

February 21, 2024 - Dr. Oyedele (olusegun.oyedele@ubc.ca)

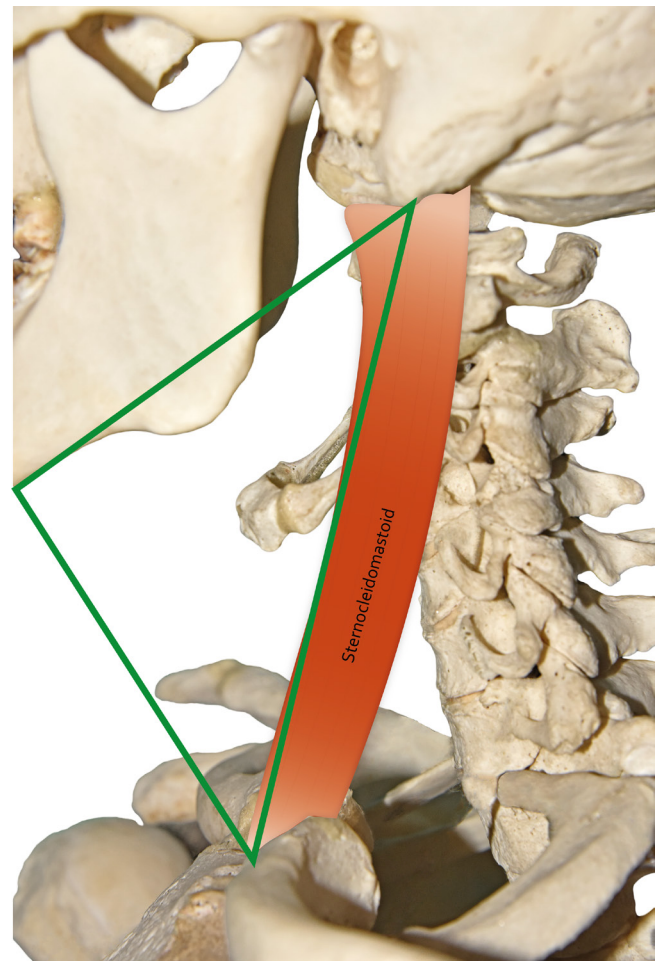
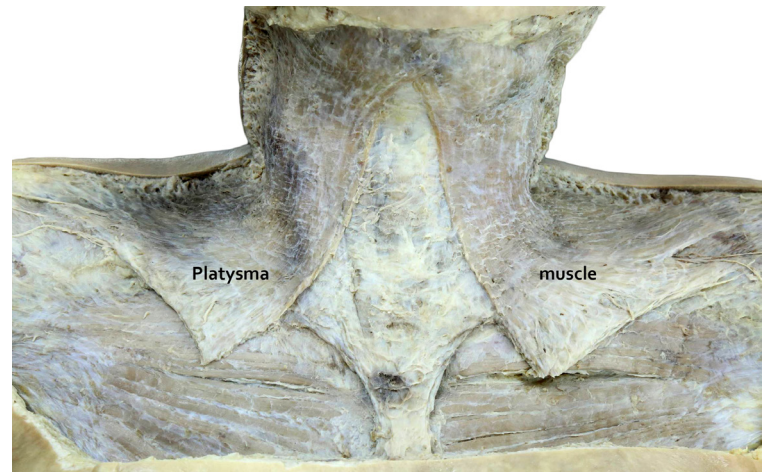
Objectives:

1. Describe the anatomical landmarks of this region, particularly the carotid sheath and contents, cricoid cartilage, thyroid cartilage and thyroid gland.
2. Correlate the gross anatomy with palpable soft tissues of the neck.
3. Identify the superficial and deep muscles of the anterior triangle of the neck.

(requires CWL login)

Volume 4 - Head & Neck

- 4.4.7 Muscles acting on the hyoid bone
- 4.5.7 Infrahyoid muscles, thyroid gland
- 4.8.12 Glossopharyngeal and vagus nerves
- 4.8.13 Accessory and hypoglossal nerves
- 4.9.8 Branches of the thyro-cervical trunk



*Bony structures of the anterior triangle of the neck
(bordered by sternocleidomastoid)*

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Hyoid Bone & Associated Muscles

Suprahyoid

Digastric

- Anterior/Posterior bellies

Stylohyoid

Mylohyoid

Geniohyoid

Infrahyoid

Strap muscles

Sternocleidomastoid

Strap muscles are named according to attachments:

- Sternohyoid
- Sternothyroid
- Thyrohyoid
- Omohyoid

Hyoid bone and associated muscles in anterior neck

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Submandibular Triangle, Lateral View

B. Kathleen Alsup & Glenn M. Fox, University of Michigan Medical School, [BlueLink](#)

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Glands

Thyroid

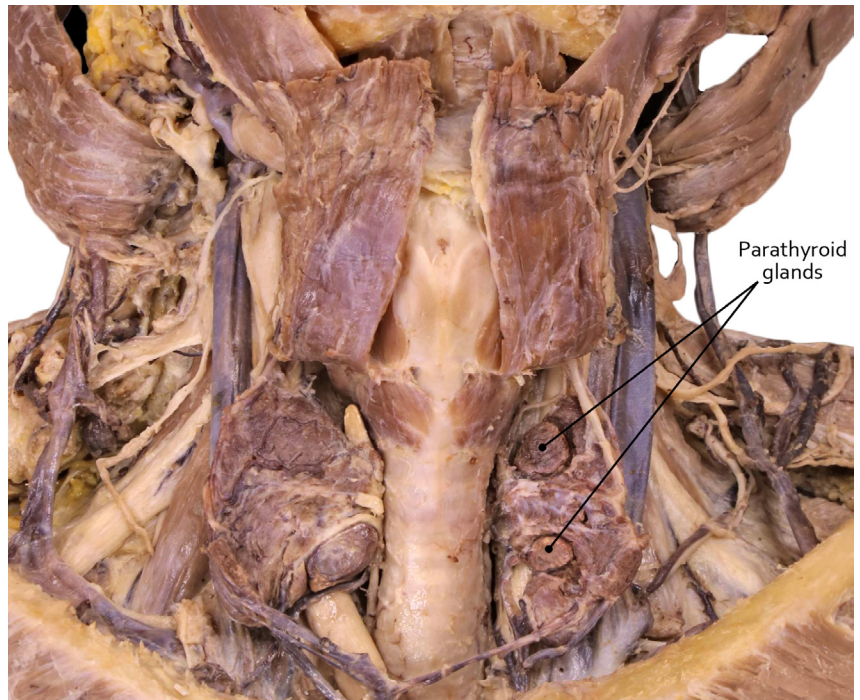
Right & left lobes
(pyramidal lobe may be present)

Isthmus

Submandibular

*Understand significance of thyroid's
relationship to recurrent laryngeal nerve*

Anterior Neck Region
B. Kathleen Alsup & Glenn M. Fox,
University of Michigan Medical School,
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Arteries

- Common carotid
 - External carotid
 - Superior thyroid
 - Lingual
 - Facial
 - Occipital
 - Internal carotid

Veins

- Internal jugular

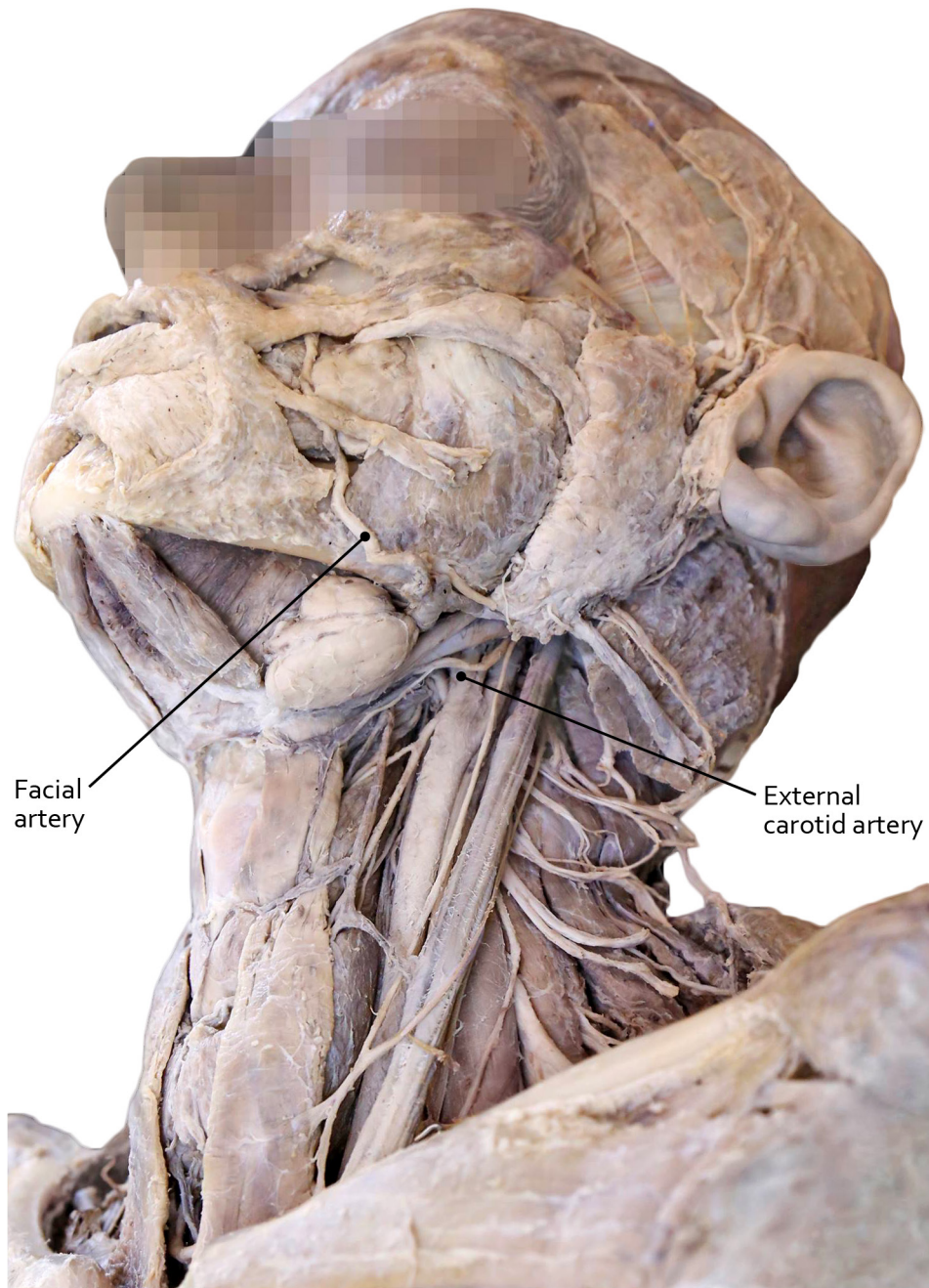
Nerves

- Superior root of ansa cervicalis (C1)
- Inferior root of ansa cervicalis (C2-3)
- Hypoglossal nerve (XII)
- Vagus nerve (X)
 - Superior laryngeal nerve
 - internal/external laryngeal branches

Carotid Sheath, Anterolateral View

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Anterior Neck & Face, Anterolateral View
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Questions for the Lab:

What is the significance of the recurrent laryngeal nerve in relation to complications of thyroid gland surgery?

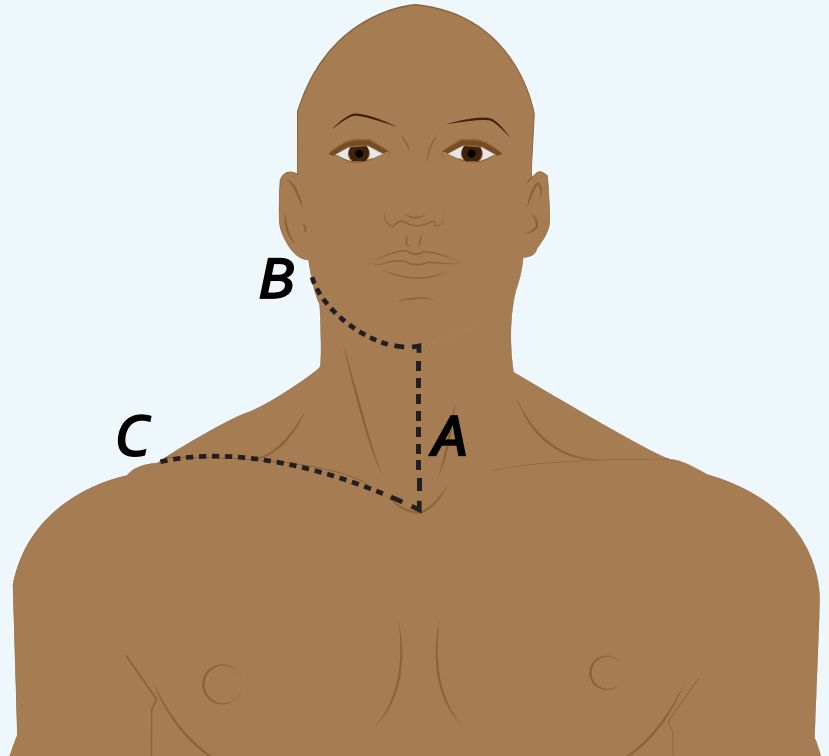
What is the embryological significance of the pyramidal lobe of the thyroid gland? How does it correlate with the possible presence of ectopic thyroid tissue?

LAB 4 DISSECTOR

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1. Make a vertical skin incision from the mental protuberance to the jugular notch of the sternum (line 'A' on diagram).
2. Make the skin incision 'B' on the diagram, as far as the mastoid process on either side.
3. Make incision 'C' on the diagram from the jugular notch to the acromion of the scapula.
 - Reflect the skin flaps laterally.

Note: The deep fascia is thick in the neck. You may be able to identify the external jugular veins laterally. Remove them with the skin.



Dissection steps 1 through 3

4. In the submental triangle above, identify the hyoid bone, as well as the superficial part of the submandibular gland in the submandibular triangle.
 - Also superiorly, identify the anterior and posterior bellies of digastric. Then identify the mylohyoid muscles, which form the floor of the oral cavity.
5. Cut the sternal and clavicular heads of the sternocleidomastoid muscles and reflect them superiorly.
 - Identify the internal jugular veins and the common carotid arteries (within the carotid sheath) as well as the omohyoid and sternohyoid muscles.

Note: the two parts of the omohyoid muscle are connected by an intermediate tendon.

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6. *Transect the sternohyoid muscle close to the sternum and reflect the muscle superiorly.*

- Identify the sternothyroid and thyrohyoid muscles.

7. *Identify the thyroid gland deep to the sternothyroid muscles.*

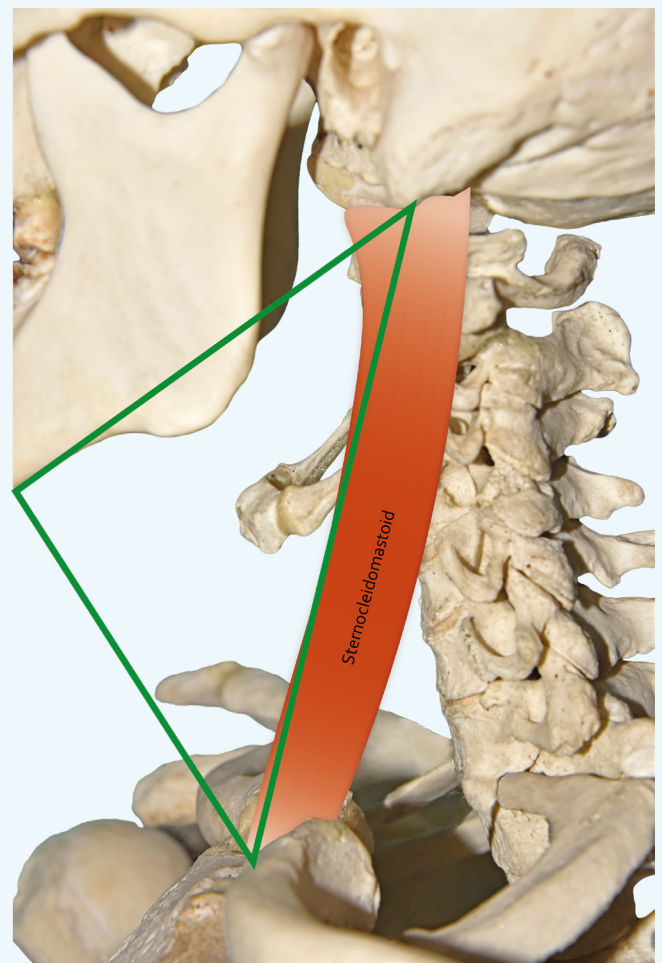
- Detaching this muscle from its sternal attachment and reflecting it superiorly gives a clearer view of the thyroid gland.
- Identify the superior thyroid artery and the external branch of the superior laryngeal nerve accompanying it.

8. *Using blunt dissection:*

- Identify other branches of the external carotid artery, particularly the lingual, facial and occipital arteries.
- Locate the ansa cervicalis, its superior root (leaving the hypoglossal nerve) and its inferior root.

9. *Finally, find the vagus nerve between the internal jugular vein and common carotid artery.*

- Confirm its continuity into the thorax.



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