

# CLINICAL THYROIDOLOGY FOR PATIENTS



AMERICAN  
THYROID  
ASSOCIATION  
FOUNDED 1923

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#### Factors that point toward more aggressive treatment for papillary thyroid microcarcinomas

Papillary thyroid microcarcinomas are very small cancers (< than 1 cm in diameter) which are often found by chance when patients have thyroid surgery for non-cancerous conditions. Because patients are not likely to die from this type of cancer and most do not have a recurrence after the initial therapy, the initial therapy is somewhat controversial. This study tried to determine the best treatment approach based on the evaluation of a number of risk factors in a group of patients who had thyroid surgery for reasons other than known cancer, but who were found to have papillary thyroid microcarcinoma on final pathology.

Lombardi CP et al. Papillary thyroid microcarcinoma: extrathyroidal extension, lymph node metastases, and risk factors for recurrence in a high prevalence of goiter area. *World J Surg* 2010. .... 3

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Thyroid nodules are very common and are seen in up to 50% of individuals who have neck imaging studies for a variety of reasons. Thyroid cancer is found in up to 8% of thyroid nodules. Ultrasound-guided fine-needle aspiration biopsy of thyroid nodules has markedly changed the approach to the diagnosis of thyroid cancer. As a result, there has been an increase in the identification of papillary microcarcinomas, which are small cancers <1 cm in size. Because patients are not likely to die from this type of cancer, it is unclear what is the best approach to the treatment of these patients. While most patients with a diagnosis of papillary cancer after a biopsy of a thyroid nodule undergo surgery, some patients with nodules <1 cm may choose to simply follow these nodules without surgery. The authors of the present study have previously reported on a series of 162 patients with papillary microcarcinomas who declined surgery — 70% had no change in their nodules while 1.2% developed spread of the cancer to the lymph nodes. The present study is an extension of this earlier study to determine the clinical course of papillary microcarcinomas in patients who initially decline surgery.

Ito et al. An observational trial for papillary thyroid microcarcinoma in Japanese patients. *World J Surg* 2010;34:28-35.10.1007/s00268-009-0303-0 [doi]..... 5

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Thyroid hemiagenesis is a condition that occurs at birth in which one of the thyroid lobes fails to develop and is absent. This study examines whether having one thyroid lobe needs to be followed by a physician on a regular basis and whether there are clinical symptoms associated with this condition.

Ruchala et al. Increased risk of thyroid pathology in patients with thyroid hemiagenesis: results of a large cohort case-control study. *Eur J Endocrinol* 2010;162:153-60. .... 7

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Systemic lupus erythematosus (SLE) is an uncommon autoimmune connective-tissue disorder which can affect a number of body systems. A previous study suggested that patients with SLE a high incidence of several cancers, including thyroid cancer. The present study looks at this further and examines the features of thyroid cancer in patients with SLE.

Antonelli et al. Thyroid cancer in systemic lupus erythematosus: a case-control study. *J Clin Endocrinol Metab* 2010;95:314-8 ..... 9

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Thyroid nodules are very common, occurring in up to 50% of patients. The initial evaluation of a thyroid nodule often includes a thyroid ultrasound followed by a thyroid fine needle aspiration biopsy (FNAB) to determine which nodules should be sent to surgery. This study examined the value of ultrasound features in thyroid nodules that initially have a biopsy read as benign.

Kwak et al. Value of US correlation of a thyroid nodule with initially benign cytologic results. *Radiology* 2010;254:292-300. .... 10

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# CLINICAL THYROIDOLOGY FOR PATIENTS

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## EDITOR'S COMMENTS

Welcome to *Clinical Thyroidology for Patients*. This publication is a collection of summaries of the top articles from the recent medical literature that cover the broad spectrum of thyroid disorders. *Clinical Thyroidology for Patients* is published on a monthly basis and includes summaries of research studies that were discussed in the previous month's issue of *Clinical Thyroidology*, a publication of the American Thyroid Association for physicians. This means that you, the patients, will be getting the latest information on thyroid research and treatment almost as soon as your physicians.

The **Calendar of Events** highlights educational forums and support groups that are organized by members of the **Alliance for Thyroid Patient Education**. The **Alliance** member groups consist of: the *American Thyroid Association*, the *Graves' Disease Foundation*, the *Light of Life Foundation* and *ThyCa: Thyroid Cancer Survivors Association*.

### In this issue, studies ask the following questions:

- Two papers ask the questions: what are the indications for more aggressive treatment and for less aggressive treatment of papillary microcarcinoma?
- Does thyroid hemigenesis require long term follow up?
- Is there an increase in thyroid cancer in patients with SLE?
- When do nodules with benign biopsy results need to be re-biopsied?

We welcome your feedback and suggestions. Let us know what you want to see in this publication. I hope you find these summaries interesting and informative.

—Alan P. Farwell, MD

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## EDITOR'S CHOICE — THYROID CANCER

### Factors that point toward more aggressive treatment for papillary thyroid microcarcinomas

#### WHAT IS THE STUDY ABOUT?

Papillary thyroid microcarcinomas are very small cancers (< than 1 cm in diameter) which are often found by chance when patients have thyroid surgery for non-cancerous conditions. Patients are not likely to die from this type of cancer and most do not have a recurrence after the initial therapy. However, the initial therapy is somewhat controversial. Some experts believe more aggressive treatment — including surgery to remove the entire thyroid gland and radioactive iodine therapy after surgery — decreases the chance of cancer returning and improves the ability to detect any return that may occur. Other experts believe a less aggressive approach is warranted and no radioactive iodine therapy is needed. However, recent studies seem to lean toward a more aggressive approach (Cranz F “Papillary thyroid carcinoma and microcarcinoma: is there a need to distinguish the two?” *Clinical Thyroidology for Patients* [serial online]. 2009;2(4):9-10. Belin R “Recurrence after treatment of micropapillary thyroid cancer. *Clinical Thyroidology for Patients* [serial online]. 2010;3(1):11-12. ). The authors of this study tried to determine the best treatment approach based on the evaluation of a number of risk factors in a group of patients who had thyroid surgery for reasons other than known cancer, but who were found to have papillary thyroid microcarcinoma on final pathology.

#### THE FULL ARTICLE TITLE:

Lombardi CP et al. Papillary thyroid microcarcinoma: extrathyroidal extension, lymph node metastases, and risk factors for recurrence in a high prevalence of goiter area. *World J Surg* 2010.

#### WHAT WAS THE AIM OF THE STUDY?

The aim of this study is to determine the best treatment approach to patients diagnosed with papillary thyroid microcarcinoma.

#### WHO WAS STUDIED?

The study group included 5355 patients from a single institution (Universita Policlinico in Rome, Italy) who had thyroid surgery in the period between October 2002 and June 2007. A total of 933 (17%) patients were found to have papillary thyroid microcarcinoma.

#### HOW WAS THE STUDY DONE?

The medical records of the patients were reviewed to find information regarding their age, sex, type of diagnosis, occurrence of other thyroid conditions, extent of thyroid surgery, cancer size, how many lymph nodes were removed, spread of the cancer beyond the thyroid and outside the neck.

#### WHAT WERE THE RESULTS OF THE STUDY?

Of the 933 patients with papillary thyroid microcarcinoma, 75% of them had thyroid surgery performed for reasons other than known cancer. In the remaining patients, the cancer was known before surgery. Patients with spread of the cancer outside of the thyroid or to the lymph nodes were younger, had larger cancers and had more lymph nodes removed.

Overall, risk factors for spread of the cancer outside of the thyroid included 1) a cancer between 5-10 mm, 2) one that was diagnosed before surgery and 3) one that spread to lymph nodes. These risk factors also predicted recurrence of the cancer.

#### HOW DOES THIS COMPARE WITH OTHER STUDIES?

Some studies show that most (>99%) of these patients are at low risk of distant spread or death from these cancers. Other studies have shown that, although the risk of death is low, return of the cancer is higher if the cancer is known before surgery, if there is more than 1 small cancer within the thyroid and if there is spread of the cancer to the lymph nodes at the time of the initial surgery. Most studies show that the use of radioactive iodine after surgery in these patients has not been shown to reduce recurrences.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that patients with papillary thyroid microcarcinoma that is known before surgery have a more advanced cancer that requires more aggressive treatment than cancers diagnosed after surgery for benign thyroid disorders.

— M. Regina Castro, MD  
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## **EDITOR'S CHOICE — THYROID CANCER, continued**

### **ATA THYROID BROCHURE LINKS**

Thyroid cancer: [http://thyroid.org/patients/patient\\_brochures/cancer\\_of\\_thyroid.html](http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html)

Radioactive Iodine Therapy: [http://thyroid.org/patients/patient\\_brochures/radioactive.html](http://thyroid.org/patients/patient_brochures/radioactive.html)

Thyroid Surgery: [http://thyroid.org/patients/patient\\_brochures/surgery.html](http://thyroid.org/patients/patient_brochures/surgery.html)

### **ABBREVIATIONS & DEFINITIONS**

**Papillary microcarcinoma** — a papillary thyroid cancer smaller than 1 cm in diameter.

**Thyroidectomy** — Surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a partial thyroidectomy.

**Radioactive iodine (RAI)** — this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).



## THYROID CANCER

### Papillary microcarcinomas without unfavorable features may be candidates for observation alone

#### WHAT IS THE STUDY ABOUT?

Thyroid nodules are very common and are seen in up to 50% of individuals who have neck imaging studies for a variety of reasons. Thyroid cancer is found in up to 8% of thyroid nodules. Ultrasound-guided fine-needle aspiration biopsy of thyroid nodules has markedly changed the approach to the diagnosis of thyroid cancer. As a result, there has been an increase in the identification of papillary microcarcinomas, which are small cancers <1 cm in size. Because patients are not likely to die from this type of cancer, it is unclear what is the best approach to the treatment of these patients. While most patients with a diagnosis of papillary cancer after a biopsy of a thyroid nodule undergo surgery, some patients with nodules <1 cm may choose to simply follow these nodules without surgery. The authors of the present study have previously reported on a series of 162 patients with papillary microcarcinomas who declined surgery — 70% had no change in their nodules while 1.2% developed spread of the cancer to the lymph nodes. The present study is an extension of this earlier study to determine the clinical course of papillary microcarcinomas in patients who initially decline surgery.

#### THE FULL ARTICLE TITLE:

Ito et al. An observational trial for papillary thyroid microcarcinoma in Japanese patients. *World J Surg* 2010;34:28-35.10.1007/s00268-009-0303-0 [doi].

#### WHAT WAS THE AIM OF THE STUDY?

The aim of this study is to determine what is the clinical course of papillary microcarcinomas in patients who initially decline surgery.

#### WHO WAS STUDIED?

Between 1993 through 2004, a diagnosis of papillary microcarcinoma was made after ultrasound screening and fine-needle aspiration biopsy in 1395 patients, 1055 of whom had immediate surgery, and 340 of whom made up the study group after being given the option of not having surgery.

#### HOW WAS THE STUDY DONE?

The records of the patients were reviewed. The 340 patients that did not undergo surgery were followed with ultrasound

and chest X-rays more than once per year. Surgery was recommended when the nodules containing the papillary microcarcinomas were next to the trachea (breathing tube) or the edge of the thyroid, when the nodule increased by >3 mm or when it appeared that there was spread to lymph nodes.

#### WHAT WERE THE RESULTS OF THE STUDY?

In the patients that underwent immediate surgery, 2 patients were found to have spread of the cancer outside the neck. Over the course of the study, 32 (3%) patients had recurrence of the cancer after surgery. Most of these recurrences were in lymph nodes within the neck. In the group that declined surgery there were 314 women (92%) and 26 men (8%) who were followed for an average of 51 months. A total 109 (32%) of this group required surgery. Five of these patients developed spread to the lymph nodes. None of the 109 patients who had surgery developed a recurrence of their cancer.

#### HOW DOES THIS COMPARE WITH OTHER STUDIES?

In the initial study by the authors, only 6.7% of the nodules containing the papillary microcarcinomas had increased by >3 mm during 5 years of follow-up and spread of the cancer to the lymph nodes occurred in 1.7% of the patients. Another study suggested that the size of the papillary microcarcinomas was important: recurrence of the cancer after a 35 year follow-up was 14% in patients with cancers 6-10 mm as opposed to 3% of the cancers were <6 mm.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that surgery may not be needed in all patients with nodules <1 cm with biopsy results indicating papillary cancer. Unfavorable features that should lead to surgery include a location next to the trachea (breathing tube) or the edge of the thyroid and evidence of spread to lymph nodes. Papillary microcarcinomas without these unfavorable features may be followed without surgery.

— Alan Farwell, MD

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## **THYROID CANCER**, continued

### **ATA THYROID BROCHURE LINKS**

Thyroid cancer: [http://thyroid.org/patients/patient\\_brochures/cancer\\_of\\_thyroid.html](http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html)

Radioactive Iodine Therapy: [http://thyroid.org/patients/patient\\_brochures/radioactive.html](http://thyroid.org/patients/patient_brochures/radioactive.html)

Thyroid Surgery: [http://thyroid.org/patients/patient\\_brochures/surgery.html](http://thyroid.org/patients/patient_brochures/surgery.html)

### **ABBREVIATIONS & DEFINITIONS**

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**Thyroidectomy** — Surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a partial thyroidectomy.

**Thyroid nodule** — an abnormal growth of thyroid cells that forms a lump within the thyroid. While most thyroid nodules are non-cancerous (Benign), ~5% are cancerous.

**Thyroid Ultrasound** — a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle into a nodule during a thyroid nodule biopsy.

**Thyroid fine needle aspiration biopsy (FNAB)** — a simple procedure that is done in the doctor's office to determine if a thyroid nodule is benign (non-cancerous) or cancer. The doctor uses a very thin needle to withdraw cells from the thyroid nodule. Patients usually return home or to work after the biopsy without any ill effects.



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## THYROID HORMONE

### Thyroid hemiagenesis: Failure of both lobes of the thyroid to develop normally

#### WHAT IS THE STUDY ABOUT?

Thyroid hemiagenesis is a condition that occurs at birth in which one of the thyroid lobes fails to develop and is absent. It is unknown how common thyroid hemiagenesis is as the absence of one thyroid lobe does not usually cause any symptoms and often goes unrecognized. Thyroid hemiagenesis is usually detected incidentally during an evaluation of other thyroid or neck disorders and its treatment is unclear. It is found more frequently in women and it is more common in the left thyroid lobe. This study examines whether having one thyroid lobe needs to be followed by a physician on a regular basis and whether there are clinical symptoms associated with this condition.

#### THE FULL ARTICLE TITLE:

Ruchala et al. Increased risk of thyroid pathology in patients with thyroid hemiagenesis: results of a large cohort case-control study. *Eur J Endocrinol* 2010;162:153-60.

#### WHAT WAS THE AIM OF THE STUDY?

The aim of this study is to determine whether having one thyroid lobe needs to be followed by a physician on a regular basis and whether there are clinical symptoms associated with this condition.

#### WHO WAS STUDIED?

The study group included 40 patients with thyroid hemiagenesis seen from January 2002 through December 2008 in the Ultrasound Unit of the Department of Endocrinology, Metabolism and Internal Medicine at the University of Medical Sciences, Poznan, Poland. A control group of 80 persons who did not have thyroid hemiagenesis was also examined.

#### HOW WAS THE STUDY DONE?

Both the 40 patients with thyroid hemiagenesis and the 80 control persons had ultrasound imaging and blood tests to examine thyroid hormone levels. The thyroid hemiagenesis group also had a nuclear medicine thyroid scan.

#### WHAT WERE THE RESULTS OF THE STUDY?

The 40 patients with thyroid hemiagenesis ranged in age from 12 through 79 years. A total of 35 were women and 35 had absence of the left thyroid lobe. Overall, the patients had higher levels TSH and T<sub>3</sub> than the control group, although all values were in the normal range. There were more nodules in the thyroid hemiagenesis group than in the control group.

#### HOW DOES THIS COMPARE WITH OTHER STUDIES?

Other studies have shown that thyroid hemiagenesis is rare. A total of 5 ultrasound screening studies found that it occurs in ~0.06% of the population. The left lobe is most often absent. There is no agreement on whether thyroid hemiagenesis should be treated with thyroid hormone unless hypothyroidism is present.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Overall, patients with thyroid hemiagenesis usually have normal thyroid hormone levels. However, this study suggests that physicians need to follow patients with thyroid hemiagenesis on a regular basis as they may be more at risk to develop further thyroid conditions.

— Heather Hoffich, MD

#### ATA THYROID BROCHURE LINKS

Thyroid Function Tests: [http://thyroid.org/patients/patient\\_brochures/function\\_tests.html](http://thyroid.org/patients/patient_brochures/function_tests.html)

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## THYROID HORMONE, continued

### ABBREVIATIONS & DEFINITIONS

**Thyroid Hemiagenesis** — absence of one lobe of the thyroid at birth.

**Thyroid Ultrasound** — a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle into a nodule during a thyroid nodule biopsy.

**Thyroid scan** — this imaging test uses a small amount of a radioactive substance, usually radioactive iodine, to obtain a picture of the thyroid gland. A “cold” nodule means that the nodule is not functioning normally. A patient with a “cold” nodule should have a fine needle aspiration biopsy of the nodule. A “functioning”, or “hot”, nodule means that the nodule is taking up radioactive iodine to a degree that is either similar

to or greater than the uptake of normal cells. The likelihood of cancer in these nodules is very low and a biopsy is often not needed.

**Triiodothyronine (T<sub>3</sub>)** — the active thyroid hormone, usually produced from thyroxine.

**Thyroid stimulating hormone (TSH)** — produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.

**Euthyroid** — a condition where the thyroid gland is working normally and producing normal levels of thyroid hormone.

**Hypothyroidism** — a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.





## THYROID CANCER

### Papillary thyroid cancer may be more common in patients with systemic lupus erythematosus

#### WHAT IS THE STUDY ABOUT?

Systemic lupus erythematosus (SLE) is an uncommon autoimmune connective-tissue disorder which can affect a number of body systems and can lead to arthritis, skin lesions, kidney disease, and other less-common problems. A previous study that looked at a large group of patients with SLE found a high incidence of several cancers, including thyroid cancer. The present study looks at this further and examines the features of thyroid cancer in patients with SLE.

#### THE FULL ARTICLE TITLE:

Antonelli et al. Thyroid cancer in systemic lupus erythematosus: a case-control study. *J Clin Endocrinol Metab* 2010;95:314-8.

#### WHAT WAS THE AIM OF THE STUDY?

The aim of the study was to examine examines the features of thyroid cancer in patients with SLE.

#### WHO WAS STUDIED?

The study group included 153 patients with SLE who were seen in the Department of Internal Medicine at the University of Pisa from 1995 through 2007.

#### HOW WAS THE STUDY DONE?

The patient's records were examined as to a diagnosis of thyroid nodules and papillary thyroid cancer. Since the intake of iodine varies significantly in different areas of Italy and since iodine intake influences the likelihood of thyroid abnormalities, study patients from an iodine-deficient area were compared to a control group from an iodine-deficient area and patients from iodine-sufficient area compared to a control group from an iodine-sufficient area.

#### WHAT WERE THE RESULTS OF THE STUDY?

Thyroid nodules were found in 25% of SLE patients, 27% of patients without SLE living in iodine deficient areas and 13% in patients without SLE living in iodine-sufficient regions. Papillary thyroid cancer was found in 3.2% of patients with SLE, 1% of patients without SLE living in iodine sufficient areas and 0% in patients without SLE living in iodine-deficient regions. Interestingly, 80%

of the SLE patients with papillary cancer also had positive TPO antibodies while only 31% of SLE patients without papillary thyroid cancer had positive TPO antibodies.

#### HOW DOES THIS COMPARE WITH OTHER STUDIES?

Another study showed an increased risk for cancer, including papillary thyroid cancer, in a large group of patients with SLE.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

There appears to be an increased risk of papillary thyroid cancer in patients with SLE, especially those with positive TPO antibodies. These patients should have a careful clinical examination of the thyroid as part of any physical examination.

— Frank Cranz, MD

#### ATA THYROID BROCHURE LINKS

Thyroid cancer: [http://thyroid.org/patients/patient\\_brochures/cancer\\_of\\_thyroid.html](http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html)

Thyroid Nodules: [http://thyroid.org/patients/patient\\_brochures/nodules.html](http://thyroid.org/patients/patient_brochures/nodules.html)

#### ABBREVIATIONS & DEFINITIONS

**Systemic lupus erythematosus (SLE)** — an uncommon autoimmune connective-tissue disorder which can affect a number of body systems and can lead to arthritis, skin lesions, kidney disease, and other less-common manifestations.

**Thyroid nodule** — an abnormal growth of thyroid cells that forms a lump within the thyroid. While most thyroid nodules are non-cancerous (Benign), ~5% are cancerous.

**TPO antibodies** — these are antibodies that attack the thyroid instead of bacteria and viruses, they are a marker for autoimmune thyroid disease, which is the main underlying cause for hypothyroidism and hyperthyroidism in the United States.



## THYROID NODULES

### Repeat fine-needle aspiration biopsy should be considered for thyroid nodules with suspicious features on ultrasound, even when the initial results are benign

#### WHAT IS THE STUDY ABOUT?

Thyroid nodules are very common, occurring in up to 50% of patients. Thyroid nodules are concerning due to the possibility that they may contain a thyroid cancer. Overall, thyroid cancer is present in ~8% of thyroid nodules at the time of surgery. The initial evaluation of a thyroid nodule often includes a thyroid ultrasound followed by a thyroid fine needle aspiration biopsy (FNAB) to determine which nodules should be sent to surgery. While FNAB plays a key role in selecting patients for surgery, it has some limitations. Most concerning is the possibility of incorrectly labeling a nodule that contains a cancer as being cancer-free (benign). This study examined the value of ultrasound features in thyroid nodules that initially have a biopsy read as benign.

#### THE FULL ARTICLE TITLE:

Kwak et al. Value of US correlation of a thyroid nodule with initially benign cytologic results. *Radiology* 2010;254:292-300.

#### WHAT WAS THE AIM OF THE STUDY?

This study examined the value of ultrasound features in thyroid nodules that initially have a biopsy read as benign.

#### WHO WAS STUDIED?

From October 2003 through February 2006, a total of 6025 consecutive patients who were seen in Severance Hospital in Seoul, Korea, had US-guided FNAB of 6118 nodules, 3540 of which were  $\geq 1$  cm with benign results (58%). Of these, follow up information was available on 1343 nodules, with 202 of these nodules removed by surgery.

#### HOW WAS THE STUDY DONE?

The cytology, pathology and ultrasound reports were examined. Ultrasound features that were considered suspicious for cancer included any of the following: 1) very dark (hypoechoic), 2) small calcifications (microcalcifications), 3) irregular margins or 4) greater height than width.

#### WHAT WERE THE RESULTS OF THE STUDY?

The average age of the patients with nodules was 48.9 years. Of the 1343 nodules, 97 (7.2%) were surgically removed after the initial benign FNAB and 14 (14.4%) were found to be cancerous. A total of 149 nodules (12%) increased in size during the follow up period and had a second biopsy or surgery. Two of these nodules were found to be cancerous at surgery (1.3%). Another 19 nodules eventually went to surgery, 16 based on a second biopsy and 8 cancers were found in this group. In total, 24 cancers were found in nodules that were initially benign on FNAB (1.9%). Suspicious ultrasound features were found in 73% of the cancers and 5.6% of the benign nodules. However, 80% of the nodules with suspicious ultrasound features were indeed benign. If no suspicious ultrasound features were present, 100% of the nodules were benign. Further, if a second FNAB was also benign, 100% of the nodules were benign.

#### HOW DOES THIS COMPARE WITH OTHER STUDIES?

This and other studies show that FNAB is currently the best means of identifying thyroid cancer. In this study, 1.9% of the biopsies initially read as benign were eventually found to contain a cancer (false negative). In other studies, the false negative rate has ranged from 1 to 11%. Several studies have examined the predictive value of suspicious ultrasound features and one study found that the ultrasound changed the management of 63% of patients with palpable thyroid nodules. The current American Thyroid Association guidelines recommend that a nodule with a maximum diameter greater than 1.0 to 1.5 cm should be considered for biopsy unless they are simple cysts. In addition, these guidelines recommend that a nodule of any size with suspicious ultrasound features can be considered for FNAB.

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## **THYROID CANCER**, continued

### **WHAT ARE THE IMPLICATIONS OF THIS STUDY?**

This study suggests that an initial negative FNAB in a nodule with no concerning ultrasound features that remains stable in size is enough to confirm that the nodule is benign. However, if there are suspicious ultrasound features, the false negative rate of the initial FNAB may be as high as 20%. Because of this, nodules with suspicious

ultrasound features should undergo a repeat FNAB at some point.

— Alan Farwell, MD

### **ATA THYROID BROCHURE LINKS**

Thyroid Nodules: [http://thyroid.org/patients/patient\\_brochures/nodules.html](http://thyroid.org/patients/patient_brochures/nodules.html)

### **ABBREVIATIONS & DEFINITIONS**

**Thyroid nodule** — an abnormal growth of thyroid cells that forms a lump within the thyroid. While most thyroid nodules are non-cancerous (Benign), ~5% are cancerous.

**Thyroid Ultrasound** — a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and

characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle into a nodule during a thyroid nodule biopsy.

**Thyroid fine needle aspiration biopsy (FNAB)** — a simple procedure that is done in the doctor's office to determine if a thyroid nodule is benign (non-cancerous) or cancer. The doctor uses a very thin needle to withdraw cells from the thyroid nodule. Patients usually return home or to work after the biopsy without any ill effects.



## ATA Alliance for Thyroid Patient Education

### GOAL

The goal of our organizations is to provide accurate and reliable information for patients about the diagnosis, evaluation and treatment of thyroid diseases.

### WHO WE ARE

#### AMERICAN THYROID ASSOCIATION

[www.thyroid.org](http://www.thyroid.org)

ATA Patient Resources: <http://www.thyroid.org/patients/>

Find a Thyroid Specialist: [www.thyroid.org](http://www.thyroid.org)

Phone (toll-free): 1-800-THYROID

e-mail: [thyroid@thyroid.org](mailto:thyroid@thyroid.org)

**ATA Mission:** The ATA leads in promoting thyroid health and understanding thyroid biology.

**ATA Vision:** The ATA is the leading organization focused on thyroid biology and the prevention and treatment of thyroid disorders through excellence and innovation in research, clinical care, education, and public health.

**ATA Values:** The ATA values scientific inquiry, clinical excellence, public service, education, collaboration, and collegiality.

To further our mission, vision and values the ATA sponsors “Friends of the ATA” online to advance the information provided to patients and the public such as this publication, *Clinical Thyroidology for Patients*. We welcome your support.

#### GRAVES' DISEASE FOUNDATION

[www.ngdf.org](http://www.ngdf.org)

Phone (toll-free): 1-877-NGDF-123 or 643-3123

e-mail: [Gravesdiseasefd@gmail.com](mailto:Gravesdiseasefd@gmail.com)

Founded in 1990, the Graves' Disease Foundation offers support and resources to Graves' disease patients, their families, and health care professionals. Their mission is to find the cause of and the cure for Graves' thyroid disease through research, to improve the quality of life for persons with Graves' disease and their caregivers and to educate persons with Graves' disease, their caregivers, healthcare professionals, and the general public about Graves' disease and its treatment. The web site features a monitored bulletin board.

#### LIGHT OF LIFE FOUNDATION

[www.checkyourneck.com](http://www.checkyourneck.com)

email: [info@checkyourneck.com](mailto:info@checkyourneck.com)

The Light of Life Foundation, founded in 1997, is a nonprofit organization that strives to improve the quality of life for thyroid cancer patients, educate the public and professionals about thyroid cancer, and promote research and development to improve thyroid cancer care.

#### THYCA: THYROID CANCER SURVIVORS' ASSOCIATION, INC.

[www.thyca.org](http://www.thyca.org)

Phone (toll-free): 877 588-7904

e-mail: [thyca@thyca.org](mailto:thyca@thyca.org)

ThyCa: Thyroid Cancer Survivors' Association, Inc., founded in 1995, is an international nonprofit organization, guided by a medical advisory council of renowned thyroid cancer specialists, offering support and information to thyroid cancer survivors, families, and health care professionals worldwide.





## **ATA Alliance for Thyroid Patient Education CALENDAR OF EVENTS**

Educational forums, patient support groups and other patient-oriented meetings

### **ATA Conferences** [www.thyroid.org](http://www.thyroid.org)

Saturday, May 15, 2010 — Hyatt Regency, Minneapolis, Minnesota

#### **ATA Alliance for Thyroid Patient Education Public Forum**

### **Graves' Disease Conferences** [www.ngdf.org](http://www.ngdf.org)

Fall 2010 — San Diego, CA

#### **Annual Meeting**

### **Light of Life Foundation** [www.checkyourneck.com](http://www.checkyourneck.com)

Saturday, June 12, 2010, 8:30 am – 3:30 pm — Memorial Sloan Kettering Cancer Center, New York, NY

#### **Light of Life Foundation Patient Education Day**

### **ThyCa Conferences** [www.thyca.org](http://www.thyca.org)

Saturday, April 17, 2010 — Kansas City, Missouri

#### **6<sup>th</sup> Midwest Thyroid Cancer Survivors' Workshop**

Free one-day educational event. Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc.

Saturday, May 1, 2010 — Stowe, Vermont

#### **Vermont/New England Thyroid Cancer Survivors' Symposium**

Co-sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. and Stowe Weekend of Hope

Saturday, May 22, 2010 — Baltimore, Maryland

#### **9<sup>th</sup> Annual Mid-Atlantic Thyroid Cancer Survivors' Workshop**

Free one-day educational event. Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc.

Saturday, May 29, 2010 — St. John's, Newfoundland, Canada

#### **Newfoundland and Labrador Thyroid Cancer Survivors' Workshop**

Free one-day educational event. Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc.

June 4–5, 2010 — Rockville, Maryland

#### **Hypoparathyroidism Association Patient Conference**

At the Rockville Hilton Hotel, Rockville, Maryland; Details at [www.hypoparathyroidism.org](http://www.hypoparathyroidism.org).

September 2010

#### **Thyroid Cancer Awareness Month**

Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. Plus year-round awareness campaigns. Visit the Raise Awareness Page to download free flyers, or request free awareness materials.

October 15–17, 2010 — Dallas, Texas.

#### **The 13<sup>th</sup> International Thyroid Cancer Survivors' Conference**

Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc.

October 16, 2010 — Dallas, Texas

#### **The 8<sup>th</sup> Annual Dinner/Auction Fundraiser for Thyroid Cancer Research**

Thyroid Cancer Survivors' Conference. Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc.



# FREE Public Health Forum

Thyroid Experts from the American Thyroid Association, and Thyroid Patients join together to inform the general public, thyroid patients, and their friends and families about:

## Thyroid Disease and You

Concerned about low energy? memory loss? ... fatigue? ... depression ... rapid heart beat ... restlessness ... infertility ... weight or hair changes ... a lump on your neck? Could it be your thyroid?

**Saturday, May 15, 2010, 1:30 p.m. – 3:00 p.m.**

**Hyatt Regency Minneapolis**

1300 Nicollet Mall

Minneapolis, Minnesota 55403

Phone: (612) 370-1234

### Physician experts will discuss thyroid disorders

This program is free and all are welcome, including walk-in-attendees. Reservations are encouraged to ensure we have enough seating. For more information and to register e-mail to ThyCa at [thyca@thyca.org](mailto:thyca@thyca.org)

### Who should attend?

Anyone who has had an overactive or underactive thyroid, thyroiditis, Graves' disease, a thyroid nodule, thyroid cancer, or a family history of thyroid problems or related disorders, including rheumatoid arthritis, juvenile diabetes, pernicious anemia, or prematurely gray hair (starting before age 30).

Please come if you have questions, symptoms, or concerns about a thyroid problem. Receive free educational materials.

### Reservations requested; Walk-ins welcome

E-mail [thyca@thyca.org](mailto:thyca@thyca.org) to RSVP

(Please indicate in your message the thyroid condition you are most concerned about.)

*Online educational information for patients is provided by all members of the ATA Alliance for Patient Education co-sponsoring this forum: ThyCa: Thyroid Cancer Survivors' Association, Light of Life Foundation, and Graves' Disease Foundation.*



Go online to [www.thyroid.org](http://www.thyroid.org) and click on Patients and Public to access the resources you need.