

## **Thyroid Nodules:**

Thyroid nodules are relatively common. Clinical studies show that ultrasound can detect thyroid nodules in 20%-76% of the general population. The vast majority of thyroid nodules are benign (not cancerous). About 1 in 20 thyroid nodules are cancerous. Nodules may be solitary or associated with other nodules in the gland. An enlarged thyroid gland with multiple nodules is called a multinodular goiter. Very large nodules or multinodular goiters may cause an obvious cosmetic deformity in the neck, difficulty swallowing or compression of the windpipe (trachea) with difficulty breathing.

Unfortunately, there is no fail-safe way to distinguish benign nodules from cancerous nodules by way of physical examination or imaging (ultrasound, thyroid scan, CT scan or MRI). Furthermore, nodule size is not predictive of malignancy. Nodules greater than 8-10 millimeters require further evaluation.

Fine needle aspiration biopsy is a useful test to help determine malignancy or increased suspicion for malignancy in a thyroid nodule. During this test, the skin overlying the thyroid gland is cleansed and anesthetized. A small needle is passed through the skin and underlying soft tissue, often with use of an ultrasound for guidance. The needle enters the thyroid nodule and extracts some abnormal cells. These cells are evaluated by the pathologist to determine if cancerous cells are present. Medical or surgical treatment is based on presence or absence of abnormal cells from the biopsy.

Cancerous nodules have the ability for the abnormal thyroid cells to invade into the surrounding thyroid tissue and spread beyond the thyroid to lymph nodes and other structures in the neck. Certain features are associated with an increased risk of cancer in thyroid nodules: A family history of papillary or medullary types of thyroid cancer, age less than 20 or greater than 70 years, male gender, history of head and neck radiation as a child (this was performed for acne or enlarged tonsils years ago), an enlarging or non-mobile nodule, and associated vocal cord paralysis.

Treatment of thyroid nodules is individualized based on size of nodule, biopsy findings, and likelihood of malignancy. Discussion with Dr. Thakkar will help clarify management strategy for thyroid nodules.