

Thyroid Examination

The thyroid is located in front of the neck, with its two lobes on either side of the trachea connected by isthmus

A) Inspection: make the patient sit on stool with neck slightly hyperextended. Asking the patient to swallow makes the thyroid move prominent for inspection

1) Size, Shape and Situation (Midline, both sides of the midline, one side): measure by measuring tape

2) Location

3) Borders in relation to the sternomastoid muscle and the suprasternal notch

4) Surface

- Smooth → simple goiter, single nodule
- Nodular, Bosselated → Multinodular goiter

5) Skin over thyroid

- Redness and edema → suggestive of inflammation
- Scar of previous surgery
- Sinuses → thyroglossal fistula
- Dilated vein

6) Pulsation

7) Upward movement on deglutition and protrusion of tongue

- Thyroid swelling moves in deglutition but we have other condition where swelling moves in deglutition:
 - Thyroid
 - Thyroglossal cyst
 - Pre-tracheal Lymph Nodes
 - Subhyoid bursa
 - Extrinsic carcinoma of larynx
- But lipoma does NOT move during deglutition because it is not attached to the pre-tracheal fascia

If swelling is a nodule which is close to the midline we must test its upward movement on protrusion of the tongue. Thyroglossal cyst and Thyroglossal fistula move upwards with tongue protrusion.

B) Palpation: we palpate by three methods:

1) Standard method: test temperature of swelling with back of fingers and then look for any tenderness

2) Lahey's method → for palpation of the deep surface of thyroid

3) Crile's method → for palpation of small nodules in the thyroid

In palpation we look for

- 1) Size and shape
- 2) Borders: we should check for a retrosternal goiter by palpating the tracheal rings in the suprasternal notch
- 3) Surface: smooth / bosselated
- 4) Consistency: nodules

If entire gland or lobule is enlarged note:

- **Surface:** smooth, bosselated
- **Consistency:** soft (colloid goiter), firm (multinodular goiter), hard (carcinoma, Riedel's thyroiditis)
- **Retrosternal extension?:** palpate the lower border during deglutition

If single nodule

- **Location:** lobe or isthmus
- Size and Shape
- Consistency: soft, firm
 - Cyst in thyroid is firm
 - Solid swelling (adenoma) soft
- Is the rest of the thyroid gland palpable?
- Normally the rest of the gland is not palpable (solitary nodule), if it is palpable then it is considered a multinodular goiter with a single large nodule

5) Thrill: Put finger gently on the upper pole of each side to check for a thrill → if positive it is diagnostic of primary toxic goiter

6) Fixity: Test for fixity and mobility → fixity in any direction suggests + malignant infiltration or thyroiditis

7) Trachea: Deviation, Kocher's test for scabbard trachea

- Kocher's test: Ask patient to take heavy deep breath and open mouth and compress swelling from both sides, if there is hoarseness of voice (indicate narrowing of trachea). It is seen in carcinoma and multinodular goiter

8) Carotids: we check for Berry's sign (for obliteration of carotid pulsation): in a benign goiter, carotid pulse is well felt, though displaced backward. In malignant goiter, carotid pulse is weak or absent

C) Percussion and Auscultation:

Percuss on manubrium sternii

- Normal = Resonant
- Retrosternal Goiter = Dull

In auscultation: we auscultate over the swelling, paying more attention at the upper poles for a systolic bruit which is diagnostic for primary toxic goiter and it is due to increased vascularity.

After examination of thyroid look for

- Sign of thyrotoxicosis
- Sign of myxedema
- Sign of retrosternal extension
- Sign of metastasis

Sign of thyrotoxicosis

1) Eye signs → Looking for Exophthalmos

- Lid retraction (Dalrymple's sign), Lid lag (Von Graefe's sign) & Infrequent blinking (Stellwag's sign)
- Actual bulge (Naffziger's method), and sclera seen inferiorly
- Absence of wrinkling and inability to converge:
 - No forehead wrinkles → Joffroy's sign
 - Difficulty everting the upper eyelids in thyrotoxicosis → Gifford's sign
 - Note convergence of eye by holding finger one meter from the eyes and ask patient to look, then slowly move finger towards midpoint of eyebrows of the patient, the patient can't converge the eyes in exophthalmos (Mobius's sign)

Progressive Exophthalmus:

1. Further bulging of eyeballs
2. Conjunctival congestion and edema
3. Corneal ulcers, diminished vision
4. Ophthalmoplegia

2) Tremors

- Fine tremor of out-stretched hands and protruded tongue (positive in thyrotoxic patient)

3) Tachycardia

- Radial pulse: count pulse rate in early morning at 4 am during sleep (Sleeping Pulse Rate)
- Palms & feet: warm and moist
- Legs: pretibial myxedema with thickened, hyperpigmented skin and coarse hair

4) Bruit, thrill

Sign of myxedema

- Edema of face and legs
- Hoarseness of voice
- Lethargy
- Delayed relaxation of deep reflexes

Sign of retrosternal extension (RSE)

- Palpate tracheal rings: inability to palpate suggest RSE
- Percuss manubrium sterni: dull sound suggests RSE
- Thoracic outlet obstruction: Pembert's sign
- Horner syndrome: ptosis, miosis, enophthalmus, absent cilio-spinal reflex and anhydrosis (in RSE or malignant goiter)

Sign of metastasis

- Hard cervical lymph nodes
- Hard nodules on skull
- Long bone metastasis
- Nodular liver & ascites
- Chest effusion/consolidation