

M2 Session 1: Palpable Anatomy & Thoracic Cavity

Part 1: Thorax

1.1 Thoracic Wall

Which rib is found at the level of the sternal angle?

- Second rib

1.2 Intercostal Space

In relation to superior and inferior ribs, where does one find the neurovascular bundle within the intercostal space?

- Just below the rib

What is the significance of the 2nd and 5th intercostal spaces?

- Aortic and pulmonic S2 heart sounds -> 2nd space
- Apex of heart -> 5th space

1.3 Superior Mediastinum

Where is the vagus nerve found in relation to these major blood vessels?

- Within the carotid sheath and anterior to the subclavian and aortic vessels

1.4 Heart

Which coronary artery typically gives off SA and AV nodal brs?

- Most often both are from the right coronary artery (RCA)

1.5 Lungs

What is the difference between the hilum and root of the lung?

- The hilum is the region of the lung which is occupied by root structures (airway, vessels, etc.)

1.6 Pleura and Pericardium

Describe the surface landmarks used to access the pericardial sac from externally.

- Insert needle between xyphoid and ribcage or lateral to the apex beat within 5th, 6th, or 7th intercostal space

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Part 2: Inferior Neck

2.1 First Rib

What is the relationship between the anterior scalene muscle, the brachial plexus, the subclavian artery, and the subclavian vein?

- The brachial plexus and subclavian artery are posterior to the anterior scalene muscle and the subclavian vein is anterior to the anterior scalene muscle.

2.2 Carotid Sheath

Where do the lymph nodes of the deep cervical chain drain?

- Into the right lymphatic duct on the right and the thoracic duct on the left

How might the clinician use palpable landmarks to find and assess these nodes?

- These nodes are found within the carotid sheath just deep to the SCM

2.3 Larynx & Thyroid Gland

Describe how you would use palpable landmarks of the anterior neck in order to perform an emergency airway.

- Palpate/locate the thyroid cartilage and cricoid cartilage and then locate the incision location within the median cricothyroid ligament between these two cartilaginous structures

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Part 3: Superior Neck

3.2 Superficial Fascia

What is the SMAS (superficial muscular aponeurotic system) layer?

- The subcutaneous layer of the neck and face which contains connective tissue and the muscles of facial expression

3.3 Reflect Platysma Muscle

Which nerve innervates platysma m. efferently?

- Cervical branch of facial nerve (CN VII)

3.4 Submandibular Triangle

Which branch of which the cranial nerve brings parasympathetic innervation to the submandibular gland?

- Chorda tympani n. (CN VII)

3.5 External Carotid Artery

Diagram the branches of the external carotid a.

- Superior thyroid, ascending pharyngeal, lingual, facial, occipital, posterior auricular, maxillary, superficial temporal aa.

3.6 Hypoglossal Nerve

What muscle acts as the roof of the submandibular triangle as well as the floor of the mouth?

- Mylohyoid m.

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Part 4: Face

4.1 Osteology

Which nerve branches pass through these openings? What do they innervate?

- Supra-orbital notch -> CN V₁ -> sensation from upper forehead
- Infra-orbital notch -> CN V₂ -> sensation from midface (lower eyelid to upper lip)
- Mental foramen -> CN V₃ -> sensation from lower face (lower lip to base of mandible)
- Stylomastoid foramen -> CN VII -> motor to muscles of facial expression

4.2 Muscles of Facial Expression

What are the five branches of facial n. that innervate the mm. of facial expression?

- Temporal, Zygomatic, Buccal, Marginal Mandibular, Cervical

4.3 Superficial Temporal Vasculature

The superficial temporal artery is a branch of which artery?

- External carotid a.

4.4 Buccinator Muscle

Near which tooth does the parotid duct enter the oral cavity?

- Maxillary 2nd molar (within oral vestibular space)

4.5 Facial Nerve Trunk & Divisions

Which division of the facial n. receives bilateral projections from the cortex and what is the clinical significance in Bell's (facial n.) palsy?

- The temporofacial division receives bilateral projections which is important clinically in that UMN (upper motor neuron) lesions such as a stroke will only affect the lower face while LMN (lower motor neuron) lesions such as Bell's (facial n.) palsy will affect both the upper and lower face (ipsilaterally).

4.6 Retromandibular Vein

What do the posterior auricular vein and the posterior division of the retromandibular vein unite to form?

- External jugular vein

4.7 Termination of External Carotid Artery

List the neurovascular structures that course through the parotid gland.

- Facial nerve, auriculotemporal nerve, retromandibular vein, external carotid artery, intraparotid lymph nodes

4.9 Cutaneous Innervation of Face

Diagram the cutaneous innervation of the face.

- Upper eyelids, bridge of the nose, and forehead -> CN V₁
- Midface (lower eyelids to upper lip) -> CN V₂
- Lower face (lower lips to base of the mandible) -> CN V₃