

More Thyroid Cancers Are Found Incidentally

The trend seems to reflect the increase in the use of diagnostic imaging studies for nonthyroid indications.

BY BRUCE JANCIN
Denver Bureau

PHOENIX — The rate of thyroid cancers identified incidentally during nonthyroid imaging procedures is on the rise, Matthew T. Tallar said at a congress sponsored by the Association for Academic Surgery and the Society of University Surgeons.

These incidental thyroid cancers deserve to be taken very seriously because they often present as late-stage malignancies, added Mr. Tallar, a medical student at the Medical College of Wisconsin, Milwaukee.

"Based on our data, we feel that incidental thyroid cancers are indeed clinically significant and that their diagnostic work-up and treatment should be the same as for palpable thyroid nodules," he said.

The overall incidence of thyroid cancer climbed 2.4-fold in the United States during 1993-2002. The reasons aren't fully known, but the trend has occurred in tandem with the greatly increasing use of diagnostic imaging studies throughout all of medicine.

It is believed that much of the overall rise in thyroid cancer is attributable to a jump in nonpalpable thyroid cancers detected incidentally on cervical imaging studies done for nonthyroid indications, according to Mr. Tallar.

His review of all 102 patients operated on for thyroid cancer by endocrine surgeons at the Milwaukee medical center during 2001-2006 showed incidental thyroid cancer in 17%. Moreover, the proportion of thyroid cancers detected incidentally on nonthyroid radiologic studies increased over time. None of 19 cancers operated on in 2001 was detected incidentally, compared with 1 of 17 in 2002, 3 of 17 in 2003, 5 of 15 in 2004, 4 of 20 in 2005, and 4 of 14 in the first half of 2006.

Incidental thyroid cancers were found on MRI, CT, ultrasound, chest x-ray, and carotid duplex ultrasound. The imaging

studies were conducted for evaluation of cervical neck pain, carotid arterial disease, voice change, pulmonary metastases, and postnephrectomy follow-up.

Papillary carcinoma was the pathology in 14 of 17 cases; follicular carcinoma was identified in two cases and medullary carcinoma in one.

Overall, 10 patients had stage I cancer. Six had stage III and one had stage IVa disease, for a combined 41% prevalence of late-stage disease.

Audience members expressed interest in a related research question: What proportion of incidentally detected thyroid abnormalities turn out to be cancer?

Mr. Tallar replied that several large studies have recently addressed this very issue.

Radiologists at Lenox Hill Hospital, New York, reviewed all 225 dedicated thyroid sonographic studies they performed in a 6-month period and found that 16% were done to evaluate thyroid nodules earlier discovered incidentally on MRI, CT, or ultrasound performed for nonthyroid indications.

Of biopsied nodules in the incidental group, 17% proved to be cancer, an unexpectedly high rate compared with the 3% for nonincidental nodules—that is, nodules that were palpable or whose presence was signaled by laboratory abnormalities or symptoms of thyroid disease (*J. Ultrasound Med.* 2005;24:629-34).

And one or more incidental thyroid abnormalities were identified in 165 of 2004 consecutive patients undergoing carotid duplex ultrasound for evaluation of carotid arterial disease in the vascular surgery clinic at Madigan Army Medical Center, Fort Lewis, Wash.

Among those patients with a thyroid abnormality on duplex ultrasound who went on to a dedicated thyroid ultrasound exam, 7.6% were eventually determined to have thyroid cancer (*Arch. Surg.* 2005;140:981-5).

Although widely used pathways exist for the evaluation and management of large palpable and/or symptomatic thyroid nodules, the best approach to thyroid "incidentalomas" remains controversial.

Mr. Tallar said that the experiences that have been reported from Lenox Hill, Madigan, and Wisconsin indicate that an aggressive approach to the evaluation of thyroid cancer is warranted. ■

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Vast Majority of Thyroid Nodule Biopsies Are Benign, Survey Finds

BY SARAH PRESSMAN LOVINGER
Contributing Writer

CHICAGO — Although only 4%-8% of adults have palpable thyroid nodules, as many as 10%-50% of adults will have nodules whose presence is confirmed by ultrasound, Dr. Roberta M. diFlorio of Dartmouth Medical Center in Hitchcock, N.H., reported at the annual meeting of the Radiological Society of North America.

Nodules are also found incidentally on CT and MRI scans in 4%-16% of patients, according to Dr. diFlorio, assistant professor of radiology at Dartmouth. Autopsy studies have found even higher rates of thyroid nodules—30%-60%, she added.

To better understand radiology practice patterns for thyroid nodule management, Dr. diFlorio sent surveys to 106 Society of Radiologists in Ultrasound fellows in 2005. She received 50 responses (a 47% response rate) from 42 institutions.

One issue that especially interested Dr. diFlorio was the frequency with which radiology departments performed fine-needle aspiration (FNA) procedures to rule out malignant nodules. "This is the most common procedure we do in our department," she noted.

To attempt to reduce the number of unnecessary thyroid biopsies and FNAs, the Society of Radiologists in Ultrasound released guidelines for managing thyroid nodules in

2005. The management recommendations were based on the size, shape, and character of the nodules as seen on ultrasound.

The survey found that most responding institutions (28) performed more than five thyroid aspirations per week. The ultrasound feature that most commonly triggered an aspiration was size, with 22 respondents reporting that the presence of a nodule greater than 1 cm on ultrasound would lead to an FNA. (Respondents could indicate that more than one ultrasound feature triggered an FNA.)

The ultrasound feature that most commonly led to a fine-needle ablation was size; about half of the respondents said they'd biopsy a nodule greater than 1 cm.

Thirteen respondents said that a dominant nodule would lead to an FNA, and 11 respondents said that a cold nodule would be a criterion for an FNA. Overall, 20% of respondents said that they routinely sample more than one nodule.

Despite the high prevalence of thyroid nodules, cancer rates remain low. About 5%-10% of palpable nodules are malignant, and similar malignancy rates—5%-13%—have been found for nodules seen on ultrasound, Dr. diFlorio said.

Only about half of the respondents (22) reported that cells for cytology were routinely present in the aspirate.

Overall, the respondents confirmed that FNAs lead to a relatively low diagnostic yield for thyroid cancer, with 29 respondents reporting that 0%-10% of the FNA procedures are diagnostic, 11 respondents saying that 10%-20% of the procedures are diagnostic, and only 2 respondents indicating that more than 20% of the procedures lead to a diagnosis. ■

Craniopharyngioma Excision Exacerbates Metabolic Issues

BY MIRIAM E. TUCKER
Senior Writer

TORONTO — Children who become obese following surgical removal of craniopharyngiomas exhibit more severe metabolic derangements than do equally obese children who did not have the tumors, Dr. Jill Hamilton reported at the annual joint meeting of the Canadian Diabetes Association and the Canadian Society for Endocrinology and Metabolism.

Craniopharyngioma, a tumor of the hypothalamic-pituitary region, accounts for 9% of all intracranial tumors in children. Although the tumor itself is benign, hypothalamic trauma resulting from its surgical removal often leads to a variety of neurologic and metabolic problems, including morbid obesity in 35%-58% of patients. The mechanism is not clear, but vagally-mediated increased insulin secretion appears to play a role, said Dr. Hamilton, of the University of Toronto and the Hospital for Sick Children, Toronto.

Fifteen children (mean age 15.2 years) with a history of craniopharyngioma treatment and body mass index (BMI) greater than the 95th percentile for age and sex (mean 35.0) were compared with 15 control children matched for both age (mean 14.8 years) and BMI (32.9) who did not have a history of the tu-

mor. There were 8 girls and 7 boys in the craniopharyngioma group, who had a mean Tanner Stage of 3, versus 10 girls and 5 boys in the control group, mean Tanner Stage 4. The two groups did not differ with regard to family history of type 2 diabetes, parental obesity, or in utero exposure to diabetes.

Oral glucose tolerance tests demonstrated significantly higher 2-hour glucose values among the craniopharyngioma children, compared with the controls (137 mg/dL vs. 115.3 mg/dL [7.6 mmol/L vs. 6.4 mmol/L]), as well as significantly elevated insulin levels at 30 minutes and 2 hours. Forty percent of the craniopharyngioma group met diagnostic criteria for either impaired glucose tolerance or type 2 diabetes (previously undiagnosed), compared with none of the controls, Dr. Hamilton reported.

Two-thirds of the craniopharyngioma group versus just 20% of the controls—a significant difference—met pediatric-adapted criteria for the metabolic syndrome, mostly via elevated triglycerides, reduced HDL cholesterol, and impaired glucose tolerance.

Whole-body insulin sensitivity did not differ between the two groups, but the craniopharyngioma patients demonstrated significantly elevated first- and second-phase insulin secretion, she said. ■