

Indeterminate FNA

Hossein Gharib, MD

Molecular Testing in Thyroid Nodules

- 20% of thyroid FNAs are cytologically indeterminate
- The majority undergo surgical excision; 80% have benign histology
- Clearly, this is not a cost-effective practice & ways to improve diagnostic accuracy seem necessary

Molecular Testing in Thyroid Nodules

- Veracyte Affirma Gene Expression (GEC) Classifier
- Gene expression from mRNA on FNA washings
- Alexander et al, NEJM 2012, showed that for 265 nodules, NPV was 92%
- With neg GEC test FU is safe
- Cost \$3200

Molecular Testing in Thyroid Nodules

- **Asuragen Panel** done on FNA specimens
- Panel includes BRAF, RAS, RET/PTC, & PAX8/PPARg
- Nikiforov et al, JCEM 2011, reported on 1056 nodules
- With positive mutations, risk of cancer was 88% to 95%; sensitivity was only 60%
- Cost \$650

Molecular Testing in Thyroid Nodules

- **Cleveland Clinic mRNA Assay**
- Milas et al, Ann Surg 2010, reported on 54 nodules with FN/SFN a sensitivity of 76% & specificity 96%
- Test performed on blood
- Available thru CCF
- Cost \$300

Molecular Testing in Thyroid Nodules

- We need better tests for suspicious thyroid FNA
- Current tests are useful but more studies are needed
- Until more info is available, we continue to use US & cytology to manage our patients