

Thyroid Carcinoma

Thyroid carcinoma is a rare disease with a prevalence of less than 0.002% among the American population (National Cancer Institute, 2012 [NCI]). The National Cancer Institute (2012) estimates 56,460 new cases will be diagnosed in 2012 with 1,780 deaths occurring from the disease. Risk factors for thyroid carcinoma include: history of radiation exposure, family history of thyroid cancer, single dominant solid nodule greater than 4cm, male gender, rapid growth of nodule, being less than 20 years old or being greater than 70 years old, cervical metastasis, and evidence of invasion on imaging (Brett & Genden, 2009). Patients may be asymptomatic or may present with cough, dysphagia, goiter, change in voice, or neck swelling (Topiwala & Zieve, 2012).

There are four main types of thyroid cancer including papillary (most common), follicular, medullary and anaplastic carcinoma (NCI, 2012). The sonographic appearance of thyroid carcinoma varies with the subtype of carcinoma. Sonographic findings that suggest malignancy include: absence of a halo sign, solid and hypoechogenic nodule, heterogeneous echotexture, irregular margins, extraglandular extensions, and fine internal calcifications (Brett & Genden, 2009).

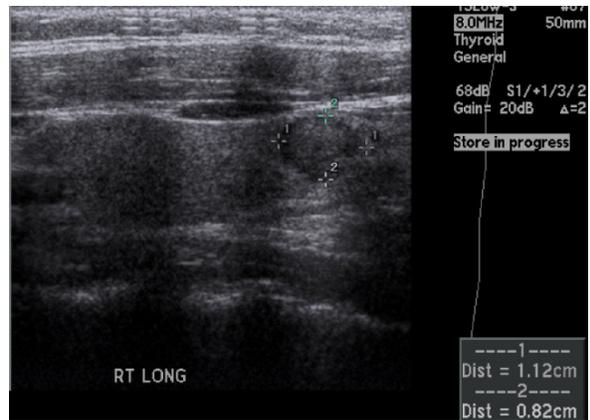
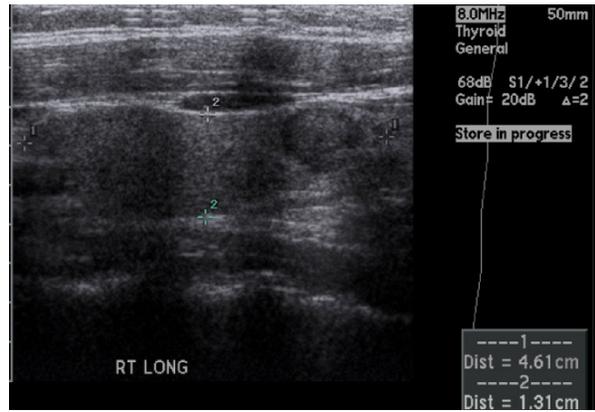
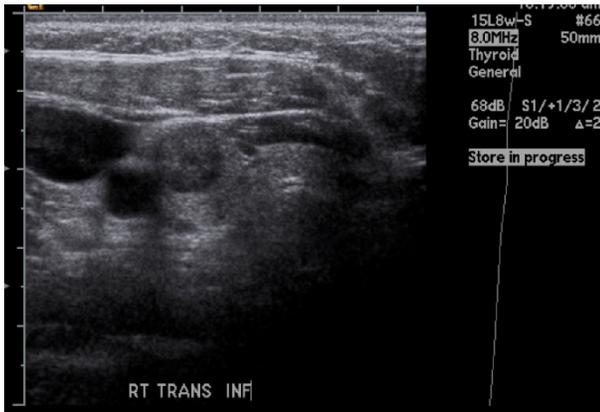
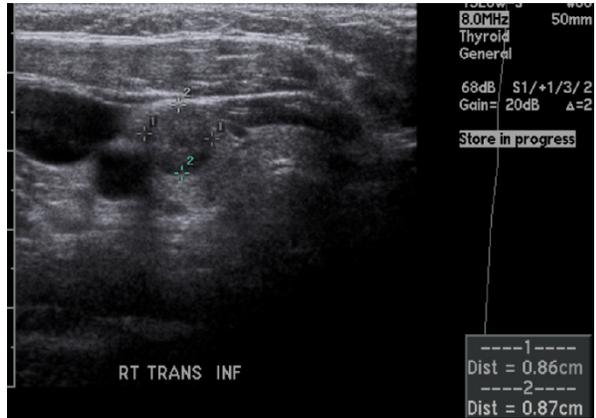
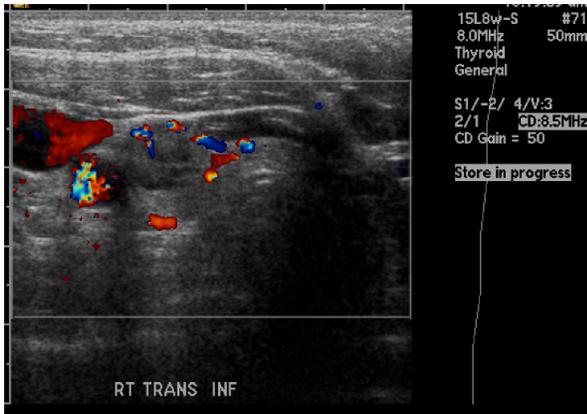
The following is a case study of a young, 28 year old woman with thyroid carcinoma.

During a physical examination, the patient's physician heard a bruit and ordered an ultrasound carotid exam. During the carotid exam, the sonographer documented a round solid nodule in the right lobe of the patient's thyroid. The sonographer concluded the carotid examination with no other significant findings. Two weeks later, the attending physician ordered a follow-up ultrasound examination of the thyroid. The ultrasound examination of the patient's thyroid confirmed there was a solitary solid nodule in the inferior right lobe of the patient's thyroid that measured 1.1 x 0.9 x 0.9 cm. The round nodule was homogeneous, and hypoechoic to the surrounding thyroid tissue. The nodule exhibited a thin sonolucent capsule around the periphery of the nodule. Color Doppler examination of the nodule showed vascularity in the periphery and center of the nodule. The radiologist recommended a biopsy of the nodule with fine needle aspiration. The results of the biopsy revealed the nodule was malignant and two months later a total thyroidectomy was performed.

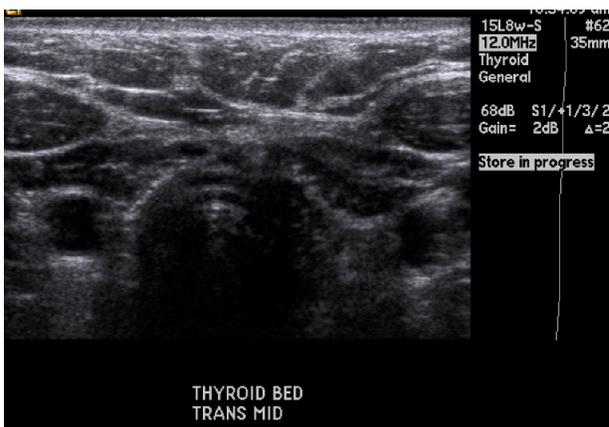
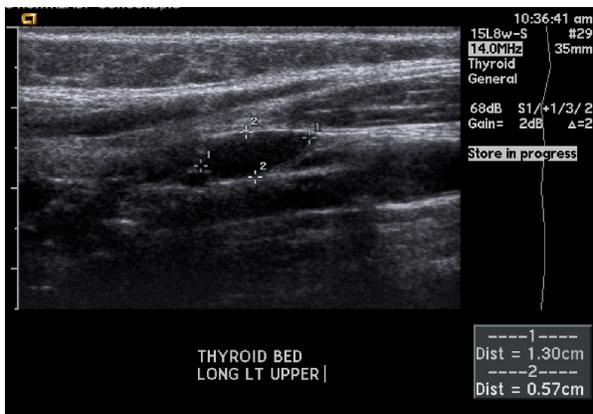
One year after the thyroidectomy, the patient returned for a follow up sonogram of the soft tissue surrounding the head and neck to evaluate the thyroid bed. The sonographer documented a 1.3 cm cystic oval nodule in the upper left area of the thyroid bed. In the final report, the radiologist indicated that the documented area showed an atypical soft tissue nodule that may be a lymph node, recurrent thyroid tissue or mass. The radiologist also recommended the patient return within a short period to reassess the nodule by ultrasound examination.

This patient has no family history of thyroid carcinoma and was not aware she had a thyroid nodule before the carotid examination. After her thyroidectomy she replaced her thyroid function with Synthroid. According to the stage of the cancer at the time of her diagnosis she has a 99.9%, five year survival rate (NCI, 2012).

Images from thyroid study:



Images from soft tissue head and neck study:



References

- Genden, E. M., & Brett, E. (2009). Contemporary management of thyroid carcinoma. *Cancer Therapy*, 7(1), 7-20. Retrieved from Academic Search Premier.
- Topiwala, S. & Zieve, D. (2012, March 22). Thyroid cancer. *PubMed Health*. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002193/>
- National Cancer Institute. (2012). SEER stat fact sheets: thyroid. U.S. National Institutes of Health. Retrieved from <http://seer.cancer.gov/statfacts/html/thyro.html>