

# Size Doesn't Matter Most in Thyroid Nodule Malignancy

BY KATE JOHNSON  
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CHICAGO — The two most important things to gather from an ultrasound study of thyroid nodules is the solidity and the presence or absence of calcifications, according to one expert.

These characteristics, not size, should guide a physician's decision about whether to perform a fine-needle aspiration to check for cancer, said Mary C. Frates, M.D., of Brigham and Women's Hospital in Boston.

"There is a misconception that larger size and the presence of a solitary rather than multiple nodules are predictors of malignancy, but this is not true," she told this newspaper.

Speaking at the annual meeting of the Radiological Society of North America, Dr. Frates outlined her prospective study looking at the likelihood of malignancy based on ultrasound characteristics of more than 1,000 thyroid nodules.

All nodules had a diameter of at least 10 mm and were assessed on ultrasound, followed by ultrasound-guided fine-needle aspiration, as well as surgery when necessary.

The study found a malignancy rate of 11%, confirmed by pathology or cytology, among the 1,060 nodules.

The ultrasound characteristics measured included size, solidity,

echogenicity, presence or absence of a halo, margins, presence or absence of calcifications, and whether there were single or multiple nodules.

Imaging indicated that the main differences between malignant and benign nodules lay in their solidity and calcifications.

Nodules that were at least 75% cystic had a low malignancy rate of almost 2%, compared with nodules that were at least 75% solid, which had a malignancy rate of 13%.

The presence of calcifications also was a strong predictor of malignancy. Fine punctate calcifications had the highest malignancy rate, at almost 24%, followed by calcifications on the rim only (17%), and coarse calcifications (16%). Nodules with no calcifications had a malignancy rate of 8%.

When the sonographic characteristics were combined, solitary nodules that were mostly cystic and without calcifications had a very low malignancy rate (2%), whereas solitary, mostly solid nodules with calcifications had a high malignancy rate (34%).

The same trend was seen in nonsolitary nodules. Those that were mostly cystic and without calcifications had a malignancy rate of 1%, while those that were mostly solid with calcifications had a malignancy rate of 19%.

Dr. Frates said ultrasound reports that do not include details

about a nodule's solidity and calcifications offer little information regarding its malignancy potential. However, she says the ultrasound information must be considered along with the patient's history.

"The clinical evaluation of the patient is also critical," she told this newspaper. "There are clinical characteristics that determine which patients are at increased risk for thyroid cancer—patients with a family history, patients with enlarged lymph nodes or hard masses, and patients who were radiated as children," she said. "You have to consider the clinical history and the imaging findings together."

Although large size should not influence a physician's decision to aspirate a nodule, Dr. Frates added that small size, under 10 mm, does influence her against a biopsy. And she cautioned physicians against doing unnecessary biopsies.

"By doing unnecessary biopsies, you increase your risk of getting insufficient cells. When you get two or three results that are insufficient, most institutions recommend performing a thyroidectomy because a small percentage of nodules that are persistently nondiagnostic turn out to be cancer," she explained.

The appropriate management of thyroid nodules remains controversial because thyroid cancer is such a slow-growing disease and is not often fatal, she said. ■

## Surgeon Volume Affects Resection in Thyroid Ca

BY BRUCE JANCIN  
Denver Bureau

VANCOUVER, B.C. — Most thyroid cancer surgery is done by low-volume operators, who are less likely to perform a total thyroidectomy than are high-volume surgeons, Philip I. Haigh, M.D., reported at the annual meeting of the American Thyroid Association.

That being said, the issue of how extensive a thyroidectomy ought to be in well-differentiated thyroid cancer is a matter of some debate. There are no randomized controlled trials comparing total thyroidectomy versus less extensive resection, added Dr. Haigh of Kaiser Permanente Los Angeles Medical Center.

He reported on 3,679 consecutive patients with well-differentiated thyroid cancer who underwent thyroidectomy at the hands of 311 surgeons at 123 hospitals during 1993-2001.

Overall, 87% of the surgeons were low-volume operators, defined as those performing fewer than five thyroidectomies per year. Collectively, they did 39% of the thyroidectomies in this series. Moderate-volume sur-

geons—those averaging 5-19 cases per year—did 42% of the thyroidectomies. The three surgeons classified as high volume based upon performing 20 or more cases per year accounted for 19% of thyroidectomies.

The low-volume surgeons performed total thyroidectomies in 65% of patients. High volume surgeons did so in 71%, with moderate-volume surgeons having a total thyroidectomy rate similar to high-volume ones.

After statistical adjustment for tumor factors related to the appropriate extent of surgical resection, high- and moderate-volume surgeons were 40%-50% more likely to perform total thyroidectomy in patients with well-differentiated thyroid cancer than were low-volume surgeons.

Men were significantly more likely than women to undergo total thyroidectomy in this study. Dr. Haigh and his coinvestigators had hypothesized that surgeons at urban teaching hospitals would perform total thyroidectomy in significantly more of their patients than would surgeons practicing in other settings, but in fact the rates turned out to be very similar.

# Increased Risk of Low BMD in Congenital Adrenal Hyperplasia

BY MIRIAM E. TUCKER  
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LISBON — Women who receive long-term glucocorticoid treatment for congenital adrenal hyperplasia due to 21-hydroxylase deficiency are at risk for decreased bone mineral density, Jeremy A. King, M.D., reported in a poster presentation at the 12th International Congress of Endocrinology.

The risk of decreased bone mineral density (BMD) is particularly high among postmenopausal women with the salt-losing form of 21-hydroxylase-deficient congenital adrenal hyperplasia (CAH). The best way to prevent the problem is to avoid oversuppression of adrenal androgens via careful monitoring, said Dr. King of Johns Hopkins University, Baltimore.

Morphologic measurements, serum hormone assays, and BMD assessments



were performed in 11 adult women with the salt-losing (SL) form of CAH who had been receiving glucocorticoid replacement therapy since infancy, and in 15 women with the simple virilizing (SV) form of CAH, who had begun glucocorticoid treatment at ages varying from infancy to 22 years.

**Body mass index did not differ between the osteopenic and nonosteopenic CAH patients.**

DR. KING

both CAH groups were significantly shorter than the controls. (See table.) All bone parameters, including z score, T score, and L-spine, were lower in the CAH group.

In addition, levels of 17-hydroxyprogesterone, androstenedione, dehydroepiandrosterone (DHEA), and dehydroepiandrosterone sulfate (DHEAS) were also all significantly lower in the two CAH groups than in the controls, Dr. King reported.

Not surprisingly, adrenal androgens and bone parameters were lower among the 12 postmenopausal CAH patients, compared with the 14 still premenopausal women, he said.

Osteopenia, defined as a T score between -1 and -2.5, was present in 5 of the 11 SL patients (45%) and 2 of the 15 SV patients (13%), compared with just 1 of the 15 controls (7%). There were no differences in age, menopausal status, or cortisol equivalents between the CAH patients with and without osteopenia. However,

adrenal androgens were more suppressed in the osteopenic group, he noted.

Interestingly, body mass index also did not differ between the osteopenic and nonosteopenic CAH patients, suggesting that increased BMI alone does not confer protection from low BMD in this population. The SL group had a mean BMI less than that of the controls with PCOS but greater than the US controls. Yet, the SL group still had lower lumbar BMD and lower z scores, compared with both control groups. ■

### Height, BMD Decreased in Women With 21-Hydroxylase-Deficient CAH

	Height (cm)	Total DXA Score
<b>Women with CAH</b>		
Salt-losing form	153	1.00
Simple virilizing form	148	1.14
<b>Controls</b>		
Women with polycystic ovary syndrome	156	1.22
Unaffected sisters	159	1.23

Source: Dr. King