ACADEMY OF CLINICAL THYROIDOLOGISTS
Position Paper on FNA for
Non-Palpable Thyroid Nodules and Neck Lymph Nodes

Jack Baskin, MD, Dan Duick, MD, Richard Guttler, MD, Sheldon Stoffer, MD, Woody Sistrunk, MD, Diana Dean, MD, Andrea Frasoldati, MD, Robert Cooper, MD, Victor Silverman, MD, Sheldon Rubenfeld, MD, John S. Kukora, MD, Sam Lerman, MD, Edward Chin, MD, Greg Powell, MD, Ruggero Battan, MD, Lorraine Dajani, MD, Genevieve Yue, MD, Ghobad Azizi, MD, Douglas Notman, MD, John Parker, MD, and Roberto Valcavi, MD

A thyroid forum was held at the 14th Annual AACE Clinical Congress in Washington, DC. It consisted of 20 clinical endocrinologists who practice primarily thyroidology. The group discussed when to perform FNA on non-palpable thyroid nodules and neck lymph nodes and came to a consensus on their recommendations.

The first topic of discussion was the increasing number of patients referred because of non-palpable thyroid nodules detected by Doppler, CT, and other types of imaging. These nodules, usually less than 2 cm in size, are very common in the population; hence the question arises when to perform ultrasound guided FNA. Numerous studies have shown that the size of a nodule is not predictive of thyroid cancer (1-4). However, non-palpable nodules are seldom a threat to life and are so numerous that the routine biopsy of all such nodules is neither practical nor cost effective. Clearly, some judgment is required in deciding which nodules require FNA.

The group felt that the decision to biopsy could not be made by ultrasound alone but should include clinical findings such as the patient's history, family history, and physical examination. Occasionally, other tests that may have been done such as TSH or TPO antibodies may affect the need for a biopsy.

The experiences of those present as well as recent studies on non-palpable nodules by two separate groups were used to make the following recommendations (5, 6).

Most nodules 1 cm or less in size can safely be observed over a period of time using ultrasound, and FNA can be avoided unless there is an increase in size. However, in the following circumstances an UG FNA is recommended regardless of size:

(1) Patients who received external radiation to the neck area during childhood.

(2) Patients with a family history of thyroid cancer (papillary or medullary).

(3) Patients with prior partial thyroidectomy showing thyroid cancer.

In addition, UG FNA is recommended for all hypoechoic nodules >5mm accompanied by one or more of the following ultrasound findings: (1) blurred margins,(2) intranodular vascularity, (3) microcalcifications, (4) anterior-posterior diameter greater than transverse diameter, or (5) the presence of significant lymphadenopathy in the neck. (Table 1)

There was unanimous agreement that all nodules 2 cm or greater in size should have an FNA unless they were known to be "hot" by 123I scan. For nodules between 1.1 and 1.9 cm, the group felt that most nodules require FNA, but that the judgment of the endocrinologist was paramount in each individual patient with certain factors

such as young age or location in the isthmus strongly favoring FNA. Some felt that features such as hyperechogenicity or "comet tail sign" might be used to delay FNA as long as the nodule was kept under observation.

The second topic of discussion was when to do an UG FNA of lymph nodes in the post-operative thyroid cancer patient. The recommendation made was that lymph nodes exceeding 5mm in the anterior-posterior diameter and having no hilar line should have FNA if they have one or more of the following features on ultrasound: (1) anterior-posterior/transverse ratio >0.5 in the transverse view, (2) calcifications, (3) cystic necrosis, (4) peripheral vascularity, or (5) caused deviation of the internal jugular vein. Other enlarged lymph nodes that do not meet these criteria should be mapped and followed-up with subsequent ultrasound. (Table 2)

These recommendations were not felt to carry the weight of guidelines. They are made on the basis of the limited data that have been published and the clinical experience of those present. They will undoubtedly be changed or altered as more long term follow-up studies become available.

References:

1. Hagag P., Strauss S., Weiss M. (1998) Role of ultrasound-guided fine-needle aspiration biopsy in evaluation of nonpalpable thyroid nodules. Thyroid 8;989-995.

2. Leenhardt L., Hejblum G., Franc B., du Pasquier Fediaevsky L., Delbot T., le Guillouzic C., Menegaux F, et al (1999) Indications and limits of ultrasound-guided cytology in the management of nonpalpable thyroid nodules. J Clin Endol Metab 84:24-28

3. Kang H, No J, Chung J, Min Y, Lee M, Lee M, et al. (2004) Prevalence, clinical and ultrasonographic characteristics of thyroid incidentalomas. Thyroid 14;29-33.

4. Nam-Goong IS, Kim HY, Gong G, Lee HK, Hong SJ, Kim WB, Shong YK (2004) Ultrasound-guided fine-needle aspiration of thyroid incidentaloma with pathological findings. Clinical Endocrinology 60(1);21-28.

5. Papini E, Guglielmi R, Bianchini A, Crescenzi A, Taccogna O, Nardi F, (2002) Risk of malignancy in nonpalpable thyroid nodules: Predictive value of ultrasound and color-Doppler features. J Clin Endo Metab 87:1941-1946

6. Kim E, Park CS, Chung WY, Oh KK, Kim DI, Lee JT, et al (2002) New sonographic criteria for recommending fine-needle aspiration biopsy of nonpalpable solid nodules of the thyroid. AJR 178:687-691

Table 1

Indications for UG FNA of Thyroid Micronodules (0.5-1cm)

1. History of radional to head or neck during childhood
2. Family history of medullary or papillary thyroid cancer
3. Micronodule in remaining lobe after hemithyroidectomy for thyroid cancer
4. Hypoechoic micronodule with one or more of the following ultrasound findings:

1. A. Blurred margins

1. B. Intranodular vascularity

1. C. Taller than wide

1. D. Microcalcifications

1. E. Significant neck lymphadenopathy

Table 2

Indications for FNA of lymph nodes found in post-op thyroid cancer patients

Any lymph node > 5mm in height without a hilar line and having one or more of the following characteristics

1. Anterior-posterior/transverse ratio > 0.5 (transverse view)
2. Calcifications
3. Cystic Necrosis
4. Peripheral Vascularity
5. Caused deviation of the internal jugular vein