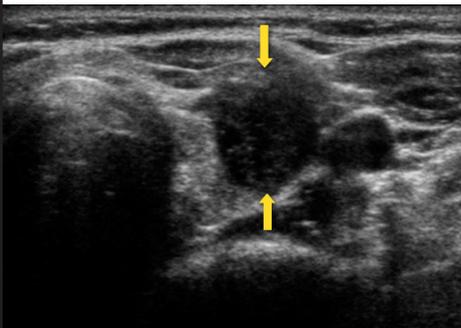


'HEAD TO TOE'

A MESSAGE FROM THE DESK OF RADIOLOGY ASSOCIATES

Management of the Solitary Thyroid Nodule *by David D. Wilson, M.D.*

Thyroid nodules are a common clinical and incidental imaging finding. In most patients, when nodules are found they warrant further evaluation. Ultrasound has become the primary tool to evaluate a thyroid nodule while a radioisotope thyroid scan is reserved only for patients who are hyperthyroid. The following is a guideline from both clinical and imaging specialist societies for management.



Biopsy proven thyroid carcinoma: Hypoechoic thyroid nodule contains micro-calcifications, micro-lobular margins and has a taller than wide configuration.

Thyroid nodules are found in 4% of patients on physical exam. Thyroid nodules are found on 50% of patients undergoing thyroid ultrasound. Nodules are a common finding on screening ultrasound exams that are performed at health fairs. Whether nodules are suspected on clinical exam of the thyroid or were first found on an imaging study such as a CT of the neck or chest, a carotid ultrasound or on a screening ultrasound exam, subsequent evaluation and

recommendations are similar. The American Thyroid Association (ATA) recommends the patient with a thyroid nodule initially be questioned for risk factors such as family history of thyroid cancer and history of therapeutic radiation exposure to the head and neck especially during childhood. History of rapid growth of a nodule, vocal cord paralysis, change in voice character, dysphagia or cervical lymphadenopathy warrant fine needle aspiration (FNA) or surgical biopsy of any suspicious nodule >5mm noted on a subsequent ultrasound.

Ultrasound can identify features that suggest a malignant nodule. The Korean Society of Thyroid Radiology has a useful classification system that divides nodules based on ultrasound findings to be either: 1) suspicious for malignancy; 2) likely benign; or 3) indeterminate. Findings suspicious for malignant thyroid nodule include micro-calcifications, marked hypo-echogenicity with heterogeneous echo texture, micro-lobular margins, taller than wide configuration and adjacent lymphadenopathy. Nodules considered likely benign include spongiform (Swiss-cheese) complex nodules and those nodules that are predominately or completely cystic. All other nodules are considered indeterminate.

There is disagreement between the different professional societies on which patients should undergo FNA under ultrasound guidance. In our experience at Radiology Associates, nodules less than 8-10 mm are not reliably sampled with FNA.

RADIOLOGY ASSOCIATES RECOMMENDATIONS FOR SOLITARY THYROID NODULES

- A thyroid nodule associated with lymphadenopathy or other suspicious clinical or ultrasound findings should be biopsied if feasible; if due to small size or comorbid conditions, biopsy/surgery is not feasible, the nodule may be followed with ultrasound.
- An indeterminate hypoechoic nodule >10 mm and isoechoic/echogenic nodule >15 mm may be biopsied.
- A solid nodule containing benign ultrasound features >20 mm may be biopsied.
- A nodule not meeting criteria for biopsy may be followed with ultrasound at one-year intervals. More frequent initial monitoring to establish stability of the nodule may be reasonable.
- Benign solid nodules can show slow growth over time, but any nodule that on follow-up ultrasound increases >20% in average diameter or >50% in volume should be biopsied.
- Although the vast majority of nodules found incidentally on routine imaging studies are benign, hyper metabolic thyroid nodules found on FDG PET imaging have an incidence of carcinoma that approaches 50%. If a "hot" thyroid nodule is found on PET, aggressive evaluation is warranted.



David D. Wilson, M.D.
Radiology Associates