Head and Neck Anatomy

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Presentation materials:

[www.ccmb.usc.edu](http://www.ccmb.usc.edu) (teaching resources)

Check-lists for midterm and final examinations
Intra-oral I&D
Anatomy of the Maxilla

Greater Palatine Foramen
Maxillary Sinus
Alignment of posterior implants
Alignment of posterior implant
Important Anatomy for the Posterior Mandible

Lingual Nerve
Submandibular Fossa
Mandibular Canal
Mental Foramen
Anatomy of the Posterior Mandible

Mylohyoid shelf

Submandibular (submylohyoid) fossa
Neck Anatomy
Boundaries of the Neck

• Anterior Aspect:
  Superior: Inferior border of the mandible
  Inferior: Superior surface of the manubrium and clavicle

• Posterior Aspect:
  Superior: Superior nuchal line
  Inferior: Horizontal line between C7 and T1
Platysma

- Covers mainly anterior aspect of the neck.
- Origin: deltoid and pectoralis fasciae.
- Insertion: inferior border of mandible and skin as well as hypodermis in this region.
- Function: assist depression the lower lip and corner of mouth.
- Innervation: cervical br. of facial N. (VII).
Sensory Innervation of Neck

- Ventral primary rami of C1, C2, C3, and most C4 form the cervical plexus.

- Front of neck:
  1. Great auricular N. (C2 & C3)
  2. Transverse cervical N. (C2 & C3)
  3. Supra clavicular N. (C2 & C4)
     a. Anterior (medial)
     b. Middle (intermediate)
     c. Posterior (lateral)
Posterior Aspect of Neck

- Greater occipital N. (C2)
- Third occipital N. (C3)
- C4 and C5
Ansa Cervicalis

- Two roots (formed by C1, C2, and C3)
  - Superior root (travels with CN XII)
  - Inferior root (from cervical region)
- Function: Motor innervation of infrahyoid muscles
Accessory N.  
(spinal accessory N.)

- Two components of fibers
  1. Cranial root
  2. Spinal root
- Function: motor innervation of
  1. Sternocleidomastoid muscle (SCM)
  2. Trapezius muscle
Phrenic N. (C3, C4, and C5)

- Motor: Diaphragm
- Sensory: Mediastinal pleura and pericardium of the heart
Anterior Triangle of Neck

- Boundaries:
  - Superior: Inferior border of mandible
  - Posterior: Anterior border of SCM
  - Anterior: Midline of the neck
Subdivisions of Anterior Tri.

1. Muscular Triangle

**Boundaries:**

**Superior:** Superior belly of omohyoid

**Inferior:** Anterior border of SCM

**Anterior:** Midline

**Contents:**

a. sternohyoid (ansa)

b. sternothyroid (ansa)

c. thyrohyoid (C1 via CN XII)

d. omohyoid (ansa)
Fig. 707: Infrahyoid and Scalene Muscles of the Neck
Continued:

2. Carotid Triangle

Boundaries:

Superior: Posterior belly of digastric muscle

Inferior: Superior belly of omohyoid

Posterior: Anterior border of SCM
Continued:

Contents:

a. common carotid (carotid sinus-BP regulator/IX)
   internal (carotid body-Chemoreceptor/IX & X)
   external carotid artery
b. internal jugular vein
c. vagus N (CN X)
d. ansa cervicalis
3. Submandibular Triangle

Boundaries:
- Superior: Inferior border of mandible
- Anterior: Anterior belly of digastric muscle
- Posterior: Posterior belly of digastric muscle

Contents:
- a. SMG (submandibular gland)
- b. lymph nodes (submandibular group)
- c. facial artery
- d. facial vein
Continued:
4. Submental Triangle

Boundaries:

- **Lateral:** both anterior bellies of digastric muscle
- **Inferior:** hyoid bones
Fig. 726: The Left Submandibular Triangle and Submandibular Gland (Viewed from Below)
FIGURE 7-12. Carotid artery in the neck. The dashed outline indicates the relative position of the internal jugular vein.
Branches of External Carotid Artery

1. Superior thyroid AA.
   a. infrahyoid
   b. sternocleidomastoid
   c. superior laryngeal
   d. cricothyroid
   e. terminal branches to thyroid gland
Continued:

2. Ascending pharyngeal AA.
   a. pharyngeal
   b. meningeal
   c. inferior tympanic (to tympanic cavity)

3. Lingual AA.
   travels deep to hypoglossal nerve (CN XII) to the muscles of tongue.

4. Facial AA.
5. Ascending palatine AA.
   Supplies muscles in the
   a. superior pharynx (superior constrictor)
   b. soft palate
   c. tonsils
   d. auditory tube

6. Occipital AA.

7. Posterior auricular AA.

8. Maxillary AA.

9. Superficial temporal AA.
Common facial vein
Cervical Fasciae

A. Superficial
   1. Superficial cervical fascia

B. Deep
   1. External (investing) fascia
   2. Middle cervical fascia
   3. Cervical visceral fascia
   4. Alar fascia
   5. Carotid sheath
   6. Prevertebral fascia
Figure 7.42. Skin incision.