

Clinical THYROIDOLOGY FOR PATIENTS



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Gullo D et al. Levothyroxine monotherapy cannot guarantee euthyroidism in all athyreotic patients. PLoS One 2011;6:e22552. Epub August 1, 2011.

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Traub-Weidinger, T et al. Coronary vasoreactivity in subjects with thyroid autoimmunity and subclinical hypothyroidism before and after supplementation with thyroxine. THYROID, Jan, 2011.

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Postoperative hypocalcemia is associated with preoperative Vitamin D deficiency

A common complication of thyroid surgery is transient postoperative hypocalcemia. Vitamin D plays an essential role in maintaining calcium levels by increasing calcium absorption from the gut. Vitamin D deficiency is common, especially in the northern part of the United States during the winter. This study examined the relationship between preoperative vitamin D levels and postoperative calcium levels.

Kirkby-Bott J et al. Preoperative vitamin D deficiency predicts postoperative hypocalcemia after total thyroidectomy. World J Surg 2011;35:324-30.

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Success rate of repeat biopsy of thyroid nodules may not necessarily be improved by waiting three months from the initial biopsy

In up to 10-15% of thyroid biopsies, the results of the biopsy are reported to be inadequate/insufficient or non-diagnostic. Since a diagnosis cannot be made in these cases, a repeat biopsy of the nodule is typically recommended, in general at least 3 months after the initial biopsy. This study examined whether the success rate of repeat thyroid biopsies differed according to whether the repeat biopsies were performed within 3 months of the initial biopsy or after 3 months.

Singh RS, Wang HH. Timing of repeat thyroid fine-needle aspiration in the management of thyroid nodules. Acta Cytol 2011;55:544-8. Epub December 9, 2011.

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Prophylactic central lymph node dissection in patients with papillary thyroid cancer reduces the need for reoperation for cancer recurrence

Surgery for thyroid cancer generally includes removal of the entire thyroid gland as well as any abnormal appearing lymph nodes in the central neck behind the thyroid. There is debate among surgeons whether also removing normal appearing lymph nodes in the central neck (prophylactic lymph node dissection) is better than removing only the abnormal appearing lymph nodes. This study examines the risks and benefits of prophylactic lymph node dissection in patients with papillary thyroid cancer.

Popadich A et al. A multicenter cohort study of total thyroidectomy and routine central lymph node dissection for cN0 papillary thyroid cancer. Surgery 2011;150:1048-57.

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Outcome of anaplastic thyroid cancer can be improved in some patients by using complete surgery and high-dose radiotherapy

Anaplastic thyroid cancer is a very rare and aggressive form of thyroid cancer that grows very rapidly. Most patients have a poor outcome, with a life expectancy less than 6 months. This study was done to examine which factors and therapies can improve the outcome in patients with anaplastic thyroid cancer.

Akaishi J et al. Prognostic factors and treatment outcomes of 100 cases of anaplastic thyroid carcinoma. Thyroid 2011;21:1183-9. Epub September 21, 2011.

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CLINICAL THYROIDOLOGY **FOR PATIENTS**

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EDITOR'S COMMENTS

Welcome to **Clinical Thyroidology for Patients**, bringing to you, the patients, the most up-to-date, cutting edge thyroid research. What you read here as research studies will likely become the accepted practice in the future. *Clinical Thyroidology for Patients* is published on a monthly basis and includes summaries of research studies that were discussed in a recent issue of *Clinical Thyroidology*, a publication of the American Thyroid Association for physicians. This means that you, the patients, are 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 around the country by members of the **Alliance for Thyroid Patient Education**. The **Alliance** member groups consist of: the *American Thyroid Association*, the *Graves' Disease and Thyroid Foundation*, the *Light of Life Foundation* and *ThyCa: Thyroid Cancer Survivors Association*.

Starting this month, you will be able to follow us on Twitter at @thyroidfriends! Get the most up-to-date thyroid news fast and easy. Be the most informed thyroid patient in the waiting room! Please feel free to submit questions as well as suggestions as to how we can better serve thyroid patients.

In this issue, the studies ask the following questions:

- Should hypothyroid patients be treated with both T₄ and T₃?
- Does subclinical hypothyroidism cause heart problems?
- Does Vitamin D deficiency affect thyroid surgery?
- When should a repeat thyroid biopsy be done if the first biopsy is inconclusive?
- How extensive should thyroid cancer surgery be?
- Is there any hope for patients with anaplastic thyroid cancer?

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

HOW TO NAVIGATE THIS DOCUMENT: The Table of Contents and the Bookmarks are linked to the articles. To navigate, move your cursor over the article title you wish to see (either in the Contents or in the Bookmarks panel) and the hand will show a pointing finger, indicating a link. Left-click the title and the article will instantly appear. To return to the Contents, move the cursor to the bottom of the page and left-click **Back to Table of Contents**.



HYPOTHYROIDISM

Should patients with no functional thyroid gland be treated with both thyroxine (T_4) and triiodothyronine (T_3)?

BACKGROUND

Thyroxine (T_4) is the main hormone secreted by the thyroid gland. It is converted to the active hormone T_3 in other cells in the body, most commonly in the liver, kidney and in the cells where thyroid hormone works. Both T_4 and T_3 are important in maintaining normal metabolic function. In individuals with normal thyroid function, ~10-15% of the daily T_3 production comes from the thyroid gland. In patients who have no functioning thyroid (ie are hypothyroid), the absence of T_3 production by the thyroid can be overcome by maintaining higher circulating T_4 levels, resulting in normal circulating levels of T_3 . This is why T_4 in the form of levothyroxine is the main treatment for hypothyroid patients. However, a longstanding question by both physicians and patients remains whether some hypothyroid patients could benefit from a mixture of T_4 and T_3 rather than replacing T_4 alone. Recent studies have generally found that there is no clinical advantage in adding T_3 to the usual T_4 replacement regimen. One condition that the studies suggest may have some benefit to replacing both hormones are those who had their thyroid removed surgically (surgical hypothyroidism). The present study examines whether T_4 alone is sufficient to maintain normal levels both T_4 and T_3 in patients with surgical hypothyroidism.

THE FULL ARTICLE TITLE

Gullo D et al. Levothyroxine monotherapy cannot guarantee euthyroidism in all athyreotic patients. PLoS One 2011;6:e22552. Epub August 1, 2011.

SUMMARY OF THE STUDY

This was a study of 1811 patients (1530 women and 281 men) who became hypothyroid following a total thyroidectomy for thyroid cancer and were receiving hormone replacement with T_4 alone. Subjects were free of thyroid cancer and had no evidence of any residual

thyroid function. These patients were compared to a group of 3875 patients with normal thyroid function despite benign thyroid nodules less than 2 cm in size. Free T_4 (FT_4) and free T_3 (FT_3) levels were examined in both groups.

In these T_4 -treated patients, FT_4 levels were 7.2% lower and FT_3 levels 15.2% lower than in the nodule patients with normal thyroid function. Moreover, there was a wide range of variability in the T_3/T_4 ratios in T_4 -treated patients suggesting a wide range in peripheral T_3 levels in different individuals. In fact, more than 20% of the T_4 -treated patients did not maintain FT_3 and FT_4 levels in normal range despite normal TSH levels.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Hypothyroid patients are typically treated with T_4 alone. A number of studies have demonstrated that T_4 alone is sufficient for the majority of hypothyroid patients. The present study identifies a subgroup of hypothyroid patients, namely those whose thyroid was surgically removed who do not have normal FT_4 and FT_3 levels despite normal TSH levels on T_4 alone. What is not shown by this study is whether or not combination therapy (T_4 plus T_3) is beneficial in these patients. Further studies are needed to sort this out.

— Frank Cranz, MD

ATA THYROID BROCHURE LINKS

Hypothyroidism: http://thyroid.org/patients/patient_brochures/hypothyroidism.html

Thyroid Hormone Treatment: http://thyroid.org/patients/patient_brochures/hormonetreatment.html

Thyroid cancer: http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html

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HYPOTHYROIDISM, continued

ABBREVIATIONS & DEFINITIONS

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

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 hormone therapy: patients with hypothyroidism are most often treated with Levothyroxine in order to return their thyroid

hormone levels to normal. Replacement therapy means the goal is a TSH in the normal range and is the usual therapy. Suppressive therapy means that the goal is a TSH below the normal range and is used in thyroid cancer patients to prevent growth of any remaining cancer cells.

Thyroxine (T_4): the major hormone secreted by the thyroid gland. Thyroxine is broken down to produce Triiodothyronine which causes most of the effects of the thyroid hormones.

Triiodothyronine (T_3): the active thyroid hormone, usually produced from thyroxine, available in pill form as Cytomel™ or liothyronine.



HYPOTHYROIDISM

Subclinical hypothyroidism is associated with impaired blood flow into the heart muscle

BACKGROUND

Patients with overt hypothyroidism have both an increased TSH and a low T_4 while in those with subclinical hypothyroidism, the T_4 is normal with an increased TSH. There is controversy about the benefits of treating patients with subclinical hypothyroidism. Studies of overt hypothyroidism suggest an increased risk of heart problems including heart attacks if untreated, but most patients with subclinical hypothyroidism have no symptoms and these increased risks have not been proven in this group. A research technique to look at heart function is coronary vasoreactivity, which examines the heart muscle blood flow using PET scanning to measure the ability of small blood vessels to open up and supply the heart with blood when needed. The inability of the small blood vessels to open up is thought to be related to more permanent blood vessel damage over time. Coronary vasoreactivity is performed during a stress test when the small heart blood vessel needs to open up. The goal of this study was to determine coronary vasoreactivity in patients with subclinical hypothyroidism both before and after treatment with thyroid hormone to normalize the TSH level.

THE FULL ARTICLE TITLE:

Traub-Weidinger, T et al. Coronary vasoreactivity in subjects with thyroid autoimmunity and subclinical hypothyroidism before and after supplementation with thyroxine. *THYROID*, Jan, 2011.

SUMMARY OF THE STUDY

Coronary vasoreactivity was performed on 8 patients with subclinical hypothyroidism before and after thyroid

hormone replacement therapy as well as on 8 individuals with normal thyroid function in an academic center in Austria. All patients were diagnosed with Hashimoto's Thyroiditis as the cause of their hypothyroidism. Before treatment coronary vasoreactivity during the stress test was much lower in all the patients, compared to the normal individuals. After 6 months of treatment with thyroid hormone, coronary vasoreactivity increased significantly but was still lower than in the normal individuals. The best responses were in younger patients.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Coronary vasoreactivity is the newest sensitive research technique to show subtle abnormalities in heart function in patients with subclinical hypothyroidism that improves with thyroid hormone therapy. It is unclear if these subtle changes translate into clinical heart problems and certainly these findings need to be confirmed in larger studies. However, this study does suggest that thyroid hormone treatment may be beneficial to more patients with subclinical hypothyroidism than previously thought.

— Jerrold Stock, MD

ATA THYROID BROCHURE LINKS

Hypothyroidism: http://thyroid.org/patients/patient_brochures/hypothyroidism.html

Thyroid Hormone Treatment: http://thyroid.org/patients/patient_brochures/hormonetreatment.html

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HYPOTHYROIDISM, continued

ABBREVIATIONS & DEFINITIONS

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

Subclinical hypothyroidism: a mild form of hypothyroidism where the only abnormal hormone level is an increased TSH. There is controversy as to whether this should be treated or not.

Overt hypothyroidism: clear hypothyroidism an increased TSH and a decreased T₄ level. All patients with overt hypothyroidism are usually treated with thyroid hormone pills.

Thyroid hormone therapy: patients with hypothyroidism are most often treated with

Levothyroxine in order to return their thyroid hormone levels to normal

Thyroxine (T₄): the major hormone secreted by the thyroid gland. Thyroxine is broken down to produce Triiodothyronine which causes most of the effects of the thyroid hormones.

TSH: thyroid stimulating hormone – produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.

Hashimotos thyroiditis: the most common cause of hypothyroidism in the United States. It is caused by antibodies that attack the thyroid and destroy it.

**THYROID SURGERY****Postoperative hypocalcemia is associated with preoperative Vitamin D deficiency****BACKGROUND**

A common complication of thyroid surgery is transient postoperative hypocalcemia, which occurs in up to 30% to 35% of patients. This occurs because the parathyroid glands, which are found next to the thyroid, are often “bruised” during thyroid surgery and don’t work too well for a short time after surgery. This leads to a fall in parathyroid hormone (PTH), which is important in regulating blood calcium levels. This usually resolves in days to weeks. The rate of permanent hypocalcemia is thought to be <2% in the hands of experienced surgeons. Prevention of hypocalcemia after thyroid surgery may reduce costs due to extra days of hospitalization, extra medication, additional blood tests and outpatient visits.

Vitamin D plays an essential role in maintaining calcium levels by increasing calcium absorption from the gut. Vitamin D is produced in our skin after exposure to the sun. Vitamin D deficiency is common, especially in the northern part of the United States during the winter. This study examined the relationship between preoperative vitamin D levels and postoperative calcium levels.

THE FULL ARTICLE TITLE:

Kirkby-Bott J et al Preoperative vitamin D deficiency predicts postoperative hypocalcemia after total thyroidectomy. *World J Surg* 2011;35:324-30.

SUMMARY OF THE STUDY

The records of 165 patients undergoing thyroidectomies

between January 2006 and March 2009 at a premier academic hospital in London were examined. Patients were divided into three groups based on the preoperative vitamin D: group 1, <10 ng/ml; group 2, 10 to 20 ng/ml; group 3, >20 ng/ml. Hypocalcemia was defined as a postoperative calcium level of <8 mg/dl on postoperative day 1 or 2.

There were 44 cases of postoperative hypocalcemia in the 165 patients. Hypocalcemia occurred in 35.4% of group 1, 28.2% of group 2 and 15.2% in group 3. The average length of the hospital stay was significantly greater in those with preoperative vitamin D deficiency as compared with those without vitamin D deficiency. The risk of hypocalcemia was not associated with the reason for the thyroid surgery (ie cancer vs benign disease).

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that preoperative vitamin D deficiency is a risk factor for transient but not permanent postoperative hypocalcemia. The threshold of the increased risk of postoperative hypocalcemia was a vitamin D level <14 ng/ml. This study suggests that all patient undergoing thyroid surgery would benefit from identifying and treating vitamin D deficiency before surgery.

— Alan P. Farwell, MD

ATA THYROID BROCHURE LINKS

Thyroid Surgery: <http://thyroid.org/patients/patient-brochures/surgery.html>

ABBREVIATIONS & DEFINITIONS

Hypocalcemia: low calcium levels in the blood, a complication from thyroid surgery that is usually short-term and relatively easily treated with calcium pills. If left untreated, low calcium may be associated with muscle twitching or cramping and, if severe, can cause seizures and/or heart problems.

Vitamin D: a vitamin that is important for maintaining calcium levels by increasing the absorption of calcium from the gut. Vitamin D is made in our skin after exposure to the sun.

Parathyroid glands: usually four small glands located around the thyroid that secrete parathyroid hormone (PTH) which regulates the body’s calcium levels.

Parathyroid hormone (PTH): the hormone that regulates the body’s calcium levels. High levels of PTH cause hypercalcemia, or too much calcium in the blood. Low levels of PTH cause hypocalcemia, or too little calcium in the blood.

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 NODULES

Success rate of repeat biopsy of thyroid nodules may not necessarily be improved by waiting three months from the initial biopsy

BACKGROUND

Thyroid nodules are very common, occurring in up to 50% of individuals in some studies. When there is a concern for thyroid cancer, which is often due to the size of the nodule or certain ultrasound features, the next step is a thyroid fine needle aspiration biopsy. In up to 10-15% of biopsies, the results of the biopsy are reported to be inadequate/insufficient or non-diagnostic. Since a diagnosis cannot be made in these cases, a repeat biopsy of the nodule is typically recommended. Some experts have recommended that a repeat biopsy be done no sooner than 3 months after the initial biopsy, since the damage and repair to cells in the area of the biopsy could cause the biopsy result to be wrongly interpreted as cancer. This study examined whether the success rate of repeat thyroid biopsies differed according to whether the repeat biopsies were performed within 3 months of the initial biopsy or after 3 months.

THE FULL ARTICLE TITLE:

Singh RS, Wang HH. Timing of repeat thyroid fine-needle aspiration in the management of thyroid nodules. *Acta Cytol* 2011;55:544-8. Epub December 9, 2011.

SUMMARY OF THE STUDY

The authors reviewed the cytology reports of 307 people evaluated at Beth Israel Deaconess Medical Center, who had more than one biopsy of the same nodule. The initial cytology was read as non-diagnostic in 138 individuals and insufficient in 108 individuals. A total of 94 patients (68%) had the repeat biopsy performed less than 3

months after the initial one while the rest had the repeat biopsy more than 3 months after the initial biopsy. About half (53%) of the repeat biopsies provided a diagnosis and there was no difference in the success rate in between samples obtained less than 3 months after the initial biopsy (52%) or those obtained more than 3 months after the initial biopsy (54%). Of the 307 individuals in the study, 81 (26%) went on to have their thyroid surgically removed by thyroidectomy. In these 81 individuals, there was no difference in the rate of false positive biopsy results (ie. thyroid cancer diagnosed based on the cytology when there was no cancer after surgery), whether the repeat biopsy was performed less than 3 months (16% of repeat biopsy results) or more than three months (12% of repeat of biopsy results) after the initial biopsy.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

When the initial thyroid biopsy is read as non-diagnostic or insufficient, a repeat biopsy is recommended but unfortunately yields a diagnosis in only about half of cases. The success of a repeat thyroid biopsy in obtaining a diagnosis does not appear to change whether the repeat biopsy is performed before or after 3 months after the initial biopsy.

— Anna Sawka, MD

ATA THYROID BROCHURE LINKS

Thyroid Nodules: <http://thyroid.org/patients/patient-brochures/nodules.html>

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THYROID NODULES, continued

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 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.

Inadequate/Insufficient biopsy: this happens with not enough cells are obtained during the biopsy to provide a diagnosis. This occurs in 5-10% of biopsies. This often results in the need to repeat the biopsy.

Non-diagnostic thyroid biopsy: this happens when some atypical cells are found but not enough to provide a diagnosis. This occurs in 5-10% of biopsies. This often results in the need to repeat the biopsy.

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 CANCER****Prophylactic central lymph node dissection in patients with papillary thyroid cancer reduces the need for reoperation for cancer recurrence****BACKGROUND**

Surgery is the first treatment after a diagnosis of thyroid cancer. The surgery generally includes removal of the entire thyroid gland as well as any abnormal appearing lymph nodes in the central neck behind the thyroid. There is debate among surgeons whether also removing normal appearing lymph nodes in the central neck (prophylactic lymph node dissection) is better than removing only the abnormal appearing lymph nodes. Previous studies have shown that prophylactic lymph node dissection does pick up small amounts of cancer cells that have spread to otherwise normal appearing lymph nodes. However, there are more frequent complications of this surgery and it is unclear that it provides any real clinical benefit to the patient. This study examines the risks and benefits of prophylactic lymph node dissection in patients with papillary thyroid cancer.

THE FULL ARTICLE TITLES:

Popadich A et al. A multicenter cohort study of total thyroidectomy and routine central lymph node dissection for cN0 papillary thyroid cancer. *Surgery* 2011;150:1048-57.

SUMMARY OF THE STUDY

This article looks at 606 patients from 3 centers with papillary thyroid cancer who underwent a total thyroidectomy between 1995 and 2009. Patients were divided into two groups: 347 had a total thyroidectomy only (group A) and 259 had a total thyroidectomy with removal of the central compartment lymph nodes (group B). The mean number of lymph nodes removed was 7 in group B and 49% of those who had lymph nodes removed had cancer within the lymph nodes. Temporary hypocalcemia (low calcium) occurred in 9.7% of group B and 4.1% of group

A. There were no other differences in the rates of complications in the two groups. Ninety-eight percent of the patients had radioactive iodine therapy. In group A, 8.1% required reoperation for recurrence of the cancer while only 5% of group B required reoperation. Having lymph nodes removed at the time of the initial surgery significantly reduced the risk of needing another operation. It was calculated that 20 routine initial lymph node removals were required to prevent 1 patient from needing an operation for recurrence of thyroid cancer.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

In well-trained and experienced surgical hands, there is a potential benefit to patients to having normal appearing lymph nodes removed at the time of thyroid cancer surgery. The benefit is that it may reduce the chance of needing a second operation in the future if the cancer returns. The tradeoff is an increased risk of having transient hypocalcemia after the surgery. Larger studies probably need to be done to look at the potential for increased complications by all surgeons (not just very experienced surgeons who publish their results) versus the potential benefit of one out of twenty patients avoiding a second operation and whether this results in a better chance at long term cure in these patients.

— Ronald Kuppersmith, MD

ATA THYROID BROCHURE LINKS

Thyroid cancer: http://thyroid.org/patients/patient-brochures/cancer_of_thyroid.html

Thyroid Surgery: <http://thyroid.org/patients/patient-brochures/surgery.html>

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THYROID CANCER, continued

ABBREVIATIONS & DEFINITIONS

Papillary thyroid cancer: the most common type of thyroid cancer.

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.

Lymph node: bean-shaped organ that plays a role in removing what the body considers harmful, such as infections and cancer cells.

Central neck compartment: the central portion of the neck between the hyoid bone above and the sternum and collar bones below and laterally limited by the carotid arteries.

Prophylactic central neck dissection: careful removal of all lymphoid tissue in the central compartment of the

neck, even if no obvious cancer is apparent in these lymph nodes.

Hypocalcemia: low calcium levels in the blood, a complication from thyroid surgery that is usually short-term and relatively easily treated with calcium pills. If left untreated, low calcium may be associated with muscle twitching or cramping and, if severe, can cause seizures and/or heart problems.

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)



ANAPLASTIC THYROID CANCER

Outcome of anaplastic thyroid cancer can be improved in some patients by using complete surgery and high-dose radiotherapy

BACKGROUND

The majority of thyroid cancers are usually slow growing cancers and patients usually do well with surgery and, when indicated, radioactive iodine therapy. Only a few patients die of the most common forms of thyroid cancer. In contrast, anaplastic thyroid cancer is a very rare and aggressive form of thyroid cancer that grows very rapidly. Anaplastic cancer occurs most often in people over age 60 and most patients have a poor outcome, with a life expectancy less than 6 months. However, a few patients do survive for a long time for unknown reasons. This study was done to examine which factors and therapies can improve the outcome in patients with anaplastic thyroid cancer.

THE FULL ARTICLE TITLE:

Akaishi J et al. Prognostic factors and treatment outcomes of 100 cases of anaplastic thyroid carcinoma. *Thyroid* 2011;21:1183-9. Epub September 21, 2011.

SUMMARY OF THE STUDY

The records of 100 patients 41-90 years of age with anaplastic thyroid cancer diagnosed between 1993 and 2009 were reviewed and analyzed in this study. A total of 81 out of 100 patients died because of anaplastic cancer. Long-term survival was seen only in 14 patients.

A total of 70 patients received surgery; 24 of them had a complete thyroidectomy. A total of 78 patients were treated with radiotherapy; most (58) of them with a high-dose radiotherapy. A total of 27 patients received chemotherapy and 15 patients received combined therapy of surgery, radiotherapy and chemotherapy.

Poor prognostic factors were age over 70 years, spread of cancer outside the thyroid and spread of the cancer outside of the neck. Patients with a complete thyroidectomy and high-dose radiotherapy had the best outcome in this study.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Overall, outcome of anaplastic thyroid cancer remains poor. This study suggests that only a combination of a complete thyroidectomy and high-dose radiotherapy can improve the outcome in patients with anaplastic thyroid cancer. These results were also seen in another study from the Mayo clinic. These studies provide hope for patients with anaplastic thyroid cancer.

— Jamshid Farahati, MD

ATA THYROID BROCHURE LINKS

Thyroid cancer: http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html

ABBREVIATIONS & DEFINITIONS

Anaplastic thyroid cancer: a very rare but very aggressive type of thyroid cancer. In contrast to all other types of thyroid cancer, most patients with anaplastic thyroid cancer die of their cancer and do so within a few years.

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).

Total thyroidectomy: surgery to remove the entire thyroid gland.

External radiotherapy: External radiotherapy uses high energy x-ray to destroy the cancer. The radiation is directed at the cancer from a radiotherapy machine outside the body. Normal cells in the radiotherapy area may also be damaged but they can usually repair themselves.



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

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

Find a Thyroid Specialist: www.thyroid.org

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

e-mail: 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 AND THYROID FOUNDATION

www.gdatf.org

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

e-mail: 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

email: 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

Phone (toll-free): 877 588-7904

e-mail: 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

Nothing is scheduled at this time. Please visit the website for updates.

Graves' Disease Conferences www.gdatf.org

Nothing is scheduled at this time. Please visit the website for updates.

Light of Life Foundation www.checkyourneck.com

Ongoing — www.checkyourneck.com

Thyroid Cancer Awareness campaign with Cindy Crawford and Brooke Shields

June 12, 2010 — a previous symposium available online at:

<http://www.checkyourneck.com/About-Thyroid-Cancer/Thyroid-Cancer-Symposium-Presentations>

Thyroid Cancer Symposium Presentations: What's New in Thyroid Cancer? A Day for Patients and Their Families

Please visit the Light of Life Foundation website to view the Patient Educational Symposium which took place in NYC in 2010. As part of the Patient Educational Program these online presentations provide valuable information in hopes that patients everywhere can gain further information and support about their disease.

ThyCa Conferences www.thyca.org

Every Month

ThyCa Support Group Meetings around the United States and in Canada, Costa Rica, and Philippines.

Complete list of groups, meetings, and contacts at www.thyca.org/sg/local

September 2012 — Thyroid Cancer Awareness Month

Worldwide observance sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc., with many partnering organizations. Details at www.thyca.org

October 19–21, 2012 — Chicago, Illinois.

The 15th International Thyroid Cancer Survivors' Conference

Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. Details at www.thyca.org

October 20, 2012 — Chicago, Illinois

The 10th Annual Dinner/Auction Fundraiser for Thyroid Cancer Research, in conjunction with the 15th International Thyroid Cancer Survivors' Conference

Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. Details at www.thyca.org