**Figure 1. Thyroid Carcinoma Evaluation in a Patient with Known or Suspected Thyroid Nodule(s)**

**Individual with known or suspected thyroid nodule(s)**

1. **TSH [899 or 19537] and Ultrasound**
   - Nodule(s) confirmed; normal or ↑ TSH
   - Nodule(s) not confirmed; Normal, ↑, or ↓ TSH
   - Nodule(s) confirmed; ↓ TSH

2. **Thyroid FNA Cytomorphology with Molecular Reflex [90818]**
   - Cytology indeterminate with mutation
   - Cytology indeterminate without mutation

3. **Surveillance and serial ultrasound**
   - Anaplastic thyroid carcinoma
   - FTC or Hürtlhe cell carcinoma
   - Malignancy rare; evaluate and treat for thyrotoxicosis
     - Malignancy possible; consider FNA

4. **Consider alternative diagnosis**
   - Cytology indeterminate without mutation
   - Benign; no reflex testing

5. **Radionuclide Imaging**
   - Autonomously functioning (hot)

6. **BRAF mutation**
   - Supports PTC diagnosis; poor prognosis
   - Follicular neoplasm more likely than PTC

7. **RET/PTC rearrangement**
   - Supports PTC diagnosis

8. **RAS mutation**
   - FTC (more likely) or follicular adenoma

9. **PAX8/PPARγ rearrangement**
   - FTC or follicular adenoma

10. **Anaplastic thyroid carcinoma**
    - Cytology indeterminate with mutation
    - Thyroid cancer not ruled out; consider surveillance, repeat FNA, or surgery

11. **FTC or Hürthle cell carcinoma**
    - Reflex testing (Figure 2)
    - Additional workup (Figure 3)

12. **PTC**
    - Reflex testing (Figure 2)
       - RET/PTC rearrangement

13. **MTC**
    - Additional workup (Figure 3)
       - RAS mutation

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Test code 90818 reflexes to *BRAF, RAS, RET/PTC, and/or PAX8/PPARγ* mutation testing if cytomorphology results are atypical, indeterminant, or suspicious using the Bethesda System for Reporting Thyroid Cytopathology. Test codes are in brackets (see Table 1). TSH indicates thyroid stimulating hormone; FNA, fine needle aspiration; FTC, follicular thyroid carcinoma; MTC, medullary thyroid carcinoma; and PTC, papillary thyroid carcinoma.

This figure was developed by Quest Diagnostics based on references 2 and 3. It is provided for informational purposes only and is not intended as medical advice. A physician’s test selection and interpretation, diagnosis, and patient management decisions should be based on his/her education, clinical expertise, and assessment of the patient.