epub ahead of print] IF: 4.33

## **Preventing Postoperative Hypocalcemia in Patients with Graves Disease: A Prospective Study.**

[Oltmann SC](#)<sup>1</sup>, [Brekke AV](#), [Schneider DF](#), [Schaefer SC](#), [Chen H](#), [Sippel RS](#).

#### **Author information**

#### **Abstract**

#### **BACKGROUND:**

Hypocalcemia occurs after total thyroidectomy (TT) for Graves disease via parathyroid injury and/or from increased bone turnover. Current management is to supplement calcium after surgery. This study evaluates the impact of preoperative calcium supplementation on hypocalcemia after Graves TT.

#### **METHODS:**

A prospective study of patients with Graves disease undergoing TT was performed. Patients with Graves disease managed over a 9-month period took 1 g of calcium carbonate (CC) three times a day for 2 weeks before TT. Those managed the previous year without supplementation served as historic controls. Age-, gender-, and thyroid weight-matched, non-Graves TT patients were procedure controls. Patient demographics, postoperative laboratory values, complaints, and medications were reviewed. Parathyroid hormone (PTH)-based postoperative protocols dictated postoperative CC and calcitriol use.

#### **RESULTS:**

Forty-five patients with Graves disease were treated with CC before TT, and 38 patients with Graves disease were not. Forty control subjects without Graves disease were identified. Age, gender, and thyroid weight were comparable. Preoperative calcium and PTH levels were equivalent. PTH values immediately after surgery, at postoperative day 1, and at 2-week follow-up were equivalent. Postoperative use of scheduled CC ( $p = 0.10$ ) and calcitriol ( $p = 0.60$ ) was similar. Postoperatively, patients with untreated Graves disease had lower serum calcium levels than pretreated patients with Graves disease or control subjects without Graves disease ( $8.3$  mg/dL vs.  $8.6$  vs.  $8.6$ ,  $p = 0.05$ ). Complaints of numbness and tingling were more common in nontreated Graves disease (26 %) than in pretreated Graves disease (9 %) or in control subjects without Graves disease (10 %,  $p < 0.05$ ).

#### **CONCLUSIONS:**

Calcium supplementation before TT for Graves disease significantly reduced biochemical and symptomatic postoperative hypocalcemia. Preoperative calcium supplementation is a simple treatment that can reduce symptoms of hypocalcemia after Graves TT.

PMID: 25212835

4. [Surgery](#). 2014 Jul;156(1):147-57. doi: 10.1016/j.surg.2014.03.045. IF: 3.19

## Radio-guided selective compartment neck dissection improves staging in papillary thyroid carcinoma: a prospective study on 345 patients with a 3-year follow-up.

[Carcoforo P](#)<sup>1</sup>, [Portinari M](#)<sup>2</sup>, [Feggi L](#)<sup>3</sup>, [Panareo S](#)<sup>3</sup>, [De Troia A](#)<sup>1</sup>, [Zatelli MC](#)<sup>4</sup>, [Trasforini G](#)<sup>4</sup>, [Degli Uberti E](#)<sup>4</sup>, [Forini E](#)<sup>5</sup>, [Feo CV](#)<sup>1</sup>.

### [Author information](#)

#### Abstract

#### BACKGROUND:

Prospective uncontrolled study to investigate in papillary thyroid carcinoma (PTC) patients: (1) Distribution of lymph node metastases within the neck compartments, (2) factors predicting lymph nodes metastases, and (3) disease recurrence after thyroidectomy associated with radio-guided selective compartment neck dissection (RSCND).

#### METHODS:

We studied 345 consecutive PTC patients operated on between February 2004 and October 2011 at the S. Anna University Hospital, Ferrara (Italy). Patients with cervical lymph node metastases on preoperative ultrasonography and fine needle aspiration cytology were excluded. All patients underwent total thyroidectomy associated with SLN identification followed by RSCND in the SLN compartment, without SLN frozen section.

#### RESULTS:

In patients with lymph node metastases, metastatic nodes were not in the central neck compartment in 22.6% of the cases. The presence of infiltrating or multifocal PTC was a predicting factor for lymph nodes metastases. The median follow-up was 35.5 months. RSCND was associated with a false-negative rate of 1.1%, a persistent disease rate of 0.6%, and a recurrent disease rate of 0.9%. The permanent dysphonia rate was 1.3%.

#### CONCLUSION:

RSCND associated with total thyroidectomy may improve: (1) the locoregional lymph node staging, and (2) the identification of the site of lymphatic drainage within the neck compartments. Thus, considering the high false-negative rate of sentinel lymph node biopsy (SLNB), a radio-guided technique in PTC patients may guide the lymphadenectomy (ie, RSCND) to increase the metastatic yield and improve staging of the disease rather than avoid prophylactic lymphadenectomy (ie, SLNB).

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PMID: 24929764 [Makale sayfası](#)

5. [Surgery](#). 2014 Jul;156(1):130-6. doi: 10.1016/j.surg.2014.02.016. Epub 2014 Feb 27. IF: 3.19

## Predicting hypocalcemia after thyroidectomy in children.

[Freire AV](#)<sup>1</sup>, [Ropelato MG](#)<sup>2</sup>, [Ballerini MG](#)<sup>2</sup>, [Acha O](#)<sup>2</sup>, [Bergadá I](#)<sup>2</sup>, [de Papendieck LG](#)<sup>2</sup>, [Chiesa A](#)<sup>2</sup>.

### [Author information](#)

#### Abstract

#### BACKGROUND AND AIMS:

Hypocalcemia after thyroidectomy is caused by parathyroid trauma. There are no studies regarding the usefulness of intact parathyroid hormone (PTH) as a monitor of postoperative hypoparathyroidism tool in pediatrics. We evaluated the diagnostic accuracy of intra- and postoperative PTH to predict the risk of developing post thyroidectomy hypocalcemia in children.

## **METHODS:**

A prospective longitudinal cohort study was conducted in 32 pediatric patients (3.2-17.6 years old) undergoing total thyroidectomy. Intact PTH measured by the assays (Immulite Immunoassay System [ICMA] or electrochemiluminescence assay [ECLIA]) at 5 (PTH-5) and 60 (PTH-60) minutes after thyroid removal were considered as predicting variables. The postoperative outcome was hypocalcemia (endpoint variable). Patients were clinically and biochemically monitored regularly for 48 hours after surgery.

## **RESULTS:**

Of the patients, 47% developed hypocalcemia (15% symptomatic). An ICMA PTH-5 of  $\leq 14$  pg/mL or an ECLIA PTH-5 of  $\leq 16$  pg/mL predicted hypocalcemia with a sensitivity of 80%, specificity of 100%, positive predictive value (PPV) of 100%, and diagnostic efficiency (DE) of 91%. Using the same cutoff values, PTH-60 presented a sensitivity of 93%, specificity of 82%, PPV of 81%, and DE of 87%. Adjusting for variation in the assays and combining intra- and postoperative PTH determinations, we developed an algorithm that improved sensitivity, specificity, and DE.

## **CONCLUSION:**

PTH is useful for predicting hypocalcemia after total thyroidectomy in children. The use of our proposed strategy should be considered to (a) initiate preventive treatment in patients identified at high risk for hypocalcemia, (b) shorten the duration of hospitalization, and (c) reduce the clinical and biochemical controls in those who remained normocalcemic.

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PMID: 24929763 [Makale sayfası](#)

6. [Surgery](#). 2014 Jul;156(1):117-25. doi: 10.1016/j.surg.2014.02.007. Epub 2014 Feb 13. IF: 3.19

## **A prospective comparison of patient body image after robotic thyroidectomy and conventional open thyroidectomy in patients with papillary thyroid carcinoma.**

[Lee S](#)<sup>1</sup>, [Kim HY](#)<sup>2</sup>, [Lee CR](#)<sup>3</sup>, [Park S](#)<sup>4</sup>, [Son H](#)<sup>3</sup>, [Kang SW](#)<sup>3</sup>, [Jeong JJ](#)<sup>3</sup>, [Nam KH](#)<sup>3</sup>, [Chung WY](#)<sup>5</sup>, [Park CS](#)<sup>3</sup>.

### **[Author information](#)**

#### **Abstract**

#### **BACKGROUND:**

Body image is associated with self-esteem and identity and has a close relationship with quality of life (QoL). We compared the impact of surgical scars on the patient's perception of body image between conventional open thyroidectomy (OT) and robotic thyroidectomy (RT) in female papillary thyroid carcinoma patients.

#### **METHODS:**

From October 2009 to December 2010, we enrolled prospectively 116 papillary thyroid carcinoma patients who underwent total thyroidectomy at the Yonsei University Health System (Seoul, Korea). Of these 116 patients, 56 had OT and 60 RT. Their scars were assessed using the Vancouver Scar Scale (VSS), and psychometric properties were evaluated using the Body Image Scale (BIS) questionnaire postoperatively. Both groups were compared using cross-sectional and time-series methods.

#### **RESULTS:**

Mean age was significantly younger in the RT group. Regarding scar quality, the OT group showed superiority in scar pigmentation and the total VSS score during the early postoperative period, but the VSS score improved over time and was similar between both groups at 9 months. The RT group had better scores regarding most of the BIS items, a trend that remained relatively constant over time. In patients with

noticeable scars (VSS  $\geq 2$ ) at 9 months, the RT group had better BIS scores regarding almost all items, including "self-conscious," "physical attractiveness," "feeling of less feminine," "sexual attractiveness," "dissatisfaction with body, scar and appearance when dressed," and "avoidance of people due to appearance."

#### **CONCLUSION:**

RT provides a better self-body image and improves QoL compared with conventional OT by avoiding a noticeable cervical scar.

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#### **Comment in**

PMID: 24878453 [Makale sayfası](#)

7. [Surgery](#). 2014 Oct;156(4):967-71. doi: 10.1016/j.surg.2014.06.043. Epub 2014 Jul 26. IF: 3.19

## **Can ultrasound be used to predict malignancy in patients with a thyroid nodule and an indeterminate fine-needle aspiration biopsy?**

[Khoncarly SM](#)<sup>1</sup>, [Tamarkin SW](#)<sup>2</sup>, [McHenry CR](#)<sup>3</sup>.

#### **Author information**

#### **Abstract**

#### **PURPOSE:**

The purpose of this study was to evaluate whether ultrasonography is helpful in predicting malignancy in patients with a thyroid nodule and atypia/follicular lesion of undetermined significance (AFLUS).

#### **METHODS:**

All patients with a preoperative ultrasound who underwent thyroidectomy for a nodule with AFLUS comprised the study population. A blinded review of gray-scale and color-Doppler sonographic images of the thyroid nodule was performed by an expert sonographer; results were compared with the original interpretation and were correlated with histopathology. All images were reviewed for hypoechogenicity, irregular margins, shape that was taller than wide, micro and macrocalcifications, absent halo, and intranodular hypervascularity.

#### **RESULTS:**

From 2010 to 2012, 61 patients underwent thyroidectomy for AFLUS with an ultrasound examination for review; 6 (10%) with cancer. Nodule shape that was taller than wide, was associated with cancer ( $P < .05$ ). The original sonographer commented on an average of two of seven features important in assessment of a thyroid nodule.

#### **CONCLUSION:**

With the exception of nodule height greater than width, sonographic criteria were not helpful in deciding which patients with AFLUS should undergo thyroidectomy. Thyroidectomy is recommended in lieu of repeat biopsy for a nodule that is taller than wide. Standardized sonographic reporting should be implemented.

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PMID: 25074360 [Makale sayfası](#)

8. [World J Surg.](#) 2014 Sep 18. [Epub ahead of print] IF: 2.47

## **Intraoperative Frozen Section for the Evaluation of Extrathyroidal Extension in Papillary Thyroid Cancer.**

[Park YM](#)<sup>1</sup>, [Wang SG](#), [Goh JY](#), [Shin DH](#), [Kim IJ](#), [Lee BJ](#).

[Author information](#)

**Abstract**

### **BACKGROUND:**

We investigated extrathyroidal extension (ETE) through frozen biopsy for intraoperative decision making in patients with papillary thyroid cancer (PTC).

### **METHODS:**

During the period of the study an operation was performed in 268 patients with PTC and ETE was evaluated using intraoperative frozen biopsies of thyroid tissue.

### **RESULTS:**

Extrathyroidal extension was confirmed in 54 patients (20 %) on frozen biopsy. Fifty-three patients among 54 patients showing ETE on frozen biopsy were confirmed on permanent pathologic analysis. Accordingly, frozen biopsy had a sensitivity of 66 %, a specificity of 99 %, a positive predictive value of 98 %, and a negative predictive value of 87 %. Tumor size (OR 4.373; CI 2.257-8.475,  $p = <0.001$ ) was an independent factor for predicting ETE on frozen biopsy.

### **CONCLUSIONS:**

Intraoperative frozen biopsy can be an useful tool in identifying the presence of ETE. It can also help the operator decide the extent of surgery and central neck dissection in patients with PTC.

PMID: 25231704

9. [Am J Surg.](#) 2014 Jul;208(1):13-20. doi: 10.1016/j.amjsurg.2013.11.007. Epub 2014 Mar 26. IF: 2.39

## **Can a surgeon predict the risk of postoperative hypoparathyroidism during thyroidsurgery? A prospective study on self-assessment by experts.**

[Promberger R](#)<sup>1</sup>, [Ott J](#)<sup>2</sup>, [Bures C](#)<sup>3</sup>, [Kober F](#)<sup>3</sup>, [Freissmuth M](#)<sup>4</sup>, [Seemann R](#)<sup>5</sup>, [Hermann M](#)<sup>3</sup>.

[Author information](#)

**Abstract**

### **BACKGROUND:**

Thyroid surgery can cause postoperative hypocalcemia (POH) and permanent hypoparathyroidism (PEH). Surgeons implicitly assess the risk and adapt their surgical strategy accordingly.

### **METHODS:**

The outcome of this intraoperative decision-making process (the surgeons' ability to predict the risk of POH and PEH on a numerical rating scale and their actual incidence) was studied prospectively in 2,558 consecutive thyroid operations.

### **RESULTS:**

POH and PEH occurred in 723 and 64 patients, respectively. In multivariate analysis, the surgeons' risk assessment score was an independent predictive factor for both complications ( $P < .05$ ). Surgeons' differed significantly ( $P = .015$ ) in their rates of POH but not of PEH ( $P = .062$ ). Six and 3 (of 9) surgeons correctly

predicted an increased risk of PEH and POH (adjusted odds ratios 1.67 to 2.21 and 1.47 to 12.73), respectively.

#### **CONCLUSION:**

The risk for hypoparathyroidism can be estimated, but surgeons differ substantially in this ability and in the extent to which this implicit knowledge is translated into lower complication rates.

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#### **KEYWORDS:**

Hypocalcemia; Hypoparathyroidism; Individual surgeon; Quality control; Risk assessment; Thyroid surgery

PMID: 24746378

[Makale sayfası](#)

10. [JAMA Otolaryngol Head Neck Surg.](#) 2014 Aug;140(8):731-5. doi: 10.1001/jamaoto.2014.972. 1.52

## **The upper limits of central neck dissection.**

[Holostenco V, Khafif A.](#)

[Author information](#)

#### **Abstract**

#### **IMPORTANCE:**

Central neck dissection (CND) is considered an imperative part of the treatment of patients with high-risk, well-differentiated thyroid carcinoma.

#### **OBJECTIVE:**

To examine the presence of lymphatic tissue and/or metastatic nodes in the upper part of the paratracheal region to determine the need to dissect this region as part of a paratracheal neck dissection.

#### **DESIGN, SETTING, AND PARTICIPANTS:**

We prospectively enrolled 27 nonselective patients with surgical thyroid cancer (4 men and 23 women; median age, 43 years; range, 21-74 years) from June 1, 2010, through March 31, 2011, from a head and neck surgical oncology specialist group practice within the largest private hospital in Israel. All patients were scheduled to undergo unilateral (n = 23) or bilateral (n = 4) CND as their definitive surgical care.

#### **INTERVENTIONS:**

A total of 31 paratracheal neck dissections were performed among the 27 patients. The surgical specimens were divided into upper and lower paratracheal regions, separated by the nerve curve line (corresponding to the level of the cricoid). These specimens were thoroughly examined separately for normal and metastatic lymph nodes. A standard pathologic technique was used, with no dedicated personnel.

#### **MAIN OUTCOMES AND MEASURES:**

The existence of lymphatic tissue and metastatic cells in all upper paratracheal surgical specimens.

#### **RESULTS:**

The surgical procedures were uneventful. Postoperative complications included temporary vocal cord palsy, minimal chyle leak, and wound infection. A median of 8 nodes were retrieved (range, 2-21). No lymphatic tissue was identified in all upper paratracheal dissection specimens. All benign and metastatic lymph nodes (mean, 5.3 and 2.5, respectively) were located in the lower paratracheal region specimens. All upper paratracheal surgical specimens (n = 31) consisted of only fibrofatty connective tissue and were devoid of lymph nodes, metastatic cells, or other endothelial-lined lymphatic structures.

#### **CONCLUSIONS AND RELEVANCE:**

In this series of paratracheal neck dissections, the upper part of the paratracheal region contained no lymphatic tissue or cancer-bearing lymph nodes. The necessity to dissect this region, as part of conventional CND, is therefore challenged.

PMID: 24994582

[Makale sayfası](#)

11. [Surg Laparosc Endosc Percutan Tech](#). 2014 Sep 18. [Epub ahead of print] IF: 1.19

## **Intraoperative Neuromonitoring of the Recurrent Laryngeal Nerve in Robotic Thyroid Surgery.**

[Bae DS<sup>1</sup>](#), [Kim SJ](#).

[Author information](#)

### **Abstract**

This study evaluated the technical feasibility and efficacy of intraoperative neuromonitoring (IONM) of the recurrent laryngeal nerve (RLN) to aid its identification and preservation during robotic thyroidectomy (RoT). IONM of the RLN was evaluated in 30 consecutive patients undergoing RoT. All patients underwent an indirect laryngoscope examination to objectively assess vocal cord function. Their Voice Handicap Index-10 (VHI-10) was measured to subjectively assess vocal cord function preoperatively and at postoperative months 1 and 3. Of the 56 RLNs at risk in 30 patients undergoing RoT, all were visualized and identified by IONM. The IONM sensitivity for postoperative permanent RLN palsy was 100%, with a positive predictive value of 100%. The mean VHI-10 scores preoperatively and at postoperative months 1 and 3 were  $0.20 \pm 0.66$ ,  $3.47 \pm 5.04$ , and  $1.53 \pm 2.47$ , respectively ( $P < 0.001$ ). IONM of the RLN during RoT is technically feasible and effective for identifying this nerve.

PMID: 25238177

# TİROİD

## RETROSPEKTİF

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1. [J Clin Endocrinol Metab.](#) 2014 Sep 26;jc20141634. [Epub ahead of print] **IF: 7.02**

### **Clinical and Molecular Features of Hürthle Cell Carcinoma of the Thyroid.**

[Chindris AM](#)<sup>1</sup>, [Casler JD](#), [Bernet VJ](#), [Rivera M](#), [Thomas C](#), [Kachergus JM](#), [Necela BM](#), [Hay ID](#), [Westphal SA](#), [Grant CS](#), [Thompson GB](#), [Schlinkert RT](#), [Thompson E A](#), [Smallridge RC](#).

#### **Author information**

#### **Abstract**

Context: Hürthle cell cancer [HCC] of the thyroid remains the subject of controversy with respect to natural course, treatment, and follow-up. Objective: To evaluate the clinical and molecular features associated with outcome in HCC. Design: A review of 173 HCC cases treated at Mayo Clinic over 11 years with a median 5.8 years follow-up. Results: None of the patients with minimally invasive histology had persistent disease, clinical recurrence, or disease-related death. Male gender and TNM stage were independently associated with increased risk of clinical recurrence or death in widely invasive patients. The 5-year cumulative probability of clinical recurrence or death was higher in patients with TNM stage III-IV (females=74%, males=91%) compared with patients with TNM stage I-II (females=0%, males=17%). Pulmonary metastases were best identified by computed tomography while radioactive iodine [RAI] scans were positive in only 2 of 27 cases. Thyroglobulin was detectable in patients with clinical disease with the notable exception of 5 patients with distant metastases. The common TERT C228T promoter mutation was detected in both widely invasive and minimally invasive tumors. TERT mRNA was below the limits of detection in all samples. Conclusion: Widely invasive HCC with TNM stage III-IV is aggressive with low probability of recurrence-free survival. Males have worse outcomes than females. Minimally invasive HCC appears to be considerably less aggressive. RAI scan performs poorly in detecting distant disease. Although the TERT gene is mutated in HCC, the role of this mutation remains to be demonstrated.

PMID: 25259908

2. [J Clin Endocrinol Metab.](#) 2014 Sep 26;jc20141631. [Epub ahead of print] **IF: 7.02**

### **Long term survival in DTC is worse after low-activity initial post-surgical I-131 therapy in both high and low risk patients.**

[Verburg FA](#)<sup>1</sup>, [Mäder U](#), [Reiners C](#), [Hänscheid H](#).

#### **Author information**

#### **Abstract**

Context: Recent trial results have revived interest in low activity initial I-131 therapy (RIT) of differentiated thyroid cancer (DTC) Objective: compare different initial I-131 activities for outcome. Design: Database study Setting: University hospital Patients: 1298 (698 low risk, 434 high risk M0 and 136 M1) DTC patients, grouped according to ablation activity (I:  $\leq 2000$  MBq (54 mCi), II: 2000-3000 MBq (54-81 mCi) and III:  $>3000$  MBq (81 mCi)), subdivided by age ( $<45$  and  $\geq 45$  years at diagnosis). Main outcome measures: Complete remission (CR: Tg below functional sensitivity combined with visually negative I-131 diagnostic whole body scintigraphy), recurrence and DTC specific mortality rates, life expectancy. Results: Low risk patients: in patients  $<45$  a lower median cumulative activity was required to achieve CR in group III (3590 MBq) than in groups I (8050 MBq) and II (6300 MBq). In patients  $\geq 45$  DTC specific mortality was

significantly higher in group I than in groups II and III (15-year: 16.1±7.7%, 0.8±0.8% and 7.2±5.5%, respectively; p=0.004). High risk M0 patients: In patients ≥45 the recurrence rate (15-year: 44.4±16.6%, 24.1±7.6% and 8.6±3.9%; p=0.001) and DTC specific mortality (15-year: 51.8±15.8%, 13.2±4.4% and 9.5±3.7%; p=0.004) were significantly higher in group I than in groups II and III. M1 patients: There were no significant differences in survival results between different activity groups in either age category. Conclusion: Before adopting low initial activity RIT for, especially older, low risk patients, results of long-term follow-up should be regarded critically. Low-activity RIT in older high-risk patients is not to be recommended.

PMID: 25259907

3. [Ann Surg Oncol](#). 2014 Aug 5. [Epub ahead of print] IF: 4.33

## **Prognostic Significance of Tumor Multifocality in Papillary Thyroid Carcinoma and its Relationship with Primary Tumor Size: A Retrospective Study of 2,309 Consecutive Patients.**

[Kim KJ<sup>1</sup>](#), [Kim SM](#), [Lee YS](#), [Chung WY](#), [Chang HS](#), [Park CS](#).

[Author information](#)

**Abstract**

### **BACKGROUND:**

Tumor multifocality is frequently observed in papillary thyroid carcinoma (PTC), but its prognostic value is controversial. We investigated the prognostic significance of multifocality in PTCs larger than 1 cm and papillary thyroid microcarcinomas (PTMC).

### **METHODS:**

Medical records and pathologic results of 2,309 patients who received thyroidectomy and lymph node dissection for PTC were retrospectively reviewed. We identified 648 patients who had PTC with a primary tumor exceeding 1 cm, and 1,661 patients with PTMC. In each group, we compared patients with unifocal and multifocal disease. Cox regression analyses of disease persistence and recurrence were performed to identify the prognostic significance of multifocality.

### **RESULTS:**

The mean follow-up period was 5.6 years. In the analyses of PTCs larger than 1 cm, the multifocal group included more extensive thyroid surgeries (p = 0.039), radioactive iodine therapies with higher doses (p < 0.001), and significantly higher rates of disease persistence and recurrence (p = 0.001) compared with the unifocal group. In analogous analyses of patients with PTMC, disease persistence and recurrence did not differ significantly between the unifocal and multifocal groups. Cox regression analyses indicated that multifocality was an independent risk factor for disease persistence and recurrence in patients who had PTC with a tumor exceeding 1 cm, but not in patients with PTMC.

### **CONCLUSION:**

Tumor multifocality appears to be an important prognostic factor for PTCs larger than 1 cm, but may have little or no prognostic significance for PTMC.

PMID: 25092159

4. [Ann Surg Oncol](#). 2014 Jul 30. [Epub ahead of print] IF: 4.33

## False Negative Cytology in Large Thyroid Nodules.

[Giles WH<sup>1</sup>](#), [MacLellan RA](#), [Gawande AA](#), [Ruan DT](#), [Alexander EK](#), [Moore FD Jr](#), [Cho NL](#).

### [Author information](#)

#### Abstract

#### BACKGROUND:

Controversy exists regarding the accuracy of fine-needle aspiration (FNA) in large thyroid nodules. Recent surgical series have documented false-negative rates ranging from 0.7 to 13 %. We examined the accuracy of benign FNA cytology in patients with thyroid nodules  $\geq 3$  cm who underwent surgical resection and identified features characteristic of false-negative results.

#### METHODS:

We retrospectively studied all thyroidectomy specimens between January 2009 and October 2011 and identified nodules  $\geq 3$  cm with corresponding benign preoperative FNA cytology. We collected clinical information regarding patient demographics, nodule size, symptoms, sonographic features, FNA results, and final surgical pathology. For comparison, we analyzed nodules  $< 3$  cm from this cohort also with benign FNA cytology.

#### RESULTS:

A total of 323 nodules with benign preoperative cytology were identified. Eighty-three nodules were  $< 3$  cm, 94 nodules were 3-3.9 cm, and 146 nodules were  $\geq 4$  cm in size. The false-negative rate was 11.7 % for all nodules  $\geq 3$  cm and 4.8 % for nodules  $< 3$  cm ( $p = 0.03$ ). Subgroup analysis of nodules  $\geq 3$  cm revealed a false-negative rate of 12.8 % for nodules 3-3.9 cm and 11 % for nodules  $\geq 4$  cm. Age  $\geq 55$  years and asymptomatic clinical status were the only patient characteristics that reached statistical significance as risk factors. Final pathology of the false-negative specimens consisted mainly of follicular variant of papillary thyroid cancer and follicular thyroid cancer.

#### CONCLUSIONS:

When referred for thyroidectomy, patients with large thyroid nodules demonstrate a modest, yet significant, false-negative rate despite initial benign aspiration cytology. Therefore, thyroid nodules  $\geq 3$  cm may be considered for removal even when referred with benign preoperative cytology.

PMID: 25074665

5. [Thyroid](#). 2014 Sep 30. [Epub ahead of print] IF: 4.23

## Central lymph node characteristics predictive of outcome in patients with differentiated thyroid cancer.

[Wang L<sup>1</sup>](#), [Palmer FL](#), [Nixon IJ](#), [Thomas D](#), [Shah JP](#), [Patel SG](#), [Tuttle RM Md](#), [Shaha AR Md](#), [Ganly I](#).

### [Author information](#)

#### Abstract

**Background** The aim of our study was to determine central compartment lymph node (LN) characteristics predictive of outcomes in patients with differentiated thyroid cancer (DTC) and pathologically confirmed positive central LNs, in the absence of lateral neck disease or distant metastases at presentation. **Methods** An institutional database of 3664 previously untreated patients with DTC operated between 1985 and 2010 was reviewed. Six hundred patients with central compartment nodal disease on histopathology were identified. Patient demographics, number of positive LNs, size of largest LN, and presence of extracapsular extension (ECS) were recorded for each patient. Variables predictive of recurrence free survival (RFS) were identified using the Kaplan-Meier method. Univariate analysis was carried out by the log rank test and multivariable analysis was carried out using cox proportional hazard model. **Results** The median age of the

cohort was 41 years (range 12-91). The median follow up was 61 months (range 1-330). Neck recurrence occurred in 43 patients. Recurrence occurred in the central neck in 11 patients, lateral neck in 27 patients and both compartments in 5 patients. Factors predictive of neck RFS on univariate analysis were higher T stage ( $p=0.007$ ), increased number of positive LNs, increased LN diameter, and presence of ECS ( $p=0.001$ ). Multivariable analysis of LN characteristics showed that the only statistically significant predictor of neck recurrence was the presence of ECS. Neck RFS at 5 years for patients with and without ECS was 84.7% and 94.5% respectively ( $p=0.001$ ). Conclusion The LN feature most predictive of neck recurrence appears to be the presence of ECS in the positive central neck.

PMID: 25268855

6. [Thyroid](#). 2014 Sep 19. [Epub ahead of print] IF: 4.23

## Diagnosis of Thyroid Follicular Neoplasm: Fine-Needle Aspiration Versus Core-Needle Biopsy.

[Yoon RG](#)<sup>1</sup>, [Baek JH](#), [Lee JH](#), [Choi YJ](#), [Hong MJ](#), [Song DE](#), [Kim JK](#), [Yoon JH](#), [Kim WB](#).

### [Author information](#)

#### Abstract

Background: Although fine-needle aspiration (FNA) is a safe and accurate diagnostic procedure for assessing thyroid nodules, it has limitations in diagnosing follicular neoplasms due to its relatively high false-positive rate. The purpose of the present study was to evaluate the diagnostic role of core-needle biopsy (CNB) for thyroid nodules with follicular neoplasm (FN) in comparison with FNA. Methods: A series of 107 patients (24 men, 83 women; mean age, 47.4 years) from 231 FNAs and 107 patients (29 men, 78 women; mean age, 46.3 years) from 186 CNBs with FN readings, all of whom underwent surgery, from October 2008 to December 2013 were retrospectively analyzed. The false-positive rate, unnecessary surgery rate, and malignancy rate for the FNA and CNB patients according to the final diagnosis following surgery were evaluated. Results: The CNB showed a significantly lower false-positive and unnecessary surgery rate than the FNA (4.7% versus 30.8%, 3.7% versus 26.2%,  $p<0.001$ , respectively). In the FNA group, 33 patients (30.8%) had non-neoplasms, including nodular hyperplasia ( $n=32$ ) and chronic lymphocytic thyroiditis ( $n=1$ ). In the CNB group, 5 patients (4.7%) had non-neoplasms, all of which were nodular hyperplasia. Moreover, the CNB group showed a significantly higher malignancy rate than FNA (57.9% versus 28%,  $p<0.001$ ). Conclusions: CNB showed a significantly lower false-positive rate and a higher malignancy rate than FNA in diagnosing FN. Therefore, CNB could minimize unnecessary surgery and provide diagnostic confidence when managing patients with FN to perform surgery.

PMID: 25089716

7. [J Am Coll Surg](#). 2014 Jul;219(1):152-63. doi: 10.1016/j.jamcollsurg.2014.03.019. Epub 2014 Mar 18. IF: 4.11

## Voice outcomes after total thyroidectomy, partial thyroidectomy, or non-neck surgery using a prospective multifactorial assessment.

[Vicente DA](#)<sup>1</sup>, [Solomon NP](#)<sup>2</sup>, [Avital I](#)<sup>3</sup>, [Henry LR](#)<sup>4</sup>, [Howard RS](#)<sup>5</sup>, [Helou LB](#)<sup>6</sup>, [Coppit GL](#)<sup>7</sup>, [Shriver CD](#)<sup>1</sup>, [Buckenmaier CC](#)<sup>8</sup>, [Libutti SK](#)<sup>9</sup>, [Shaha AR](#)<sup>10</sup>, [Stojadinovic A](#)<sup>11</sup>.

### [Author information](#)

#### Abstract

BACKGROUND:

Voice alteration remains a significant complication of thyroid surgery. We present a comparison of voice outcomes between total thyroidectomy (TT), partial thyroidectomy (PT), and non-neck (NN) surgery using a multifactorial voice-outcomes classification tool.

#### **STUDY DESIGN:**

Patients with normal voice (n = 112) were enrolled between July 2004 and March 2009. The patients underwent TT (n = 54), PT (n = 35), or NN (n = 23) surgery under general endotracheal anesthesia as part of a prospective observational study involving serial multimodality voice evaluation preoperatively, and at 2 weeks, 3 months, and 6 months postoperatively. Patients with adverse voice outcomes were grouped into the negative voice outcomes (NegVO) category, including patients with objective (abnormality on videolaryngostroboscopy and substantial voice dysfunction) and subjective (normal videolaryngostroboscopy but with notable voice impairment) NegVO. Voice outcomes were compared among study groups.

#### **RESULTS:**

Negative voice outcomes occurred in 46% (95% CI, 34-59%) and 14% (95% CI, 6-30%) of TT and PT groups, respectively. No NegVOs were observed after NN surgery. Early NegVOs were more common in the TT group than in the NN or PT groups ( $p < 0.001$ ). Most voice disturbances resolved by 6 months (TT 84%; PT 92%) with no difference in NegVO among all groups ( $p = 0.23$ ). Black race and significant changes in certain voice outcomes measures at the 2-week follow-up visit were identified as predictors of late (3 to 6 months) NegVO.

#### **CONCLUSIONS:**

This comprehensive voice outcomes study revealed that the extent of thyroidectomy impacts voice outcomes in the early postoperative period, and identified risk factors for late NegVO in post-thyroidectomy patients who should be considered for early voice rehabilitation referral.

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PMID: 24745621

[Makale sayfası](#)

8. [Cancer Cytopathol.](#) 2014 Aug;122(8):604-10. doi: 10.1002/cncy.21434. Epub 2014 May 28. **IF:**

4.01

## **What is the malignancy risk for atypia of undetermined significance? Three years' experience at a university hospital in Turkey.**

[Gocun PU](#)<sup>1</sup>, [Karakus E](#), [Bulutay P](#), [Akturk M](#), [Akin M](#), [Poyraz A](#).

#### **Author information**

#### **Abstract**

#### **BACKGROUND:**

The Bethesda System for Reporting Thyroid Cytopathology (BSRTC) provides uniform diagnostic terminology for communication between pathologists and clinicians. Each diagnostic category is associated with a specific risk of malignancy and a recommendation for its management. The indeterminate diagnostic categories of atypia of undetermined significance/follicular lesion of undetermined significance (AUS/FLUS) present a major challenge for both pathologists and clinicians. We report our institution's 3 years' experience with the AUS/FLUS category and follow-up of these patients.

#### **METHODS:**

A retrospective analysis was conducted for all thyroid fine-needle aspirations (FNAs) between July 2010 and July 2013. During this period, 9242 nodules from 4916 patients were reported according to the BSRTC guidelines. We adopted the AUS terminology in our practice to refer to both AUS, and FLUS.

**RESULTS:**

Of the 4916 patients, 347 (7%) were diagnosed as AUS. The malignancy risk for patients who underwent surgical resection after initial diagnosis of AUS was 22.8%, whereas that for patients who underwent a second FNA and surgical resection was 36%. When we included patients with second FNA and without surgery, the malignancy risk was 15.7%.

**CONCLUSIONS:**

The malignancy risk for AUS reported in the present study is consistent with those reported previously and is higher than those anticipated according to the Bethesda System. This supports that a multimodal approach (clinical, radiologic, and cytopathologic) is necessary for the management of thyroid nodules diagnosed as AUS. Therefore, we suggest that the recommendation for repeat FNA following an initial diagnosis of AUS should be based on a multimodal approach for each particular patient.

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**KEYWORDS:**

AUS, Bethesda, FLUS, FNA, malignancy risk, thyroid

PMID: 24890894

[Makale sayfası](#)

9. [Eur Radiol.](#) 2014 Sep 9. [Epub ahead of print] **IF:3.80**

## **Efficacy and safety of radiofrequency ablation for treating locoregional recurrence from papillary thyroid cancer.**

[Lim HK<sup>1</sup>](#), [Baek JH](#), [Lee JH](#), [Kim WB](#), [Kim TY](#), [Shong YK](#), [Hong SJ](#).

**Author information****Abstract****OBJECTIVES:**

To assess the efficacy and safety of ultrasound- (US) guided radiofrequency ablation (RFA) for controlling locoregional recurrent papillary thyroid cancer (PTC) in a large patient population.

**METHODS:**

We included patients who had undergone RFA for locoregional recurrent PTC between September 2008 and April 2012 who fulfilled the following criteria: no metastasis beyond the neck; not more than four tumours; confirmed recurrence by US-guided fine needle aspiration biopsy or thyroglobulin measurement of needle washouts; more than a six-month follow-up period; and surgery not feasible or was refused by the patient.

**RESULTS:**

Sixty-one recurrent tumours in 39 patients were included. The mean follow-up duration was  $26.4 \pm 13.7$  months. Tumour volume decreased significantly from  $0.20 \pm 0.35$  ml before ablation to  $0.02 \pm 0.11$  ml ( $P < .001$ ), with a mean volume reduction ratio of  $95.1 \pm 12.3$  %. Fifty tumours (82.0 %) completely disappeared. Eleven tumours were visible at last follow-up US. The mean serum thyroglobulin level decreased from  $1.21 \pm 1.91$  to  $0.50 \pm 0.80$  ng/ml ( $P = .001$ ). The overall complication rate was 7.7 % (3/39).

**CONCLUSIONS:**

RFA can effectively control locoregional recurrent PTC without life-threatening complications; therefore, RFA may replace "berry picking surgery" in selected patients.

**KEY POINTS:**

• RFA for recurrent PTC achieved a volume reduction ratio of  $95.1 \pm 12.3\%$  • Eighty-two percent (50/61) of recurrent PTC completely disappeared after RFA • The mean serum thyroglobulin level decreased significantly ( $P = .001$ ) after RFA • RFA may replace "berry picking surgery" for recurrent PTC.

PMID: 25199815

10. [Clin Endocrinol \(Oxf\)](#). 2014 Aug 11. doi: 10.1111/cen.12579. [Epub ahead of print] IF: 3.46

## **RAS Mutations in Indeterminate Thyroid Nodules are Predictive of the Follicular Variant of Papillary Thyroid Carcinoma.**

[An JH](#)<sup>1</sup>, [Song KH](#), [Kim SK](#), [Park KS](#), [Yoo YB](#), [Yang JH](#), [Hwang TS](#), [Kim DL](#).

### **Author information**

### **Abstract**

#### **OBJECTIVE:**

RAS mutations are the most common mutations in thyroid nodules with indeterminate cytology by fine-needle aspiration cytology (FNAC), and are mutually exclusive with BRAF mutations. However, the diagnostic utility of RAS mutation analysis is uncertain. We evaluated the diagnostic utility of RAS mutation analysis in indeterminate thyroid nodules.

#### **DESIGN, PATIENTS, AND MEASUREMENTS:**

A total of 155 thyroid nodules (90 benign and 65 indeterminate) negative for BRAF<sup>V600E</sup> mutations on FNAC were analyzed for mutations in RAS codon 61 using pyrosequencing methods. We evaluated diagnostic accuracy of RAS mutation for predicting thyroid malignancy based on the surgical pathologic diagnosis.

#### **RESULTS:**

Among the 65 BRAF<sup>V600E</sup>-negative indeterminate thyroid nodules identified by FNAC, 25 (38.5%) exhibited point mutations in RAS 61 consisting of 18 NRAS 61 (72%), and 7 HRAS 61 (28%) mutations. In contrast, only 5 of 90 (5.6%) nodules with benign cytology had RAS mutations. Only 2 of 25 (8.0%) RAS 61<sup>+</sup> - indeterminate nodules exhibited malignant ultrasonographic features. Of the 15 patients with RAS 61<sup>+</sup> - indeterminate nodules who underwent thyroid surgery, 14 (93.3%) were diagnosed as malignant, including 13 follicular variant of papillary thyroid carcinomas (FVPTC), and one follicular thyroid carcinoma (FTC). The average tumor size was  $1.79 \pm 0.62$  cm. Multifocality was seen in 28.6% of cases, with 7.1% exhibiting extrathyroidal extension; no lymph node or distant metastases were evident. Based on the surgical pathologic diagnosis results, preoperative RAS 61 mutation analysis on FNAC exhibited 93.3% sensitivity, 75.0% specificity, 93.3% positive predictive value, 75.0% negative predictive value, and 89.5% diagnostic accuracy for predicting malignancies.

#### **CONCLUSION:**

Our results suggest that RAS mutation analysis holds great promise as a preoperative diagnostic tool for predicting FVPTC in cytologically and sonographically indeterminate nodules negative for BRAF mutations. This article is protected by copyright. All rights reserved.

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#### **KEYWORDS:**

Fine-needle aspiration cytology.; Follicular variant of papillary thyroid cancer; Indeterminate nodule; RAS mutation

PMID: 25109485

[Makale sayfası](#)

## Does the ultrasound dissector improve parathyroid gland preservation during surgery?

[Pelizzo MR](#)<sup>1</sup>, [Sorgato N](#)<sup>1</sup>, [Isabella Merante Boschini I](#)<sup>1</sup>, [Marzola MC](#)<sup>2</sup>, [Colletti PM](#)<sup>3</sup>, [Rubello D](#)<sup>4</sup>.

### [Author information](#)

#### Abstract

#### BACKGROUND:

The most common complication of thyroid surgery is hypoparathyroidism, usually temporary. Ischemic injury or parathyroid avulsion are the causes of surgical hypoparathyroidism. We assessed the value of an ultrasound scalpel, the Harmonic Focus® (HF), could prevent surgical-related hypoparathyroidism.

#### METHODS:

Patients consecutively undergoing total thyroidectomy using the HF from November 2009 to February 2011 were recruited and their clinical characteristics, type of operation, histology, and postoperative calcium levels (normal range: 2.10-2.55 mMol/l) were recorded. The prevalence of transient and permanent hypocalcemia was calculated for benign vs. malignant diseases and compared with a control group of 147 patients treated surgically in 2005 using manual technique.

#### RESULTS:

139 patients treated by the same surgeon with a total thyroidectomy (41.7% for a malignant disease) were considered. Prevalence of transient hypoparathyroidism (THP) was 45.2% and of definitive hypoparathyroidism (DHP) 1.4%. None of the patients with malignancies were hypocalcemic at 1-year follow-up. In the control group THP was found in 51.7% of cases and DHP in 5.4% ( $p < 0.001$ ).

#### CONCLUSIONS:

Use of the ultrasound scalpel improved the likelihood of the parathyroid glands preservation during thyroid surgery. Paradoxically, the HF appears to be more effective in treating malignant disease, i.e. when central node dissection is required.

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#### KEYWORDS:

Parathyroid gland preservation; Thyroidectomy; Ultrasound dissector

PMID: 24742590 [Makale sayfası](#)

IF:3.07

## Clinicopathological and prognostic analysis of follicular thyroid carcinoma in a single institute over a 15-year period.

[Yu XF](#)<sup>1</sup>, [Wang WB](#)<sup>1</sup>, [Teng XD](#)<sup>2</sup>, [Wang HY](#)<sup>1</sup>, [Chen X](#)<sup>3</sup>, [Wang HH](#)<sup>1</sup>, [Ma ZM](#)<sup>1</sup>, [Fahey TJ 3rd](#)<sup>4</sup>, [Teng LS](#)<sup>5</sup>.

### [Author information](#)

#### Abstract

#### BACKGROUND:

This study was to evaluate the clinicopathological and prognostic features of follicular thyroid carcinoma (FTC) in our institute over a 15-year period.

#### METHODS:

The clinical features, management and outcome of 134 consecutive patients were analyzed according to the time of diagnosis: Group I (1997-2001), Group II (2002-2006), and Group III (2007-2011).

#### **RESULTS:**

As time advanced, the ratio of FTC to papillary thyroid carcinoma decreased from 8.7% in group I to 4.3% in group III ( $p = 0.000$ ). The percentage of patients undergoing total thyroidectomy seemed to be more commonly used in the later periods - from 10.5% in group I to 21.8% in group II and 18.9% in group III. The median diameter of tumors in group I was 4.2 cm and it showed a sharp decrease to 2.8 cm in group II and 2.9 cm in group III respectively. There was a trend towards a higher stage in patients from Group I vs. patients from Groups II and III (stage IV, 15.8% vs. 2.2% and 4.3%,  $p = 0.072$ ). The outcome was improved in terms of disease-free survival (DFS). The 3-year DFS rate improved from 77.8% in group I to 93.7% in group II and 100% in group III ( $p = 0.008$ ).

#### **CONCLUSIONS:**

The clinical features, management and outcome of FTC patients changed over 15-year period. Patients diagnosed after 2001 had a better prognosis. This improvement was probably related to earlier diagnosis with smaller tumor size and presentation at earlier tumor stage.

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#### **KEYWORDS:**

Clinicopathological features; Follicular thyroid carcinoma; Prognosis

PMID: 24613740 [Makale sayfası](#)

13. [Head Neck](#). 2014 Sep 16. doi: 10.1002/hed.23868. [Epub ahead of print] IF: 2.85

## **Risk factors for and occurrence of postoperative cervical haematoma after thyroidsurgery: A single-institution study based on 5156 cases from the past 2 years.**

[Liu J](#)<sup>1</sup>, [Li Z](#), [Liu S](#), [Wang X](#), [Xu Z](#), [Tang P](#).

#### **Author information**

#### **Abstract**

**Background** The occurrence of and risk factors for postoperative cervical haematoma (PCH) remain unclear. **Methods** We conducted a retrospective study of 5156 patients treated at a single institution. **Results** The occurrence of PCH was 0.85% (44/5156). The multivariate analysis showed that male gender, benign pathology, hypertension, and previous thyroid surgery are individual risk factors with odds ratios of 1.906, 2.004, 7.962, and 4.407, respectively. The majority (88.7%) of haematomas occurred within 12 h after surgery. Obvious bleeding points were detected in 28 cases (73.6%) during re-exploration, surface of the strap muscle, superior thyroid vessel and end of the recurrent laryngeal nerve were the most frequent bleeding sources. **Conclusions** Haematoma often occurs within 12 h after thyroid surgery. Hypertension, previous thyroid surgery, male gender, and benign pathology may increase the risk of haematoma. *Head Neck*, 2014.

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#### **KEYWORDS:**

complication; haematoma; neck dissection; risk factor; thyroid surgery

PMID: 25225123 [Makale sayfası](#)

14. [Head Neck](#). 2014 Sep 12. doi: 10.1002/hed.23857. [Epub ahead of print] IF: 2.85

## Management Of The Compromised Airway And The Role Of Tracheostomy In Anaplastic Thyroid Carcinoma.

[Mani N<sup>1</sup>](#), [McNamara K](#), [Lowe N](#), [Loughran S](#), [Yap BK](#).

### [Author information](#)

#### Abstract

**Introduction** Anaplastic thyroid carcinoma (ATC) is an uncommon thyroid malignancy with a poor prognosis. American Thyroid Association guidelines acknowledge the complexity of airway management in these patients. We studied our local experience with the aim of providing guidance in airway management in ATC. **Methods** Patients with histologically confirmed ATC from January 2004 - December 2011 were identified from our institutional database. The data was retrospectively analyzed using hospital case notes. **Results** 26 patients were identified with ATC, 25 of which died from the disease. 5 out of 26 patients (19%) had stridor at presentation. A further 6 out of 26 (23%) developed stridor during or soon after radiotherapy. 9 patients (36%) died from airway obstruction. **Conclusion** Tracheotomy can facilitate completion of palliative treatment in those patients with ATC and stridor. Given the short life expectancy of these patients, a balanced decision must be made regarding the role and timing of tracheotomy. *Head Neck*, 2014.

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#### KEYWORDS:

Airway obstruction; Anaplastic thyroid cancer; Stridor; tracheostomy

PMID: 25215461 [Makale sayfası](#)

15. [Endocrine](#). 2014 Jul 10. [Epub ahead of print] IF:2.77

## Nodal metastasis and recurrence in papillary thyroid microcarcinoma.

[Pisanu A<sup>1</sup>](#), [Saba A](#), [Podda M](#), [Reccia I](#), [Uccheddu A](#).

### [Author information](#)

#### Abstract

Despite the majority of papillary thyroid microcarcinoma (PTMC) patients has benign clinical courses, some PTMCs have a clinical presentation similar to conventional papillary thyroid carcinoma (PTC). The aim of this study was to identify risk factors for lymph node metastasis at presentation and prognostic parameters influencing nodal recurrence in PTMC. From January 1998 to October 2013, 556 consecutive patients had a diagnosis of differentiated thyroid carcinoma in our surgical department. A total of 219 (39.4 %) patients who had a pathological diagnosis of PTMC represented the cohort for the current study. We carried out a retrospective cohort study to compare 24 PTMC patients with lymph node metastasis at diagnosis (N1) and 195 PTMC patients without lymph node involvement (N0). The comparison between groups involved evaluation of patients and tumor characteristics. A diameter >8 mm, the presence of multifocality, and extrathyroid invasion (T3) were independent risk factors for nodal involvement at presentation. The presence of T3 was the only independent prognostic parameter influencing nodal recurrence. Prognostic factors for N1 at presentation and for recurrence are pathological parameters, thus it is not possible before surgery to detect PTMC patients who are at risk. However, we believe that a full treatment protocol should be also indicated in the case of PTMC according to risk stratification and cancer stage as for the conventional counterpart of PTC.

PMID: 25007850

16. [Pediatr Blood Cancer](#). 2014 Jul;61(7):1168-72. doi: 10.1002/pbc.24935. Epub 2014 Mar 27. IF:

2.68

## **BRAF V600E mutational status in pediatric thyroid cancer.**

[Henke LE](#)<sup>1</sup>, [Perkins SM](#), [Pfeifer JD](#), [Ma C](#), [Chen Y](#), [DeWees T](#), [Grigsby PW](#).

### **Author information**

#### **Abstract**

##### **BACKGROUND:**

Clinical outcome of papillary thyroid carcinoma (PTC) in children differs significantly from that of adults. There is no clear explanation of this difference although previous studies have demonstrated a lower prevalence of the BRAF(V600E) mutation in PTC of children. However, data are limited due to the rarity of this diagnosis. BRAF(V600E) mutation prevalence and its relationship with outcome in pediatric PTC remain unclear.

##### **PROCEDURE:**

BRAF(V600E) mutational status was determined in 27 PTC patients less than 22 years of age using restriction fragment length polymorphism (RFLP) analysis. The relationship between BRAF(V600E) mutation status, patient and tumor characteristics as well as progression-free survival (PFS) were analyzed.

##### **RESULTS:**

BRAF(V600E) was present in 63% of patients and occurred more often in male patients versus females ( $P = 0.033$ ). Presence of the mutation did not correlate with any difference in extent of disease at diagnosis, tumor size, capsular invasion, vascular invasion, soft tissue invasion, or margin status. At 10 years, PFS for BRAF(V600E) positive versus negative patients was 55.5% versus 70.0%, respectively ( $P = 0.48$ ). Overall survival was 100% and median follow-up was 13.9 years.

##### **CONCLUSIONS:**

This study of pediatric PTC demonstrates that BRAF(V600E) mutations occur in children at a rate comparable to adults. We found a correlation of BRAF(V600E) with the male gender, but no evidence that the mutation correlates with more extensive or aggressive disease. This analysis suggests that differences in disease course of PTC in children versus adults are not strongly dependent upon the presence of the BRAF(V600E) mutation.

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##### **KEYWORDS:**

BRAF V600E; BRAF mutation; pediatric BRAF mutation; pediatric thyroid carcinoma

PMID: 24677749 [Makale sayfası](#)

17. [Am J Surg](#). 2014 Sep;208(3):412-8. doi: 10.1016/j.amjsurg.2013.10.032. Epub 2014 Feb 10. IF:

2.39

## **Risk factors for central neck lymph node metastasis of clinically noninvasive, node-negative papillary thyroid microcarcinoma.**

[Park JP](#)<sup>1</sup>, [Roh JL](#)<sup>2</sup>, [Lee JH](#)<sup>3</sup>, [Baek JH](#)<sup>3</sup>, [Gong G](#)<sup>4</sup>, [Cho KJ](#)<sup>4</sup>, [Choi SH](#)<sup>1</sup>, [Nam SY](#)<sup>1</sup>, [Kim SY](#)<sup>5</sup>.

### **Author information**

#### **Abstract**

##### **BACKGROUND:**

To examine predictive factors for subclinical central neck lymph node metastases (LNM) of papillary thyroid microcarcinoma (PTMC).

## **METHODS:**

The clinical and pathological findings of 287 patients with clinically noninvasive, node-negative, solitary papillary thyroid carcinoma (PTC), who had undergone thyroidectomy plus central compartment neck dissection and showed pathologically confirmed nodal metastases, were analyzed. Predictive risk factors for central LNM were quantified.

## **RESULTS:**

Pathologic LNM was identified in 63 (32.6%) PTMC patients and 48 (51.0%) PTC patients (tumor size >1 cm; P = .003). Tumor size (>.7 cm; P = .011), multifocality (P = .010), and microscopic extracapsular extension (P = .050) were significant variables predictive of central LNM from PTMC in univariate analysis. Tumor size (odds ratio 2.28, 95% confidence interval 1.19 to 4.38; P = .014) and multifocality (odds ratio 2.38, 95% confidence interval 1.14 to 4.93; P = .020) were independent variables predictive of central LNM in multivariate analysis.

## **CONCLUSIONS:**

Cervical LNM is highly prevalent in clinically noninvasive, node-negative PTC. Central neck LNM is associated with larger tumor size and multifocality of PTMC.

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## **KEYWORDS:**

Central neck; Lymph node dissection; Papillary thyroid carcinoma; Predictive factors; Subclinical lymph node metastasis

PMID: 24602323 [Makale sayfası](#)

18. [J Thyroid Res.](#) 2014;2014:818134. doi: 10.1155/2014/818134. Epub 2014 Sep 10. IF: 2.22

## **Papillary thyroid cancer, macrofollicular variant: the follow-up and analysis of prognosis of 5 patients.**

[Erol V<sup>1</sup>](#), [Makay O<sup>1</sup>](#), [Ertan Y<sup>2</sup>](#), [İçöz G<sup>1</sup>](#), [Akyıldız M<sup>1</sup>](#), [Yılmaz M<sup>1</sup>](#).

### **Author information**

#### **Abstract**

**Objective.** The main aim of this study was to comparatively analyze the recurrence and prognosis of this rare variant with the literature by analyzing the follow-up data of 5 patients diagnosed with papillary cancer macrofollicular variant. **Methods.** The demographic data, radiological and pathological data, and prognostic data of 5 patients who underwent surgery for thyroid cancer and were diagnosed with papillary cancer macrofollicular variant pathologically were retrospectively analyzed. **Results.** The mean age of patients whose mean follow-up period was determined as 7.2 years was 41, and the male/female ratio was 4/1. All patients underwent total thyroidectomy. The pathology report of 2 patients (40%) revealed macrofollicular variant of papillary microcancer, and 3 patients papillary cancer macrofollicular variant. Central dissection was performed in one patient (20%) due to macroscopic pathologic lymph node and 4 metastatic lymph nodes were reported. Also, locoregional recurrence was present in 3 out of 5 patients (60%). **Conclusions.** Although an impression of earlier and increased risk of recurrence in papillary carcinoma with macrofollicular variant has been documented, more studies with extensive follow-up times and large populations are required.

PMID: 25295215 [Makale sayfası](#)

## Endoscopic thyroid surgery via a breast approach: a single institution's experiences.

[Kim YS](#), [Joo KH](#), [Park SC](#), [Kim KH](#), [Ahn CH](#), [Kim JS](#)<sup>1</sup>.

[Author information](#)

**Abstract**

### BACKGROUND:

Thyroid carcinoma in young women is rapidly increasing, and cosmesis plays an important role in thyroid operations. Various endoscopic thyroid surgery approaches have been performed, and their application has recently been extended. We performed endoscopic thyroid surgeries via a breast approach since 1999. Herein, we evaluate the safety of this approach and identify the outcomes for differentiated thyroid carcinoma.

### METHODS:

A total of 452 consecutive patients with thyroid and parathyroid disease underwent endoscopic thyroidectomy via a breast approach at Uijeongbu St. Mary's Hospital between November 1999 and December 2012. The inclusion criteria for endoscopic thyroidectomy included a benign tumour less than 4 cm in diameter, malignant thyroid nodules less than 2 cm, and no evidence of lymph node metastasis or local invasion. We analysed the clinicopathologic data and surgical factors of this approach.

### RESULTS:

The mean age of the patients was  $38.4 \pm 10.6$  years (range 11-73 years). The mean tumour size was  $2.12 \pm 1.17$  cm (range 0.1-4 cm). The final tumour pathologies included papillary carcinoma (n = 120), follicular carcinoma (n = 8), nodular hyperplasia (n = 266), follicular adenoma (n = 43), and Hürthle cell adenoma (n = 4). The mean postoperative hospital stay was  $3.8 \pm 1.3$  days (range 1-17 days). Temporary and permanent hypoparathyroidism requiring calcium and vitamin D supplementation developed in 32 (7.1%) and 4 (0.9%) patients, respectively. Transient vocal cord paresis occurred in 20 (4.4%) patients.

### CONCLUSIONS:

For patients with benign and low-risk malignant thyroid disease, endoscopic thyroidectomy via a breast approach is a safe, feasible, and minimally invasive surgical method with minimal complications.

PMID: 25095889

[Makale sayfası](#)

## Clinicopathologic Characteristics and Surgical Outcomes of Elderly Patients with Thyroid Cancer.

[Park HS](#)<sup>1</sup>, [Jung CK](#)<sup>2</sup>, [Lee SH](#)<sup>2</sup>, [Chae BJ](#)<sup>3</sup>, [Lim DJ](#)<sup>4</sup>, [Park WC](#)<sup>3</sup>, [Song BJ](#)<sup>3</sup>, [Kim JS](#)<sup>3</sup>, [Jung SS](#)<sup>3</sup>, [Bae JS](#)<sup>5</sup>.

[Author information](#)

**Abstract**

### OBJECTIVE:

Age is one of the important prognostic factors in thyroid cancer, and old age is generally related to higher rate of post-operative morbidity and mortality. The study analyzed the characteristics of thyroid cancer in elderly patients compared with those in younger patients.

### METHODS:

Patients who underwent surgery between 1992 and 2011 were enrolled. The patients were divided into those  $\geq 70$  years of age (older group) and  $< 70$  years of age (younger group). Data including clinicopathological features and post-operative complications was analyzed. Molecular markers including

Galectin-3, Cyclooxygenase-2, bcl-2, Cyclin D1, Epidermal growth factor receptor and BRAF mutation were reviewed. Survival analyses including recurrence-free survival and overall survival were examined.

#### **RESULTS:**

Of 1867 patients, 98 were age-classified in older group and the remaining 1769 were in younger group. Older group displayed larger tumor size, and increased extrathyroidal extension, vascular invasion and neural invasion than younger group, and all were statistically significant. Molecular marker analyses revealed no significant differences between the groups. Post-operative complication rates were not significantly different between the older and younger groups in both univariate and multivariate analyses. Elderly patients showed poor recurrence-free survival and overall survival than younger patients in univariate analyses. However, age  $\geq 70$  years was not associated with poor recurrence-free survival after adjustment of confounding factors.

#### **CONCLUSION:**

Molecular features of elderly patients may be similar with younger patients. Even though aggravated clinicopathological features of thyroid carcinoma are more prevalent in elderly patients, thyroid surgery in elderly patients can be performed with favorable surgical and oncological outcomes.

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#### **KEYWORDS:**

carcinoma; elderly; molecular markers; neoplasms; outcomes; prognosis; surgery; survival; thyroid

PMID: 25205673

21. [Int J Endocrinol](#). 2014;2014:385787. doi: 10.1155/2014/385787. Epub 2014 Aug 21. IF: 1.78

## **Clinical Characteristics Related to Central Lymph Node Metastasis in cN0 Papillary Thyroid Carcinoma: A Retrospective Study of 916 Patients.**

[Jiang LH](#)<sup>1</sup>, [Chen C](#)<sup>2</sup>, [Tan Z](#)<sup>2</sup>, [Lu XX](#)<sup>1</sup>, [Hu SS](#)<sup>1</sup>, [Wang QL](#)<sup>1</sup>, [Hou XX](#)<sup>1</sup>, [Cao J](#)<sup>1</sup>, [Ge MH](#)<sup>2</sup>.

#### **Author information**

#### **Abstract**

Background. Papillary thyroid carcinoma (PTC) is a form of thyroid cancer with high risk of cervical lymph node metastasis. Aim. The aim of this study was to investigate the incidence and the predictive factors for occult ipsilateral central lymph node (CLN) metastasis in the patients with papillary thyroid carcinoma. Methods. A total of 916 PTC patients (1017 lesions) undergoing central lymph node dissection in our hospital from 2005 to 2011 were enrolled. The relationship between CLN metastasis and clinical factors such as gender, age, tumor size, tumor number, capsule invasion, and tumor location was analyzed. Results. Occult CLN metastasis was observed in 52.41% (533/1017) of PTC lesions, respectively. Multivariate analysis showed that age  $\leq 35$  years, tumor size  $> 1.5$  cm, present capsule invasion/extracapsular invasion, and tumor located in upper/middle pole/whole lobe were risk factors of CLN metastasis. Conclusions. Tumor located in upper/middle pole/whole lobe, less than 35 years old, tumor size  $> 1.5$  cm, and present capsule invasion/extracapsular invasion were risk factors of CLN metastasis. We recommend performing ipsilateral prophylactic CLN dissection in cN0 PTC patients.

PMID: 25214837

[Makale sayfası](#)

## The role of FDG-PET/CT in differentiated thyroid cancer patients with negative iodine-131 whole-body scan and elevated anti-Tg level.

[Asa S<sup>1</sup>](#), [Aksoy SY](#), [Vatankulu B](#), [Aliyev A](#), [Uslu L](#), [Ozhan M](#), [Sager S](#), [Halac M](#), [Sonmezoglu K](#).

### Author information

### Abstract

#### AIM:

In the follow-up of differentiated thyroid cancer (DTC) after a successful total-near total thyroidectomy and I-131 ablation therapy, anti-thyroglobulin antibodies (anti-Tg) may be persistently or progressively increased in the patients with an undetectable serum thyroglobulin (Tg) level. In these cases, further investigation was performed to search for recurrence/metastases. The aim of our study was clarifying the role of FDG-PET/CT in detecting recurrence/metastasis in patients with DTC with negative serum Tg and elevated anti-Tg level.

#### MATERIALS AND METHODS:

A total of 40 patients (32 female, 8 male; mean age: 43.15 years (22-65); mean age at diagnosis: 39.08 (16-64)) with DTC who had undetectable serum Tg and elevated anti-Tg level after a successful initial therapy were included in the study. All of the patients had serum anti-Tg of >40 IU/ml and underwent FDG-PET/CT to search for recurrence/metastasis.

#### RESULTS:

Twenty patients (50 %) had recurrence/metastasis on FDG-PET/CT while the other 20 had no pathologic findings. Of the 20 patients who had positive FDG-PET/CT, 12 had a histopathological final diagnosis of which 11 were true positive (TP) and 1 was false positive (FP). On the other hand, 16 of the 40 patients had a histopathological final diagnosis of which 11/16 had TP, 1/16 FP, 3/16 false negative (FN) and 1/16 true negative (TN) findings by PET/CT. The final diagnosis was made by clinical follow-up in the remaining 24 patients. Of these, 8 patients were PET positive, and in 1 (12.5 %) of 8 patients a decrease in serum anti-Tg level, in 2 (25 %) patients a saw-toothed pattern and in 5 (62.5 %) a progressive increase in the serum anti-Tg level were noted during the follow-up. Of the 16 of 24 patients who were diagnosed by clinical follow-up, in 8 a (50 %) decrease in serum anti-Tg level, in 6 (37.5 %) a saw-toothed pattern, and in 2 (12.5 %) a progressively increased anti-Tg level was seen. Of the 40 patients, 14 (35 %) had a diagnosis of recurrence/metastasis finally, with PET/CT detecting 11 (78.6 %) of them.

#### CONCLUSION:

The value of a persistently or progressively increased serum anti-Tg level in the follow-up of DTC in the prediction of recurrence/metastasis is controversial. However, it is reported that FDG-PET can be useful in the detection of recurrence/metastasis. We conclude from the available data that PET/CT can be effectively used in the detection of recurrence/metastasis in the follow-up of patients with DTC and negative serum Tg and a persistently/progressively increased anti-Tg level. Besides, one half of the patients were FDG negative, meaning that further studies are needed to assess the prognostic-clinical value of PET negativity.

## **Predictive role of nontumoral sodium iodide symporter activity and preoperativethyroid characteristics in remission process of thyroid cancer patients.**

[Yildirim-Poyraz N<sup>1</sup>](#), [Yazgan A](#), [Ozdemir E](#), [Gozalan A](#), [Keskin M](#), [Ersoy R](#), [Turkolmez S](#), [Cakir B](#).  
[Author information](#)

### **Abstract**

#### **OBJECTIVE:**

The target of radioiodine ablation therapy (RIAT) after complete tumor removal is the nontumoral remnant tissue. We aimed to evaluate sodium iodide symporter (NIS) expression in nontumoral thyroid tissue in differentiated thyroid cancer (DTC) patients who have complete but delayed structural response (DSR) to RIAT after surgery. Preoperative thyroid characteristics such as volume and nontumoral histology were also investigated for both DSR and its control group as potential predictors of insufficient NIS activity in this study.

#### **METHODS:**

Total of 600 patients with postoperative remnant thyroid tissue and who were in remission after RIAT spontaneously, were included in the study. Patients with positive diagnostic whole body scan (DxWBS) with thyroidbed uptake and stimulated serum Tg level <2 ng/mL at first year visit after initial therapy were defined as DSR group. Immunohistochemical staining of NIS protein was performed on the nontumoral tissue sections from surgery and semi quantified in terms of density and intensity. DSR and its control group were also compared in terms of NIS expression, radioiodine (RAI) uptake on post-therapy scan and preoperative thyroid characteristics.

#### **RESULTS:**

When compared with the control group, the density and intensity of NIS expression as well as the intensity of RAI uptake were significantly lower in DSR group ( $p = 0.001$ ). There were also significant differences between groups regarding preoperative thyroid characteristics; i.e. preoperative thyroid volumes were significantly higher and the presence of concurrent benign thyroid disease was significantly more common in DSR group ( $p = 0.035$ ,  $p = 0.001$ ). Hashimoto thyroiditis was 8.59 times higher (95% CI; 2.31-31.96) and multinodular goiter was 7.50 times higher (95% CI; 1.88-29.91) among DSR group when compared with the control group.

#### **CONCLUSIONS:**

Our findings suggest that insufficient NIS activity in nontumoral thyroid tissue associates with DSR in DTC patients who have postoperative remnant tissue. Preoperative thyroid characteristics such as volume and concomitant benign thyroid disease may have an important role in predicting the complete response time to RIAT in these patients.

PMID: 24823701 [Makale sayfası](#)

## **Preoperative serum thyroglobulin concentration as a predictive factor of malignancy in small follicular and Hürthle cell neoplasms of the thyroid gland.**

[Petric R](#), [Besic H](#), [Besic N<sup>1</sup>](#).

[Author information](#)

### **Abstract**

#### **BACKGROUND:**

Cytologic examination of a fine-needle aspiration biopsy specimen cannot distinguish between benign and malignant follicular or Hürthle cell neoplasms. Serum thyroglobulin (Tg) concentrations are higher in follicular and Hürthle cell carcinomas than in benign follicular or Hürthle cell tumors, but preoperative measurement of Tg is not recommended for initial evaluation of thyroid nodules. The aim of this study was to find out whether preoperative serum Tg concentration is a predictive factor of malignant disease in patients with a follicular or Hürthle cell neoplasm with a diameter of 2 cm or less.

#### **METHODS:**

From 1988 to 2013, a total of 244 patients (214 female, 30 male, age range 9 to 82 years, median age 52 years) had a surgical procedure at our institute because of follicular or Hürthle cell neoplasms with a tumor diameter of 2 cm or less. In these patients a preoperative concentration of Tg was determined and Tg-autoantibodies were negative. The risk factors for malignancy were identified by a chi-square test and multivariate logistic regression.

#### **RESULTS:**

The histopathologic diagnoses were carcinoma, adenoma, and benign goiter in 62 (25.5%), 115 (47%), and 67 (27.5%) patients, respectively. The median preoperative Tg concentration in benign tumors, papillary carcinomas, follicular carcinomas, and Hürthle cell carcinomas was 41, 87, 72, and 106 ng/ml ( $P = 0.05$ ), respectively. The predictive factors for carcinoma shown by the chi-square test were: sex, thyroid volume, and preoperative Tg concentration. The independent predictors of malignancy as shown by multivariate logistic regression were: male sex (odds ratio, 2.57;  $P = 0.02$ ), and a Tg concentration of more than 80 ng/ml (odds ratio, 2.35;  $P = 0.005$ ).

#### **CONCLUSION:**

The independent predictors of malignancy in follicular or Hürthle cell neoplasms are sex and preoperative Tg concentration.

PMID: 25213012

[Makale sayfası](#)

25. [World J Surg Oncol](#). 2014 Aug 28;12:273. doi: 10.1186/1477-7819-12-273. IF: 1.37

## **Ultrasonographic findings relating to lymph node metastasis in single micropapillary thyroid cancer.**

[Lee YS](#), [Lim YS](#), [Lee JC](#), [Wang SG](#), [Son SM](#), [Kim SS](#), [Kim IJ](#), [Lee BJ](#)<sup>1</sup>.

### **Author information**

#### **Abstract**

#### **BACKGROUND:**

In thyroid cancer, preoperative ultrasonography (US) is performed to detect the primary tumor and lymph node metastasis (LNM), which are related to prognosis. This study examined the relationships between specific US findings and LNM in micropapillary thyroid cancer (MPTC).

#### **METHODS:**

Data on 220 patients with solitary MPTC who underwent total thyroidectomy and neck dissection between 2008 and 2009 were evaluated retrospectively. We classified the US findings according to the nature, shape, echogenicity, extent, margin, and calcification of the primary tumor and evaluated the correlations between these findings and those of LNM.

#### **RESULTS:**

Hypoechoogenicity (odds ratio = 2.331,  $P = 0.025$ ) and marked hypoechoogenicity (OR = 4.032,  $P = 0.016$ ) of MPTC were risk factors for central LNM. All of the patients with lateral cervical LNM showed hypoechoogenicity or marked hypoechoogenicity. Hypoechoogenicity (odds ratio = 5.349,  $P = 0.047$ ) and other types of calcification (odds ratio = 2.495,  $P = 0.010$ ) were significant risk factors for lateral cervical LNM.

#### **CONCLUSIONS:**

Specific sonographic findings (hypoechoogenicity or marked hypoechoogenicity, and calcification) suggest LNM.

PMID: 25169012 [Makale sayfası](#)

26. [Am Surg](#). 2014 Aug;80(8):811-6. IF: 0.89

## **False-negative results with the Bethesda System of reporting thyroid cytopathology: predictors of malignancy in thyroid nodules classified as benign by cytopathologic evaluation.**

[Richmond BK](#)<sup>1</sup>, [Judhan R](#), [Chong B](#), [Ubert A](#), [AbuRahma Z](#), [Mangano W](#), [Thompson S](#).

### **Author information**

### **Abstract**

The benign category of the Bethesda System for reporting thyroid cytopathology (BSRTC) predicts an incidence of malignancy from zero to three per cent. However, recent series report higher rates of malignancy ranging from eight to 14 per cent. Surgery is often performed for reasons other than their fine needle aspiration biopsy (FNAB) such as symptoms, nodule enlargement, or worrisome imaging. We hypothesized that an analysis of patients who underwent thyroidectomy despite a benign FNAB would identify predictors of malignancy, an area not currently addressed by American Thyroid Association guidelines. We performed a retrospective analysis of patients with benign FNAB results who underwent thyroidectomy from October 2007 to October 2012. Data collected included symptoms, imaging findings, FNAB results, and operative and histopathology results, all of which were obtained by chart review. Findings were compared between patients with and without a diagnosis of malignancy. Statistical significance was set as  $P < 0.05$ . Of 3839 FNABs, 2838 were benign. Of these, 180 underwent surgery for indications other than the FNAB category. Twenty-four (13.4%) malignancies were identified: 12 (6.7%) incidental microcarcinomas and 12 (6.7%) significant cancers (papillary greater than 1.0 cm, any nonpapillary histology). No patient's symptoms or signs reached significance as a predictor of malignancy. Suspicious ultrasound appearance was significantly associated with an underlying carcinoma ( $P = 0.004$ ). The false-negative result with benign FNAB is higher in surgical series than suggested by the BSRTC. Patients with tolerable symptoms may be observed in the face of a benign FNAB. Additionally, despite a benign FNAB, recommendations for closer follow-up or surgical intervention are warranted if the ultrasound appearance is suspicious.

PMID: 25105404

27. [Ann R Coll Surg Engl](#). 2014 Sep;96(6):466-74. doi: 10.1308/003588414X13946184902884. IF:0.88

## **A cross-specialty survey to assess the application of risk stratified surgery for differentiated thyroid cancer in the UK.**

[Craig W](#)<sup>1</sup>, [Ramsay C](#), [Fielding S](#), [Krukowski Zh](#).

### **Author information**

### **Abstract**

#### **INTRODUCTION:**

This study describes variability of treatment for differentiated thyroid cancer among thyroid surgeons, in the context of changing patterns of thyroid surgery in the UK.

#### **METHODS:**

Hospital Episodes Statistics on thyroid operations between 1997 and 2012 were obtained for England. A survey comprising six scenarios of varying 'risk' was developed. Patient/tumour information was provided,

with five risk stratified or non-risk stratified treatment options. The survey was distributed to UK surgical associations. Respondent demographics were categorised and responses analysed by assigned risk stratified preference.

#### **RESULTS:**

From 1997 to 2012, the Hospital Episode Statistics data indicated there was a 55% increase in the annual number of thyroidectomies with a fivefold increase in otolaryngology procedures and a tripling of cancer operations. Of the surgical association members surveyed, 264 respondents reported a thyroid surgery practice. Management varied across and within the six scenarios, and was not related consistently to the level of risk. Associations were demonstrated between overall risk stratified preference and higher volume practice (>25 thyroidectomies per year) ( $p=0.011$ ), fewer years of consultant practice ( $p=0.017$ ) and multidisciplinary team participation ( $p=0.037$ ). Logistic regression revealed fewer years of consultant practice (odds ratio [OR]: 0.96/year in practice, 95% confidence interval [CI]: 0.922-0.997,  $p=0.036$ ) and caseload of >25/year (OR 1.92, 95% CI: 1.044-3.522,  $p=0.036$ ) as independent predictors of risk stratified preference.

#### **CONCLUSIONS:**

There is a substantial contribution to thyroid surgery in the UK by otolaryngology surgeons. Adjusting management according to established case-based risk stratification is not widely applied. Higher caseload was associated with a preference for management tailored to individual risk.

PMID: 25198981 [Makale sayfası](#)

28. [J Craniofac Surg](#). 2014 Sep;25(5):1797-800. doi: 10.1097/SCS.0000000000000950. IF: 0.77

## **Surgical approach and outcomes for revision surgery of the central neck compartment.**

[Cayonu M](#)<sup>1</sup>, [Acar A](#), [Eryilmaz A](#), [Oguz O](#).

#### **Author information**

#### **Abstract**

Revision surgery of the central neck compartment is still a controversial subject, and data are scarce in the literature regarding surgical approaches and outcomes. This might be a result of the small number of patients in need of revision of the central neck compartment. Therefore, the purpose of this study was to document the approach and outcomes for revision surgery of the central neck compartment performed in our clinic. The files of patients who had undergone revision surgery of the central neck compartment in the Clinic of Otorhinolaryngology, Ankara Numune Training and Research Hospital, between 2007 and 2013, were evaluated. The subjects included 61 patients who had previously undergone surgical intervention in the central neck compartment and had then undergone bilateral lymph node dissection covering at least levels 6 and 7 in our clinic. Patient ages ranged between 36 and 63 years (mean, 47.2 y; SD = 8.3 y). The complications seen after revision surgery were temporary recurrent laryngeal nerve palsy in 4 patients (6.6%), temporary hypocalcemia in 8 patients (13.1%), and permanent hypocalcemia in 3 patients (4.9%). No permanent recurrent laryngeal nerve damage, wound infection, or hematoma was encountered. Meticulous surgical dissection with identification of the recurrent laryngeal nerve and the implantation site of the parathyroid glands may safeguard against complications. Reoperative surgery in the central compartment of the neck allows the removal of recurrent/persistent disease and has acceptable morbidity.

PMID: 25098577 [Makale sayfası](#)

# TİROİD

## Vaka sunumu

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1. [Eur J Endocrinol](#). 2014 Jul;171(1):31-6. doi: 10.1530/EJE-14-0147. Epub 2014 Apr 17. IF:3.64

### **Serum negative autoimmune thyroiditis displays a milder clinical picture compared with classic Hashimoto's thyroiditis.**

[Rotondi M](#)<sup>1</sup>, [de Martinis L](#)<sup>1</sup>, [Coperchini F](#)<sup>1</sup>, [Pignatti P](#)<sup>1</sup>, [Pirali B](#)<sup>1</sup>, [Ghilotti S](#)<sup>1</sup>, [Fonte R](#)<sup>1</sup>, [Magri F](#)<sup>1</sup>, [Chiovato L](#)<sup>2</sup>.

#### **Author information**

#### **Abstract**

##### **BACKGROUND:**

Despite high sensitivity of current assays for autoantibodies to thyroperoxidase (TPO) and to thyroglobulin (Tg), some hypothyroid patients still present with negative tests for circulating anti-thyroid Abs. These patients usually referred to as having seronegative autoimmune thyroiditis (seronegative CAT) have not been characterized, and definite proof that their clinical phenotype is similar to that of patients with classic chronic autoimmune thyroiditis (CAT) is lacking.

##### **OBJECTIVE:**

To compare the clinical phenotype of seronegative CAT (SN-CAT) and CAT as diagnosed according to a raised serum level of TSH with negative and positive tests for anti-thyroid Abs respectively.

##### **METHODS:**

A case-control retrospective study enrolling 55 patients with SN-CAT and 110 patients with CAT was performed. Serum free triiodothyronine (FT3), free thyroxine (FT4), TSH, Tg Abs, and TPO Abs were measured in all patients.

##### **RESULTS:**

Patients with SN-CAT displayed significantly lower mean levels of TSH ( $6.6 \pm 3.4$  vs  $10.2 \pm 9.8 \mu\text{U/ml}$ ;  $P=0.009$ ), higher mean FT4 levels ( $1.1 \pm 0.2$  vs  $0.9 \pm 0.2 \text{ ng/dl}$ ;  $P=0.0002$ ), and similar FT3 levels when compared with CAT patients. Mean thyroid volume was significantly greater in patients with CAT when compared with SN-CAT patients ( $11.2 \pm 6.5$  vs  $8.1 \pm 3.7 \text{ ml}$ ;  $P=0.001$ ). Logistic regression demonstrated that FT4 ( $0.123$  ( $0.019$ - $0.775$ ); ( $P=0.026$ )) and thyroid volume ( $1.243$  ( $1.108$ - $1.394$ ); ( $P=0.0002$ )) were significantly and independently related to the diagnosis (CAT/SN-CAT). Patients with SN-CAT had a similar prevalence of thyroid nodules and female gender but a lower prevalence of overt hypothyroidism ( $5.4$  vs  $20.9\%$ ;  $P=0.012$ ) as opposed to patients with CAT.

##### **CONCLUSIONS:**

These results suggest an autoimmune etiology of SN-CAT, which, however, seems to have a milder clinical course when compared with CAT.

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PMID: 24743395 [Makale sayfası](#)

2. [JAMA Otolaryngol Head Neck Surg.](#) 2014 Jul;140(7):664-6. doi: 10.1001/jamaoto.2014.806. IF: 1.68

## **Histoplasmosis mimicking malignant adenopathy during diagnostic thyroid lobectomy.**

[Frank PN](#)<sup>1</sup>, [Palma Diaz MF](#)<sup>2</sup>, [Uslan DZ](#)<sup>3</sup>, [Yeh MW](#)<sup>1</sup>.

### **Author information**

#### **Abstract**

##### **IMPORTANCE:**

Benign granulomatous disease may mimic malignant disease in the evaluation of mediastinal or pulmonary lesions. However, histoplasmosis as a cause of cervical lymphadenopathy is relatively rare. We report the first case of Histoplasma infection mimicking malignant adenopathy discovered during diagnostic thyroidlobectomy.

##### **OBSERVATIONS:**

A 2.5-cm, calcified, right paratracheal lymph node intimately involving the recurrent laryngeal nerve was discovered during lobectomy for a follicular lesion of undetermined significance with a positive NRAS mutation. Although metastatic thyroid cancer was the most probable diagnosis, results of gross inspection of the bisected thyroid nodule suggested a benign process. Partial removal of the node, sparing the nerve, established the diagnosis of Histoplasma capsulatum infection.

##### **CONCLUSIONS AND RELEVANCE:**

Histoplasmosis is a rare cause of cervical adenopathy that should be considered in cases in which a discordance arises between the malignant gross appearance of the adenopathy and the benign gross appearance of an associated thyroid nodule.

PMID: 24875853 [Makale sayfası](#)

3. [J Pediatr Hematol Oncol.](#) 2014 Jul;36(5):407-9. doi: 10.1097/MPH.000000000000113. IF:1.11

## **An adolescent with a rare midline neck tumor: thyroid carcinoma in a thyroglossal duct cyst.**

[Vassilatou E](#)<sup>1</sup>, [Proikas K](#), [Margari N](#), [Papadimitriou N](#), [Hadjidakis D](#), [Dimitriadis G](#).

### **Author information**

#### **Abstract**

Occurrence of malignancy in a thyroglossal duct cyst (TDC) in children and adolescents is very rare, preoperative diagnosis is a challenge, and appropriate management is still debated. We report a 19-year-old male patient referred for a midline neck mass diagnosed as an atypical TDC after initial and subsequent investigations. Ultrasound-guided fine-needle aspiration (FNA) of the mass was diagnostic for papillary thyroid carcinoma. Sistrunk procedure and total thyroidectomy were performed. Histologic analysis confirmed the presence of papillary thyroidcarcinoma within TDC, infiltrating surrounding soft tissues. Postoperatively, radioiodine ablation treatment was administered, followed by TSH suppression therapy.

PMID: 24577542 [Makale sayfası](#)

4. [Hell J Nucl Med](#). 2014 May-Aug;17(2):148-52. doi: 10.1967/s002449910137. Epub 2014 Jul 5. IF: 0.95

## **Simultaneous occurrence of medullary and differentiated thyroid carcinomas. Report of 4 cases and brief review of the literature.**

[Erhamamci S<sup>1</sup>](#), [Reyhan M](#), [Kocer NE](#), [Nursal GN](#), [Torun N](#), [Yapar AF](#).

### **Author information**

#### **Abstract**

Simultaneous occurrence of medullary thyroid carcinoma (MTC) and papillary thyroid carcinoma (PTC) in a single patient is an unusual event. The incidence, cell origin, histopathology features and prognosis of these two carcinomas are considered completely different. The aim of this retrospective study was to describe clinical, pathologic characteristics and the prevalence of diagnosing such patients in our clinic. Between October 2003 and December 2013, 1.420 consecutive patients diagnosed by histology as having differentiated thyroid carcinoma (DTC) and treated with radioactive iodide (RAI) were retrospectively investigated. Of these, 4 patients were diagnosed by histology as having simultaneous MTC and PTC. The clinical and pathology characteristics of these patients are described. The prevalence of simultaneous MTC and PTC of these 4 patients in our clinic was 0.28% of all patients with DTC. The age of the 4 patients ranged from 44 to 63 years and were three females and one male. These patients are currently alive without disease from either of the two types of cancer. In two of these patients, MTC was located in the left and PTC in the right thyroid lobe. One patient had MTC in the right lobe and PTC in both lobes. The remaining patient had both cancers in the left lobe as a mixed tumor. We are able to present the pathology of only 2 of these 4 patients. In these 2 patients MTC was located in the left and PTC in the right thyroid lobe, one of them was female and the other was male, aged 44 and 49, respectively. In conclusion, our results suggested that simultaneous occurrence of MTC and PTC had a prevalence in our clinic of 0.28% among 1420 consecutive patients with DTC or 0.14%, if only the 2 patients in whom we are able to present their pathology slides are considered. Our cases suggest that these two tumors are usually independent and coincidental events in every patient.

PMID: 24997082 [Makale sayfası](#)

# PARATIROID

## DERLEME

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1. [J Clin Endocrinol Metab.](#) 2014 Oct;99(10):3561-9. doi: 10.1210/jc.2014-1413. Epub 2014 Aug 27.

IF:7.02

### **Guidelines for the management of asymptomatic primary hyperparathyroidism: summary statement from the fourth international workshop.**

[Bilezikian JP<sup>1</sup>](#), [Brandi ML](#), [Eastell R](#), [Silverberg SJ](#), [Udelsman R](#), [Marcocci C](#), [Potts JT Jr.](#)

#### **Author information**

#### **Abstract**

##### **OBJECTIVE:**

Asymptomatic primary hyperparathyroidism (PHPT) is routinely encountered in clinical practices of endocrinology throughout the world. This report distills an update of current information about diagnostics, clinical features, and management of this disease into a set of revised guidelines.

##### **PARTICIPANTS:**

PARTICIPANTS, representing an international constituency, with interest and expertise in various facets of asymptomatic PHPT constituted four Workshop Panels that developed key questions to be addressed. They then convened in an open 3-day conference September 19-21, 2013, in Florence, Italy, when a series of presentations and discussions addressed these questions. A smaller subcommittee, the Expert Panel, then met in closed session to reach an evidence-based consensus on how to address the questions and data that were aired in the open forum.

##### **EVIDENCE:**

Preceding the conference, each question was addressed by a relevant, extensive literature search. All presentations and deliberations of the Workshop Panels and the Expert Panel were based upon the latest information gleaned from this literature search.

##### **CONSENSUS PROCESS:**

The expert panel considered all the evidence provided by the individual Workshop Panels and then came to consensus.

##### **CONCLUSION:**

In view of new findings since the last International Workshop on the Management of Asymptomatic PHPT, guidelines for management have been revised. The revised guidelines include: 1) recommendations for more extensive evaluation of the skeletal and renal systems; 2) skeletal and/or renal involvement as determined by further evaluation to become part of the guidelines for surgery; and 3) more specific guidelines for monitoring those who do not meet guidelines for parathyroid surgery. These guidelines should help endocrinologists and surgeons caring for patients with PHPT. A blueprint for future research is proposed to foster additional investigation into issues that remain uncertain or controversial.

PMID: 25162665

[Makale sayfası](#)

2. [Oncologist](#). 2014 Sep;19(9):919-929. Epub 2014 Jul 25. IF: 4.76

## **Mild Primary Hyperparathyroidism: A Literature Review.**

[Applewhite MK](#)<sup>1</sup>, [Schneider DF](#)<sup>2</sup>.

[Author information](#)

### **Abstract**

The biochemical profile of classic primary hyperparathyroidism (pHPT) consists of both elevated calcium and parathyroid hormone levels. The standard of care is parathyroidectomy unless prohibited by medical comorbidities. Because more patients are undergoing routine bone density evaluation and neck imaging studies for other purposes, there is a subset of people identified with a biochemically mild form of the pHPT that expresses itself as either elevated calcium or parathyroid hormone levels. These patients often do not fall into the criteria for operation based on the National Institutes of Health consensus guidelines, and they can present a challenge of diagnosis and management. The purpose of this paper is to review the available literature on mild pHPT in an effort to better characterize this patient population and to determine whether patients benefit from parathyroidectomy. Evidence suggests that there are patients with mild pHPT who have overt symptoms that are found to improve after parathyroidectomy. There is also a group of patients with biochemically mild pHPT who are found to progress to classic pHPT over time; however, it is not predictable which group of patients this will be. Early intervention for this group with mild pHPT may prevent progression of bone, psychiatric, and renal complications, and parathyroidectomy has proven safe in appropriately selected patients at high volume centers.

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### **KEYWORDS:**

Hypercalcemia; Hyperparathyroidism; Nephrolithiasis; Parathyroid hormone; Parathyroidectomy; Primary hyperparathyroidism

PMID: 25063228

3. [Indian J Surg](#). 2014 Aug;76(4):308-15. doi: 10.1007/s12262-013-0898-0. Epub 2013 Apr 21. IF: 0.35

## **Surgical treatment of primary hyperparathyroidism: description of techniques and advances in the field.**

[Khan MA](#), [Rafiq S](#), [Lanitis S](#), [Mirza FA](#), [Gwozdziwicz L](#), [Al-Mufti R](#), [Hadjiminas DJ](#).

[Author information](#)

### **Abstract**

Primary hyperparathyroidism is a disease commonly seen in patients above 60 years of age. It is the most common cause of asymptomatic or symptomatic hypercalcemia, usually found incidentally on routine check-ups. Surgical treatment is the only definitive treatment of choice in the symptomatic patient; however, it can also be employed in asymptomatic patients. First described in 1925, bilateral neck exploration is the gold standard of treatment for primary hyperparathyroidism. The recent interest in minimally invasive surgeries has led to better and improved techniques of neck exploration with improved cosmetic results and lesser chances of transient or permanent hypoparathyroidism due to inadvertent removal of normally functioning parathyroid tissue. These include unilateral neck explorations, minimally invasive parathyroidectomies and minimally invasive radio-guided parathyroidectomy. The intact parathyroid hormone assays have greatly added to the detection of normal and abnormal functioning glands, hence better surgical outcomes.

PMID: 25278656

[Makale sayfası](#)

# PARATIROID

## PROSPEKTİF

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1. [Eur Radiol.](#) 2014 Sep;24(9):2052-8. doi: 10.1007/s00330-014-3252-4. Epub 2014 Jun 4. IF: 4.80

### **US-guided high-intensity focused ultrasound as a promising non-invasive method for treatment of primary hyperparathyroidism.**

[Kovatcheva R](#)<sup>1</sup>, [Vlahov J](#), [Stoinov J](#), [Lacoste F](#), [Ortuno C](#), [Zaletel K](#).

#### **Author information**

#### **Abstract**

##### **OBJECTIVES:**

To investigate the long-term efficacy and safety of ultrasound (US)-guided high-intensity focused ultrasound (HIFU) treatment in patients with primary hyperparathyroidism (PHPT).

##### **METHODS:**

In our prospective study, 13 of 72 screened patients with PHPT were eligible for HIFU treatment, which was performed in one or two sessions. Parathyroid adenoma size and function were evaluated at baseline, 1, 3, 6, 9, and 12 months after the final HIFU session.

##### **RESULTS:**

In 11 females and 2 males, mean age  $55.2 \pm 12.41$  years, the mean applied energy was  $15.2 \pm 7.7$  kJ. Parathyroid size and parathyroid hormone decreased significantly one month after HIFU therapy ( $p < 0.002$  and  $p < 0.02$ , respectively). Calcium concentration decreased slowly to reach significant reduction nine months later ( $p < 0.05$ ). Complete remission was noted in three patients (23%) after one year, good disease control was achieved in nine (69%), and procedure was unsuccessful in one patient (8%). Number of sessions was significantly related to treatment success ( $p < 0.05$ ). Transitory side effects were impaired vocal cord mobility in three patients (23.1%), subcutaneous oedema in three patients (23.1%), and a combination of both in two patients (15.4%).

##### **CONCLUSIONS:**

HIFU is a promising non-invasive technique for PHPT treatment, which could serve as therapeutic alternative for selected patients.

##### **KEY POINTS:**

US-guided HIFU is a new non-invasive ablative technique for parathyroid adenomas. The method is efficient and ensures good disease control in most patients. HIFU is a good alternative for patients not meeting surgery criteria. Treatment is well-tolerated with only transient side effects.

PMID: 24895038

[Makale sayfası](#)

2. [Endocrine](#). 2014 Sep;47(1):221-6. doi: 10.1007/s12020-013-0152-3. Epub 2014 Jan 11. IF:2.24

## Diagnostic value of endoscopic ultrasonography for preoperative localization of parathyroid adenomas.

[Ersoy R<sup>1</sup>](#), [Ersoy O](#), [Evranoş Oğmen B](#), [Polat SB](#), [Kilic M](#), [Yildirim N](#), [Ozturk L](#), [Cakir B](#).

### [Author information](#)

#### Abstract

The most common cause of primary hyperparathyroidism (PHPT) is a single, sporadic parathyroid adenoma. Ultrasonography (US) and (99m)Technetium methoxyisobutylisonitrile ((99m)Tc-MIBI) scintigraphy are the imaging methods most widely used to localize parathyroid adenomas. The purpose of the present study was to determine the diagnostic value and accuracy of endoscopic ultrasonography (EUS) for localizing parathyroid adenoma compared with those of US and (99m)Tc-MIBI scintigraphy. Forty-seven patients with a PHPT diagnosis and who were recommended for surgery were enrolled in this study. An endoscopist who was blinded to the previous US and (99m)Tc-MIBI scintigraphy results performed the EUS in each patient. Thirty-nine female and eight male patients with PHPT were evaluated. The presence of adenoma was confirmed by subsequent postsurgical pathology results. One case was excluded because the histopathological evaluation was compatible with a lymph node, although the lesion was detected using three different imaging modalities preoperatively. The locations of the parathyroid adenomas were correctly documented by US in 39 patients (84.7 %) by (99m)Tc-MIBI scintigraphy in 35 (76.0 %), and by EUS in 44 (95.6 %) of 46 patients. EUS located all 31 adenomas detected previously with US and (99m)Tc-MIBI scintigraphy. EUS also successfully located three adenomas that could not be identified by US and (99m)Tc-MIBI scintigraphy. The positive predictive value and diagnostic accuracy of EUS, US, and (99m)Tc-MIBI were 97.7, 97.7, and 95.6 %; 88.6, 97.5, and 86.9 %; and 77.7, 97.2, 76.0 %, respectively. EUS was preferred as the second step imaging tool for detecting parathyroid adenomas that could not be localized by US and (99m)Tc-MIBI scintigraphy.

PMID: 24415171

[Makale sayfası](#)

3. [Can J Surg](#). 2014 Aug;57(4):237-40. IF: 1.77

## Parathyroid hormone levels 1 hour after thyroidectomy: an early predictor of postoperative hypocalcemia.

[AlQahtani A<sup>1</sup>](#), [Parsyan A<sup>2</sup>](#), [Payne R<sup>3</sup>](#), [Tabah R<sup>4</sup>](#).

### [Author information](#)

#### Abstract

in [English](#), [French](#)

#### BACKGROUND:

Parathyroid dysfunction leading to symptomatic hypocalcemia is not uncommon following a total or completion thyroidectomy and is often associated with significant patient morbidity and a prolonged hospital stay. A simple, reliable indicator to identify patients at risk would permit earlier pharmacologic prophylaxis to avoid these adverse outcomes. We examined the role of intact parathormone (PTH) levels 1 hour after surgery as a predictor of post-thyroidectomy hypocalcemia.

#### METHODS:

We prospectively reviewed the cases of consecutive patients undergoing total or completion thyroidectomy. Ionized calcium (Ca<sup>2+</sup>) and intact PTH levels were measured preoperatively and at 1-, 6- and 24-hour intervals postoperatively. The specificity, sensitivity, negative and positive predictive values of the 1-hour PTH serum levels (PTH-1) in predicting 24-hour post-thyroidectomy hypocalcemia and eucalcemia were determined.

#### RESULTS:

We reviewed the cases of 149 patients. Biochemical hypocalcaemia ( $\text{Ca}^{2+}$ ) < 1.1 mmol/L) developed in 38 of 149 (25.7%) patients 24 hours after thyroidectomy. The sensitivity, specificity, positive and negative predictive values of a low PTH-1 were 89%, 100%, 97% and 100%, respectively.

#### **CONCLUSION:**

We found that PTH-1 levels were predictive of symptomatic hypocalcemia 24 hours after thyroidectomy. Routine use of this assay should be considered, as it could prompt the early administration of calcitriol in patients at risk of hypocalcemia and allow for the safe and timely discharge of patients expected to remain eucalcemic.

PMID: 25078927

4. [J Clin Res Pediatr Endocrinol](#). 2014 Sep 5;6(3):158-62. doi: 10.4274/Jcrpe.1401. IF: 1.44

## **Intraoperative parathyroid hormone monitoring corroborates the success of parathyroidectomy in children.**

[Celik A<sup>1</sup>](#), [Divarçı E](#), [Dökümcü Z](#), [Ergün O](#), [Ozen S](#), [Gökşen D](#), [Darcan S](#), [Ertan Y](#).

#### **Author information**

#### **Abstract**

Ob-jec-ti-ve: To assess the efficacy of intraoperative parathyroid hormone (PTH) monitoring in evaluating the outcome of parathyroidectomy in pediatric patients.

#### **METHODS:**

Intraoperative PTH monitoring during parathyroidectomy was performed in five children (3M, 2F); three had parathyroid adenomas (single gland disease) and two had primary hyperplasia. One patient had undergone two previous surgical interventions to remove the parathyroid glands, but the PTH levels had remained high with persistence of symptoms. Immunoradiometric analysis was used for PTH measurements. Preoperative PTH values were obtained to monitor the baseline levels. Serum samples were collected 20 minutes after removal of the adenoma/parathyroid gland(s) and PTH levels were compared with preoperative values. Specimens were also confirmed by frozen sectional examination.

#### **RESULTS:**

Mean age of the patients was 11 years (range: 3 months-16 years). Mean preoperative PTH values were  $633.3 \pm 579$  pg/mL (range: 143-1300 pg/mL). Intraoperative values decreased to  $18.7 \pm 5.5$  pg/mL (range: 8-27 pg/mL) following removal of the gland(s). Normal calcium levels were achieved with adequate management following surgery. One patient (with multiple surgeries and found to have an ectopic parathyroid gland) had hungry bone syndrome after the operation and was treated successfully. There were no major complications. All patients maintained normal calcium/phosphorus levels in the follow-up period, ranging from 2 to 5 years.

#### **CONCLUSION:**

An ectopic parathyroid gland or another undetected adenoma can be overlooked during surgery. Owing to the short life of the hormone, intraoperative PTH monitoring to determine PTH clearance proved to be a feasible marker for adequacy and safety of surgery and "cure".

PMID: 25241609

[Makale sayfası](#)

# PARATIROID

## RETROSPEKTİF

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1. [Ann Surg.](#) 2014 Sep;260(3):474-80; discussion 480-2. doi: 10.1097/SLA.0000000000000875. IF: 7.65

### **Primary hyperparathyroidism with negative imaging: a significant clinical problem.**

[Wachtel H<sup>1</sup>](#), [Bartlett EK](#), [Kelz RR](#), [Cerullo I](#), [Karakousis GC](#), [Fraker DL](#).

#### **Author information**

#### **Abstract**

#### **OBJECTIVE:**

To compare the outcomes for patients undergoing parathyroidectomy for primary hyperparathyroidism by imaging results.

#### **BACKGROUND:**

Preoperative imaging plays an increasingly important role in the evaluation of primary hyperparathyroidism, and surgical referral may be predicated upon successful imaging.

#### **METHODS:**

We performed a retrospective study of patients undergoing initial parathyroidectomy for primary hyperparathyroidism (2002-2014). Patients were classified as nonlocalized when preoperative imaging failed to identify affected gland(s) and localized if successful. Primary outcome was cure, defined as eucalcemia postoperatively. Intraoperative success, defined by intraoperative parathyroid hormone criteria, and complication rates were also analyzed. Localized and nonlocalized patients were matched (1:1) utilizing a propensity score. Logistic regression determined factors associated with localization in the matched cohort.

#### **RESULTS:**

Of 2185 patients, 38.3% (n = 836) were nonlocalized. Nonlocalized patients had smaller parathyroids by size (1.2 vs 1.6 cm, P < 0.001) and mass (250 vs 537 mg, P < 0.001), higher incidence of hyperplasia (12.8% vs 5.4%, P < 0.001) and lower incidence of single adenoma (73.6 vs 86.0%, P < 0.001) compared with localized patients. There was no difference in intraoperative success (93.9 vs 95.6%, P = 0.073) or cure rates (96.2% vs 97.7%, P = 0.291) between nonlocalized and localized groups. In a propensity-matched cohort of 452 patients, there was no significant difference in cure rates (97.8 vs 97.4%, P = 0.760) between nonlocalized patients and matched localized controls.

#### **CONCLUSIONS:**

Nonlocalization of abnormal glands preoperatively is not associated with a decreased surgical cure rate for primary hyperparathyroidism. Referral for surgical evaluation should be based on biochemical diagnosis rather than localization by imaging.

2. [Br J Surg](#). 2014 Sep;101(10):1252-6. doi: 10.1002/bjs.9589. Epub 2014 Jul 15. IF: 5.35

## Long-term outcome after parathyroidectomy for lithium-induced hyperparathyroidism.

[Norlén O](#)<sup>1</sup>, [Sidhu S](#), [Sywak M](#), [Delbridge L](#).

[Author information](#)

### Abstract

#### BACKGROUND:

The accepted management of lithium-associated hyperparathyroidism (LiHPT) is open four-glandparathyroid exploration (OPTX). This approach has recently been the subject of controversy. A recent study has shown very high long-term recurrence rates after OPTX, whereas some have promoted unilateral focused parathyroidectomy as appropriate management. The aim was to evaluate long-term outcomes after surgery for LiHPT and to assess the accuracy of preoperative imaging.

#### METHODS:

This was a retrospective cohort study that comprised all patients undergoing initial surgery for LiHPT between 1990 and 2013. The cumulative recurrence rate was calculated by the Kaplan-Meier method. The sensitivity and specificity of sestamibi scintigraphy and ultrasound imaging for identification of single-gland versus multigland disease was investigated using intraoperative assessment as reference.

#### RESULTS:

Of 48 patients, 45 had OPTX and three underwent focused parathyroidectomy. Multiglandular disease was documented in 27 patients and 21 had a single adenoma. The median follow-up was 5.9 (range 0.3-22) years and 16 patients died during follow-up. The 10-year cumulative recurrence rate was 16 (95 per cent confidence interval 2 to 29) per cent. No permanent complications occurred after primary surgery for LiHPT. Twenty-four patients had at least one preoperative ultrasound or sestamibi scan. For concordant sestamibi scintigraphy and ultrasound imaging, the sensitivity and specificity for identifying single-gland versus multigland disease was five of nine and five of eight respectively.

#### CONCLUSION:

Surgery provided a safe and effective management option for patients with LiHPT in this series, with a long-term cure rate of well over 80 per cent.

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PMID: 25043401 [Makale sayfası](#)

3. [Ann Surg Oncol](#). 2014 Sep 6. [Epub ahead of print] IF: 4.21

## Justified Follow-Up: A Final Intraoperative Parathyroid Hormone (ioPTH) Over 40 pg/mL is Associated with an Increased Risk of Persistence and Recurrence in Primary Hyperparathyroidism.

[Rajaei MH](#)<sup>1</sup>, [Bentz AM](#), [Schneider DF](#), [Sippel RS](#), [Chen H](#), [Oltmann SC](#).

[Author information](#)

### Abstract

#### INTRODUCTION:

After parathyroidectomy for sporadic primary hyperparathyroidism (PHPT), overall rates of persistence/recurrence are extremely low. A marker of increased risk for persistence/recurrence is needed. We hypothesized that final intraoperative parathyroid hormone (FioPTH)  $\geq 40$  pg/mL is indicative of

increased risk for disease persistence/recurrence, and can be used to selectively determine the degree of follow-up.

#### **METHOD:**

A retrospective review of PHPT patients undergoing parathyroidectomy with ioPTH monitoring was performed. An ioPTH decline of 50 % was the only criteria for operation termination. Patients were grouped based on FioPTH of <40, 40-59, and >60 pg/mL.

#### **RESULTS:**

Between 2001 and 2012, 1,371 patients were included. Mean age was  $61 \pm 0.4$  years, and 78% were female. Overall persistence rate was 1.4%, with a 2.9% recurrence rate. Overall, 976 (71%) patients had FioPTH < 40, 228 (16.6%) had FioPTH 40-59, and 167 (12.2%) had FioPTH  $\geq$ 60. Mean follow-up was  $21 \pm 0.6$  months. Patients with FioPTH <40 were younger, with lower preoperative serum calcium, PTH, and creatinine (all  $p \leq 0.001$ ). Patients with FioPTH <40 had the lowest persistence rate (0.2 %) versus patients with FioPTH 40-59 (3.5 %) or FioPTH  $\geq$ 60 (5.4 %;  $p < 0.001$ ). Recurrence rate was also lowest in patients with FioPTH <40 (1.3 vs. 5.9 vs. 8.2 %, respectively;  $p < 0.001$ ). Disease-free status was greatest in patients with FioPTH <40 at 2 years (98.5 vs. 96.8 vs. 90.5 %, respectively) and 5 years (95.7 vs. 72.3 vs. 74.8 %, respectively;  $p < 0.01$ ).

#### **CONCLUSIONS:**

Patients with FioPTH < 40 pg/mL had lower rates of persistence and recurrence, than patients with FioPTH 40-59, or  $\geq$ 60. Differences became more apparent after 2 years of follow-up. Patients with FioPTH  $\geq$ 40 pg/mL warrant close and prolonged follow-up.

PMID: 25192677

4. [J Bone Miner Metab.](#) 2014 Sep 17. [Epub ahead of print] IF: 2.36

## **Ultrasonographic evaluation of parathyroid hyperplasia in multiple endocrine neoplasia type 1: Positive correlation between parathyroid volume and circulating parathyroid hormone concentration.**

[Tamiya H<sup>1</sup>](#), [Miyakawa M](#), [Takeshita A](#), [Miura D](#), [Takeuchi Y](#).

### **Author information**

#### **Abstract**

There are few reports on parathyroid ultrasonography of multiple endocrine neoplasia type 1 (MEN1). This study investigated the ultrasonographic features of parathyroid glands in 10 patients with MEN1 who underwent preoperative neck ultrasonography and parathyroidectomy between 2006 and 2010 at Toranomon Hospital. We retrospectively analyzed clinical features, laboratory and ultrasonographic data, and pathological diagnosis. A total of 38 parathyroid glands were surgically removed (three to five glands from each patient). All removed parathyroids were pathologically diagnosed as hyperplasia. Seven cases (70.0 %) had adenomatous thyroid nodules. Twenty-five enlarged parathyroid glands (65.8 %) were detected by preoperative ultrasonography with a detection rate of 81.8 % (9/11) and 59.3 % (16/27) for patients without and with adenomatous nodules, respectively. Total parathyroid gland weight and potentially predictable total parathyroid volume by preoperative ultrasonography were significantly correlated with preoperative serum intact parathyroid hormone (iPTH) concentration ( $R = 0.97$ ,  $P < 0.001$  and  $R = 0.96$ ,  $P < 0.001$ , respectively). The equation used for prediction of the total volume by ultrasonography was  $15 \times \text{iPTH (pg/ml)} - 1,000$  and that for total weight was  $20 \times \text{iPTH (pg/ml)} - 1,400$ . Although adenomatous nodules often coexisted with MEN1 and made identification of enlarged parathyroid glands by ultrasonography difficult, the positive correlation between the predictable parathyroid volume by ultrasonography and serum iPTH suggests that their measurement is useful in the preoperative detection and localization of enlarged parathyroid glands in patients with MEN1. Furthermore, the presence

of parathyroid glands that should be resected can be predicted before surgery using the equation proposed here.

PMID: 25227285

5. [Med Sci Monit.](#) 2014 Sep 9;20:1604-12. doi: 10.12659/MSM.890983. IF: 1.30

## Reoperations for persistent or recurrent primary hyperparathyroidism: results of a retrospective cohort study at a tertiary referral center.

[Nawrot I](#)<sup>1</sup>, [Chudziński W](#)<sup>1</sup>, [Ciąčka T](#)<sup>1</sup>, [Barczyński M](#)<sup>2</sup>, [Szmidt J](#)<sup>1</sup>.

### [Author information](#)

#### Abstract

#### BACKGROUND:

Parathyroid reoperations are challenging and achieving a cure requires multidisciplinary treatment team cooperation. The aims of this study were to summarize our experience in revision surgery for persistent (pHPT) or recurrent primary hyperparathyroidism (rHPT) and to explore factors underlying failure to cure at initial surgery.

#### MATERIAL AND METHODS:

This was a retrospective cohort study of patients who underwent reoperations for pHPT or rHPT at a tertiary referral center. The database of parathyroid surgery was searched for eligible patients (treated in the years 2000-2012). The primary outcome was the cure rate. All the patients were followed-up for at least 12 months postoperatively. Factors underlying failure to cure at initial surgery were reviewed based on hospital records.

#### RESULTS:

The study group comprised 88 patients (69 women, 19 men) operated on for persistent (n=57) or recurrent disease (n=31), who underwent 98 reoperations, including 26 (2.4%) patients first operated on at our institution, and 72 (81.8%) patients operated on elsewhere, but referred for revision surgery. A long-term cure was achieved in 83/88 patients (94.3%). The mean post-reoperation follow-up was 91.7 (12-176) months. Missed hyperfunctioning parathyroid gland was found on reoperation in eutopic position in 49 (55.5%) patients, and in ectopic position in 39 (44.3%) patients, including 20 (22.7%) cases of cervical ectopy and 19 (21.6%) cases of mediastinal ectopy.

#### CONCLUSIONS:

Multidisciplinary treatment team cooperation at a tertiary referral center, consisting of an accurate preoperative localization, expertise in parathyroid re-explorations, and correct use of intraoperative adjuncts, contribute to the high success rate of parathyroid reoperations.

PMID: 25201515 [Makale sayfası](#)

6. [Chin Med J \(Engl\).](#) 2014 Jul;127(13).doi:10.3760/cma.j.issn.0366-6999320133080. IF: 1.17

## Radio-guided parathyroidectomy for secondary hyperparathyroidism.

[Yuan F](#), [Yu W](#), [Waqas A](#), [Yang Z](#), [Cao H](#), [Li J](#), [Jiang G](#).

### [Abstract](#)

#### BACKGROUND:

The value of gamma probes in the surgical treatment of secondary hyperparathyroidism (sHPT) was determined.

## **METHOD:**

We retrospectively analyzed the clinical data of 48 sHPT patients between May 2007 and September 2011. Preoperative (99)Tc(m)- methoxyisobutyl isonitrile (MIBI) scintigraphy and high-frequency ultrasonography were used for parathyroid localization. Thirty-five patients (group I) underwent conventional neck exploration and open parathyroidectomy. Thirteen patients (group II) underwent gamma probe-guided total parathyroidectomy and parathyroid transplantation. The two groups were compared in terms of the number of parathyroid resections, operative time, and postoperative changes in the blood levels of parathyroid hormone (PTH), calcium, and phosphate.

## **RESULTS:**

The clinical manifestations, PTH and calcium levels, age distribution, and clinical characteristics did not differ between the two groups. The accuracy of preoperative (99)Tc(m)-MIBI scintigraphy (89.74%) for the diagnosis of hyperparathyroidism did not differ from that of ultrasonography (81.25%). However, the accuracy of (99)Tc(m)-MIBI scintigraphy (66.67%) for localizing hyperfunctioning parathyroids was significantly lower than that of ultrasonography (76.86%). The operation time was significantly longer in group I (120+/-25) min than in group II (90+/-30) min. The accuracy of parathyroid specimens were obtained in group I (2.5+/-0.5) than in group II (3.5+/-0.5). Compared with group I, group II showed a significant increase (15.4%) in the number of parathyroid resections. The PTH, calcium, and phosphate levels significantly decreased postoperatively in all patients.

## **CONCLUSION:**

Intraoperative gamma probe examination confirmed that the excised specimen was parathyroid tissue and improved the accuracy of parathyroid resection. The parathyroidectomy rate was increased by 15.4% due to the use of these probes. However, the probes did not detect all ectopic parathyroids, and further research is required to clarify the underlying reasons.

PMID: 25111995

[Makale sayfası](#)

7. [Am Surg](#). 2014 Aug;80(8):817-20. IF:0.98

## **Parathyroid hormone levels predict posttotal thyroidectomy hypoparathyroidism.**

[Rivere AE](#)<sup>1</sup>, [Brooks AJ](#), [Hayek GA](#), [Wang H](#), [Corsetti RL](#), [Fuhrman GM](#).

### **Author information**

### **Abstract**

We hypothesized that parathyroid hormone (PTH) determination would be the most effective strategy to identify posttotal thyroidectomy hypoparathyroidism (PTTHP) compared with other clinical and laboratory parameters. We retrospectively reviewed our recent experience with total thyroidectomy. We recorded demographics, malignancy, thyroid weight, parathyroid autotransplantation, hospital stay, use of postoperative calcium and hormonally active vitamin D3 (calcitriol), and postoperative serum calcium and PTH levels. Patients were divided into two groups depending on whether supplemental calcitriol was required to maintain eucalcemia and therefore reflecting the diagnosis of PTTHP. From October 2010 to June 2013, a total of 202 total thyroidectomies were performed. Twenty-four patients (12%) developed PTTHP and required calcitriol replacement. Logistic regression analysis revealed that only postoperative calcium levels ( $P = 0.02$ ) and PTH levels ( $P < 0.0001$ ) statistically significantly predicted PTTHP. Twenty-two of 29 patients with PTH 13 pg/mL or less had PTTHP. Only two of 173 patients with a PTH level greater than 13 pg/mL were diagnosed with PTTHP. We recommend using PTH levels after total thyroidectomy to determine which patients will have hypoparathyroidism requiring calcitriol therapy. An early determination of PTTHP allows for prompt management that can shorten hospital stay and improve outcomes.

PMID: 25105405

8. [Am Surg](#). 2014 Jul;80(7):646-51. IF:0.98

## Near total parathyroidectomy is effective therapy for tertiary hyperparathyroidism.

[Dewberry LK<sup>1</sup>](#), [Weber C](#), [Sharma J](#).

### [Author information](#)

#### Abstract

Tertiary hyperparathyroidism (3°HPT) is defined as persistent hyperparathyroidism with hypercalcemia after renal transplantation. Near total parathyroidectomy (NTPTX) is the current standard for surgical intervention. The purpose of this study was to identify outcomes of NTPTX. A retrospective review was conducted of surgeries performed between 1994 and 2013. NTPTX resulted in resolution of 96.9 per cent of patients' hypercalcemia at a median follow-up of three years (interquartile range [IQR], 1 to 8). However, 3.1 per cent of patients remained hypercalcemic with a mean calcium of  $10.5 \pm 0.2$  mg/dL. A total of 78.4 per cent of patients had parathyroid hormone (PTH) levels below 250 pg/mL at a median follow-up of two years (IQR, 2 to 8). The remaining 21.6 per cent had a median PTH of 535 (IQR, 345 to 857). PTH levels dropped from a median of 745 (IQR, 285.75 to 1594.25) pg/mL to 97 (IQR, 60 to 285) pg/mL one month post-NTPTX ( $P < 0.01$ ). The most frequent complication was transient hypocalcemia in 27.1 per cent of patients, but no patients became permanently hypocalcemic. In the 1-month postoperative period, only one patient had a cardiac complication, and there was 0 per cent all-cause mortality. Glomerular filtration rate fell from  $57.9 \pm 28.3$  mL/min pre-NTPTX to  $53.2 \pm 27.5$  mL/min at 1-year post-NTPTX ( $P < 0.01$ ). NTPTX effectively treats hypercalcemia in 3°HPT. However, PTH remains elevated (greater than 250) in 21.6 per cent of patients.

PMID: 24987894

9. [Minerva Chir](#). 2014 Sep 22. [Epub ahead of print] IF: 0.93

## Incidental parathyroidectomy as a cause of postoperative hypocalcemia after thyroid surgery: Reality or illusion?

[Yazici P<sup>1</sup>](#), [Bozkurt E](#), [Citgez B](#), [Kaya C](#), [Mihmanli M](#), [Uludag M](#).

### [Author information](#)

#### Abstract

##### AIM:

We aimed to investigate the incidence and clinical relevance of incidental parathyroidectomy (IPT) following thyroid surgery.

##### METHODS:

A retrospective review of thyroid operations was performed between January 2013 and January 2014. Pathology and operative reports were analyzed to identify the specimens which included parathyroid tissue. Information related to diagnosis, operative details and postoperative complications were collected. Calcium levels of  $\leq 8$ mg/dl was defined as biochemical hypocalcemia and those presenting with classic findings of acute hypocalcemia, classified as clinical hypocalcemia.

##### RESULTS:

Two hundred and forty-five thyroid procedures were performed during study period. IPT was found in 34 (13.8%) cases: 25 were benign and 9 were malignant. Parathyroid tissue was found intrathyroidal in 6 patients (17.6%); lobar locations were right lobe in 19 (55.8%) and left lobe in 13 (38.2%) and isthmus in 2 cases (5.8%). The frequency of biochemical and clinical hypocalcemia were 50% (n=17) and 8.8% (n=3), respectively. Neither surgical type (lobectomy or thyroidectomy) nor malignancy (benign or malign) was not found associated with biochemical hypocalcaemia. In those with biochemical hypocalcemia, left location of both dominant nodule and extracted parathyroid gland were significantly higher ( $p=0.01$  and  $0.04$ , respectively).

**CONCLUSION:**

Incidental parathyroidectomy which is not uncommon (13.8%) after thyroidectomy is not associated with postoperative biochemical hypocalcemia. Neither the type of surgical procedure (lobectomy or thyroidectomy) nor the pathology but adjacent dominant nodule location may increase the risk of IPT.

PMID: 25242004

# PARATIROID

## VAKA SUNUMU

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1. [Obstet Gynecol.](#) 2014 Aug;124(2 Pt 2 Suppl 1):478-80. doi: 10.1097/AOG.0000000000000393. IF: 3.97

### **Management of ectopic parathyroid adenoma in pregnancy.**

[Saad AF<sup>1</sup>](#), [Pacheco LD](#), [Costantine MM](#).

#### **Author information**

#### **Abstract**

#### **BACKGROUND:**

During pregnancy, management of refractory hypercalcemia secondary to a parathyroid adenoma must include prompt localization and excision of the mass, irrespective of gestational age.

#### **CASE:**

An 18-year-old woman at 23 weeks of gestation was found to have severe hypercalcemia secondary to primary hyperparathyroidism. She required aggressive intravenous hydration with the addition of furosemide to enhance calcium elimination. After localization of an ectopic adenoma in the mediastinum using nuclear medicine scanning, she underwent a video-assisted thoracoscopic resection of the mediastinal parathyroid adenoma. The patient subsequently had an uneventful delivery at term.

#### **CONCLUSION:**

Physiologic changes during pregnancy may delay the diagnosis of severe hypercalcemia secondary to parathyroid adenomas. When conservative management fails, localization and surgical excision of the adenoma become imperative to achieve the best maternal and perinatal outcomes.

PMID: 25004326

[Makale sayfası](#)

2. [Eur J Endocrinol.](#) 2014 Jul;171(1):K1-5. doi: 10.1530/EJE-14-0166. Epub 2014 Apr 17. IF:3.64

### **Refractory hypercalcaemia secondary to parathyroid carcinoma: response to high-dose denosumab.**

[Karuppiyah D<sup>1</sup>](#), [Thanabalasingham G<sup>1</sup>](#), [Shine B<sup>1</sup>](#), [Wang LM<sup>1</sup>](#), [Sadler GP<sup>1</sup>](#), [Karavitaki N<sup>1</sup>](#), [Grossman AB<sup>2</sup>](#).

#### **Author information**

#### **Abstract**

#### **OBJECTIVE:**

Hypercalcaemia is an important cause of increased morbidity and mortality in patients with parathyroid carcinoma. Surgical resection is the mainstay of treatment but, equally, managing hypercalcaemia is of paramount importance. At present, few therapies have been shown to be effective in the most severe cases. This report describes the efficacy of denosumab in a patient with parathyroid carcinoma when conventional therapies had been shown to be relatively ineffective. **SUBJECT, METHODS AND RESULTS:** A 50-year-old man presented with symptomatic hypercalcaemia 1 year after the surgery for his parathyroid carcinoma. Investigations revealed raised serum calcium and parathyroid hormone concentrations consistent with the recurrence of the disease. Imaging failed to localise any surgically remediable foci. Medical management with loop diuretics, calcimimetics and bisphosphonates failed to provide a sustained response. Denosumab, as a monthly

injection, led to a gradual decrement in his peak calcium concentrations with the values now persistently below 3mmol/l.

#### **CONCLUSIONS:**

Denosumab, a fully human MAB that binds to the 'receptor activator of nuclear factor  $\kappa$ B ligand (RANKL)', was shown to have a profound effect in modulating malignant hypercalcaemia. This medication should be considered as an effective option in patients with refractory hypercalcaemia secondary to parathyroid carcinoma.

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#### **Comment in**

PMID: 24743399

[Makale sayfası](#)

3. [Surg Today](#). 2014 Aug 6. [Epub ahead of print] IF:1.12

### **Bilobar thyroid agenesis with primary hyperparathyroidism: report of a case.**

[Simşek T<sup>1</sup>](#), [Cantürk NZ](#), [Cantürk Z](#), [Gürbüz Y](#).

#### **Author information**

#### **Abstract**

Congenital thyroid abnormalities are rarely seen. They mostly include hemiagenesis with or without involving the isthmus. In this report, we present a case of bilateral lobe agenesis with hypertrophied isthmus and high calcium and elevated PTH levels which were detected during routine examinations of a 49-year-old female patient. Some findings consistent with parathyroid pathology on the right side were determined in parathyroid scintigraphy. At thyroid scan and neck ultrasonography there was no sign of bilateral thyroid tissue except a mass localized isthmus. The right lower parathyroidectomy and thyroidectomy for isthmus were performed; the pathology report was shown as parathyroid adenoma and nodular colloid goiter. This case of bilobar agenesis with incidental primary hyperparathyroidism due to single parathyroid adenoma is the first case reported in literature.

PMID: 25091455

4. [Case Rep Endocrinol](#). 2014;2014:680876. doi: 10.1155/2014/680876. Epub 2014 Aug 10. IF: 1.01

### **Fine-needle aspiration cytology of parathyroid carcinoma mimic hürthle cell thyroid neoplasm.**

[Sriphrapadang C<sup>1</sup>](#), [Sornmayura P<sup>2</sup>](#), [Chanplakorn N<sup>2</sup>](#), [Trachoo O<sup>1</sup>](#), [Sae-Chew P<sup>3</sup>](#), [Aroonroch R<sup>2</sup>](#).

#### **Author information**

#### **Abstract**

Background. Fine-needle aspiration (FNA) can cause misdiagnosis of cytomorphological findings between parathyroid and thyroid lesions. Case Presentation. A 31-year-old man presented with a palpable neck mass on the right thyroid lobe. FNA cytology was reported as intrathyroidal lymphoid hyperplasia. After 5 years, repeated FNA was done on the enlarged nodule with result of Hürthle cell lesion. Prior to right lobectomy, laboratories revealed elevated serum calcium and parathyroid hormone (PTH). Careful history taking revealed chronic knee pain and ossifying fibroma at the maxilla. Ultrasonography showed a 2.8 cm mass inferior to right thyroid lobe. Pathology from en bloc resection was parathyroid carcinoma and immunohistochemical study revealed positivity for PTH. Genetic analysis found somatic mutation of CDC73 gene in exon1 (c.70delG) which caused premature stop codon in amino acid 26 (p.Glu24Lysfs\*2). The final

diagnosis was hyperparathyroidism-jaw tumor syndrome. Conclusions. FNA cytology of parathyroid can mimic thyroid lesion. It is important to consider and correlate the entire information from clinical history, laboratory, imaging, and FNA.

PMID: 25177504 [Makale sayfası](#)

5. [Arq Bras Endocrinol Metabol.](#) 2014 Jul;58(5):583-6. IF: 0.88

## **Normocalcemic primary hyperparathyroidism: long-term follow-up associated with multiple adenomas.**

[Pimentel L](#), [Portela S](#), [Loureiro A](#), [Bandeira F](#).

### **Author information**

#### **Abstract**

Normocalcemic primary hyperparathyroidism (NPHPT) is a condition characterized by elevation of the parathyroid hormone (PTH) in the presence of normal serum calcium and the absence of secondary causes. The case described illustrates the long-term follow-up of a postmenopausal woman with NPHPT patient who progressed with multiple adenomas. This case reports a 77-year-old female who has chronic generalized pain and osteoporosis. Her initial serum PTH was 105 pg/mL, with total serum calcium of 9.6 mg/dL, albumin 4.79 g/dL, phosphorus 2.8 mg/dL, and 25OHD after supplementation was 34.6 ng/mL. The bone densitometry (BMD) results were as follows: lumbar spine: T-score -3.0, femoral neck: T-score -2.6 and distal radius: -4.2. Other causes of secondary hyperparathyroidism were ruled out and cervical ultrasound and Tc-99-Sestamibi scan were negative. She used oral alendronate and three infusions of zoledronic acid for treatment of osteoporosis. In the 10th year of follow-up, after successive negative cervical imaging, ultrasound showed a nodule suggestive of an enlarged right inferiorparathyroid gland. PTH levels in fluid which was obtained during fine-needle aspiration (FNA) were over 5,000 pg/mL and a Sestamibi scan was negative. The patient underwent parathyroidectomy, and a histological examination confirmed parathyroid adenoma. Post-operatively serum PTH remained elevated in the presence of normal serum calcium levels. A follow-up cervical ultrasound showed a new solid nodule suggestive of an enlarged right superior parathyroid gland. PTH levels in the aspiration fluid were remarkably high. A second parathyroidectomy was performed, with the excision of a histologically confirmed parathyroid adenoma. In conclusion, this is an unusual presentation of NPHPT and highlights the long-term complications.

PMID: 25166050

6. [Ann R Coll Surg Engl.](#) 2014 Jul;96(5):e21-3. doi: 10.1308/003588414X13946184900480. IF: 0.81

## **Day-case minimally invasive excision of a giant mediastinal parathyroid adenoma.**

[Haldar A<sup>1</sup>](#), [Thapar A](#), [Khan S](#), [Jenkins S](#).

### **Author information**

#### **Abstract**

Inferior parathyroid adenomas in the mediastinum can be a troublesome cause for hypercalcaemia, requiring a full collar incision or, occasionally, a sternotomy. We report a case of a giant parathyroid adenoma in a 61-year-old woman on warfarin, which we excised via a minimally invasive transcervical approach after radiological localisation. The procedure was performed as a day case and, at six weeks, the patient had recovered fully with biochemical resolution of hypercalcaemia. This case demonstrates that focused transcervical excision of giant parathyroidadenomas is a viable option and should be considered prior to neck exploration or sternotomy.

PMID: 24992407 [Makale sayfası](#)

# ADRENAL

## DERLEME

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1. [Cancer Treat Rev.](#) 2014 Aug;40(7):838-46. doi: 10.1016/j.ctrv.2014.04.001. Epub 2014 Apr 16. IF: 7.01

### **Surgical and ablative therapies for the management of adrenal 'oligometastases' - A systematic review.**

[Gunjur A](#)<sup>1</sup>, [Duong C](#)<sup>2</sup>, [Ball D](#)<sup>3</sup>, [Siva S](#)<sup>4</sup>.

#### **Author information**

#### **Abstract**

#### **BACKGROUND:**

We systematically reviewed the literature on the use of surgery, stereotactic ablative body radiotherapy (SABR) and percutaneous catheter ablation (PCA) techniques for the treatment of adrenal metastases to develop evidence-based recommendations.

#### **METHODS:**

A systematic review of the MEDLINE database was performed using structured search terms following PRISMA guidelines. Eligible publications were those published from 1990 to 2012, written in English, had at least five patients treated for adrenal metastasis and reported on patient clinical outcomes (local control, survival and treatment related complications/toxicity). Where possible, pooled 2-year local control and overall survival outcomes were analysed.

#### **RESULTS:**

Our search strategy produced a total of 45 papers addressing the three modalities - 30 adrenalectomy, nine SABR and six PCA (818, 178 and 51 patients, respectively). There was marked heterogeneity in outcome reporting, patient selection and follow-up periods between studies. The weighted 2-year local control and overall survival for adrenalectomy were 84% and 46%, respectively, compared with 63% and 19%, respectively for the SABR cohort. Only one study of PCA with five patients analysed clinical outcomes, reporting an actuarial local control of 80% at 1 year. Treatment related complications/toxicities were inconsistently reported.

#### **CONCLUSION:**

There is insufficient evidence to determine the best local treatment modality for isolated or limited adrenal metastases from any primary tumour. Published data suggests adrenalectomy to be a reasonable treatment approach for isolated adrenal metastasis in suitable patients. SABR is a valid alternative in cases when surgery is not feasible or the operative risk is unacceptable. PCA cannot be recommended until there are more robust studies which include long-term oncological outcomes.

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#### **KEYWORDS:**

Adrenalectomy; Oligometastases; Radiofrequency ablation; Stereotactic radiotherapy

PMID: 24791623

[Makale sayfası](#)

2. [Eur J Endocrinol](#). 2014 Sep;171(3):R111-22. doi: 10.1530/EJE-14-0113. Epub 2014 Jun 2. IF:

4.08

## Therapy of endocrine disease: treatment of malignant pheochromocytoma and paraganglioma.

[Baudin E](#)<sup>1</sup>, [Habra MA](#)<sup>2</sup>, [Deschamps F](#)<sup>2</sup>, [Cote G](#)<sup>2</sup>, [Dumont F](#)<sup>2</sup>, [Cabanillas M](#)<sup>2</sup>, [Arfi-Roufe J](#)<sup>2</sup>, [Berdelou A](#)<sup>2</sup>, [Moon B](#)<sup>2</sup>, [Al Ghuzlan A](#)<sup>2</sup>, [Patel S](#)<sup>2</sup>, [Leboulleux S](#)<sup>2</sup>, [Jimenez C](#)<sup>1</sup>.

### [Author information](#)

#### Abstract

Metastatic pheochromocytomas and paragangliomas (MPPs) present clinicians with three major challenges: scarcity, complexity of characterization, and heterogeneous behavior and prognosis. As with the treatment for all neuroendocrine tumors, the control of hormonal symptoms and tumor growth is the main therapeutic objective in MPP patients. A significant number of MPP patients still die from uncontrolled hormone secretion. In addition, the management of MPPs remains palliative. Steps forward include proper characterization of MPP patients at large cancer referral centers with multidisciplinary teams; improved strategies to stratify patients prognostically; and implementation of trials within national and international networks. Progress in the molecular characterization and staging of MPPs constitutes the basis for significant treatment breakthroughs.

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PMID: 24891137

[Makale sayfası](#)

3. [AJR Am J Roentgenol](#). 2014 Aug;203(2):245-52. doi: 10.2214/AJR.13.11793. IF: 3.19

## (18)F-FDG PET/CT of adrenal lesions.

[Dong A](#)<sup>1</sup>, [Cui Y](#), [Wang Y](#), [Zuo C](#), [Bai Y](#).

### [Author information](#)

#### Abstract

##### OBJECTIVE:

The purpose of this review is to describe FDG uptake characteristics of adrenal lesions, which can show increased FDG uptake on PET/CT.

##### CONCLUSION:

Both benign and malignant adrenal lesions can show increased FDG uptake. Knowledge of the uptake characteristics of these lesions is helpful for increasing diagnostic accuracy and expanding the differential diagnosis for adrenal lesions.

##### KEYWORDS:

FDG; PET/CT; adrenal gland; carcinoma; hemorrhage; tuberculosis; tumor

PMID: 25055255

[Makale sayfası](#)

4. [Surg Oncol Clin N Am](#). 2014 Oct;23(4):847-861. doi: 10.1016/j.soc.2014.06.002. Epub 2014 Aug 1.

IF: 2.26

## Current Status of Imaging for Adrenal Gland Tumors.

[Song JH](#)<sup>1</sup>, [Mayo-Smith WW](#)<sup>2</sup>.

[Author information](#)

### Abstract

Adrenal glands are common sites of disease involved in a wide spectrum of pathology. Several imaging studies allow accurate diagnosis of adrenal masses, separating inconsequential benign masses from the lesions that require treatment. This article discusses contemporary adrenal imaging techniques, imaging appearance, and the optimal imaging algorithm for the workup of common adrenal masses.

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### KEYWORDS:

Adrenal; Adrenal incidentaloma; Adrenal mass; Adrenal tumor; Hyperfunctioning adrenal mass

PMID: 25246052

[Makale sayfası](#)

5. [J Visc Surg](#). 2014 Aug 12. pii: S1878-7886(14)00095-2. doi: 10.1016/j.jviscsurg.2014.07.002.

[Epub ahead of print] IF: 0.76

## Management of adrenal incidentaloma.

[Menegaux F](#)<sup>1</sup>, [Chéreau N](#)<sup>2</sup>, [Peix JL](#)<sup>3</sup>, [Christou N](#)<sup>4</sup>, [Lifante JC](#)<sup>3</sup>, [Paladino NC](#)<sup>5</sup>, [Sebag F](#)<sup>5</sup>, [Ghander C](#)<sup>6</sup>, [Trésallet C](#)<sup>2</sup>, [Mathonnet M](#)<sup>4</sup>.

[Author information](#)

### Abstract

Improvements in medical imaging have resulted in the incidental discovery of many silent and unrecognized adrenal tumors. The term "adrenal incidentaloma" (AI) is applied to any adrenal mass  $\geq 1$  cm in its longest axis that is discovered incidentally during abdominal imaging that was not performed to specifically evaluate adrenal pathology. These incidentalomas may be either secretory or non-secretory, benign or malignant. Distinctive characteristics of these lesions must be determined by the clinician to determine appropriate management. Such distinctions are based on laboratory findings and imaging, principally CT with and without contrast injection. Investigations must be carefully chosen to avoid ordering unnecessary and expensive tests for too many patients while, at the same time, avoiding the risk of failing to diagnose a secreting malignant or tumor. These examinations will determine patient care: surgery or surveillance. When simple surveillance is chosen, specific criteria must be met with regard to diagnostic modalities (clinical, imaging, laboratory testing) and its duration.

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### KEYWORDS:

Adrenal; Diagnosis; Incidentaloma; Treatment

PMID: 25127879

[Makale sayfası](#)

# ADRENAL

## PROSPEKTIF

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1. [Ann Surg](#). 2014 Sep 19. [Epub ahead of print] IF: 7.65

### **Randomized Clinical Trial of Posterior Retroperitoneoscopic Adrenalectomy Versus Lateral Transperitoneal Laparoscopic Adrenalectomy With a 5-Year Follow-up.**

[Barczyński M](#)<sup>1</sup>, [Konturek A](#), [Nowak W](#).

[Author information](#)

#### **Abstract**

#### **OBJECTIVE::**

To test if posterior retroperitoneoscopic adrenalectomy (PRA) is superior to lateral transperitoneal laparoscopic adrenalectomy (LTLA).

#### **BACKGROUND::**

Most popular LTLA has been recently challenged by an increasing popularity of PRA, which is believed by many surgeons (not evidence-based) as superior to LTLA in the treatment of small and benign adrenal tumors.

#### **METHODS::**

Participants were assigned randomly to PRA or LTLA and followed for 5 years after surgery. The primary endpoint was the duration of surgery. Secondary endpoints were blood loss, conversion rate, postoperative recovery, morbidity, and costs.

#### **RESULTS::**

Sixty-five patients were included, of whom 61 (PRA 30, LTLA 31) completed the 5-year follow-up. The following differences were identified in favor of PRA vs LTLA: shorter duration of surgery (50.8 vs 77.3 minutes), lower intraoperative blood loss (52.7 vs 97.8 mL), diminished pain intensity within 48 hours postoperatively, lower prevalence of shoulder-tip pain (3.0% vs 37.5%), shorter time to oral intake (4.4 vs 7.3 hours), shorter time to ambulation (6.1 vs 11.5 hours), shorter length of hospital stay, and lower cost (1728 &OV0556; vs 2315 &OV0556;), respectively ( $P < 0.001$  for all). No differences were noted in conversion rate or morbidity except for herniation occurring more often after LTLA than PRA (16.1% vs 0%,  $P = 0.022$ ) and need for hernia repair (12.9% vs 0%,  $P = 0.050$ ), respectively.

#### **CONCLUSIONS::**

Both approaches were equally safe. However, outcomes of PRA operations were superior to LTLA in terms of shorter surgery duration, lower blood loss, lower postoperative pain, faster recovery, improved cost-effectiveness, and abolished risk of surgical access site herniation. Registration number: NCT01959711 (<http://www.clinicaltrials.gov>).

PMID: 25243546

# ADRENAL

## RETROSPEKTİF

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1. [Surg Endosc.](#) 2014 Sep;28(9):2683-9. doi: 10.1007/s00464-014-3528-4. Epub 2014 Apr 16. IF: 3.65

### Laparoscopic transperitoneal anterior adrenalectomy in pheochromocytoma: experience in 62 patients.

[Paganini AM<sup>1</sup>](#), [Balla A](#), [Guerrieri M](#), [Lezoche G](#), [Campagnacci R](#), [D'Ambrosio G](#), [Quaresima S](#), [Antonica MV](#), [Lezoche E](#).

#### [Author information](#)

#### Abstract

##### BACKGROUND:

Aim was to evaluate the results in 62 patients undergoing laparoscopic adrenalectomy (LA) for the treatment of pheochromocytoma (PHE), with a transperitoneal anterior approach for lesions on the right side, and with a transperitoneal anterior submesocolic approach in case of left-sided lesions.

##### METHODS:

Sixty-two patients underwent LA for the treatment of PHE at two centers in Rome and Ancona (Italy). Two patients had bilateral lesions, for a total of 64 adrenalectomies. Sporadic PHE occurred in 57 patients (91.9 %) and in 5 (8.0 %) it was familiar. Thirty-six patients (58.0 %) underwent right adrenalectomy, 24 (38.7 %) left adrenalectomy, and in 2 cases (3.2 %) LA was bilateral. In 38 cases of right adrenalectomy (59.3 %) and in 5 cases of left adrenalectomy (7.8 %), the approach was a transperitoneal anterior one. A transperitoneal anterior submesocolic approach was used in 21 left adrenalectomy cases (32.8 %).

##### RESULTS:

Mean operative time for right and left transperitoneal anterior LA was 101 min (range 50-240) and 163 min (range 50-190), respectively. Mean operative time for left transperitoneal anterior submesocolic LA was 92 min (range 50-195). For bilateral adrenalectomy, mean operative time was 210 min (range 200-220). Conversion to open surgery occurred in 2 cases (3.22 %) due to extensive adhesions (1) and hemorrhage (1). One major and three minor complications were observed. Mobilization occurred on the first postoperative day. Hospitalization was 4.8 days (range 2-19). The lesions had a mean diameter of 4.5 cm (range 0.5-10).

##### CONCLUSIONS:

Early identification with no gland manipulation prior to closure of the adrenal vein is the main advantages of the transperitoneal anterior approach. PHE may be treated safely and effectively by a laparoscopic transperitoneal anterior approach for right-sided lesions and with a transperitoneal anterior submesocolic approach for left-sided ones.

2. [World J Surg.](#) 2014 Jul;38(7):1749-54. doi: 10.1007/s00268-014-2461-y. **IF: 2.47**

## **Is adrenal venous sampling mandatory before surgical decision in case of primary hyperaldosteronism?**

[Pirvu A<sup>1</sup>](#), [Naem N](#), [Baquet JP](#), [Thony F](#), [Chabre O](#), [Chaffanjon P](#).

[Author information](#)

### **Abstract**

#### **BACKGROUND:**

Primary hyperaldosteronism (PHA) is a cause of secondary arterial hypertension potentially curable by laparoscopic unilateral adrenalectomy. We describe the follow-up of these patients according to their medical or surgical treatment.

#### **METHODS:**

We report a retrospective single-center study of 91 patients with PHA from 1998 to 2012. Treatment was guided by computed tomography (CT) scans. Preoperative adrenal vein sampling (AVS) was performed when the CT scan did not show single solitary unilateral nodules on the adrenal glands. During the follow-up, we considered hypertension to be cured in patients with normal blood pressure without antihypertensive medication (AM), and improvement was defined by a decrease in AM.

#### **RESULTS:**

A total of 28 patients received only AM. Of the 62 patients who underwent a unilateral adrenalectomy, 46 (74 %) had an adrenal adenoma, 14 (22 %) a hyperplasia, and the adrenal gland was normal in two cases. Hypertension was cured in 24 cases (38 %), and 28 patients (45 %) showed improvement with a reduction in AM. Predictive factors for a cure were gender, age, number of preoperative AMs, preoperative arterial systolic blood pressure, and plasma renin activity. All patients who presented with hypokalemia were cured postoperatively. We performed 38 AVS and nine of these patients were operated on based on the AVS findings, with an improvement of 100 % of arterial blood pressure after surgery.

#### **CONCLUSION:**

Laparoscopic unilateral adrenalectomy for PHA cured or improved hypertension in 84 % of patients. Preoperative AVS is mandatory for surgical decision making if the CT scan shows bilateral or no lesions associated with PHA.

PMID: 24481990

[Makale sayfası](#)

3. [J Endourol.](#) 2014 Sep;28(9):1103-6. doi: 10.1089/end.2014.0102. Epub 2014 Jun 30. **IF:2.28**

## **Clinical outcomes in patients undergoing laparoscopic adrenalectomy for unilateral aldosterone producing adenoma: partial versus total adrenalectomy.**

[Chen SF<sup>1</sup>](#), [Chueh SC](#), [Wang SM](#), [Wu VC](#), [Pu YS](#), [Wu KD](#), [Huang KH](#).

[Author information](#)

### **Abstract**

**Abstract Background and Purpose:** Laparoscopic adrenalectomy is the standard treatment for patients with aldosterone producing adenoma (APA). The comparative effectiveness between laparoscopic total and partial adrenalectomy remains controversial, however. In this study, we compared the clinical outcomes for the two procedures.

#### **METHODS:**

We analyzed the patients with unilateral APA undergoing laparoscopic total or partial adrenalectomy during the period 2008 to 2011. All surgical procedures were performed transperitoneally. We compared the perioperative and postoperative parameters between two procedures. Clinical outcomes including serum

aldosterone, renin, and potassium levels, and systolic and diastolic blood pressure (DBP) were assessed and compared at 1 year after operation.

#### **RESULTS:**

A total of 63 cases (16 partial and 47 total adrenalectomies) were included. There were no differences with regard to age, sex, hypertension duration, and tumor size as well as preoperative blood pressure, serum aldosterone, rennin, and potassium levels between the two groups. The perioperative and postoperative outcomes such as operative time, hospital stay, blood loss, and complications were similar between the two groups. The clinical outcomes at 1-year follow-up including serum aldosterone, renin, and potassium levels and blood pressure significantly improved in both groups.

#### **CONCLUSIONS:**

Laparoscopic partial adrenalectomy is technically feasible and yields similar perioperative, postoperative, and 1-year clinical outcomes to those of total adrenalectomy for the treatment of patients with unilateral APA. A prospective randomized study with a larger sample size is needed to further prove the cost and effectiveness of the two procedures.

PMID: 24828761 [Makale sayfası](#)

4. [Urology](#). 2014 Sep;84(3):596-601. doi: 10.1016/j.urology.2014.04.040. Epub 2014 Jun 28. IF: 2.27

## **Mini-retroperitoneoscopic Adrenalectomy: Our Experience After 50 Procedures.**

[Porpiglia F<sup>1</sup>](#), [Fiori C<sup>2</sup>](#), [Bertolo R<sup>2</sup>](#), [Cattaneo G<sup>2</sup>](#), [Amparore D<sup>2</sup>](#), [Morra I<sup>2</sup>](#), [Didio M<sup>2</sup>](#), [De Luca S<sup>2</sup>](#), [Scarpa RM<sup>2</sup>](#).

#### **Author information**

#### **Abstract**

#### **OBJECTIVE:**

To present our experience with retroperitoneoscopic adrenalectomy using 3-mm instruments (mini-rA) for adrenal tumors.

#### **MATERIALS AND METHODS:**

From March 2009 to May 2013, patients with adrenal tumors <6 cm in size and body mass index ≤35 were involved in this prospective study and underwent mini-rA performed by 3-mm instruments. Demographic, endocrine and perioperative data, and cosmetic results (using Patient Scar Assessment Questionnaire and Scoring System) were recorded and analyzed.

#### **RESULTS:**

Fifty procedures were performed in 48 patients. All procedures were performed with neither conversion to open surgery nor reoperation or mortality. Median operative time and blood loss were 90 minutes (range, 45-210 minutes) and 50 mL (range, 20-210 mL), respectively. Only 1 intraoperative complication (2%) was recorded. Conversion to conventional laparoscopy was needed in 4 procedures (8%). Postoperative complications were recorded in 6 cases (Clavien grade ≤2). No differences were recorded in terms of perioperative variables when comparing procedures performed in patients having secreting tumors (n = 18) with other ones (n = 32). On the contrary, procedures performed in patients having benign lesions (n = 41) had significantly lower operative times and complications with respect to those performed in patients with malignant lesions (n = 9). Median Patient Scar Assessment Questionnaire score was 30 (minimum score 28 = the best result; maximum score = 112, the worst result).

#### **CONCLUSION:**

In selected population, mini-rA is a feasible, safe, and effective technique in the treatment of adrenal masses <6 cm in size, offering objectively proven excellent patients' satisfaction with symptoms and cosmesis. Significant experience before embarking in this kind of surgery is recommended.

PMID: 24985166 [Makale sayfası](#)

5. [Anticancer Res.](#) 2014 Sep;34(9):5087-90. IF: 2.09

## **Surgical considerations for removal of giant tumor of the right adrenal.**

[Pedullà G<sup>1</sup>](#), [Sapienza P<sup>2</sup>](#), [Paliotta A<sup>2</sup>](#), [Giordano A<sup>2</sup>](#), [Crocetti D<sup>2</sup>](#), [DE Toma G<sup>2</sup>](#).

### **Author information**

#### **Abstract**

#### **BACKGROUND/AIM:**

Complete surgical removal is the only potentially curative approach for adrenal tumors. Our series of patients affected with giant right adrenal tumors, as well as the open surgical modalities used to obtain a complete tumor resection with safe vascular control were analyzed.

#### **MATERIALS AND METHODS:**

Nine patients (mean age=57 years) affected with a giant right adrenal tumor who underwent open surgical removal of the mass from the basis of the present analysis. A midline incision was performed. Large mobilization of the liver was performed to obtain good and safe exposure of the vascular pedicles.

#### **RESULTS:**

An en bloc R0 tumor resection was accomplished in all cases. Histology revealed an adrenal corticalcarcinoma in all patients. No local recurrence was noted at a mean follow-up of 14 months.

#### **CONCLUSION:**

Radical surgery is the only curative approach and is recommended for all patients, whenever technically feasible, through open access in cases of giant right adrenal carcinoma.

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#### **KEYWORDS:**

Giant adrenal tumor; adrenalectomy; radical surgery

PMID: 25202096

6. [Int J Endocrinol.](#) 2014;2014:241854. doi: 10.1155/2014/241854. Epub 2014 Jul 15. IF: 1.78

## **Laparoscopic adrenalectomy for adrenal tumors.**

[Chuan-Yu S](#), [Yat-Faat H](#), [Wei-Hong D](#), [Yuan-Cheng G](#), [Qing-Feng H](#), [Ke X](#), [Bin G](#), [Guo-Wei X](#).

### **Author information**

#### **Abstract**

Objective. To evaluate the indication and the clinical value of laparoscopic adrenalectomy of different types of adrenal tumor. Methods. From 2009 to 2014, a total of 110 patients were diagnosed with adrenal benign tumor by CT scan and we performed laparoscopic adrenalectomy. The laparoscopic approach has been the procedure of choice for surgery of benign adrenal tumors, and the upper limit of tumor size was thought to be 6 cm. Results. 109 of 110 cases were successful; only one was converted to open surgery due to bleeding. The average operating time and intraoperative blood loss of pheochromocytoma were significantly more than the benign tumors ( $P < 0.05$ ). After 3 months of follow-up, the preoperative symptoms were relieved and there was no recurrence. Conclusions. Laparoscopic adrenalectomy has the advantages of minimal invasion, less blood loss, fewer complications, quicker recovery, and shorter hospital stay. The full preparation before operation can decrease the average operating time and intraoperative blood loss of pheochromocytomas. Laparoscopic adrenalectomy should be considered as the first choice treatment for the resection of adrenal benign tumor.

PMID: 25132851

[Makale sayfası](#)

7. [Int Urol Nephrol](#). 2014 Jul;46(7):1283-8. doi: 10.1007/s11255-013-0614-9. Epub 2014 Feb 2. IF: 1.43

## **A retrospective study of laparoscopic unilateral adrenalectomy for primary hyperaldosteronism caused by unilateral adrenal hyperplasia.**

[Jiang SB](#)<sup>1</sup>, [Guo XD](#), [Wang HB](#), [Gong RZ](#), [Xiong H](#), [Wang Z](#), [Zhang HY](#), [Jin XB](#).

[Author information](#)

### **Abstract**

#### **OBJECTIVE:**

To evaluate the long-term outcomes of laparoscopic unilateral adrenalectomy for primary aldosteronism (PA) caused by unilateral adrenal hyperplasia (UAH).

#### **METHODS:**

One hundred and sixty-four patients who underwent laparoscopic unilateral adrenalectomy for UAH from January 2004 to December 2011 were entered in this retrospective analysis. Patients demographics, perioperative parameters, and follow-up results were recorded and analyzed statistically.

#### **RESULTS:**

All 164 cases suffered hypertension with biochemical evidence of hyperaldosteronism prior to operation. Hypokalemia was observed in 52/164 (37.14%) patients. UAH was proved by multi-slice computed tomography (MSCT). All operations were completed successfully without any conversions or complications. Postoperative pathology confirmed that 164 cases were cortical nodular hyperplasia, of which 4 cases coexist with medullary hyperplasia and 7 with micro-adenoma. At the median follow-up of 48 months, hypertension was cured in 88 (53.7%) patients, improved in 71 (43.3%) patients, and refractory in 5 (3.05%) patients. Hypokalemia and hyperaldosteronism were cured in all patients except re-elevation of blood pressure and plasma aldosterone in two patients 1 month after adrenalectomy.

#### **CONCLUSIONS:**

As an underestimated subtype of PA, UAH is accepted gradually. Laparoscopic unilateral adrenalectomy is nowadays the preferred approach to treat patients with PA caused by UAH. When adrenal venous sampling is not allowed, high-resolution MSCT is a reliable test for lateralization of aldosterone hypersecretion in carefully selected patients and 97% had either cure or improvement in blood pressure control.

PMID: 24488149

[Makale sayfası](#)

8. [J Laparoendosc Adv Surg Tech A](#). 2014 Aug;24(8):528-33. doi: 10.1089/lap.2014.0048. IF: 1.41

## **Prognostic indices of perioperative outcome following transperitoneal laparoscopic adrenalectomy.**

[Kiziloz H](#)<sup>1</sup>, [Meraney A](#), [Dorin R](#), [Nip J](#), [Kesler S](#), [Shichman S](#).

[Author information](#)

### **Abstract**

#### **OBJECTIVES:**

We sought to identify preoperative patient and tumor characteristics that may be useful prognostic indicators of postsurgical outcome in patients undergoing laparoscopic adrenalectomy (LA).

#### **SUBJECTS AND METHODS:**

Data from 92 patients who underwent 93 transabdominal LA procedures between 2006-2012 were retrieved. Patients were stratified based on estimated blood loss (EBL), length of stay (LOS), and perioperative complications. Interdependencies between surgical outcome and patient demographics,

tumor characteristics, comorbidities, and Charlson Comorbidity Index (CCI) were statistically analyzed. The predictive capacity of each index was assessed using receiver operating characteristic curves.

#### **RESULTS:**

Neither age, gender, tumor laterality, body mass index, American Society of Anesthesiologists (ASA) score, nor CCI predicted the occurrence of perioperative complications. EBL was significantly associated with increased age, tumor size, ASA score, and CCI, whereas prolonged LOS was associated with higher ASA score. Tumor size was related, although not significantly, to LOS and perioperative complications. Tumors  $\geq 7.5$  cm in diameter were significantly associated with worse perioperative outcomes.

#### **CONCLUSIONS:**

LA for adrenal lesions demonstrated reasonable complication rates and perioperative outcomes. Tumor size, CCI, and ASA score are predictive of increased EBL and LOS.

PMID: 25062338

[Makale sayfası](#)

9. [ANZ J Surg.](#) 2014 Jul 25. doi: 10.1111/ans.12799. [Epub ahead of print] IF:1.35

## **Adherence to adrenal incidentaloma guidelines is influenced by radiology report recommendations.**

[Wickramarachchi BN](#)<sup>1</sup>, [Meyer-Rochow GY](#), [McAnulty K](#), [Conaglen JV](#), [Elston MS](#).

#### **Author information**

#### **Abstract**

#### **INTRODUCTION:**

Approximately 5% of all abdominal computed tomography (CT) and magnetic resonance imaging (MRI) scans reveal an adrenal incidentaloma. Although most adrenal incidentalomas are benign non-functioning adenomas, lesions may be hormonally active and/or malignant. The aim of this study was to determine adherence to recommended international guidelines and potential influencing factors when an adrenal incidentaloma is identified in routine clinical practice.

#### **METHODS:**

A retrospective study was performed of all CT and MRI reports from December 2009 to December 2011 using a key phrase search to identify patients with an incidental adrenal lesion.

#### **RESULTS:**

A total of 125 patients with incidental adrenal lesions were identified, of which 74 patients were considered appropriate for further endocrine/radiological workup. Of the 74 patients, only 19 (26%) were initially referred to the endocrine service for investigation; 21/74 (28%) had complete biochemical workup and 24/74 (32%) had imaging follow-up arranged. The reporting radiologist provided advice for follow-up in 31/74 (42%), and action was more likely to be taken when this recommendation was given. Follow-up of the patients who had not received investigation was attempted resulting in assessment of a further 23 patients. Of the 44 patients who have undergone full assessment, four patients were found to have clinically significant lesions (one each of: Cushing's syndrome, pheochromocytoma, Conn's syndrome and plasmacytoma).

#### **CONCLUSION:**

This study suggests that the majority of adrenal incidentalomas may not be investigated according to current international guidelines. The recommendations by the reporting radiologist appear to influence whether a patient is referred for further investigation.

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PMID: 25060597

[Makale sayfası](#)

# ADRENAL

## VAKA SUNUMU

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1. [Int J Clin Exp Pathol](#). 2014 Jul 15;7(8):5051-6. eCollection 2014. IF: 2.29

### **Cystic lymphangioma of adrenal gland: a clinicopathological study of 3 cases and review of literature.**

[Zhao M](#)<sup>1</sup>, [Gu Q](#)<sup>2</sup>, [Li C](#)<sup>3</sup>, [Yu J](#)<sup>3</sup>, [Qi H](#)<sup>4</sup>.

#### **Author information**

#### **Abstract**

Cystic lymphangioma of the adrenal gland is a rare and benign lesion, most often found incidentally during abdominal imaging studies, abdominal surgery or at autopsy. We aimed to retrospectively review all adrenallymphangioma cases at our hospital, further document their lymphatic origin by immunohistochemical staining and discuss the differential diagnosis with other cystic adrenal gland lesions. A total of 3 adrenal lymphangioma cases were identified. All three patients were men and adults at time of diagnosis aged 41 years, 43 years, and 66 years, respectively. All were incidentally identified during investigating for unrelated reasons, two of which were discovered by routine radiologic check-up while the last one was found during imaging detection of ureteral cancer. The average size of an adrenal lymphangioma lesion was 3.2 cm (range, 2.5-4.6 cm). Histologically, all three cases showed a typical multicystic architecture with dilated spaces lined by flattened, bland, simple lining. The cystic spaces occasionally contained proteinaceous material but lacked red blood cell content. On immunohistochemical stains, D2-40 cytoplasmic staining was positive in all three lesions, whereas AE1/AE3 was negative, thus, confirming their lymphatic nature.

#### **KEYWORDS:**

Adrenal gland; D2-40; adrenal cyst; cystic neoplasm; differential diagnosis; lymphangioma

PMID: 25197378

2. [Indian J Urol](#). 2014 Jul;30(3):339-41. doi: 10.4103/0970-1591.134248. IF: 0.55

### **Aldosterone and cortisol co-secreting bifunctional adrenal cortical carcinoma: A rare event.**

[Chowdhury PS](#), [Nayak P](#), [Gurumurthy S](#), [David D](#).

#### **Author information**

#### **Abstract**

Adrenocortical carcinoma (ACC) co-secreting aldosterone and cortisol is extremely rare. We report the case of a 37-year-old female who presented with paresis and facial puffiness. Evaluation revealed hypertension, hyperglycemia, severe hypokalemia and hyperaldosteronemia with elevated plasma aldosterone to renin ratio (ARR). Urinary free cortisol estimation showed elevated levels. Computed tomography scan revealed a rightadrenal mass. Radical adrenalectomy specimen revealed ACC (T3N1). Post-operatively, the patient became normotensive and euglycemic with normalization of urinary cortisol and ARR. This case highlights the need for a complete evaluation in patients of hyperaldosteronism if overlapping symptoms of hypercortisolism are encountered, to avoid post-operative adrenal crisis.

#### **KEYWORDS:**

Adrenal cortical carcinoma; bi-functional tumor; co-secretion

PMID: 25097323

[Makale sayfası](#)

3. [Conn Med.](#) 2014 Aug;78(7):403-7. IF: 0.29

## **Primary adrenal leiomyosarcoma: a case report and review of the literature.**

[Bhalla A](#), [Sandhu F](#), [Sieber S](#).

### **Abstract**

Primary adrenal leiomyosarcoma has been reported previously in 25 patients. The patient presented herein is the only case where the definitive diagnosis was made with core needle biopsy evaluation. A 45-year-old male presented with pain in the back and right groin. Radiological evaluation demonstrated a heterogeneous 11 cm rightadrenal mass, multiple liver masses, and an enlarged aortocaval lymph node. No retroperitoneal mass was identified. Core needle biopsies revealed a malignant mesenchymal neoplasm composed of atypical spindle shaped cells arranged in intersecting fascicles, with high mitotic activity and focal tumor necrosis. Immunohistochemical stains revealed immunoreactivity for smooth muscle actin and desmin. S-100 and c-kit stains were negative. The diagnosis of adrenal leiomyosarcoma with liver metastasis was rendered. It was an aggressive tumor with clinical presentation at Figure 1. Core needle biopsy, a an advanced stage. Definitive diagnosis of this tumor by core needle biopsy can obviate the need for surgical biopsy in patients with advanced disease.

PMID: 25195305

# NET

## DERLEME

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1. [Cancer Treat Rev.](#) 2014 Sep;40(8):974-9. doi: 10.1016/j.ctrv.2014.06.009. Epub 2014 Jun 25. IF: 7.01

### **RAF signaling in neuroendocrine neoplasms: from bench to bedside.**

[Fazio N](#)<sup>1</sup>, [Abdel-Rahman O](#)<sup>2</sup>, [Spada F](#)<sup>3</sup>, [Galdy S](#)<sup>3</sup>, [De Dosso S](#)<sup>4</sup>, [Capdevila J](#)<sup>5</sup>, [Scarpa A](#)<sup>6</sup>.

#### **Author information**

#### **Abstract**

Neuroendocrine neoplasms are a low-incidence and heterogeneous group of malignancies. In the advanced stage, several therapeutic options can be discussed, including molecular-targeted agents, but biological predicting factors are lacking. A number of molecular targets have been studied over the last decade leading to several phase II studies; however, very few agents progressed to phase III clinical trials. The RAF family of proteins belongs to the mitogen-activated protein kinase (MAPK) pathway, that has a role in several types of cancers, particularly related to BRAF mutations. Indeed BRAF inhibitors have been reported as being effective, mainly in melanoma. However, in neuroendocrine neoplasms BRAF mutations are extremely rare and RAF-1 activation has been reported to inhibit tumor growth in a pre-clinical setting. Therefore, in this field, RAF-1 activators rather than BRAF inhibitors should be clinically investigated. This article reviews the basic science as well as clinical data of RAF signaling in advanced neuroendocrine neoplasms with special emphasis on the potential role of both RAF activators and inhibitors.

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#### **KEYWORDS:**

BRAF; Cell signaling; MAPK; Molecular targeted therapy; NET; Neuroendocrine neoplasms; Neuroendocrine tumors; RAF; RAF-1

PMID: 24998490

[Makale sayfası](#)

2. [Surgery.](#) 2014 Jul;156(1):83-96.e2. doi: 10.1016/j.surg.2014.03.026. Epub 2014 Mar 18. IF: 3.19

### **A systematic review and meta-analysis of the clinicopathologic characteristics of cystic versus solid pancreatic neuroendocrine neoplasms.**

[Koh YX](#)<sup>1</sup>, [Chok AY](#)<sup>1</sup>, [Zheng HL](#)<sup>2</sup>, [Tan CS](#)<sup>2</sup>, [Goh BK](#)<sup>3</sup>.

#### **Author information**

#### **Abstract**

#### **INTRODUCTION:**

Cystic pancreatic neuroendocrine neoplasms (PNENs) are rare neoplasms, and presently, it is uncertain whether their behavior is similar or distinct from their solid counterparts. This study aimed to review systematically the present literature to compare the clinicopathologic characteristics of cystic PNENs versus their solid counterparts to determine whether cystic PNENs are likely to be a distinct entity from solid PNENs.

## METHODS:

Comparative studies of solid versus cystic PNENs studies were reviewed. Cystic and solid PNENs were compared on the basis of several clinicopathologic characteristics.

## RESULTS:

Seven nonrandomized case control studies compared 152 cystic versus 915 solid PNENs. Pooled analysis demonstrated that the likelihood of PNENs to be located in the head/uncinate of the pancreas was lower for cystic than solid neoplasms (27.7% vs 45.5%, odds ratio [OR] 0.452, 95% confidence interval [95% CI] 0.304-0.673,  $P < .001$ ). Cystic PNENs were less likely to be functional (14% vs 24.4%, OR 0.405, 95% CI 0.221-0.742,  $P = .003$ ) and were more likely to be benign/uncertain rather than malignant compared with solid PNENs (90.3% vs 65.9%, OR 3.151, 95% CI 1.297-7.652,  $P = .011$ ). Cystic PNENs were more likely to have a mitotic count  $<2$  per 10 hpf and a Ki67 index  $<2\%$  (93.3% vs 72.7%, OR 4.897, 95% CI 2.139-11.209,  $P < .001$  and 82.4% vs 54.1%, OR 4.079, 95% CI 2.177-7.641,  $P < .001$ ), respectively. Cystic neoplasms were also less likely to have regional lymph node metastases than solid neoplasms (11.2% vs 28.9%, OR 0.387, 95% CI 0.219-0.685,  $P = .001$ ). In this meta-analysis, there was no difference in the 5-year overall survival and 5-year disease-free survival between cystic vs solid PNENs (92.0% vs 86.8%,  $P = .214$ ) and (98.1% vs 83.9%,  $P = .185$ ).

## CONCLUSION:

These findings suggest that cystic PNENs tend to be biologically less aggressive compared with their solid counterparts; more data, however, with respect to molecular analysis are required to establish whether cystic and solid PNENs were distinct pathologic entities.

PMID: 24878455

[Makale sayfası](#)

3. [J Clin Pathol](#). 2014 Jul 22. pii: jclinpath-2014-202515. doi: 10.1136/jclinpath-2014-202515. [Epub ahead of print] IF:2.82

## Gastric neuroendocrine neoplasms and related precursor lesions.

[La Rosa S](#)<sup>1</sup>, [Vanoli A](#)<sup>2</sup>.

### [Author information](#)

### Abstract

Gastric neuroendocrine neoplasms (NENs) are a heterogeneous group of tumours showing different clinicopathological features and behaviour, implying a wide spectrum of therapeutic options. They are currently classified using the 2010 WHO classification of digestive neuroendocrine neoplasms into G1-neuroendocrine tumours (NETs), G2-NETs, neuroendocrine carcinomas (NECs) and mixed adenoneuroendocrine carcinomas (MANECs). However, most gastric NENs are composed of ECL-cells (ECL-cell NETs) that can be preceded by ECL-cell hyperplastic and dysplastic lesions, whose oncologic potential has not yet been completely elucidated. ECL-cell NETs differ considerably in terms of prognosis depending on the proliferative status and clinicopathological background. The integration of both aspects in the diagnostic pathway may help to better classify tumours in different prognostic categories, especially when diagnosing them in small bioptic specimens. NECs are all poorly differentiated, highly aggressive carcinomas, while MANECs can show different morphological features that are directly associated with different prognoses. Precursor lesions of such carcinomas are not entirely understood. In this review, the clinicopathological features of gastric NENs and related precursor lesions will be described to give the reader a comprehensive overview on this topic.

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## KEYWORDS:

GASTRIC PATHOLOGY; NEUROENDOCRINE TUMOURS; SURGICAL PATHOLOGY

PMID: 25053544

[Makale sayfası](#)

4. [Eur J Gastroenterol Hepatol](#). 2014 Aug;26(8):826-35. doi: 10.1097/MEG.000000000000138. IF: 2.24

## **Pancreatic neuroendocrine tumors: current opinions on a rare, but potentially curable neoplasm.**

[Karakaxas D](#)<sup>1</sup>, [Gazouli M](#), [Liakakos T](#), [Vaiopoulou A](#), [Apessou D](#), [Papaparaskeva K](#), [Patapis P](#), [Dervenis C](#).

[Author information](#)

### **Abstract**

Pancreatic neuroendocrine tumors (PNETs) share a unique genetic identity, functional behavior, and clinical course. Compared with tumors of the exocrine pancreas, they are rare and show a different biologic behavior and prognosis. On the basis of data from recent studies, all PNETs, outside of small insulinomas, should be considered potentially malignant and treated accordingly. Untreated tumors have a high possibility to grow locally into adjacent structures or spread to distant organs. Although surgical excision irrespective of tumor functioning or nonfunctioning state remains the cornerstone of therapy, providing the best disease-free and survival rates to date, the understanding of the genetic nature of the disease yields new 'targets' to consider in drug development. The aim of this review is to summarize all recent advances of genetic research and new drug development in terms of PNETs, especially their genetic identity and subsequent alterations leading to the development of near or total malignant activity, and the new medical treatment strategies of this potentially curable disease on the basis of therapeutical agents acting, where possible, at the genetic level.

PMID: 24987821

[Makale sayfası](#)

5. [Clin Transl Oncol](#). 2014 Sep 3. [Epub ahead of print] IF: 1.75

## **SEOM clinical guidelines for the diagnosis and treatment of gastroenteropancreatic neuroendocrine neoplasms (GEP-NENs) 2014.**

[Garcia-Carbonero R](#)<sup>1</sup>, [Jimenez-Fonseca P](#), [Teulé A](#), [Barriuso J](#), [Sevilla I](#).

[Author information](#)

### **Abstract**

GEP-NENs are a challenging family of tumors of growing incidence and varied clinical management and behavior. Diagnostic techniques have substantially improved over the past decades and significant advances have been achieved in the understanding of the molecular pathways governing tumor initiation and progression. This has already translated into relevant advances in the clinic. This guideline aims to provide practical recommendations for the diagnosis and treatment of GEP-NENs. Diagnostic workup, histological and staging classifications, and the different available therapeutic approaches, including surgery, liver-directed ablative therapies, peptide receptor radionuclide therapy, and systemic hormonal, cytotoxic or targeted therapy, are briefly discussed in this manuscript. Clinical presentation (performance status, comorbidities, tumor-derived symptoms and hormone syndrome in functioning tumors), histological features [tumor differentiation, proliferation rate (Ki-67), and expression of somatostatin receptors], disease localization and extent, and resectability of primary and metastatic disease, are all key issues that shall be taken into consideration to appropriately tailor therapeutic strategies and surveillance of these patients.

PMID: 25183048

1. [Br J Surg.](#) 2014 Oct;101(11):1405-12. doi: 10.1002/bjs.9603. Epub 2014 Aug 13. IF: 5.35

### **Outcome of surgery for pancreatic neuroendocrine neoplasms.**

[Fischer L](#)<sup>1</sup>, [Bergmann F](#), [Schimmack S](#), [Hinz U](#), [Prieß S](#), [Müller-Stich BP](#), [Werner J](#), [Hackert T](#), [Büchler MW](#).

[Author information](#)

**Abstract**

#### **BACKGROUND:**

The incidence of pancreatic neuroendocrine neoplasms (pNEN) is increasing. This study aimed to evaluate predictors of overall survival and the indication for surgery.

#### **METHODS:**

Data collected between October 2001 and December 2012 were analysed. Histological grading and staging was based on the classifications of the World Health Organization, the International Union Against Cancer and the European Neuroendocrine Tumour Society.

#### **RESULTS:**

Some 310 patients (150 female, 48.4 per cent) underwent surgical resection. The final survival analysis included 291 patients. Five-year overall survival differed according to tumour grade (G): 91.0 per cent among 156 patients with pancreatic neuroendocrine tumours (pNET) G1, 70.8 per cent in 111 patients with pNET G2, and 20 per cent in 24 patients with pancreatic neuroendocrine carcinomas (pNEC) G3 ( $P < 0.001$ ). Tumours graded G3 (hazard ratio (HR) 6.96, 95 per cent confidence interval 3.67 to 13.21), the presence of distant metastasis (HR 2.41, 1.32 to 4.42) and lymph node metastasis (HR 2.10, 1.07 to 4.16) were independent predictors of worse survival ( $P < 0.001$ ,  $P = 0.004$  and  $P = 0.032$  respectively). Eight of 61 asymptomatic patients with pNEN smaller than 2 cm had tumours graded G2 or G3, and six of 51 patients had lymph node metastasis. Among patients with pNEC G3, the presence of distant metastasis had a significant impact on the 5-year overall survival rate: 0 per cent versus 43 per cent in those without distant metastasis ( $P = 0.036$ ).

#### **CONCLUSION:**

Neuroendocrine tumours graded G3, lymph node and distant metastasis are independent predictors of worse overall survival in patients with pNEN.

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PMID: 25132004

[Makale sayfası](#)

2. [Int J Cancer.](#) 2014 Jul 1;135(1):128-37. doi: 10.1002/ijc.28675. Epub 2014 Jan 6. IF: 5.28

### **Analysis of 320 gastroenteropancreatic neuroendocrine tumors identifies TS expression as independent biomarker for survival.**

[Lee HS](#)<sup>1</sup>, [Chen M](#), [Kim JH](#), [Kim WH](#), [Ahn S](#), [Maeng K](#), [Allegra CJ](#), [Kaye FJ](#), [Hochwald SN](#), [Zajac-Kaye M](#).

[Author information](#)

## Abstract

Thymidylate synthase (TS), a critical enzyme for DNA synthesis and repair, is both a potential tumor prognostic biomarker as well as a tumorigenic oncogene in animal models. We have now studied the clinical implications of TS expression in gastroenteropancreatic (GEP) neuroendocrine tumors (NETs) and compared these results to other cell cycle biomarker genes. Protein tissue arrays were used to study TS, Ki-67, Rb, pRb, E2F1, p18, p21, p27 and menin expression in 320 human GEP-NETs samples. Immunohistochemical expression was correlated with univariate and multivariate predictors of survival utilizing Kaplan Meier and Cox proportional hazards models. Real time RT-PCR was used to validate these findings. We found that 78 of 320 GEP-NETs (24.4%) expressed TS. NETs arising in the colon, stomach and pancreas showed the highest expression of TS (47.4%, 42.6% and 37.3%, respectively), whereas NETs of the appendix, rectum and duodenum displayed low TS expression (3.3%, 12.9% and 15.4%, respectively). TS expression in GEP-NETs was associated with poorly differentiated endocrine carcinoma, angiolymphatic invasion, lymph node metastasis and distant metastasis ( $p < 0.05$ ). Patients with TS-positive NETs had markedly worse outcomes than TS-negative NETs as shown by univariate ( $p < 0.001$ ) and multivariate ( $p = 0.01$ ) survival analyses. Expression of p18 predicted survival in TS-positive patients that received chemotherapy ( $p = 0.015$ ). In conclusion, TS protein expression was an independent prognostic biomarker for GEP-NETs. The strong association of increased TS expression with aggressive disease and early death supports the role of TS as a cancer promoting agent in these tumors.

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## KEYWORDS:

gastroenteropancreatic neuroendocrine tumor; immunohistochemistry; survival analysis; thymidylate synthase

PMID: 24347111

[Makale sayfası](#)

3. [Ann Surg Oncol](#). 2014 Sep;21(9):2956-62. doi: 10.1245/s10434-014-3725-3. Epub 2014 Apr 24.

IF:4.33

## A retrospective review of 126 high-grade neuroendocrine carcinomas of the colon and rectum.

[Smith JD<sup>1</sup>](#), [Reidy DL](#), [Goodman KA](#), [Shia J](#), [Nash GM](#).

### [Author information](#)

## Abstract

### BACKGROUND:

High-grade neuroendocrine carcinomas (HGNECs) of the colon and rectum are rare, constituting less than 1 % of colorectal cancers. The purpose of this study was to identify the natural history and oncologic outcomes of this disease, describe the use of surgery, and determine the clinical and pathological factors associated with outcomes.

### METHODS:

Following Institutional Review Board approval, patients with HGNEC were identified from our institutional database. Patient charts and pathology reports were analyzed retrospectively for clinical and pathological factors.

### RESULTS:

A total of 126 patients with a median follow-up of 9 months were identified. Median survival was 13.2 months, and 85 (67 %) patients had metastatic disease at diagnosis. Three-year overall survival (OS) was 5 and 18 % for patients with and without metastatic disease, respectively. Factors associated with improved OS on multivariable analysis were absence of metastatic disease and presence of an adenocarcinoma component within the tumor. In patients with metastatic disease, response to chemotherapy was the only factor associated with survival. In patients with localized disease, an

adenocarcinoma component within the tumor was the only factor associated with survival. Resection of tumor was not associated with survival in either localized or metastatic disease.

#### **CONCLUSION:**

High-grade colorectal NECs are extremely aggressive tumors with poor prognosis. Patients appear to have a marginally better prognosis if they present without metastatic disease, have an adenocarcinoma component within their tumor, or respond to chemotherapy. Surgery, particularly in the presence of metastatic disease, may not offer a survival benefit for the majority of patients.

PMID: 24763982

[Makale sayfası](#)

4. [Ann Surg Oncol](#). 2014 Oct;21(11):3422-8. doi: 10.1245/s10434-014-3774-7. Epub 2014 Jul 25.

IF: 4.21

## **Incidence of additional primary malignancies in patients with pancreatic and gastrointestinal neuroendocrine tumors.**

[Kauffmann RM<sup>1</sup>](#), [Wang L](#), [Phillips S](#), [Idrees K](#), [Merchant NB](#), [Parikh AA](#).

#### **Author information**

#### **Abstract**

#### **BACKGROUND:**

The incidence of secondary malignancies is increased in patients with malignant and premalignant conditions. Although neuroendocrine tumors (NET) are uncommon, their incidence is increasing. We evaluated the rate of additional malignancies in patients with NET.

#### **METHODS:**

Using the Surveillance, Epidemiology, and End Results (SEER) database, we identified a cohort of patients with pancreatic NET (PNET) or gastrointestinal NET (GINET). We determined the incidence of additional cancers diagnosed either before or after the diagnosis of PNET or GINET, by comparing these rates with the general population. Using multivariable regression, we evaluated factors that increased the risk of an additional malignancy.

#### **RESULTS:**

A cohort of 9,727 NET patients was identified. A total of 3,086 additional cancers occurred in 2,508 patients (25.8 %). The most common sites of additional malignancies included colorectal (21.1 %), prostate (14.5 %), breast (13.3 %), and lung (11.6 %). Among patients with PNET, the incidence of breast, lung, uterine, lymph, and pancreatic cancers was less than expected in the general population, whereas in patients with GINET, the observed incidence of nearly all malignancies exceeded that expected. Increasing age, marital status, and localized NET were associated with increased risk.

#### **CONCLUSION:**

Our study shows that the incidence of additional malignancies in patients with PNET and GINET is 25.8 %. Patients with GINET are at increased risk of additional malignancies, whereas patients with PNET have a decreased risk compared with the general population. More vigilant surveillance for secondary malignancies should be performed in patients with GINET. Studies investigating potential etiologic oncogenic pathways are warranted.

PMID: 25059786

[Makale sayfası](#)

5. [Pancreatology](#). 2014 Sep 16. pii: S1424-3903(14)00976-4. doi: 10.1016/j.pan.2014.09.005. [Epub ahead of print] IF: 3.09

## WHO 2010 classification of pancreatic endocrine tumors. Is the new always better than the old?

[Ricci C](#)<sup>1</sup>, [Casadei R](#)<sup>2</sup>, [Taffurelli G](#)<sup>2</sup>, [D'Ambra M](#)<sup>2</sup>, [Monari F](#)<sup>2</sup>, [Campana D](#)<sup>2</sup>, [Tomassetti P](#)<sup>2</sup>, [Santini D](#)<sup>3</sup>, [Minni F](#)<sup>2</sup>.

### [Author information](#)

### Abstract

#### BACKGROUND:

In 2010, the World Health Organization released a new classification system for endocrine pancreatic tumors. The new categories replaced those in the old classification.

#### METHODS:

To test the safety and accuracy of the new classification in stratifying patients, we retrospectively evaluated 64 consecutive patients, surgically R0 resected for pancreatic endocrine tumors.

#### RESULTS:

In our experience, only 19/31 (61.3%) patients classified as having well-differentiated tumors were included in the new neuroendocrine tumor G1 category while the remaining 12 (38.7%) shifted into the G2 category. Moreover, 10/33 (30.3%) patients classified as affected by a malignant endocrine neoplasm in the old system were considered as G1 tumors in the new one. These differences were statistically significant ( $P < 0.001$ ) and changed the risk category in 22 (33.3%) patients with well-differentiated pancreatic endocrine tumors. Multiple multivariate models were produced and the poor stratification of the new system was found to be in the G2 category which presents too wide a range of the Ki 67 index (2 to 20%). We built a model in which the G2 category was divided into two subcategories: tumors with a Ki 67 index  $\geq 2$  and  $< 5\%$  and tumors with a Ki index  $\geq 5$  and  $< 20\%$ , partially modifying the new classification. In this model, the modified classification showed a superiority with respect to the European Neuroendocrine tumor Society-Tumor-Node-Metastasis staging system in stratifying patients for recurrence, with a relative risk of 19 ( $P < 0.001$ ).

#### CONCLUSION:

The new G2 category seems too large because it includes both benign, low and high grade malignant tumors.

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#### KEYWORDS:

Classification; ENETS; Endocrine pancreatic tumor; Ki 67 index; Survival; WHO

PMID: 25266640

[Makale sayfası](#)

6. [J Gastrointest Surg](#). 2014 Aug 26. [Epub ahead of print] IF: 2.65

## Surgical Resection Provides an Overall Survival Benefit for Patients with Small Pancreatic Neuroendocrine Tumors.

[Sharpe SM](#)<sup>1</sup>, [In H](#), [Winchester DJ](#), [Talamonti MS](#), [Baker MS](#).

### [Author information](#)

### Abstract

#### BACKGROUND:

The optimal management of small ( $\leq 2$  cm) pancreatic neuroendocrine tumors (PNETs) remains controversial. We evaluated these tumors in the National Cancer Data Base (NCDB) to determine if resection provides a survival advantage over observation.

## **METHODS:**

The NCDB was queried to identify patients with nonmetastatic PNETs  $\leq 2$  cm treated between 1998 and 2006. Kaplan-Meier survival estimates, stratified by grade and treatment type, evaluated the difference in 5-year overall survival (OS) between patients who underwent resection and observation. Multivariable Cox regression was used to determine the importance of resection in OS.

## **RESULTS:**

Three hundred eighty patients met inclusion criteria. Eighty-one percent underwent resection; 19 % were observed. Five-year OS was 82.2 % for patients who underwent surgery and 34.3 % for those who were observed ( $p < 0.0001$ ). When controlling for age, comorbidities, income, facility type, tumor size and location, grade, margin status, nodal status, surgical management, and nonsurgical therapy in the Cox model, observation [hazard ratio (HR) 2.80], poorly differentiated histology (HR 3.79), lymph node positivity (HR 2.01), and nonsurgical therapies (HR 2.23) were independently associated with an increase in risk of mortality ( $p < 0.01$ ).

## **CONCLUSION:**

Patients with localized PNETs  $\leq 2$  cm had an overall survival advantage with resection compared to observation, independent of age, comorbidities, tumor grade, and treatment with nonsurgical therapies.

PMID: 25155459

7. [Digestion](#). 2014 Sep 4;90(2):89-97. [Epub ahead of print] IF:2.48

## **Well-Differentiated Neuroendocrine Neoplasia: Relapse-Free Survival and Predictors of Recurrence after Curative Intended Resections.**

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### **Author information**

#### **Abstract**

Background: Resection with curative intention is the cornerstone of treatment in patients with neuroendocrine tumors. A proportion of patients will relapse after R0 resection, but the factors predictive of recurrence are not well understood. Methods: A database established 1998 at the University Hospital Marburg was queried for all patients with documented R0 resection. Recurrence-free survival and overall survival were estimated using the Kaplan-Meier method. Uni- and multivariate analyses were performed. Results: 180 patients with a median age of 52 years entered the analysis. We observed 77 recurrences after a median time of 2.9 years. 24% of the recurrences occurred later than 5 years after operation. Median recurrence-free survival of the whole cohort was 101 months. In univariate analysis grade by Ki-67, stage, high lymph node ratio and microangiogenesis were significant predictors of recurrence. On multivariate analysis these parameters were confirmed as independent prognostic parameters with stage and microangiogenesis being the most important predictors. Conclusions: After R0 resection of neuroendocrine tumors, postoperative surveillance should be extended to at least 10 years. Patients with distant metastases and microangiogenesis are at high risk of recurrence. Clinical trials of adjuvant treatment protocols are indicated in these patients. © 2014 S. Karger AG, Basel.

PMID: 25196446

## Clinical, pathological and prognostic characteristics of gastroenteropancreatic neuroendocrine neoplasms in China: a retrospective study.

[Zhang X](#), [Ma L](#), [Bao H](#), [Zhang J](#), [Wang Z](#), [Gong P](#)<sup>1</sup>.

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### Abstract

#### BACKGROUND:

Gastroenteropancreatic neuroendocrine neoplasms (GEP-NENs) are rare neuroendocrine tumors, and lack of data in Asian populations especially in China. The aim of this retrospective study was to assess the clinical, pathological and prognostic characteristics of GEP-NENs in China.

#### METHODS:

We collected clinical and pathological data of 168 patients diagnosed with GEP-NENs and treated at the First and Second Affiliated Hospitals of Dalian Medical University between January 2003 and December 2012. Kaplan-Meier method and log rank analysis was used to analyze the prognostic significance of clinical and pathological characteristics.

#### RESULTS:

Mean age was  $51.83 \pm 14.03$  and the male-to-female ratio was 1.5:1. Primary sites were the rectum (58.93%), pancreas (13.69%), stomach (9.52%), duodenum (5.36%), colon (4.76%), appendix (4.76%), ileum (2.38%) and jejunum (0.60%). Most patients (95.83%) presented non-functional tumors with non-specific symptoms such as abdominal or back pain (29.17%) and gastrointestinal bleeding (25.60%). Based on the 2010 World Health Organization (WHO) classification, patients were diagnosed with neuroendocrine tumor (NET) (24.40%) or neuroendocrine carcinoma (NEC) (7.14%). The estimated mean survival was  $8.94 \pm 0.28$  years (95% CI: 8.40-9.48). Male gender, young age, small tumor size and NET tumor type were favorable prognostic factors.

#### CONCLUSION:

Chinese GEP-NENs patients present characteristics that are similar to American and European patients. However, there is an urgent need to establish a national database for understanding the clinical and epidemiological features of GEP-NENs in China.

# NET

## VAKA SUNUMU

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1. [World J Gastrointest Oncol.](#) 2014 Aug 15;6(8):301-10. doi: 10.4251/wjgo.v6.i8.301.

### **Neuroendocrine tumors of the gastrointestinal tract: Case reports and literature review.**

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#### **Author information**

#### **Abstract**

Neuroendocrine tumors (NET) previously called carcinoid tumors are neoplasms of enterochromaffin/neuroendocrine cell origin which display neurosecretory capacity that may result in the carcinoid syndrome. The annual incidence of patients with NET is 8.4 per 100000; yet many NET remain asymptomatic and clinically undetected. A majority of NET follows a benign course; however, some will display malignant characteristics. NET most commonly occur in the gastrointestinal tract (67%) and bronchopulmonary system (25%). Gastrointestinal NET occur within the stomach, small intestine, liver, and rectum. We report a retrospective study of 11 subjects: Eight with benign carcinoid tumors: duodenal bulb (n = 2), terminal ileum (n = 1), sigmoid colon (n = 2), and rectum (n = 3); three with malignant carcinoid: liver (n = 1) and intra-abdominal site (n = 2). The diagnosis, endoscopic images, outcome, treatment and review of the literature are presented.

#### **KEYWORDS:**

Carcinoid; Gastrointestinal; Neuroendocrine; Tumors

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[Makale sayfası](#)