

Thyroid/neck

Introduction

Examination of the neck may arise in two contexts. The first is examination of the thyroid gland and peripheral manifestations of thyroid disease. The other is the examination of a lump, describing it and formulating a differential diagnosis.

Examination of any lump is described elsewhere in this book (*see* Chapter A6, Lumps and bumps). However, it is useful to list some of the possible lumps that may arise in the neck. The sternocleidomastoid muscle is used to divide the neck into anterior and posterior triangles.

Anterior triangle lumps:

- thyroid gland (nodule, carcinoma, goitre)
- thyroglossal cyst
- lymph node
- pharyngeal pouch
- branchial cyst
- carotid body tumour
- keloid scar.

Posterior triangle lumps:

- lymph node
- cervical rib
- cystic hygroma
- subclavian artery aneurysm
- keloid scar.

Before you start

Enter the station, read the instructions and introduce yourself to the patient and the examiner. To reiterate, the examination will either be a general neck examination in which there will be a lump to find, or a scenario that encourages you to look for thyroid disease. We will cover the latter scenario in detail here.

You will need some equipment for this examination, so ensure that you have a glass of water and a tendon hammer at your disposal. Ideally, the patient should be perched on the edge of the couch or sat in a chair, so you can walk behind them to examine the neck. The patient should be adequately exposed, so that the whole of their neck and the upper part of their sternum can be seen. Explain to the patient what you wish to do, and why it is necessary. Gain their verbal consent to proceed. Wash your hands.

Examination

General

Standing in front of the patient, ask yourself:

- Does the patient look well or unwell?
- Are they comfortable at rest or are they in any pain/distress?
- Are they thin or overweight?
- Are they dressed appropriately for the ambient temperature?
- Do they have eye signs consistent with thyroid disease?
- Are they fidgety/restless or apathetic with myxoedematous facies?
- Are there any visible lumps?

The clinical examination is easier if you follow the standard inspection, palpation, percussion, auscultation process used for other system examinations.

The hands

Start at the hands and look for:

- palmar erythema (a hyperdynamic circulation occurs in thyrotoxicosis)
- tremor (occurs in thyrotoxicosis) – can be exaggerated by asking the patient to stretch out their hands together, with wrists in a neutral position, and elbows extended. Place a piece of paper on the back of the hands to emphasise very fine/low amplitude tremors (*see* Figure A8.1)



FIGURE A8.1 Demonstrating tremor

- acropachy – characteristically appears like clubbing and associated specifically with Graves' disease
- skin and temperature – warm and sweaty would suggest thyrotoxicity, whereas coarse and dry would suggest hypothyroidism.

Palpate the pulse. Abnormalities in rate may occur in thyroid disease (bradycardia in hypothyroidism, tachycardia in hyperthyroidism), as well as abnormalities in rhythm (atrial fibrillation in hyperthyroidism).

The eyes

Look at the eyes. Graves' disease is characterised by eye signs in the context of hyperthyroidism, but eye signs may also occur after treatment for this (when euthyroid or hypothyroid). Look for:

- proptosis – forward protrusion of an eye
- exophthalmos – with the eyes looking forward and relaxed, the upper and lower eyelids normally obscure the upper and lower rims of the

iris and the sclera above and below it. If exophthalmos is present, white sclera is observed above the lower lid

- lid retraction – sclera visible above the cornea
- chemosis – injection and oedema of the conjunctiva
- extra-ocular movement impairment, leading to diplopia.

Complete the eye examination by checking for lid-lag. Comment on loss of hair from the eyebrows.

The thyroid/neck

Inspection

Inspection of the neck involves the following:

- look for a goitre or other swelling in the region of the thyroid gland and comment if you find a mass
- ask the patient to swallow some water – if the identified mass is the thyroid gland or thyroglossal cyst, it will move
- ask the patient to protrude their tongue – if the lump is a thyroglossal cyst, it will move, but if it is the thyroid gland, it will stay still.

Make a final check for any surgical scars and then proceed to palpation.

Palpation (see Figure A8.2)

Move round the couch/chair to stand behind the patient. Explain to them that this is important in order to perform the examination properly. The examination may be uncomfortable but should not be painful (unless they have thyroiditis). As a result, you must ask the patient if they have any pain before palpating. Warm your hands, since cold hands may make it difficult for the patient to relax the neck adequately for examination.

Place your hands gently on the patient's neck, again warning them before you do so. Identify the thyroid gland and palpate fully. Identify:

- its borders (including feeling in the suprasternal notch for retrosternal extension)
- the two lobes, the pyramid and the isthmus
- focal swelling/nodule
- diffuse enlargement
- tenderness
- its consistency.



FIGURE A8.2 Palpation of the thyroid gland

Once you have identified a lump, ask the patient to assist your examination by taking a sip of water in the mouth, and then, while you are looking at the neck, ask them to swallow again. Some people gently push the thyroid to one side to enable improved palpation of one lobe at a time. Once you are satisfied that you can describe the gland as you would any other lump (see Chapter A6, Lumps and bumps), continue to palpate the remainder of the neck. Palpate specifically for any lymphadenopathy (supraclavicular, submandibular, postauricular and suboccipital).

Percussion and auscultation

If the thyroid is found to be enlarged, and you could not feel below the lower poles of the thyroid, percuss down the sternum to illustrate whether the thyroid extends retrosternally. You should examine to ensure that the trachea is central and not compromised.

An enlarged thyroid gland in Graves' disease may produce a bruit on

auscultation of each lobe. You should put the stethoscope over the area of the superior thyroid artery.

Completing the examination

Expose the patient's shins and look for pretibial myxoedema (specific to Graves' disease). Ask the patient to rise from a seated position, without using their hands, to check for proximal myopathy. Check the ankle reflexes with a tendon hammer to discover whether they are brisk or slow-relaxing.

Cover the patient adequately, if they were exposed for any reason, and ensure their comfort. Thank the patient. Wash your hands and take a moment to gather your thoughts.

Conclusion and presentation

Summarise your findings to the examiner in a concise manner, drawing on the significant positive findings and any important negatives. Offer a diagnosis. For example:

This middle-aged lady has a low body mass index, a fine tremor and a regular tachycardia at rest. She has exophthalmos and discernible lid-lag. Her thyroid gland is diffusely enlarged, however, the right lobe is greater in size than the left. The thyroid does not extend retrosternally, but has an audible bruit. She has no regional lymphadenopathy and no pretibial myxoedema. Her tendon reflexes are brisk. In light of these findings, I believe that this lady has hyperthyroidism due to Graves' disease and, as such, requires thyroid function testing and a thyroid antibody screen.

Example of a thyroid examination mark scheme

Before you start

- Makes introduction (full name and role)
- Offers explanation and seeks consent
- Ensures adequate exposure and patient's comfort

- Positions patient appropriately for each examination stage
- Washes hands

Examination

- Makes general inspection (including hands and pulse)
- Makes inspection of neck (comments on neck, watches patient swallowing)
- Makes inspection of eyes
- Palpates (from behind the patient)
- Percusses retrosternally
- Auscultates for bruits
- Examines legs

Completing your examination

- Covers the patient, ensuring that they are comfortable
- Thanks patient
- Washes hands
- Demonstrates empathy
- Presents examination findings in a concise and confident manner
- Offers (differential) diagnosis
- Does the above in a fluent, professional manner