CERVICAL FASCIA AND TRIANGLES OF THE NECK

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Lecture 1
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STUDY AIMS

• Describe the fascial layers of the neck
• Function & Contents of compartments the fascial layers
• Describe:
  i. Anterior triangle
  ii. Posterior triangles
    o Boundaries and contents
FASCIAL LAYERS OF THE NECK

- **Two main types:**
  - Superficial fascia
  - Deep fascia

- **Superficial fascia:**
  - Between dermis and deep fascia
  - **Contains:**
    - Cutaneous nerves and vessels
    - Lymphatics & Fat
    - Platysma muscle
FASCIAL LAYER OF THE NECK

• **Platysma muscle**
  ✓ Action – tenses the skin of the neck
  ✓ Supplied by cervical branch of the facial nerve

❖ **Evolution**: Remains of the *cutaneous trunci muscle*
FASCIAL LAYER OF THE NECK

• Deep fascia of the neck:
  o Consists of three layers
    ✓ Investing
    ✓ Pretracheal
    ✓ Prevertebral

• Investing layer:
  ✓ Surrounds entire neck, beneath superficial fascia
  ✓ Slits to enclose trapezius and stenocleidomastoid muscles
FASCIAL LAYER OF THE NECK

• **Investing layer:**
  - Encloses parotid and submandibular glands
  - Forms roof of anterior and posterior triangles neck
FASCIAL LAYER OF THE NECK

- **Pretracheal fascia:**
  - Found anterior neck, from hyoid bone - fibrous pericardium
  - Has two portions:
    - Muscular layer
    - Visceral layer
- **Muscular layer** - covers infrahyoid muscles
- **Visceral layer** invests
  - Trachea
  - Thyroid and parathyroid glands
  - Oesophagus
FASCIAL LAYER OF THE NECK

• Prevertebral layer:
  ✓ Surrounds the vertebral column and associated muscles
    o Ant – longus colli and capitis
    o Post- deep cervical muscles
    o Lat- scalenes
  • Fuses laterally with axillary sheath
FASCIAL LAYER OF THE NECK

• **Carotid sheath:**
  - Condensation of fascia around great vessels
  - Extends from base of skull to root of neck
  - Blends medially with prevertebral and laterally with pretracheal layer of fascia

• *Communicates with mediastinum inferiorly*
FASCIAL LAYER OF THE NECK

- Contents of the carotid sheath:
  - Common carotid artery
  - Internal carotid artery
  - Internal jugular vein
  - Vagus nerve (CN X)
  - Deep cervical lymph nodes
  - Sympathetic fibers
  - Carotid body
FASCIAL SPACES:

- **Retropharyngeal space:**
  - Space between prevertebral layer buccopharyngeal fascia
  - From base of skull to posterior mediastinum
  - Allows movement of viscera during swallowing
  - Spread of infections from aesophagus superior mediastinum
FASCIAL SPACES:

• **Pretracheal space:**
  ✓ Space between investing fascia and pretracheal fascia
  ✓ Limited by attachments of fascia to thyroid cartilages superiorly

• *Can spread into thorax anterior to pericardium*
FASCIAL SPACES:

• Space between two lamina of prevertebral fascia:
  ✓ Critical space
  ✓ Extends from base of skull and through thorax
TRIANGLES OF THE NECK

• A plain joining the two stenocleidomastoid muscles divides the neck into anterior and posterior triangles

• NB: anterior region, lateral region, posterior regions of the neck!!!!!!
Triangles of the neck

• Posterior triangle:
  o Subdivided by inferior belly of omohyoid muscle:
    ✓ Occipital triangle
    ✓ Supraclavicular triangle
Triangles of the neck

- **Posterior triangle:**
  - Boundaries
    - Posterior-anterior border of trapezius
    - Anterior-posterior border of SCM
    - Inferior-medial third clavicle
    - Roof-investing layer of deep cervical fascia
    - Floor-muscles covered by prevertebral layer
TRIANGLES OF THE NECK

• **Muscles of the floor:**
  
  o Splenius capitis
  o Levator scapulae
  o Middle scalene
  o Posterior scalene
  o *Rarely anterior scalene*
TRIANGLES OF THE NECK

• Contents are not limited to:

✓ External jugular vein
✓ Cervical plexus (posterior branches)
✓ Accessory nerve
✓ Brachial plexus – trunks
✓ Transverse cervical artery
✓ Suprascapular artery
✓ Third part of subclavian artery
✓ Suprascapular nerve
✓ Cervical lymph nodes
✓ Phrenic nerve
TRIANGLES OF THE NECK

• **Anterior triangle:**
  - **Boundaries**
    - Lateral-anterior border of SCM
    - Anterior-anterior midline of neck
    - Superior-inferior mandible
  - Divided into four smaller triangles for descriptive purposes
TRIANGLES OF THE NECK

• The four triangles include:
TRIANGLES OF THE NECK

• **Submandibular triangle**
  • Between inferior mandible and anterior and posterior bellies of the digastric muscle
  o **Contains**:
    ✓ submandibular gland
    ✓ Submandibular duct
    ✓ Submandibular lymph nodes
TRIANGLES OF THE NECK

• **Submental triangle:**
  - Between body of hyoid bone and right and left anterior bellies of the digastric muscles
  - Apex is mandibular symphysis
  - **Contains:**
    - submental lymph nodes
• **Carotid triangle:**
  - Bounded by superior belly of omohyoid, posterior belly of digastric, and anterior border of SCM
  - **Contains:**
    - carotid sheath, with common carotid artery, internal jugular vein, and vagus nerve
    - Bifurcation of common carotid to internal and external carotid arteries
    - Carotid sinus
    - Carotid body
TRIANGLES OF THE NECK

• Muscular triangle:

• Bounded by:
  o anterior border of SCM, superior belly of omohyoid,
  o midline of neck

  o Contains:
    ✓ infrahyoid muscles,
    ✓ thyroid,
    ✓ parathyroid
SUMMARY

• Fascial layers and space prevent spread of infections and surgery:
• Understand the fascial spaces and direction of flow of blood, pus
• Triangles of the neck:
• Boundaries and contents

• Demonstrate fxn of stenocleidomastoid muscles
• Explain torticollies
Thank you

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