Palpable Thyroid Nodules

Disclaimer

This pathway applies to thyroid nodules that have been found incidentally through a radiological examination and are impalpable on physical examination. See also:

- Thyroid Nodules
- Thyroid Disease in Pregnancy

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Red Flags

- Thyroid mass with difficulty in breathing
- Bleeding from a thyroid nodule
- Rapidly enlarging thyroid mass
- Thyroid mass with change in voice quality
- Cervical lymphadenopathy associated with a thyroid lump
- Thyroid nodules in children

Background – About Palpable Thyroid Nodules

Thyroid nodules are a common finding. They may be detected:
- by palpation in 10% of women and 2% of men.
- incidentally on ultrasound, CT, MRI.

About 5% of palpable thyroid nodules are malignant, and imaging alone may not reliably identify these. The optimal management of thyroid nodules is controversial.

Assessment

1. Perform an examination:
   - Confirm that the lump is likely to be of thyroid origin. If unsure that the lump is of thyroid origin.

   **Thyroid origin**
   - Lump is located in lower central neck.
   - Lump moves with swallowing.

   - Check clinical thyroid hormone status e.g., weight loss, sweats, tremor, pulse.
   - Assess thyroid cancer risk factors and nodule duration and growth.

   **Thyroid cancer risk factors**
   - History of neck irradiation in childhood
   - There are rare familial dominant syndromes predisposing to thyroid cancer, so a family history is relevant.
     - Cowden syndrome – a genetic disorder with increased risk of breast and thyroid disease and malignancies
     - Familial adenomatous polyposis (FAP)
     - Familial thyroid cancer
     - MEN syndrome (multiple endocrine neoplasia)
   - Hashimoto thyroiditis (small but recognised risk of lymphoma)

   - Consider obstructive symptoms and cosmetic concerns.

   **Compressive symptoms**
   - Hoarseness – may be due to compression or malignant infiltration of the recurrent laryngeal nerve.
   - Dysphagia.
   - Plethora – red face, especially when raising arms above head e.g., towel drying hair, hanging washing up.
Airway obstruction:
- Symptoms depend on severity of the compression or narrowing of the trachea.
- Dyspnoea is the most common symptom of tracheal obstruction or narrowing and often aggravated with exertion or posture, especially when leaning forward.
- If severe tracheal compression (luminal diameter < 5 mm), stridor (noisy breathing during inspiration) and/or wheezing (noisy breathing during expiration) occurs at rest.
- Cough or a choking sensation may be symptoms of airways obstruction.

- Palpate thyroid nodule and examine for lymph nodes.

2. Arrange investigations:
- thyroid-stimulating hormone (TSH). See Thyroid Function Tests.
- neck and thyroid ultrasound to assess rest of gland and lymph nodes.
- if TSH is elevated or normal, arrange ultrasound-guided fine needle aspiration (FNA).
- If TSH is reduced, order thyroid radionuclide scan. If the patient is pregnant, nuclear scan is contraindicated.

Management

1. Arrange immediate endocrine surgery referral or admission if:
- thyroid mass with difficulty in breathing, stridor.
- unexplained new hoarseness associated with goitre.
- cervical lymphadenopathy associated with a thyroid lump.
- painless thyroid mass rapidly enlarging over a period of weeks.
- thyroid nodules in children.

2. If patient is pregnant, see Thyroid Disease in Pregnancy.

3. If TSH is elevated or normal, further management is determined by the results of the FNA:
- If malignant, non-diagnostic, or indeterminate, refer to endocrinologist.
- If benign, nodule is < 4 cm, and patient has no obstructive symptoms, observe and review with ultrasound at 6 months initially, then yearly.
  - If significant enlargement, repeat ultrasound-guided FNA and refer to endocrine surgeon.
  - If there are cosmetic or obstructive concerns, refer to endocrine surgeon.
  - If FNA results are benign and TSH remains high, follow the Hypothyroidism pathway.

4. If TSH is reduced, further management is determined by the results of the thyroid radionuclide scan:
- If hot nodule, which corresponds to the palpable nodule, consider Subclinical Hyperthyroidism.
  - Hot nodule
    High isotope uptake is likely to indicate a benign but functioning thyroid lesion which has low likelihood of cancer.
- If cold nodule or other condition e.g., diffuse hyperplasia and corresponds to palpable nodule, order ultrasound-guided FNA.
**Cold nodule**
Has a low isotope uptake, and may indicate cancer, although most are usually benign.

- If FNA results are benign and TSH remains low, consider **Subclinical Hyperthyroidism**.
- If nodule seen on radionuclide scan does not correspond to the palpable nodule, arrange **immediate endocrinology referral or admission**.

5. If any uncertainty regarding FNA results, discuss with pathologist, endocrinology, or ENT or endocrine surgeon.

## Referral

Include **investigation results** in all referrals. If referring to the public system, a free thyroxine (T4) result is required as per the **Statewide referral criteria**.

**Investigation results to include in referrals**
- TSH and free thyroxine (T4)
- Reports and images from diagnostic ultrasound
- Radionuclide imaging, or other imaging if available
- Fine needle aspiration (FNA), if done

- If thyroid mass associated with difficulty breathing or active bleeding, arrange **immediate ENT referral or admission** or **immediate endocrine surgery referral or admission**.

- Refer for an **urgent or routine ENT referral** or **urgent or routine endocrine surgery referral** if:
  - suspected or confirmed malignancy.
  - thyroid mass with mild to moderate compressive symptoms.
  - thyroid mass associated with hyperthyroidism.
  - rapidly enlarging thyroid mass.
  - thyroid mass with change in voice quality.
  - cervical lymphadenopathy associated with a thyroid lump.
  - thyroid nodules in children.

- If indicated, write "high suspicion of cancer" on referral.

- Arrange **urgent or routine endocrine surgery referral** if:
  - pregnant patient without red flags.
  - FNA results are non-diagnostic, or indeterminate.

## Information

### For health professionals

**Further information**
- Australian Family Physician – **Thyroid Scans**
- Diagnostic Imaging Pathways – **Thyroid Nodule (Incidental)**
- Inside Radiology:
  - **Thyroid Fine Needle Aspiration (FNA)**
  - **Nuclear Medicine Thyroid Scan**
- Ultrasound
- Royal College of Pathologists of Australasia (RCPA) – Common Sense Pathology (CSP): Investigation of Common Thyroid Problems

## For patients

- Better Health Channel:
  - Thyroid: Hyperthyroidism
  - Thyroid Gland
- Inside Radiology:
  - Thyroid fine needle aspiration (FNA)
  - Nuclear Medicine Thyroid Scan
  - Ultrasound

## References

1. Royal College of Physicians of London. British Thyroid Association Thyroid Cancer Guidelines. 2. [place unknown]: British Thyroid Association; 2014.

## Disclaimer

Last updated: September 2020