



## EMC 340 Intro to Clinical Medicine

### The Neck

David Trigg, MD

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## Outcomes

At the end of this lecture the learner will be able to:

- Describe the anatomy of the neck and it's anatomical landmarks.
- Explain (and later demonstrate) the technique of examining the anterior, central, and posterior triangles.
- Explain the application of knowledge of *landmarks for procedures* and physical diagnosis.
- Explain the significance of abnormal findings on the physical exam of the neck.

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## Anatomy

### Life sustaining structures

- Cervical spinal cord
- Trachea
- Carotid arteries
- Jugular veins

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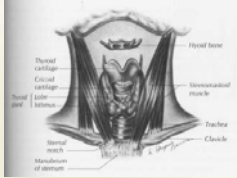
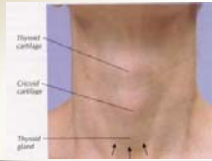
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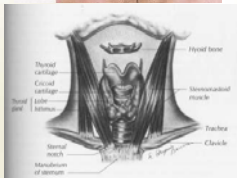
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## Anterior View



- Thyroid cartilage
- Cricoid cartilage
- Cricothyroid membrane
- Thyroid gland
- Sternomastoid muscle
- “Claviculomastoid” muscle

## Anterior View



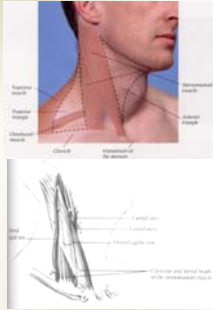
- Thyroid cartilage
- Cricoid cartilage
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- Sternomastoid muscle
- “Claviculomastoid” muscle

## Lateral View



- Sternocleidomastoid muscle
- Carotid sinus
- Carotid artery
  - Common
  - Internal
  - External
- External jugular vein
- Internal jugular vein

## Landmarks

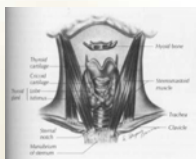


1. Anterior triangle
2. Sternocleidomastoid muscle
  - External jugular
    - Peripheral vein
    - Midway between jaw and clavicle
    - Angle needle toward lateral edge of muscle
3. Posterior triangle


## Landmarks, continued

- Central triangle / Internal Jugular Vein
  - Preferred approach for central line IV
  - Triangle between
    - Clavicle
    - Sternomastoid muscle
    - Claviculomastoid muscle

## Internal Jugular Vein Cannulation



- Preferred approach :
- because at this level [on right]
- The angle of needle is away from the carotid artery
  - The vein is a greater distance from the carotid artery
  - The landmarks are easier to identify
  - The technique is easier
    - Vein is usually entered within 2 cm
  - Why on the right side?



## Proximal Neck

- Clavicle
- Subclavian vein
- Subclavian artery
- Pleura / lungs
- Brachial plexus
- Central triangle

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## Proximal Neck

- Clavicle
- Subclavian vein
- Subclavian artery
- Pleura / lungs
- Brachial plexus
- Central triangle

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## Techniques of Examination

- Inspection
  - NVD-neck vein distension (external jugular)
  - Tracheal deviation
  - Thyroid gland
  - Lymph nodes
- Palpation
- C-spine
- Lymph nodes

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## Abnormal Findings

- NVD - neck vein distension (AKA : JVD)
  - Right side CHF
  - Tension pneumothorax
  - Tamponade
- Beck's Triad
  - NVD
  - Low blood pressure (shock)
  - Muffled heart sounds

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## Abnormal Findings

- Tracheal deviation
  - **Not** an early sign of tension pneumothorax
  - *LATE* sign of tension pneumothorax
  - or late sign of cancer
- Lymph node enlargement
  - Usually a sign of infection

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## Abnormal Conditions

- *Right* sided CHF
  - NVD
- Tension pneumothorax
  - NVD
  - Low blood pressure (shock)

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## Abnormal Conditions

- Tamponade
  - *Beck's Triad*
    - NVD
    - Low blood pressure (shock)
    - Muffled heart sounds
  - *Paradoxical Pulse*
    - Caused by a restricted right ventricle
    - Inspiration causes an exaggerated drop in the usual of the BP
    - e.g., instead of the usual < 10 mmHg drop with inspiration, the BP will drop > 10mmHg

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## Summary

We have:

- Discussed the anatomy of the neck.
- Familiarized ourselves with the anatomical landmarks.
- Become prepared to use these landmarks for:
  - Physical diagnostic purposes.
  - Peripheral and central IV's.

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