



UNIVERSITY of
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DEPARTMENT OF IMAGING SCIENCES

Imaging Sciences Interesting Cases

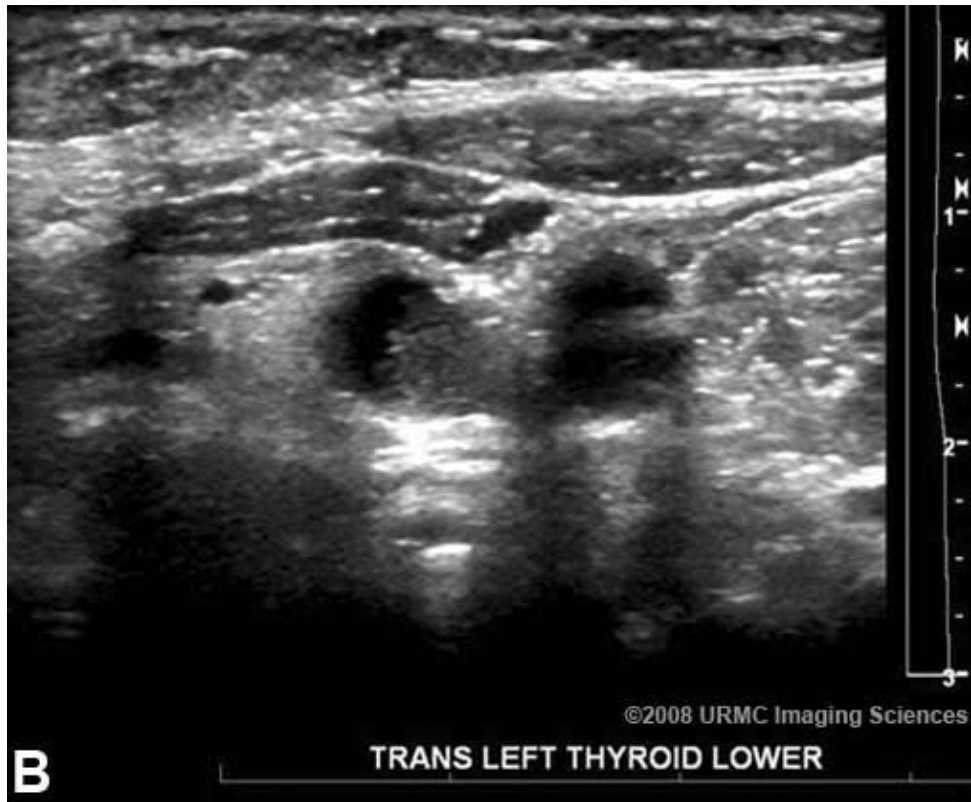
CASE 57

Chandler Shyu, MD, MPH

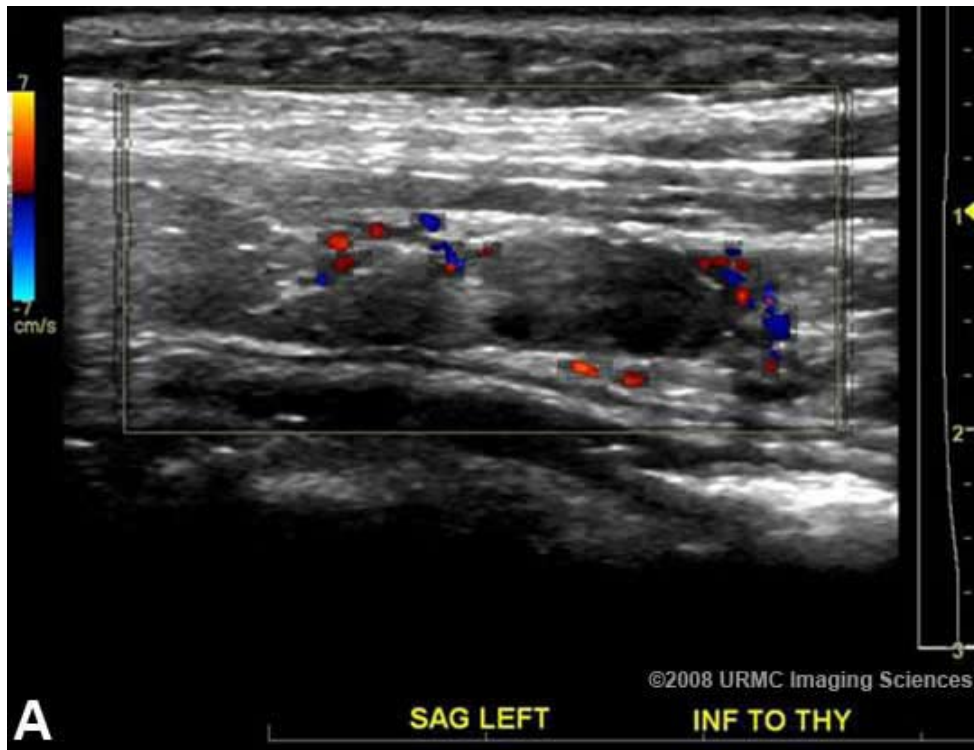
CLINICAL PRESENTATION: A 60-year-old female with history of metastatic renal cell carcinoma (RCC) to the lungs presented with a left thyroid nodule seen on chest CT. Thyroid ultrasound was requested for further characterization.

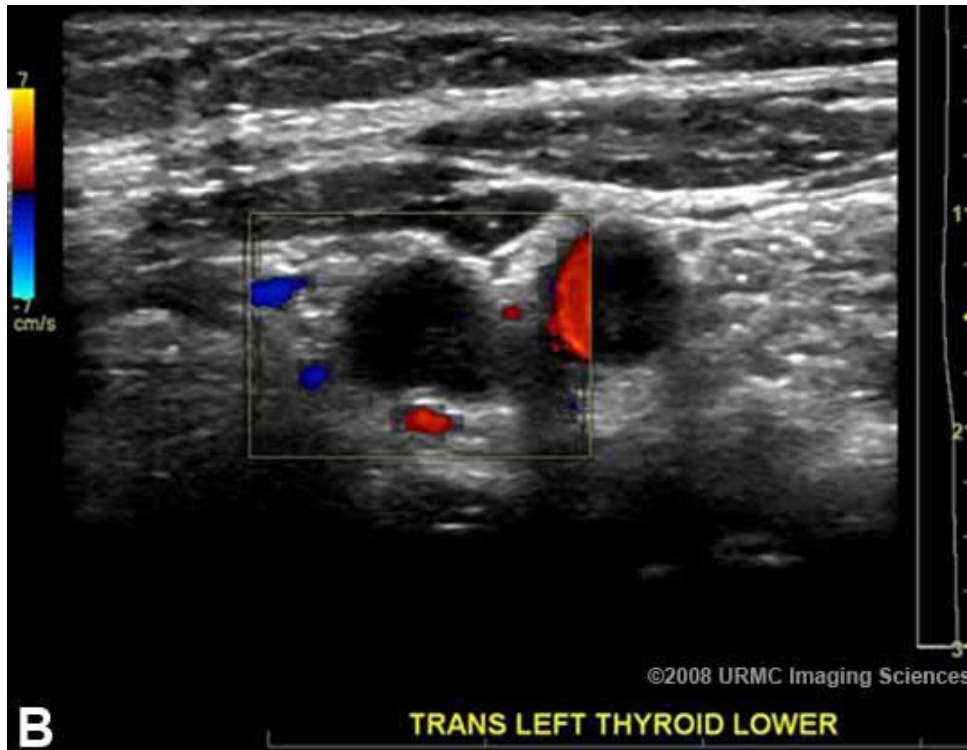
IMAGING FINDINGS: Thyroid US revealed a few sub-centimeter nodules without malignant features in bilateral thyroid lobes. However a predominantly hypoechoic lesion with some internal echoes measuring 2.4 x 0.6 cm was found posterior and inferior to the left thyroid lobe. Color Doppler US demonstrates mild vascularity along the periphery.





Figures 1 A&B: Sagittal and transverse grayscale ultrasound images.





Figures 2 A&B: Sagittal and transverse color Doppler images.

DIAGNOSIS: Parathyroid Adenoma

DISCUSSION: Parathyroid glands are paired structures found posterior to the thyroid lobes both superiorly and posteriorly. They can also be found in ectopic locations such as the mediastinum.

Parathyroid adenomas are not routinely visualized on ultrasound; when seen they are often enlarged with associated hyperparathyroidism. Patients should be evaluated for hypercalcemia and elevated PTH.

Parathyroid adenomas are usually oval, hypoechoic, predominantly solid lesions. A small percentage may develop cystic necrosis and hemorrhage when larger than 2cm in size. On color Doppler imaging they are usually hypervascular with “polar vascular arcs” (peripheral blood flow).

It may be difficult to distinguish adenoma from carcinoma. Carcinomas are usually larger than 2cm and have a lobular contour.

Differential diagnosis includes cervical lymph node, exophytic thyroid nodule, and longus colli muscle.

REFERENCES:

1. Rumack C, Wilson S, Charboneau JW, Johnson J-A. Diagnostic Ultrasound. 3rd ed., Mosby, 2005:771-789.
2. Brant WE. Core Curriculum: Ultrasound. Lippincott, Williams & Wilkins, 2001:359-361.