

Thyroid Ultrasound Protocol

@UltrasoundTechniques

Before Thyroid Ultrasound is started:

- **Obtain prior thyroid ultrasound for comparison. (if any)
- **Ensure correct date and time is set on machine.
- **Check gain settings
- **Check first printed image to ensure gray scale settings are optimal and can distinguish between thyroid tissue, surrounding tissue, and vessels. Please note that even though images are optimal on screen; sometimes printer setting are altered for other studies.

Scanning Protocol:

Transverse~

1. Label isthmus, take measurement up and down within the correct borders (measuring thickness) Look for any nodularity. Label and measure any isthmus nodules accordingly.
 2. Label Right Lobe, measure right lobe left to right (width measurement)
 3. Scan up and down- looking for any nodules.
 4. Nodules are usually measured in transverse and sagittal views with length, width, and depth measurements. (this should be done for each nodule) Nodules are observed also with color Doppler to demonstrate vascularity. Show any artifacts associated with the nodule; as they can give clues to the characteristics of the nodule, such as cystic (posterior enhancement artifact) or calcifications (posterior shadow artifact.)
- *Numbering nodules is recommended in order not to confuse multiple nodules.

Sagittal~

1. Measure lobe from right to left and anterior to posterior (top to bottom). This will record length and depth dimensions of the thyroid.
2. Insert color Doppler to demonstrate any abnormal flow/normal blood flow, print image
REPEAT transverse and sagittal steps on left lobe.

Lymph nodes: measure all lymph nodes in length, width, and depth. Apply color doppler to show vascularity. Also, note if there is a visible hilum or not. Label all cervical lymph nodes by level.

**The carotid can be seen during a thyroid ultrasound; use your discretion to note any incidental carotid plaque findings.

Nodule Talk:

Here are some ways to describe nodules with consideration to what the radiologist will look for to determine benign vs. malignant characteristic of a nodule.

***Please note that an ultrasound cannot determine if a nodule is benign or malignant.*

Characteristics to take images of and note:

Composition (solid, cystic, calcified, complex....)

Shape (round, ovoid, taller than wide, irregular....)

Echogenicity (hyperechoic, hypoechoic, anechoic, mixed echoes....)

Margins (smooth, spiculated, irregular, unclear borders....)

Echogenic foci (hyperechoic area, usually within a cystic nodule)

Vascularity (vascular, peripheral vascularity, vascular stalk, non-vascular, mildly vascular...)

If you are unsure if an area is a true nodule, it can be noted as follows:

~ “possible pseudonodular area” (an area appearing as a nodule but isn’t a “real” nodule, such as a multinodular goiter or heterogeneous area mimicking a nodule.)

~ “heterogeneous area” (area in a homogeneous lobe that appears as a nodule, however borders are not clear)

~ “possible nodule; however, it is unclear give heterogeneous lobe”

~ “multinodular goiter” (area which appears as a bunch of nodules squished together, where you cannot make a clear distinction of nodule borders”

*** A good tip to knowing if it is a true nodule is:

A true nodule will maintain clear borders in the transverse and sagittal planes.