

# Assessing Patients – Part II

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## **A. Extra-Oral Examination (Continued)**

### • **Examination of Lymph Nodes**

For every single patient, it's of prime importance to do screening for lymph nodes. The major lymph node in head and neck region are (Fig.1):

1. Submental.
2. Submandibular.
3. Preauricular.
4. Postauricular.
5. Occipital.
6. Cervical chain of lymph nodes, In relation to sternocleidomastoid muscle can be further divided into:
  - A. Superficial cervical.
  - B. Deep cervical.
7. Supraclavicular.
8. Infraclavicular.

The submandibular and submental lymph nodes are of particular importance as they receive drainage from oral cavity.

The examination of the lymph nodes should be systematic to avoid missing any node, the patient should be in up-right position, preferably with head tilted slightly forward, and both sides should be evaluated at same time to allow comparison by inspection and palpation using the middle three fingers in vertical, horizontal and circular gentle motion. The operator can stand behind or in front of the patient to perform the examination. When standing in front of patients, the examiner can observe patients' expressions during examination as pain and tenderness can be easily recognized. However, when standing behind the patient, the examiner can obtain better control.

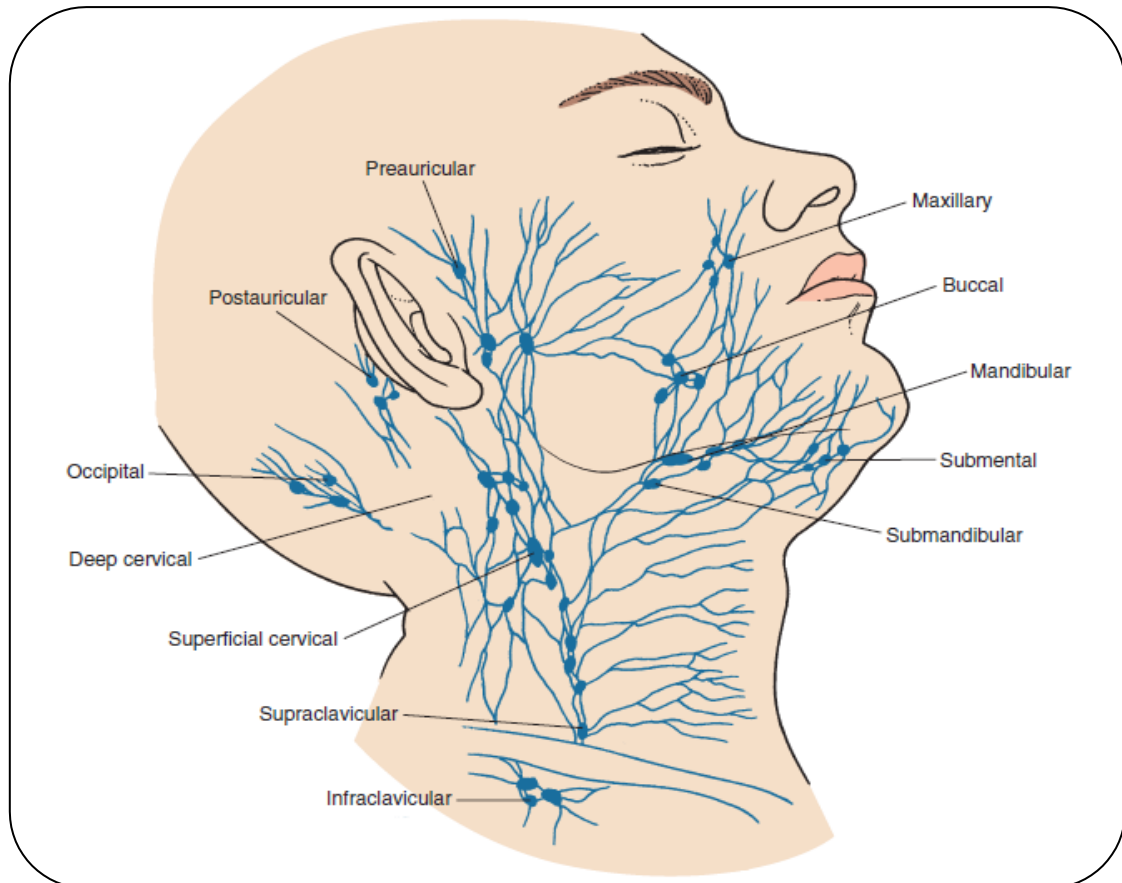


Figure 1 Anatomic distribution of lymphatic system in cervicofacial area

Any order can be followed but in general the common sequence is as follows: Submental, Submandibular, Preauricular, Postauricular and Occipital then down over the cervical chain of lymph nodes.

In recording lymph node findings, the following five characteristics should be routinely documented:

**(1) Location:** Record the site of palpable lymph nodes (e.g. Submental, Submandibular ... etc.)

**(2) Size:** Recording the diameters in centimetres.

**(3) Presence of pain or tenderness.**

**(4) Degree of fixation:** Whether the palpated lymph node is freely movable within the soft tissue or fixed to area.

**(5) Texture:** Making note about the consistency (e.g. soft or hardened).

- **Examination of Thyroid gland**

The examination of thyroid gland can be simplified by understanding the anatomy of surrounding structures. These can be listed from cephalic to caudal direction as follows (Fig.2):

- 1- Thyroid cartilage recognized by prominent structure (i.e. Adam apple).
- 2- Cricothyroid membrane.
- 3- Cricoid cartilage.
- 4- 1<sup>st</sup> and 2<sup>nd</sup> tracheal rings.
- 5- Isthmus of thyroid gland and its two lobes, which situated lateral on both sides.

To perform the examination the operator stands behind the patient and starts the examination by first palpating tip of the patient's chin. Then, slides the finger downwards with the midline, the first prominent structure palpated is the thyroid cartilage. Caudal to it is the cricothyroid membrane, which is felt as depression. Sliding the finger further down, the examiner starts to palpate the cricoid cartilage and then the 1<sup>st</sup> and 2<sup>nd</sup> tracheal rings. At this point, the examiner begins to palpate the isthmus of the thyroid gland, as it overlies the tracheal rings.

Both hands should be used with the patient's neck slightly extended and relaxed. The thumbs rest of the back of the neck and remaining fingers are used for examination by pads and not the tips. The fingers should meet at the midline to palpate the isthmus of the gland and 1-2cm apart when palpating the lobes. The examiner should also ask the patient to swallow during palpation to assess any asymmetrical elevation of lobes.

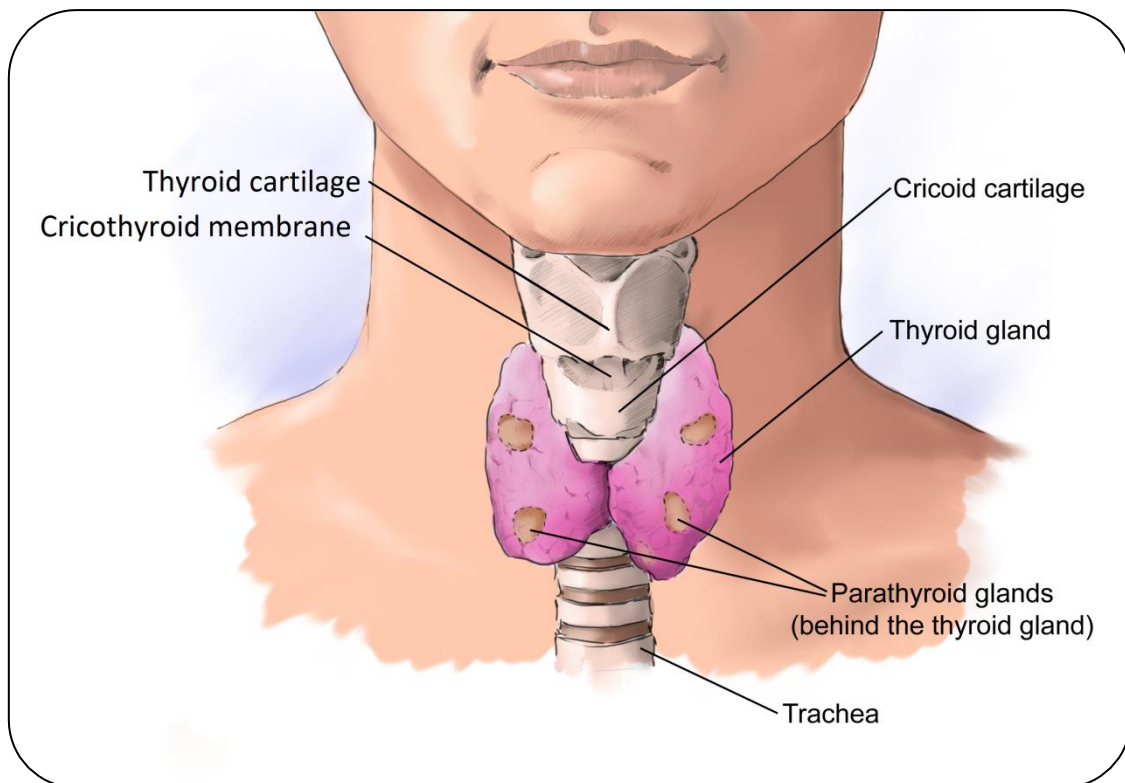


Figure 2 Anatomy of structures surrounding the thyroid gland

### **B. Intra-oral examination:**

The intraoral examination should be done in systematic manner, good illumination should be used during the examination of the oral cavity and any removable prosthesis should be removed to allow examinations of the prosthesis and area beneath it. The intra-oral examination must cover the following areas:

- Lips.
- Labial mucosa.
- Buccal mucosa.
- Buccal and lingual gingiva.
- Hard and soft palate.
- Tongue (dorsal and ventral surface).
- Floor of the mouth.
- Teeth.



Figure 3 Chronic lower lip ulceration caused by squamous cell carcinoma



Figure 4 Eversion of the lower lip to allow examination of the labial mucosa

**Lips** should be checked for colour, competence (i.e. competence or incompetence), the texture should be noted, usually the lips are soft, any indurations or swellings should be noted. The presence of fissures, cracks or ulceration should be recorded (Fig.3).

In order to allow the examination of the **labial mucosa**, the lips should be everted by the examiner hands. The normal labial mucosa in healthy individuals is pink, smooth and lubricated by minor salivary glands secretion. The minor salivary glands occasionally are palpable during examination of the lower lip (Fig.4).

The **buccal mucosa** should be evaluated for their colour, texture, presence or absence of cheek bite, ulceration and swellings. The examination can be performed by ask the patient to open their mouth and the operators can then stretch the buccal mucosa by dental mirror. The common finding in this area is the papilla of the orifice of parotid gland duct, which is situated just opposite to maxillary 1st molar (Fig. 5). Fordyce's granules are commonly seen in this area, which are considered as normal variation caused by ectopic sebaceous glands (Fig.6). Linea alba is also often observed on the buccal mucosa as a result from chronic trauma against teeth. Linea alba manifests as a horizontal white streak along the buccal mucosa at the level of the occlusal plane bilaterally (Fig.7).





Figure 5 Papilla of the orifice of parotid gland duct (i.e. Stenson duct)



Figure 6 Fordyce's granules, yellowish spots on buccal mucosa

**The gingiva** must be assessed for colour, contour (e.g. scalloped or flat), consistency (e.g. firm or oedematous) and texture (e.g. presence or absence of stippling on attached gingiva similar to an orange peel) (Fig.8). Any swellings in this area should be noted. Dark melanin pigmentation might be present in patient with dark skin tone.

The gingival biotype is important to be identified in certain circumstance; in general there is either Thin or Thick biotype.

**The hard palate** is examined by inspection and palpation. It's covered by thick keratinized mucosa with many fibrous ridges anteriorly, known as the rugae. The colour of the hard palate is pale pink due to the thick keratinization

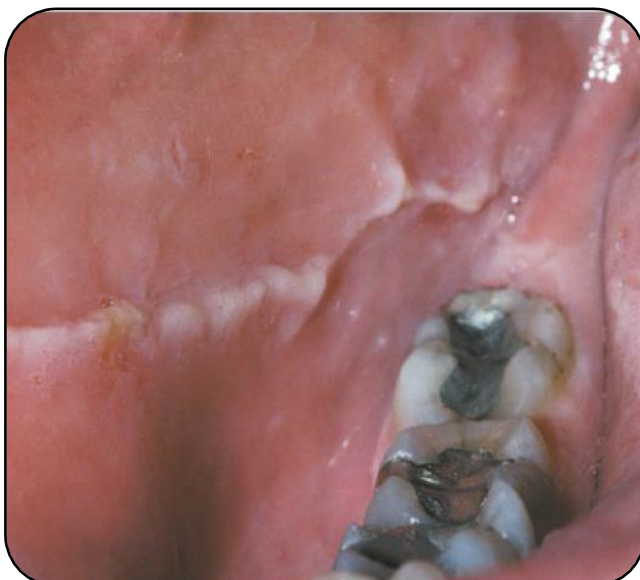


Figure 7 Linea alba manifested as white line at level of occlusion



Figure 8 Texture of attached gingiva, note the presence of stippling.

and it is firm on palpation. In some patients, a prominent incisive pad might presents on between the palatal aspects of the central incisors (Fig.9). Palatal bony prominence at the midline might present, this bony exostosis is known as palatal tori.



Figure 9 Normal appearance of hard palate; note the anterior fibrous rugae and the prominent incisive pad.

The **soft palate** is more vascular area and covered with non-keratinized mucosa; therefore, normally it appears as dark red in colour in comparison with the hard palate (Fig.10). The examination of this part can be carried out by depressing the tongue with diagnostic mirror or tongue depressor and instructing the patient to say “Ahh.”. Lymphoid tissues are present in this region, which enlarges in presence of inflammation and infection.



Figure 10 Dark red colour of the soft palate compared to hard palate

The examination of the **tongue** is important, as its site of oral cancer and several diseases can have their manifestation on this this part of the oral cavity. The examination can be performed by inspection and palpation of the dorsum, lateral and ventral surface of the tongue. The patient is asked to protrude the tongue in an attempt to touch the chin or the operator can hold the tongue with piece of gauze. By this way the dorsum can be examined and it is usually pink in colour with numerous papillae. The most common is filiform papillae interspersed with mushroom-shaped pinkish fungiform papillae (Fig.11).

The filiform papillae on the dorsum of the tongue can become hyperplastic in nature, giving rise to hairy tongue. Other times it became atrophic such as during nutritional deficiencies and erythematous candidiasis. The tongue can also have fissures runs on the dorsum surface, which is classically known as fissured tongue. This is can be a feature of dry mouth and in most of cases it has no diagnostic importance.

The lateral border of the tongue can be examined by grasping the tip of the tongue by piece of gauze and manipulate the tongue lateral to examine each side (i.e. right and left lateral border). The lateral border has fewer number of papilla; therefore, the mucosal lining of this part of the tongue appears more reddish in colour. As the examination proceeds more posterior-laterally, vertical grooves might be evident in some patient reflecting normal feature of this region (Fig.12).

The ventral surface can be easily examined by instructing the patient to touch the anterior palate with the tip of the tongue. The ventral surface has prominent vasculature in most cases. The lingual frenum can be visualized on this surface, which serves as attachment of tongue to the floor of mouth.



Figure 11 Normal appearance of the dorsum of the tongue



Figure 12 Lateral view of the tongue, note the vertical grooves.



Figure 13 Ventral surface of the tongue, note the lingual frenum.



The **floor of mouth** is covered with non-keratinized mucosa and pinkish in colour. The lingual frenum can be seen in this region, as discussed earlier. The papilla of Wharton duct, that collect the saliva from submandibular and sometimes from sublingual glands as well, opens on each side of the lingual frenum.



Figure 14 Floor of the mouth, note the papilla of Wharton duct.

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