

# Neck soft tissue trauma

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No disclosures

# Head and neck trauma

- **Penetrating injury**
  - Follow the trajectory
  - Vascular, airway, and nervous injury
  - Active bleeding
  - Foreign bodies
- **Laryngeal injury**
  - Cartilage fracture & dislocation
- **Blunt vascular trauma**
  - Mostly arterial injuries; use CTA

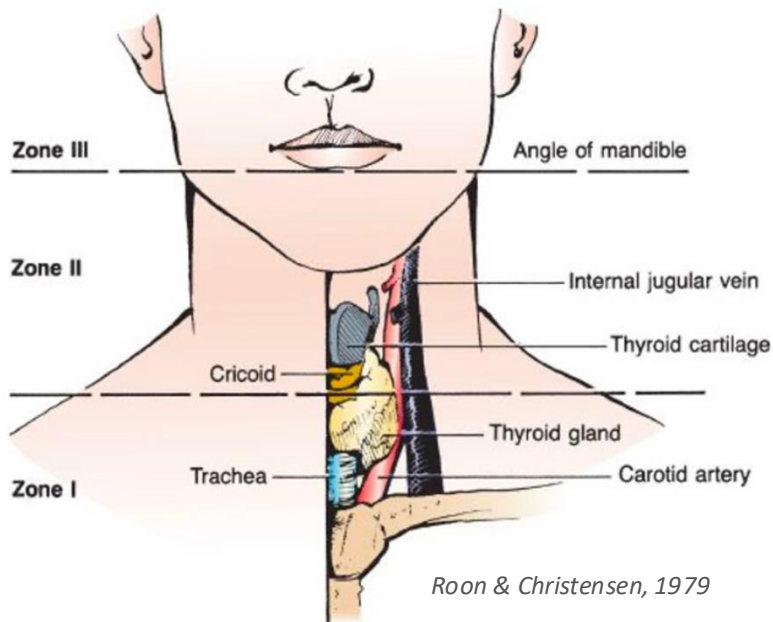


# Outline: Principles of neck trauma



- **A**
  - Airway (patency, intubation)
- **B**
  - Breathe (pleura, lung parenchyma)
- **C**
  - Circulation (large vessels, hematoma, active bleeding)
- **D**
  - Disability (level of consciousness)
  - Delay (need for delayed scanning?)
  - Dialogue (trauma team, surgeon, technologists)
- **E**
  - Exposure (read carefully at the workstation)

# Clinical considerations and imaging rules



## Box 1 Hard and soft signs of penetrating neck trauma

### Signs of penetrating neck trauma

#### Soft signs

- ⇒ Hemoptysis.
- ⇒ Hematemesis.
- ⇒ Oropharyngeal blood.
- ⇒ Dyspnea.
- ⇒ Dysphonia.
- ⇒ Dysphagia.
- ⇒ Subcutaneous air.
- ⇒ Mediastinal air.
- ⇒ Chest tube air leak.
- ⇒ Non-expanding hematoma.
- ⇒ Focal neurological defects.

#### Hard signs

- ⇒ Expanding hematoma.
- ⇒ Severe active bleeding.
- ⇒ Shock not responding to fluids.
- ⇒ Deceased or absent radial pulse.
- ⇒ Vascular bruit or thrill.
- ⇒ Cerebral ischemia.
- ⇒ Airway obstruction.

## Hard signs → operating room

active bleed, expanding/pulsatile hematoma, bruit or thrill, airway compromise, neurologic deficit

## Soft signs or stable → CTA, any zone (“no-zone”)

CTA sensitivity 90–100%, specificity 98.6–100% for vascular injury

## CTA misses ≈1 in 5 esophageal injuries

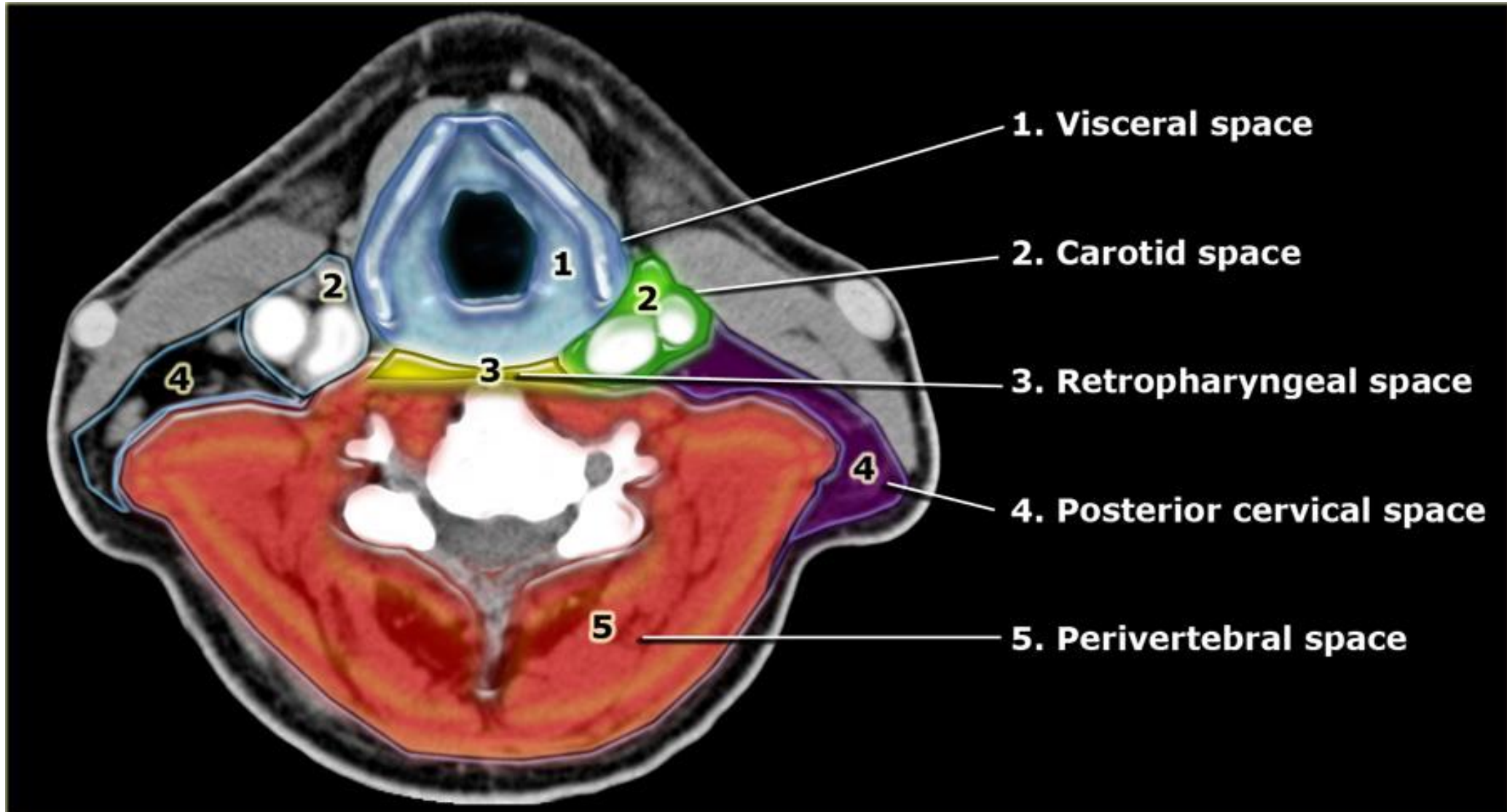
swallow study or endoscopy if clinical concern for aerodigestive injury

Loss et al. Trauma Surg Acute Care Open 2025;10:e001619

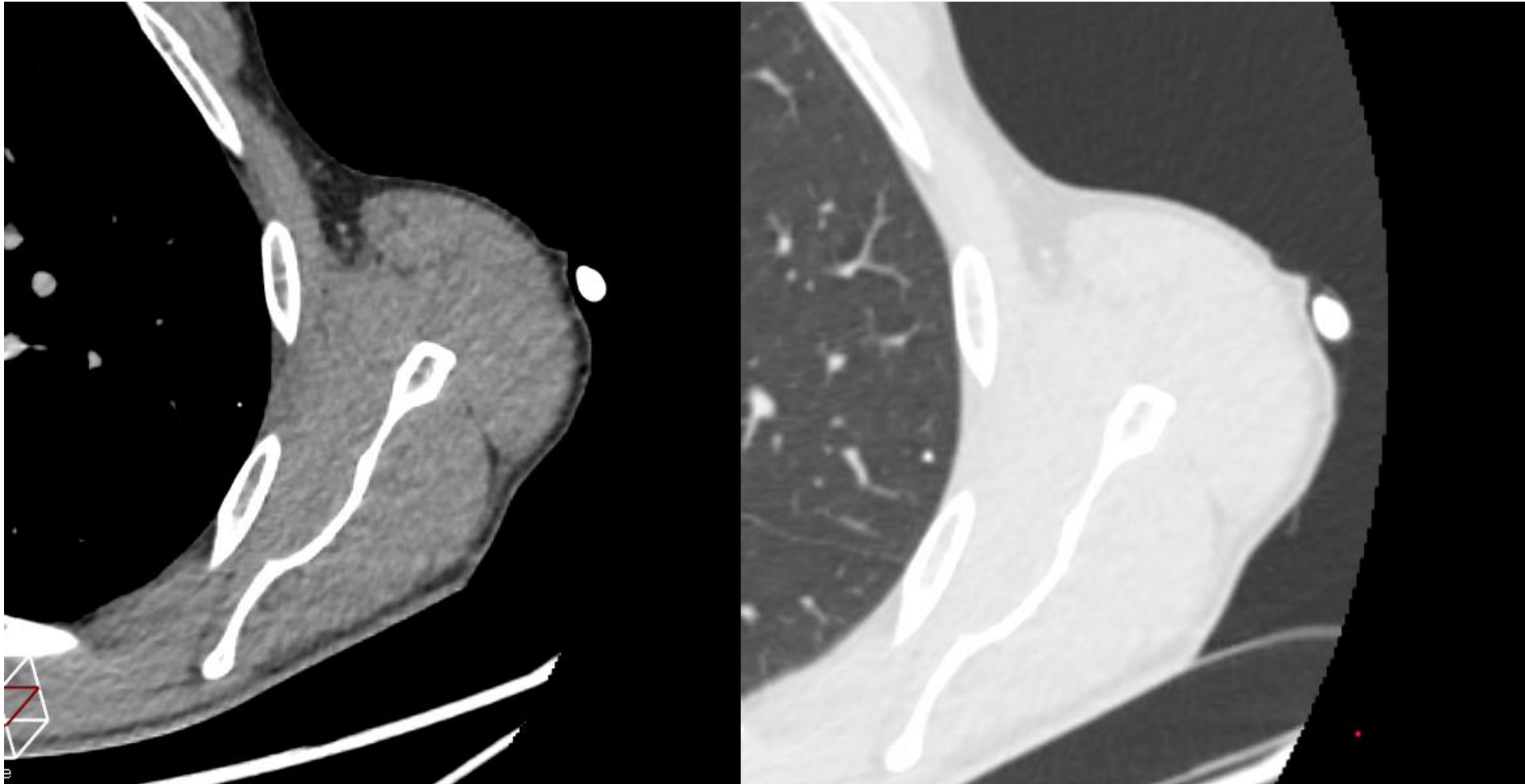
Ibraheem et al. J Trauma Acute Care Surg 2020;89:1233

Paladino et al. Acad Emerg Med 2021;28:1160

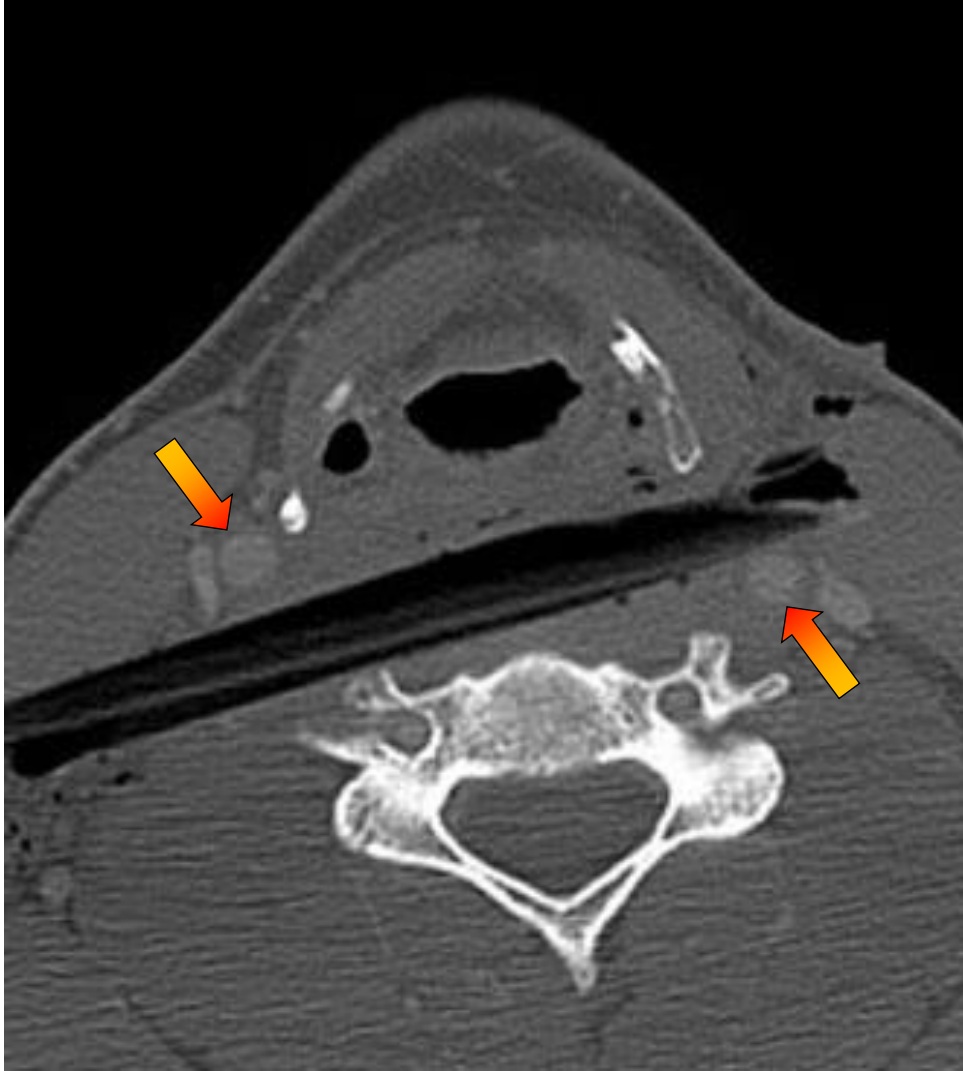
# Anatomical compartments of the neck



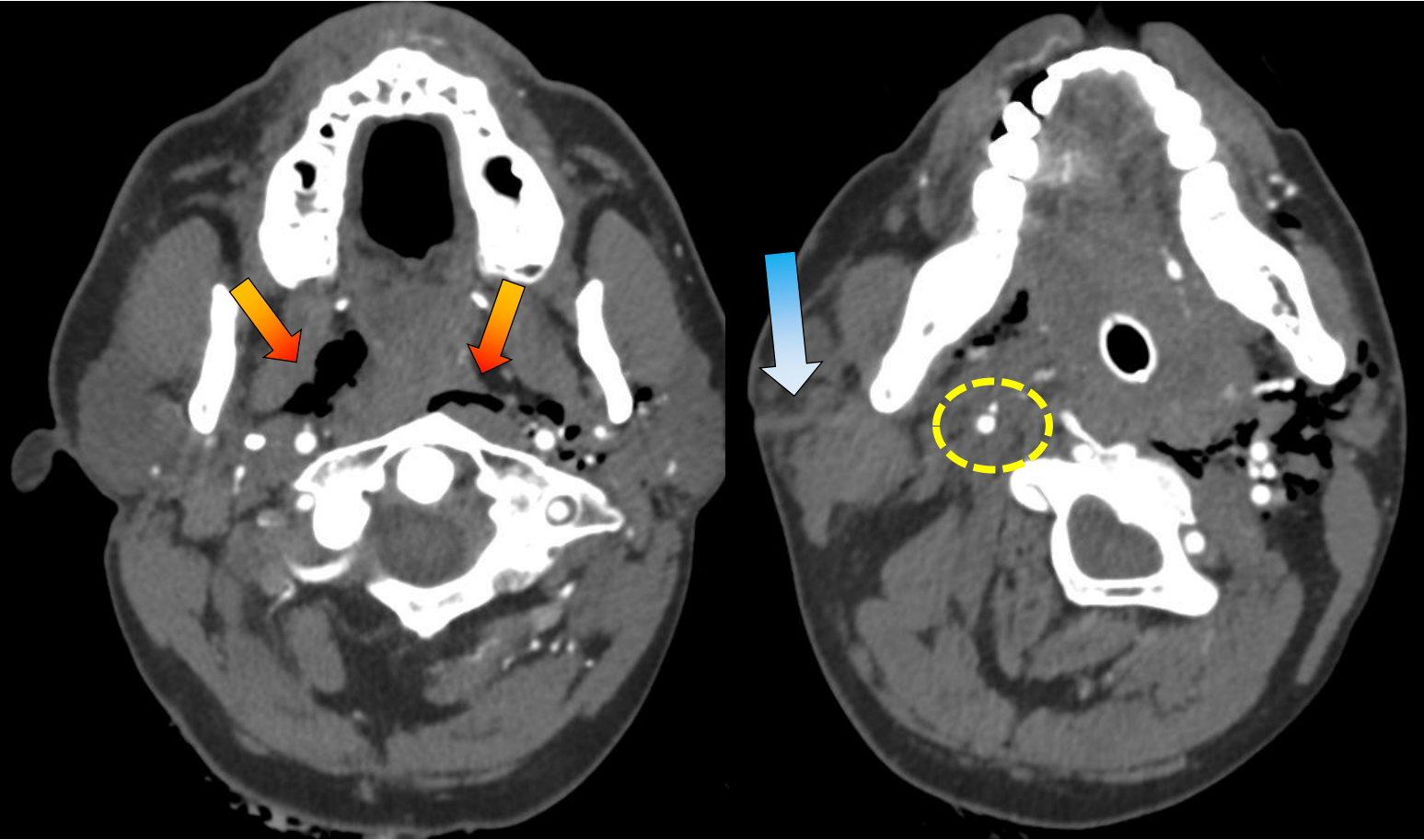
# Marking of entry point with adhesive putty



# Case 1: patient fell outside

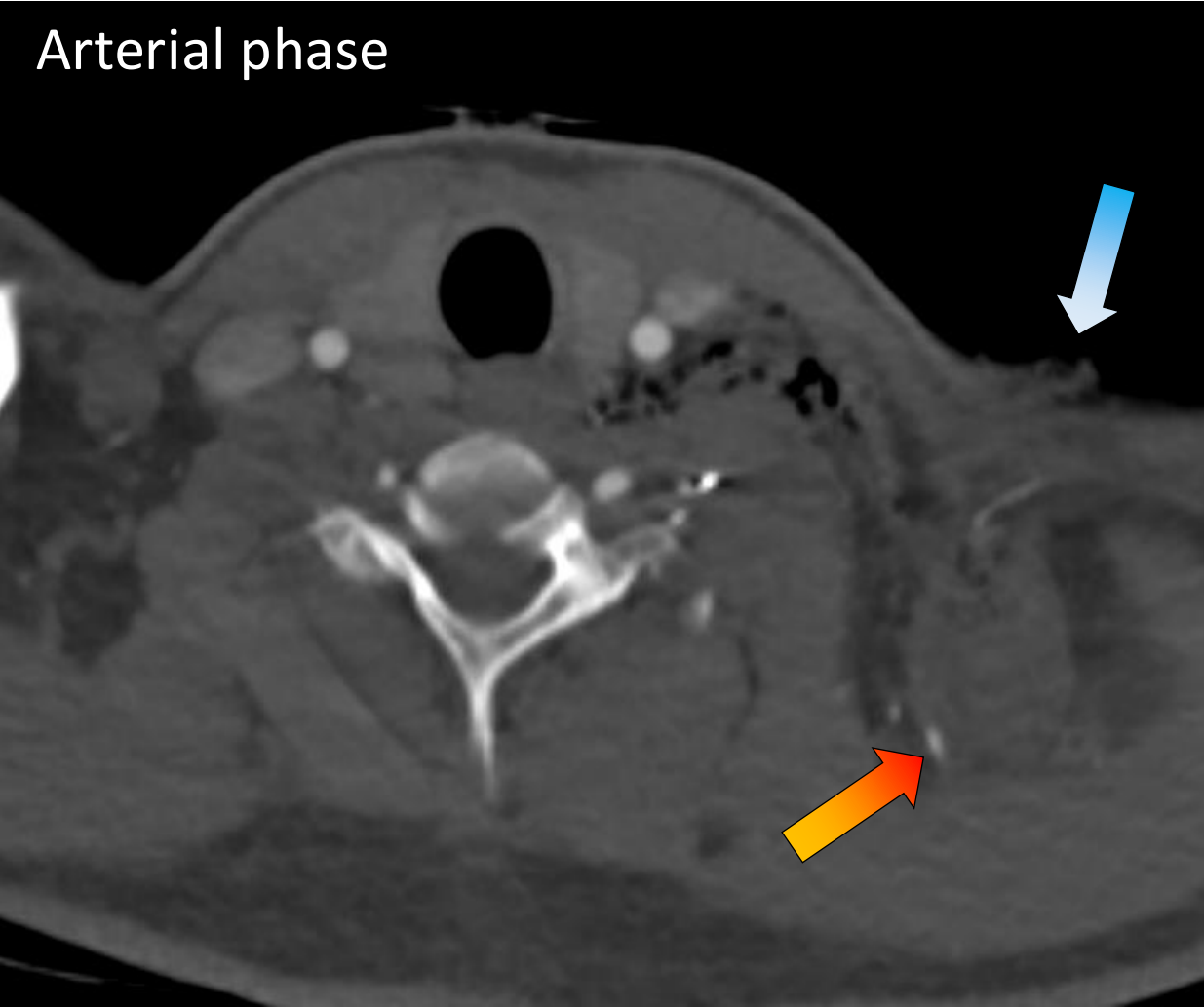


# Case 2: 34M stabbed

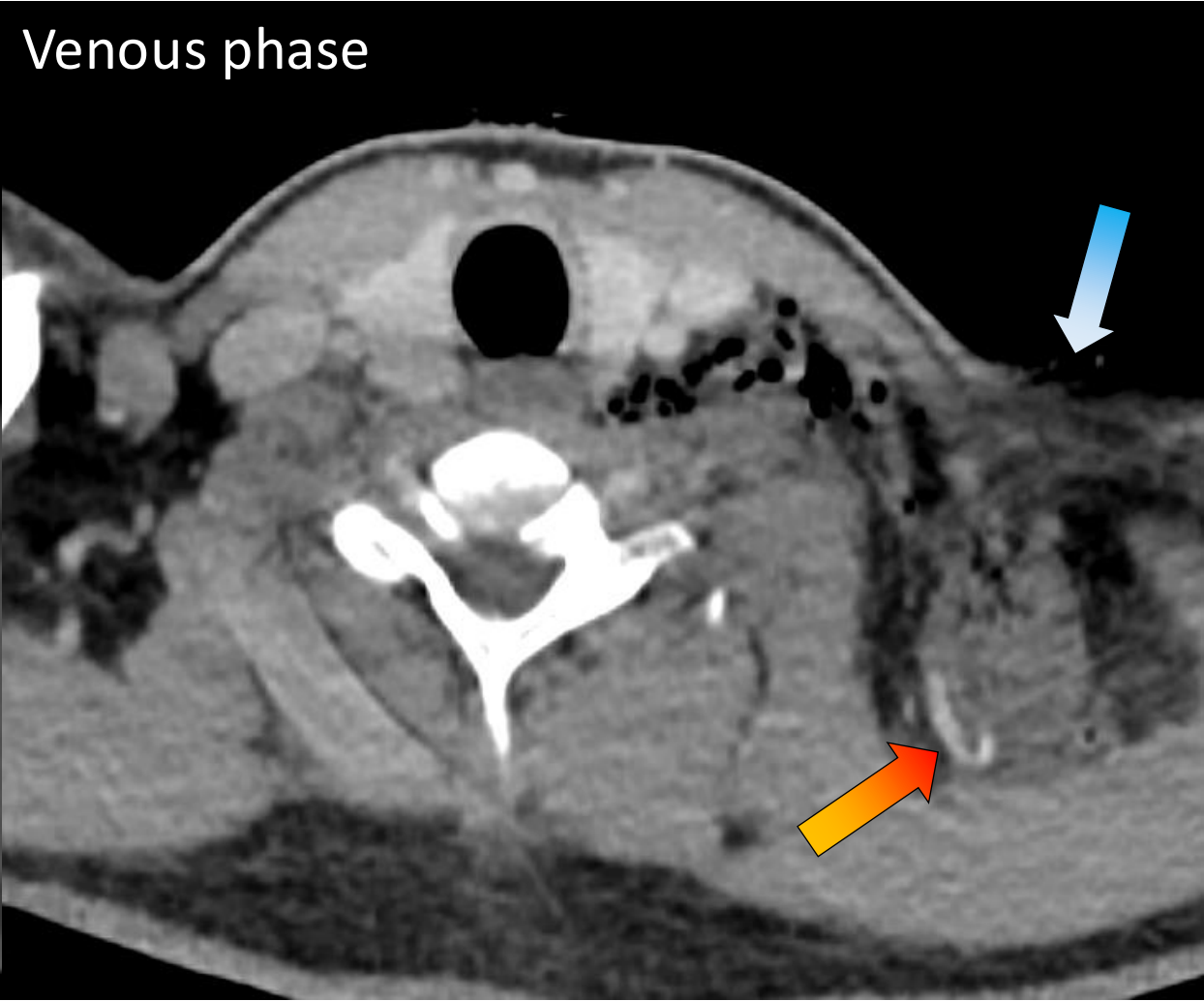


# Case 3: 26M stabbed

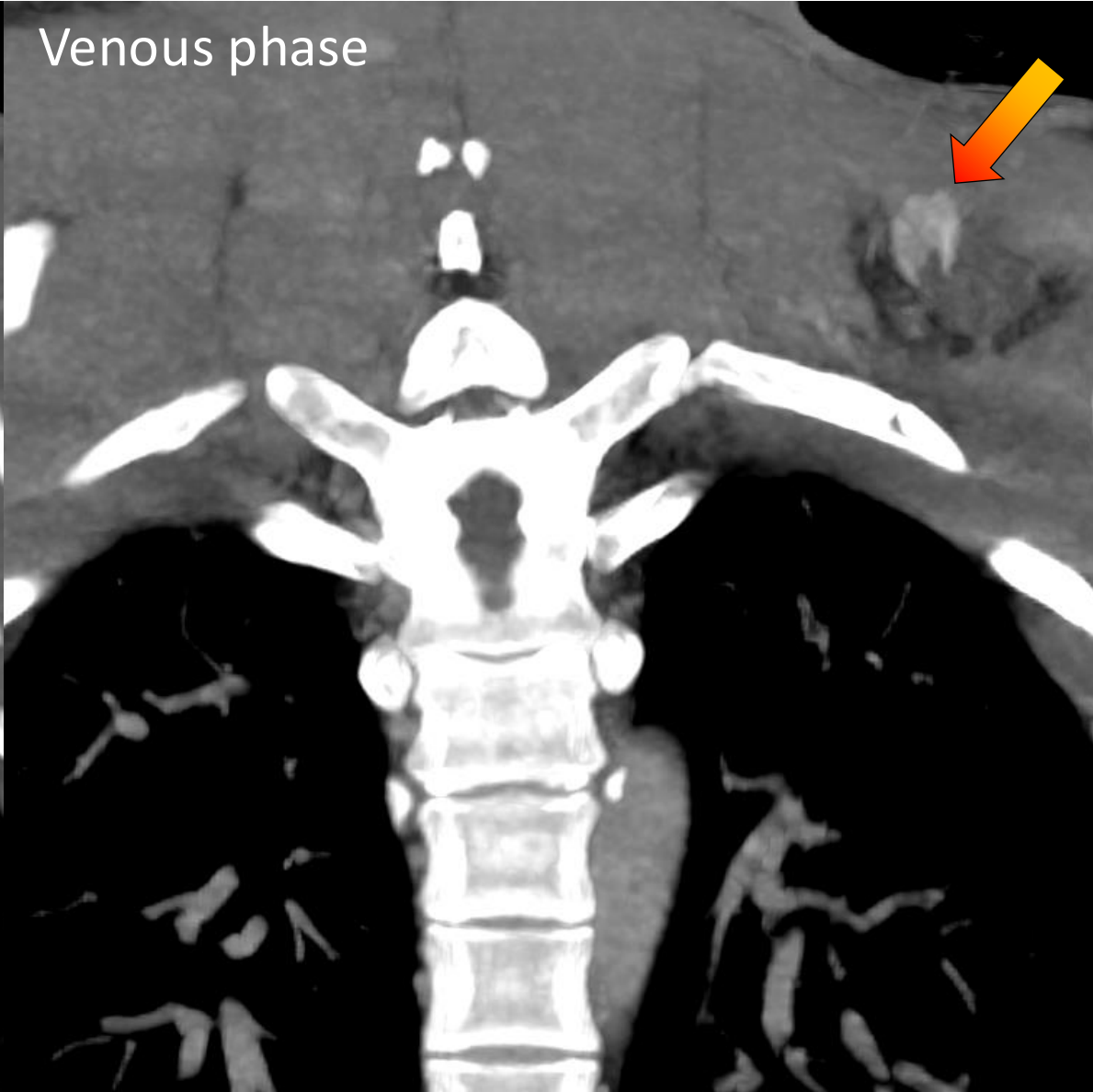
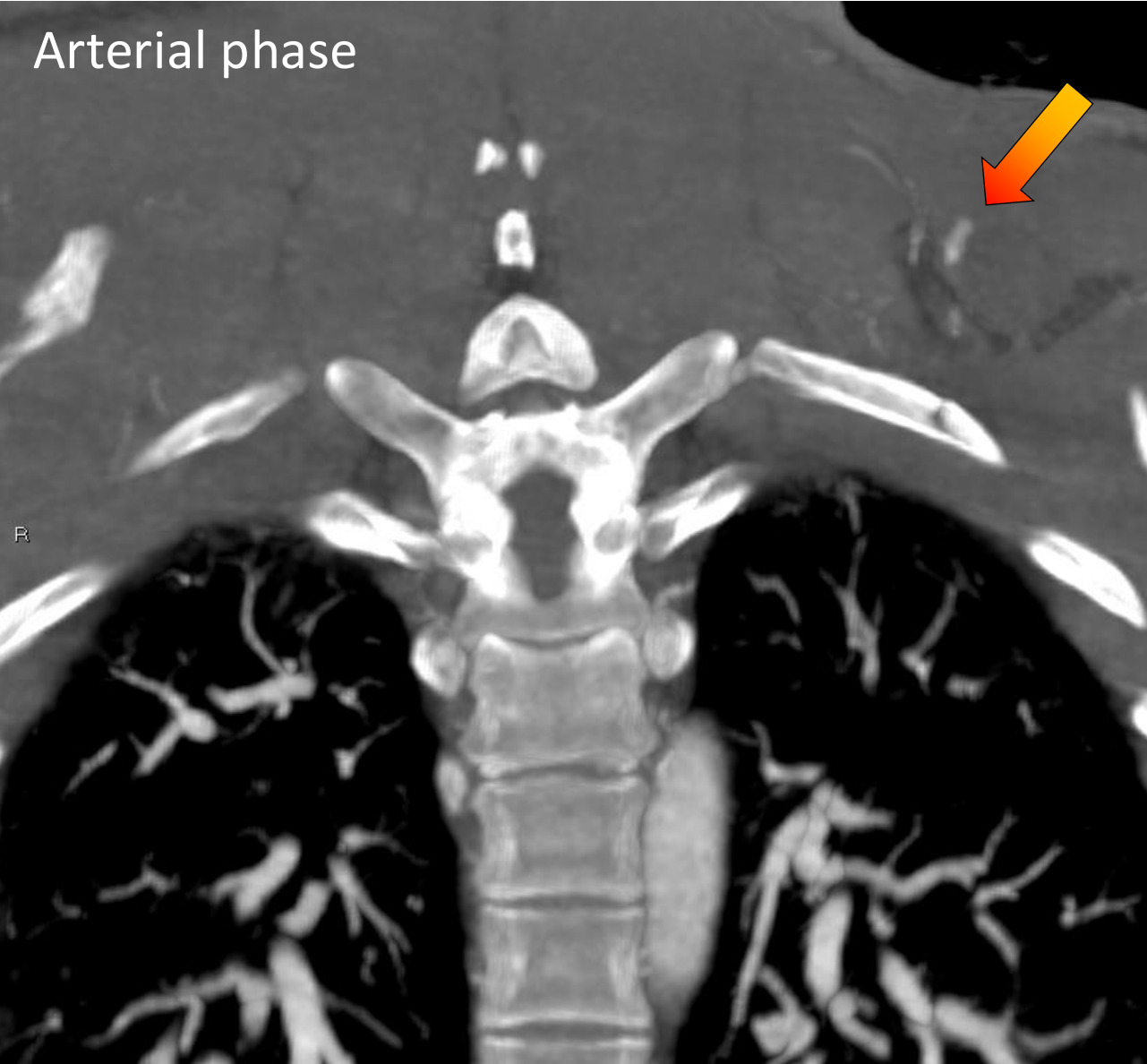
Arterial phase



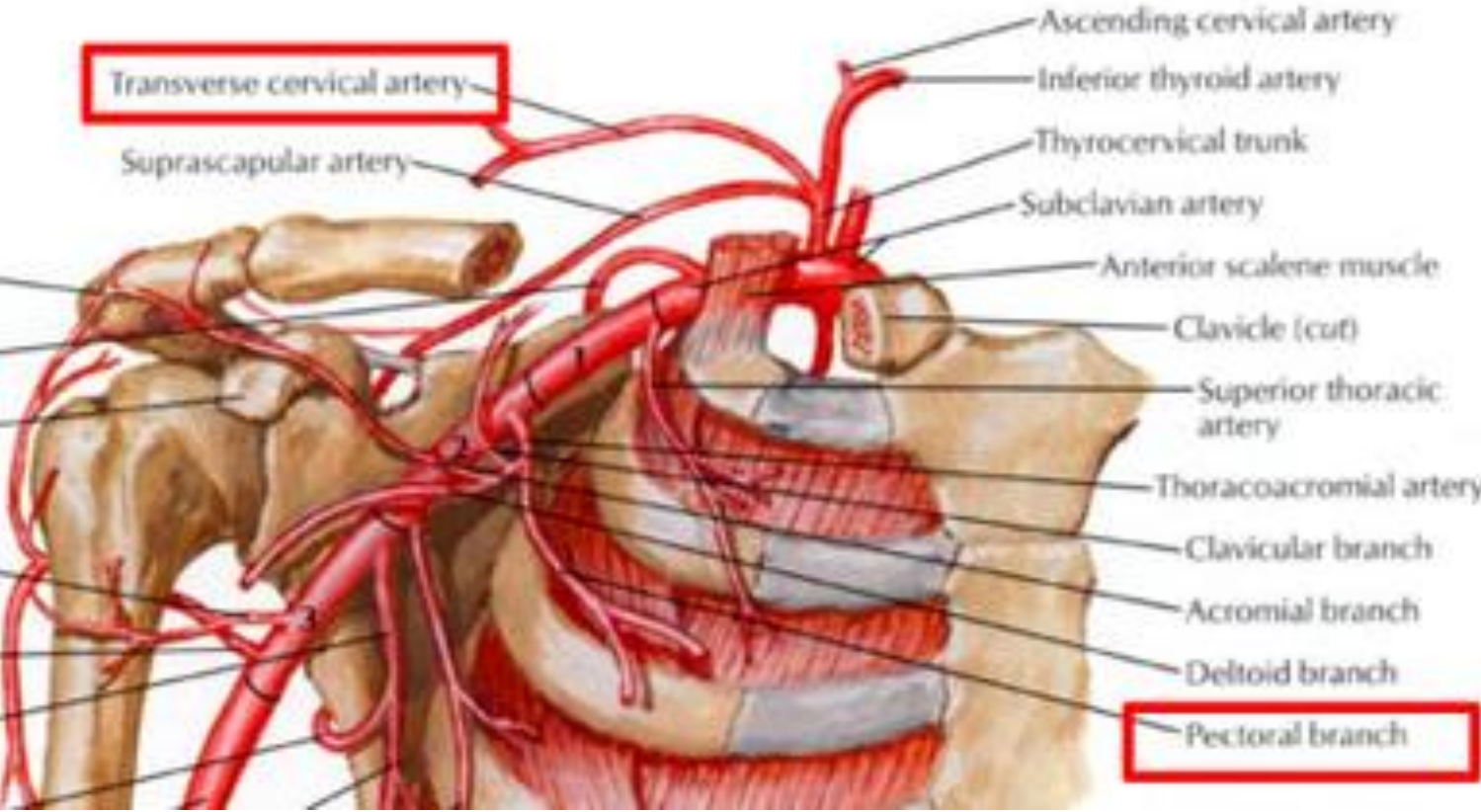
Venous phase



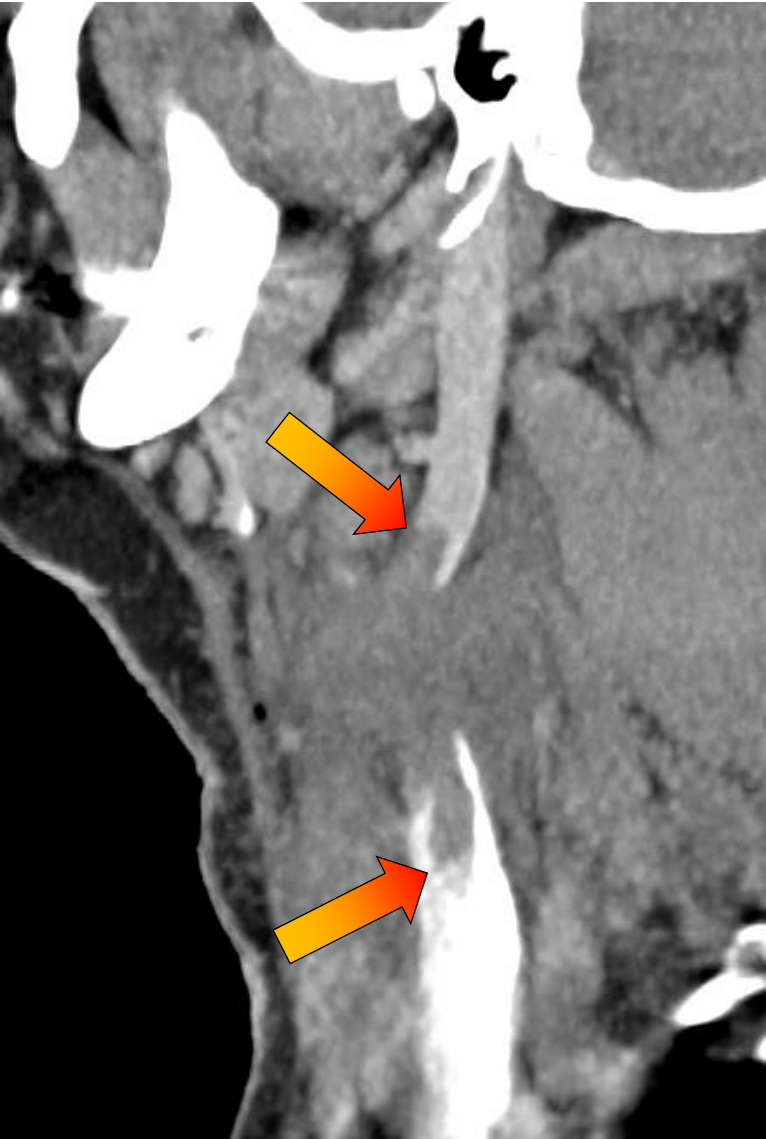
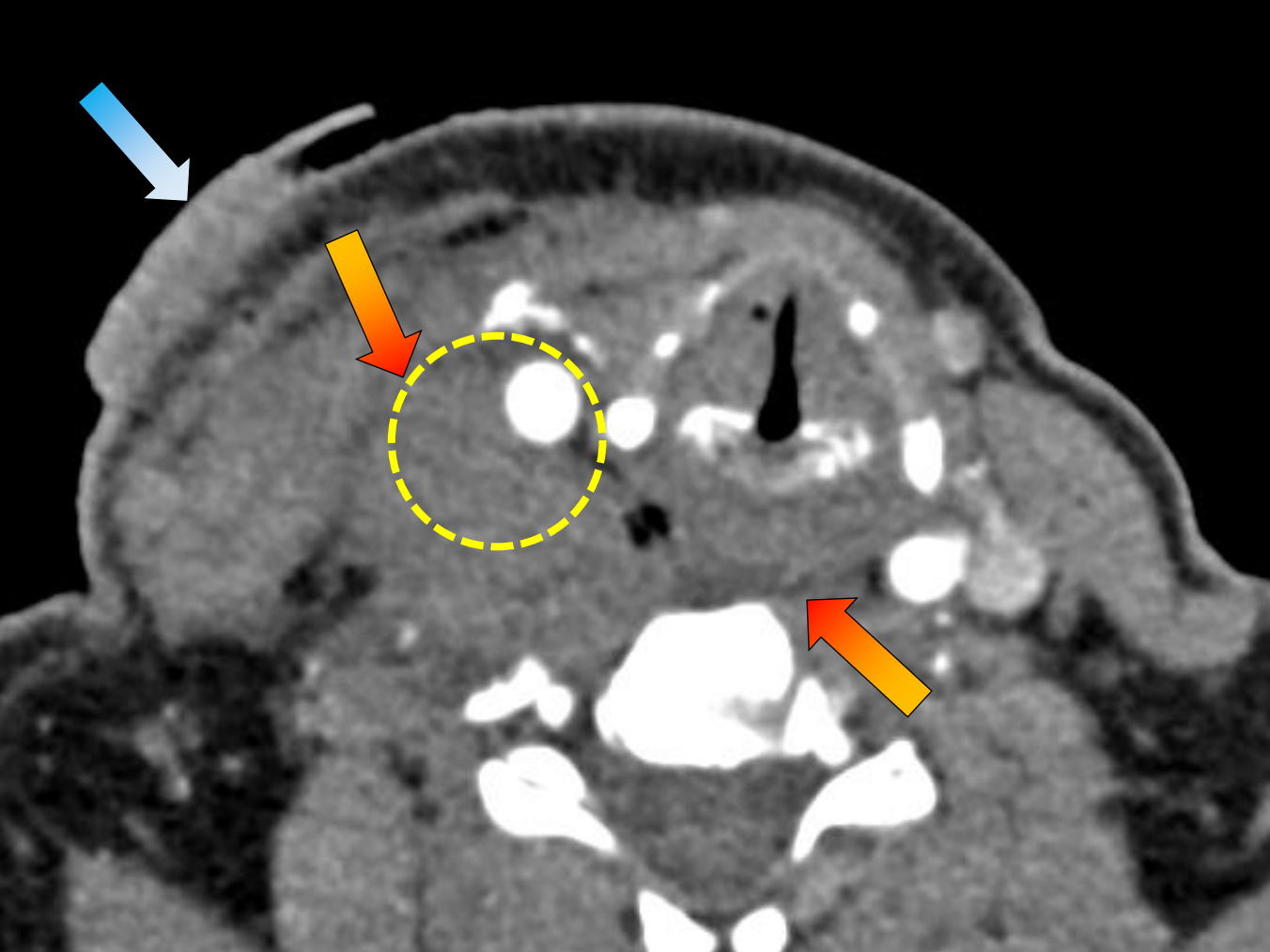
# Case 3: 26M stabbed



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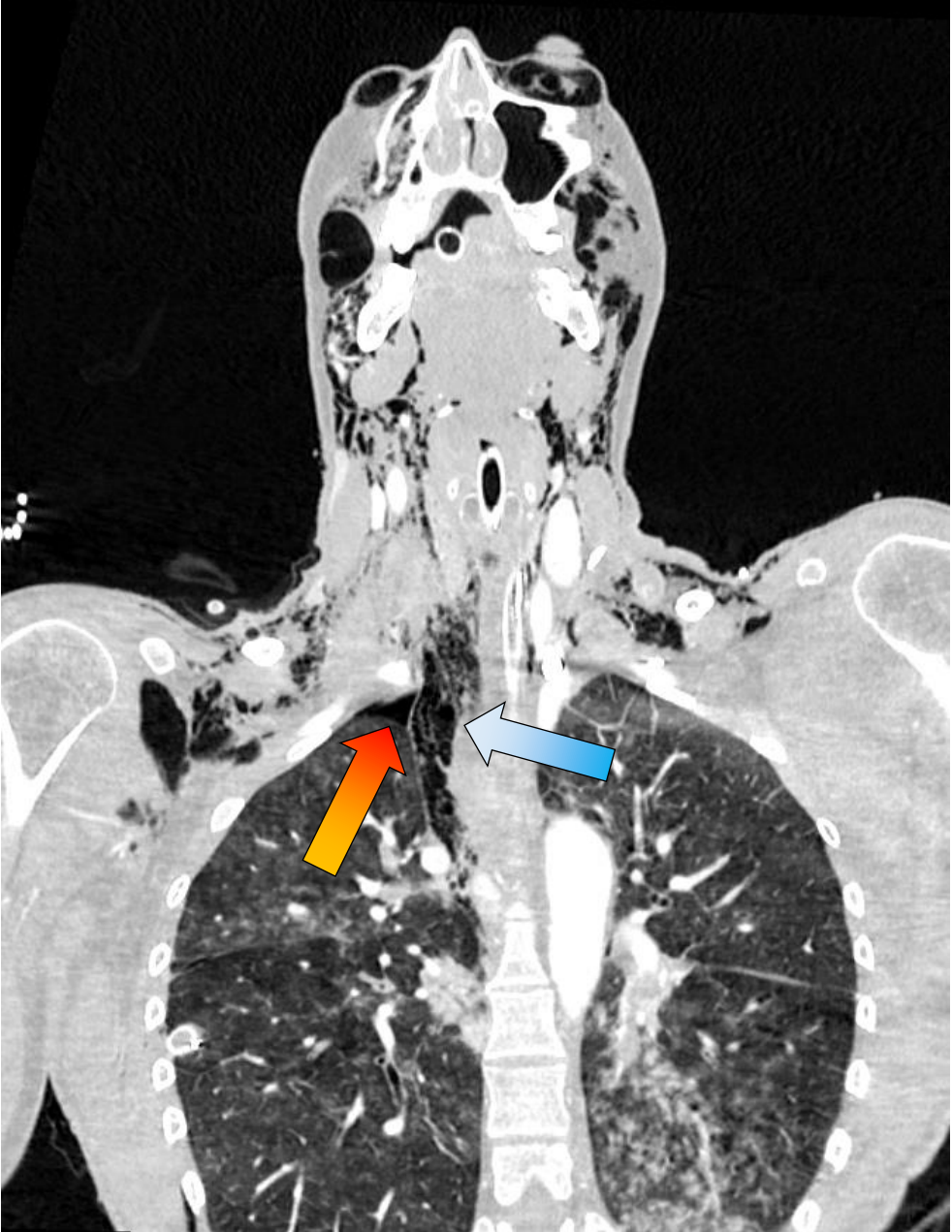
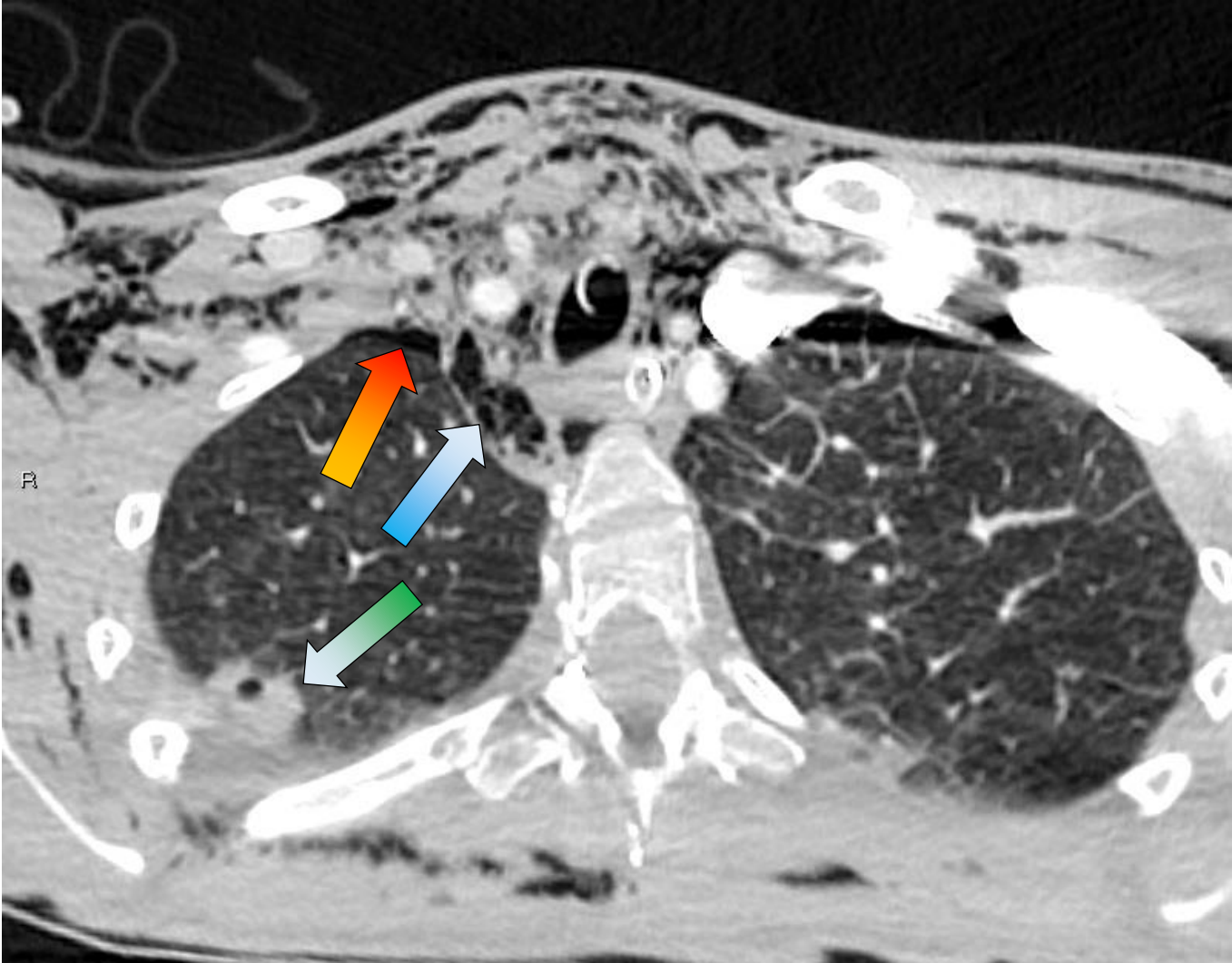
# Case 4: 50F fell through a glass door



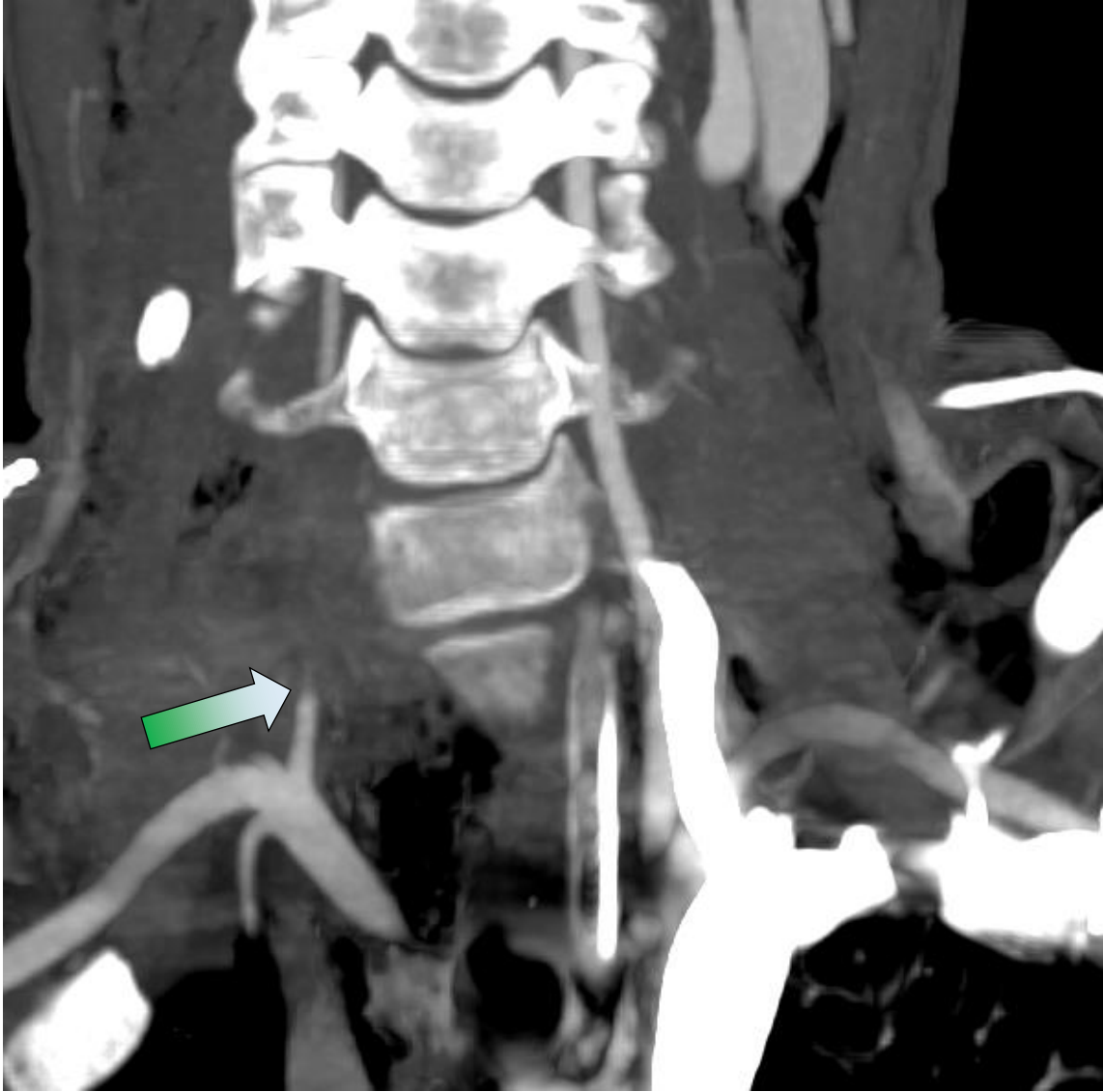
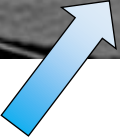
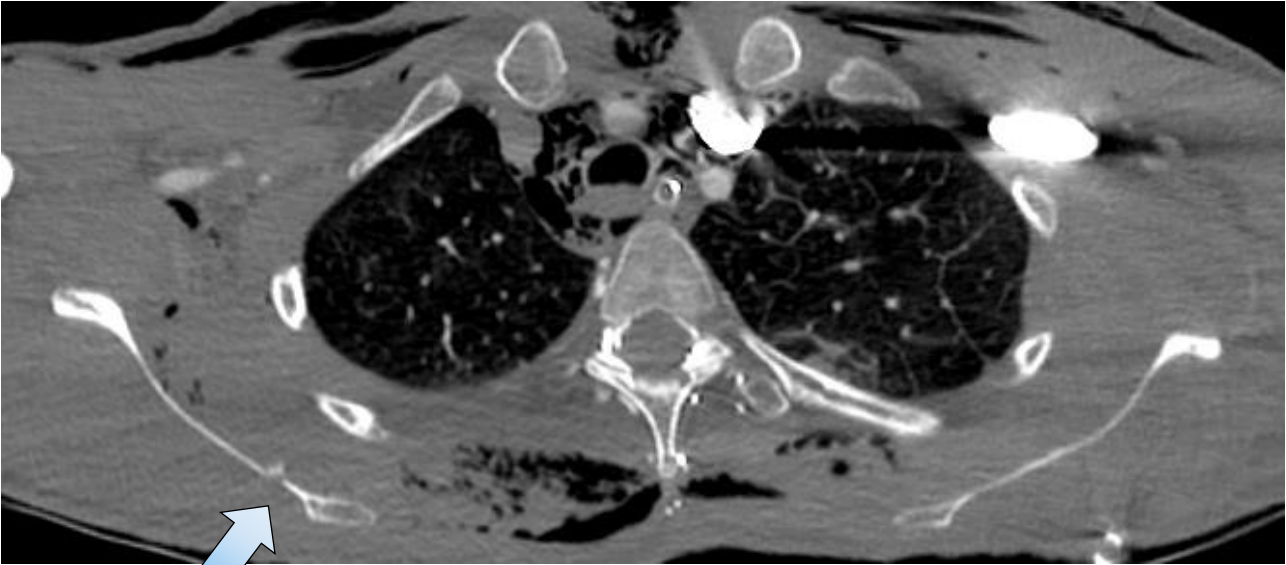
# Case 4: 50F fell through a glass door



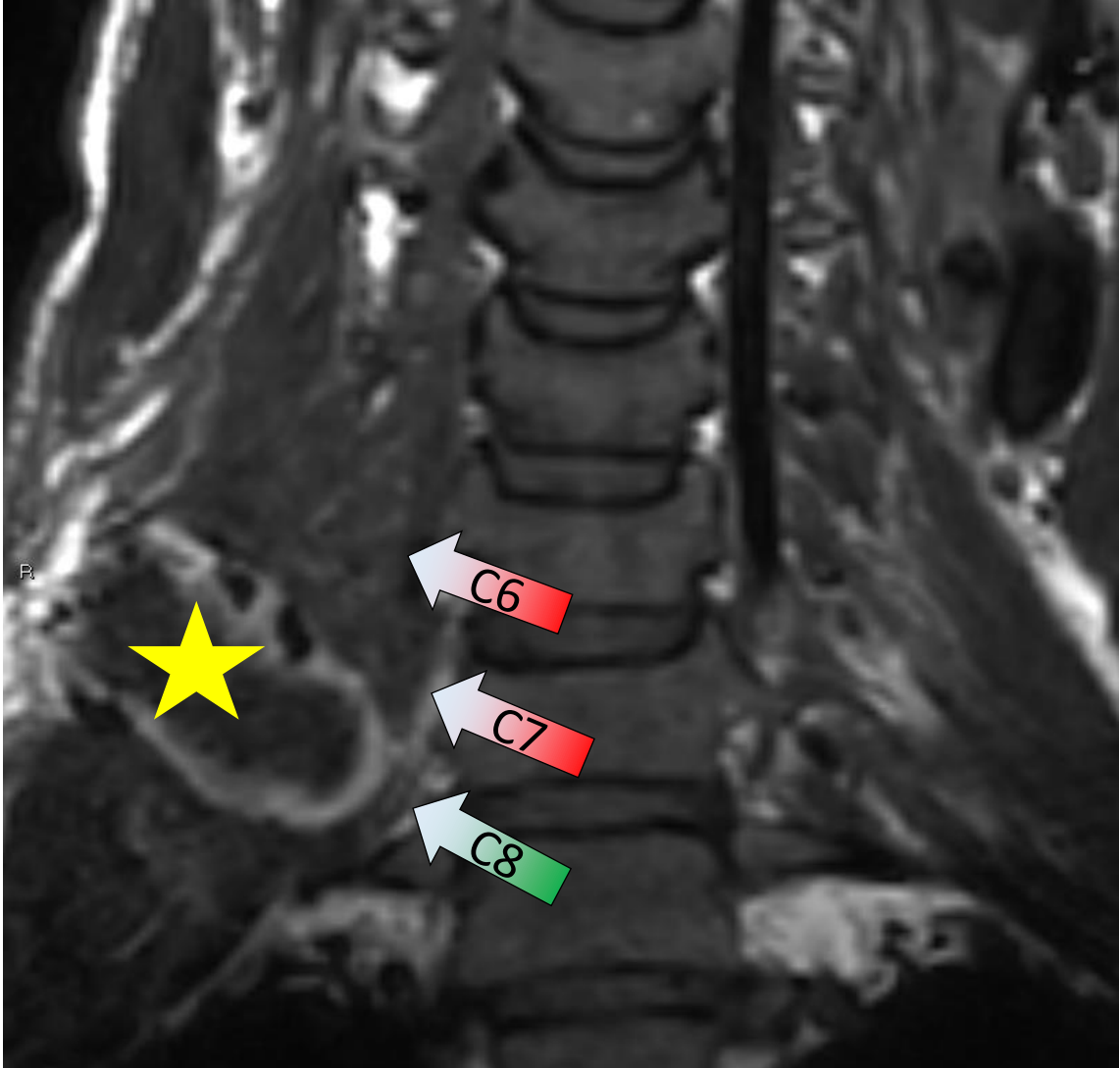
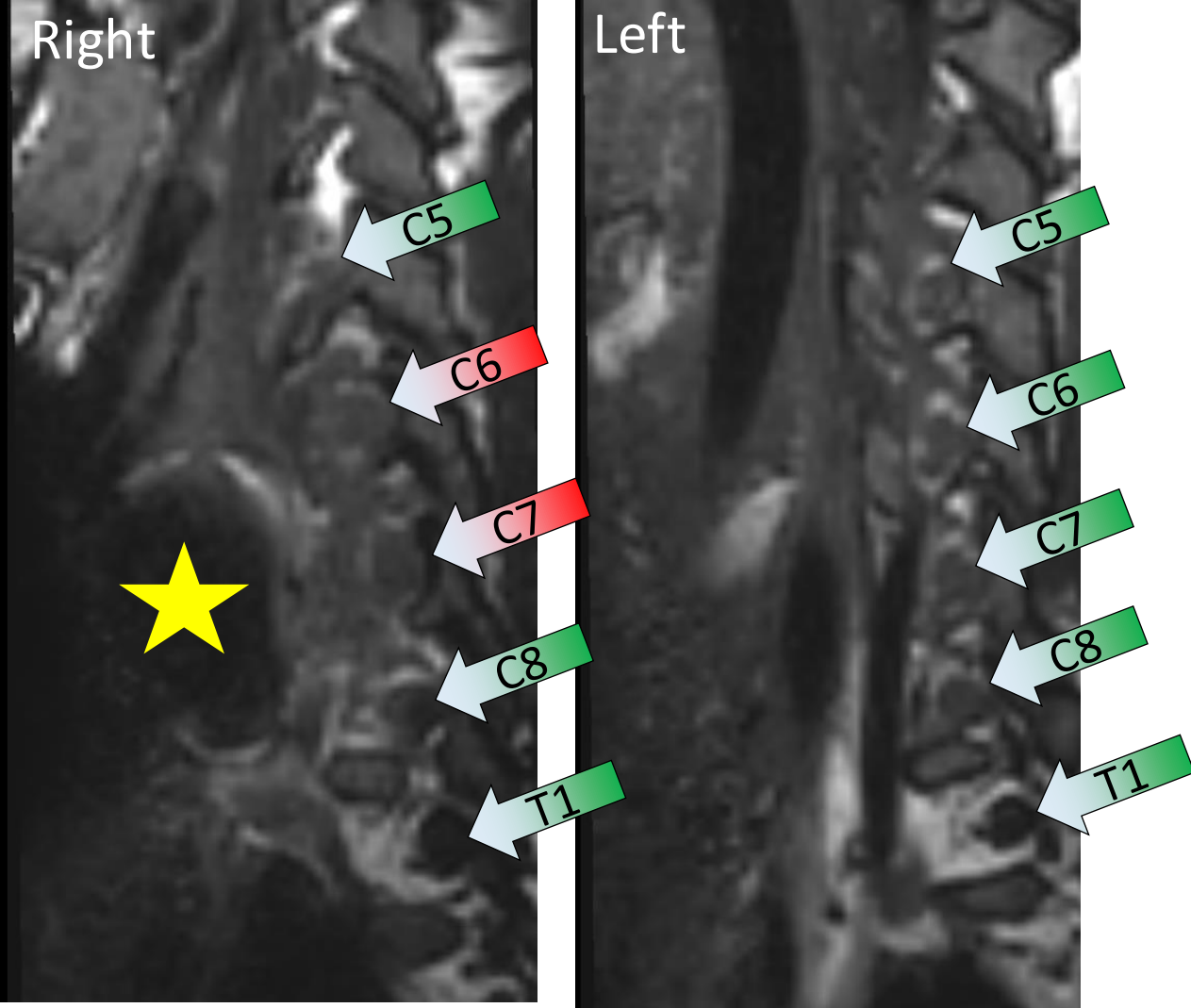
# Case 5: 32F stabbed



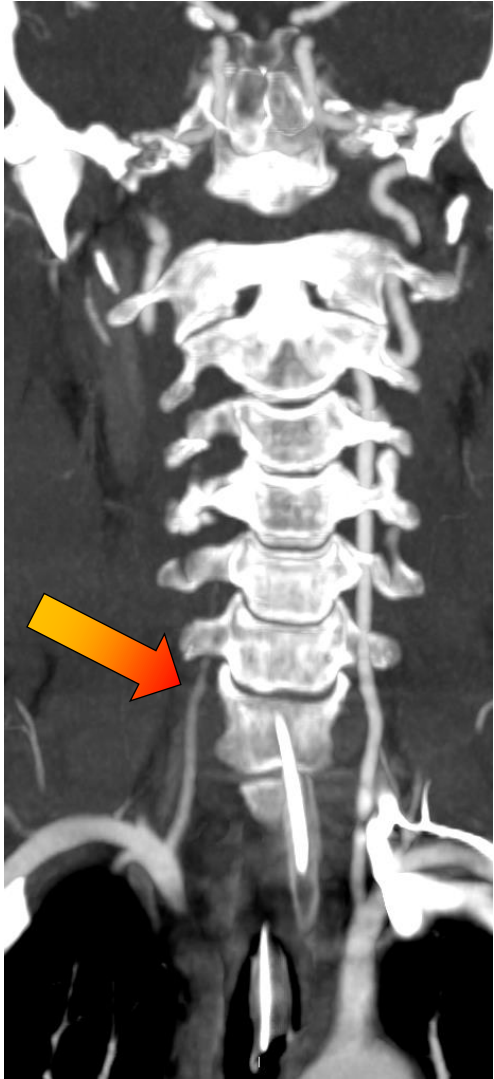
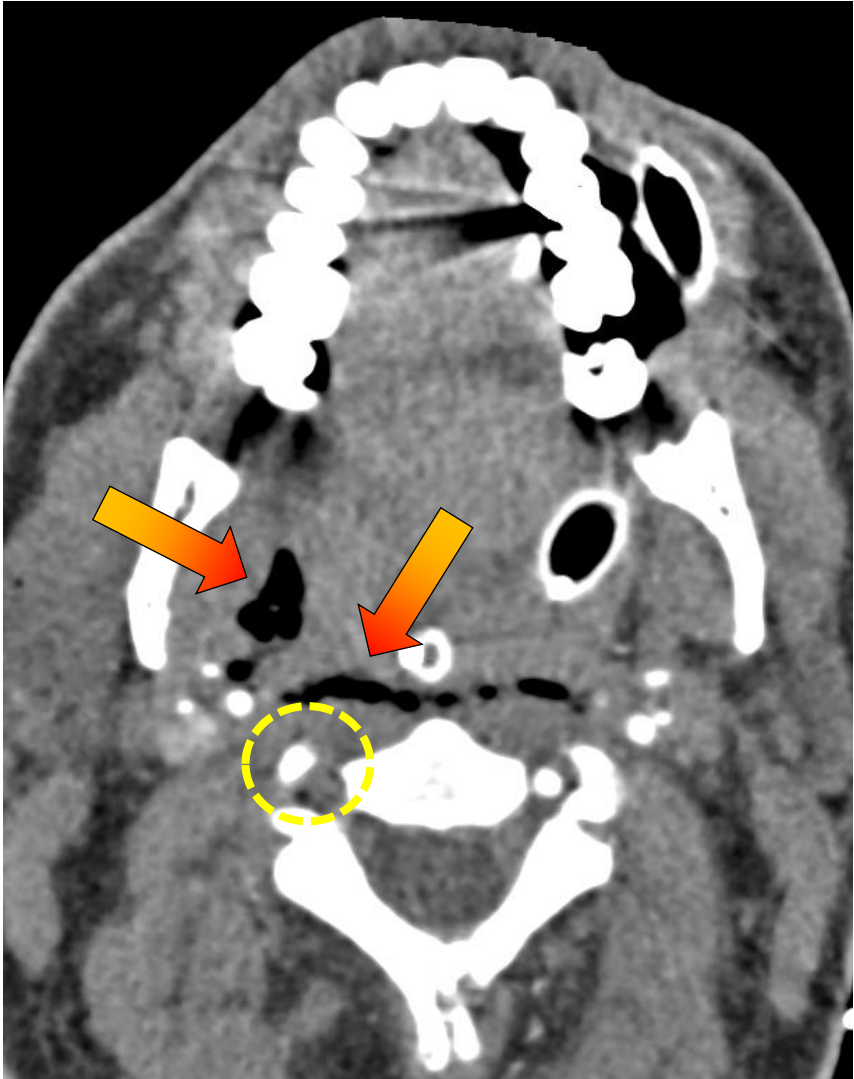
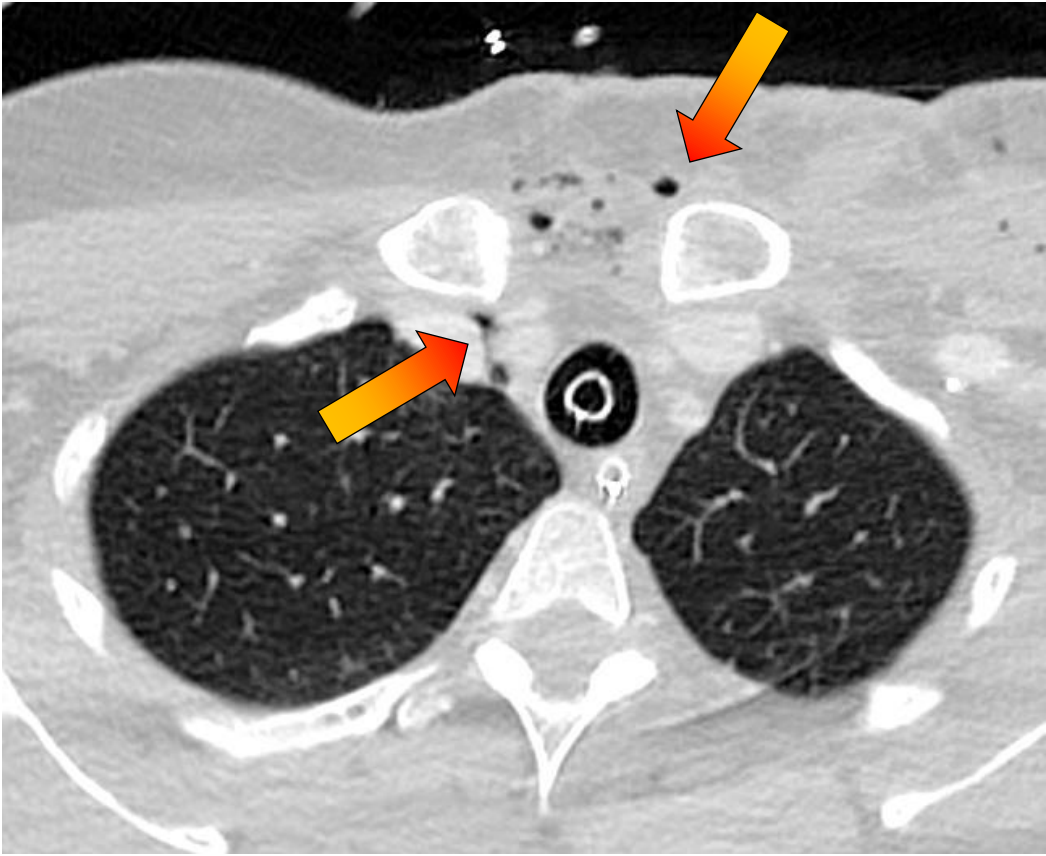
# Case 5: 32F stabbed



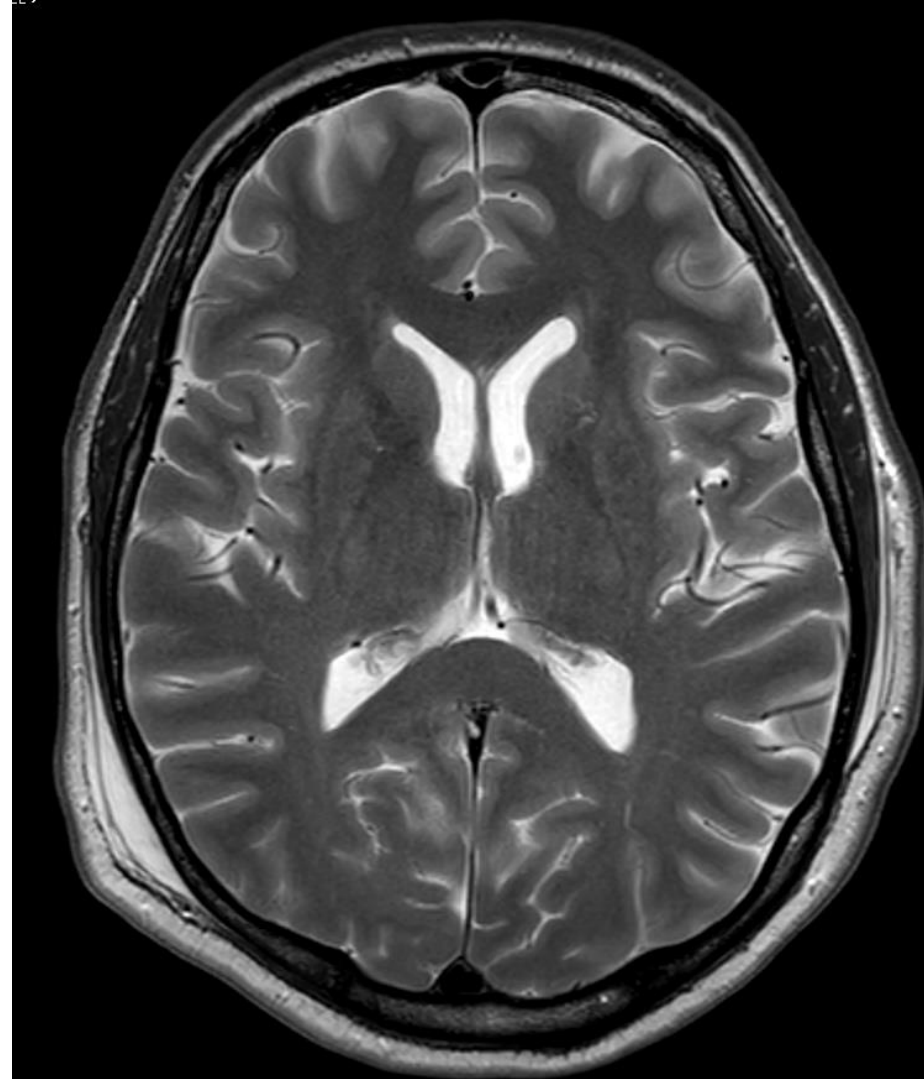
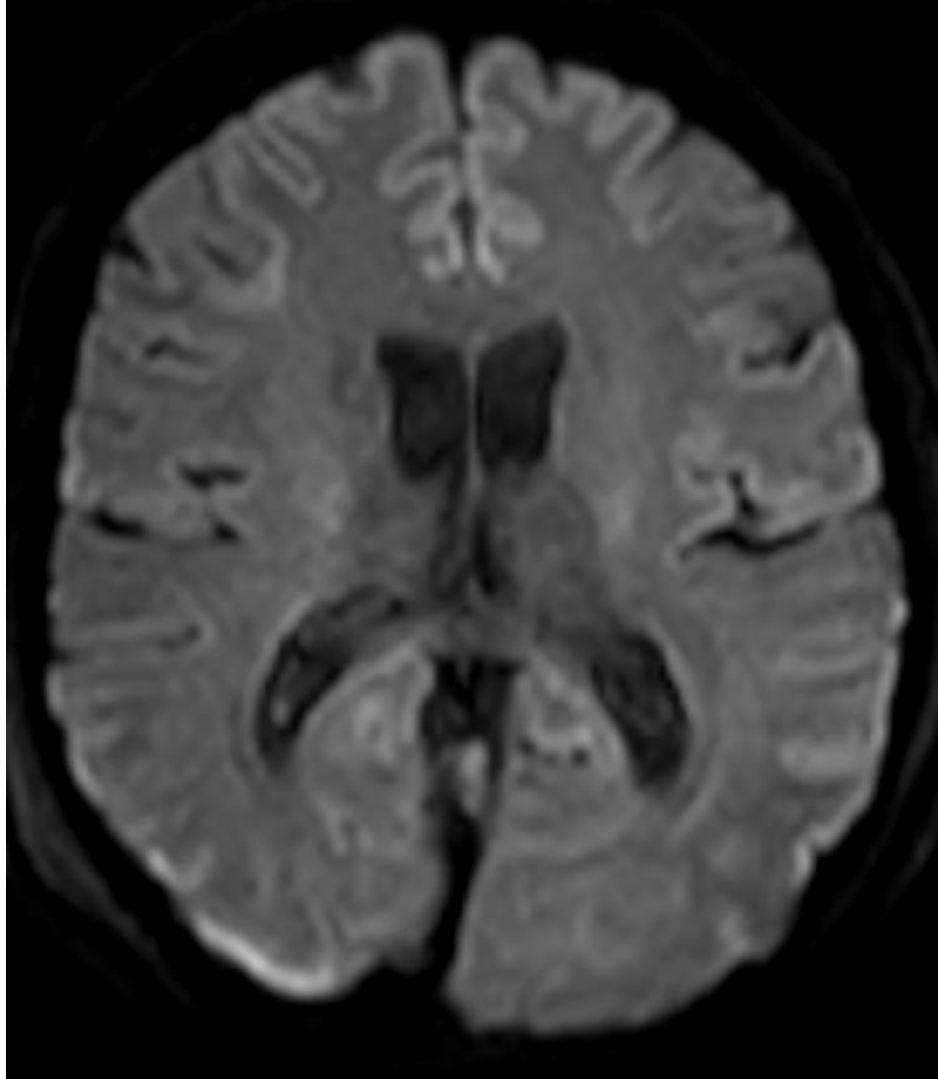
# Case 5: 32F stabbed



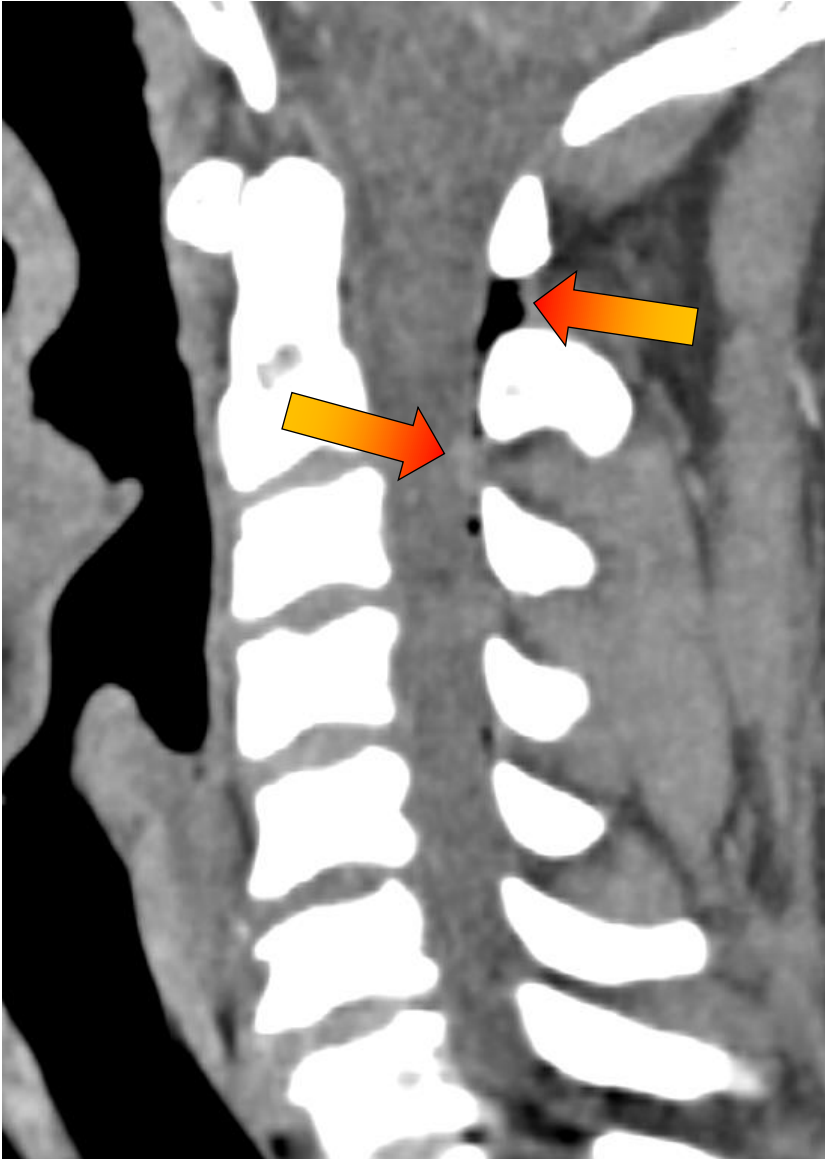
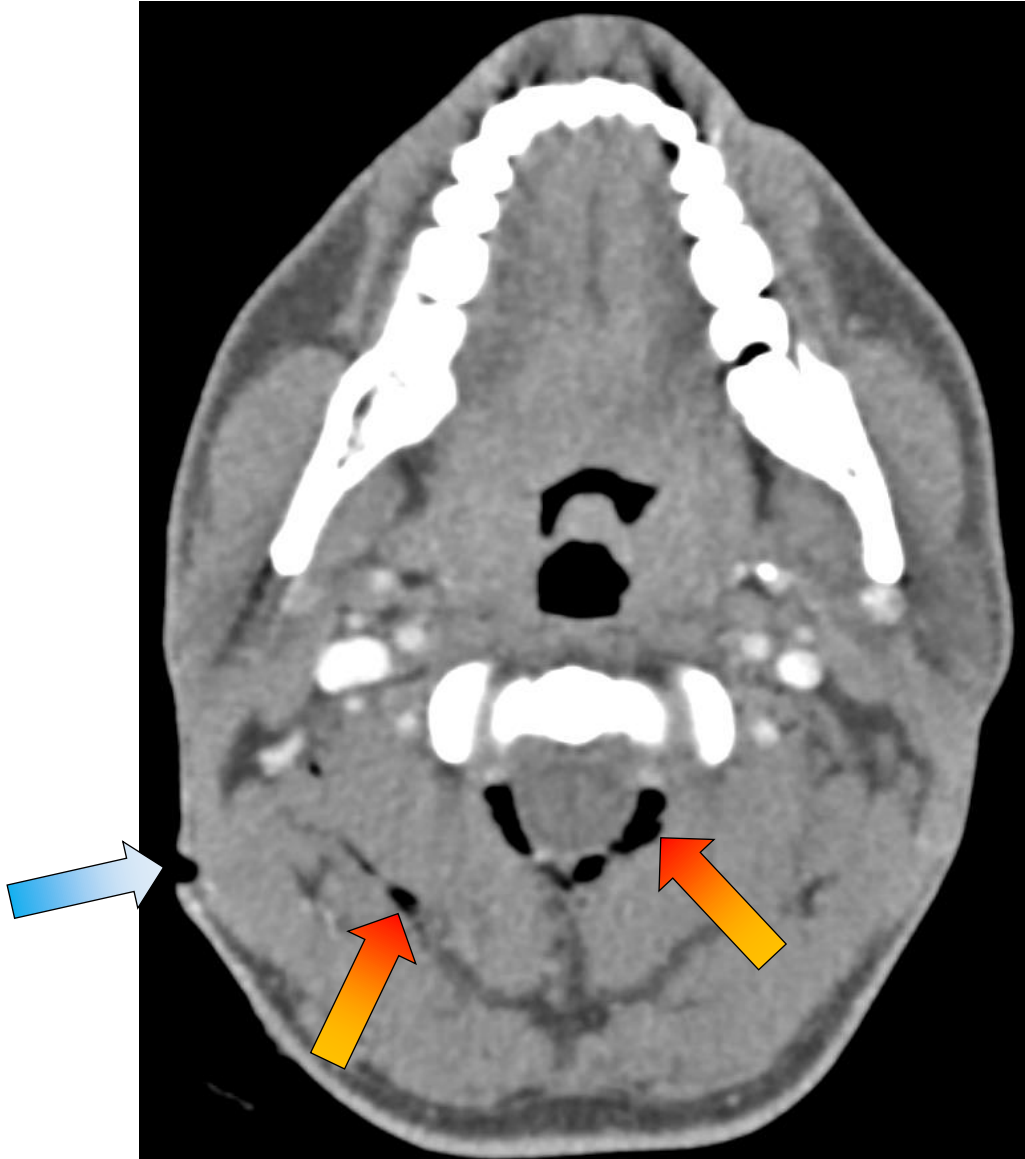
# Case 6: 42F stabbed



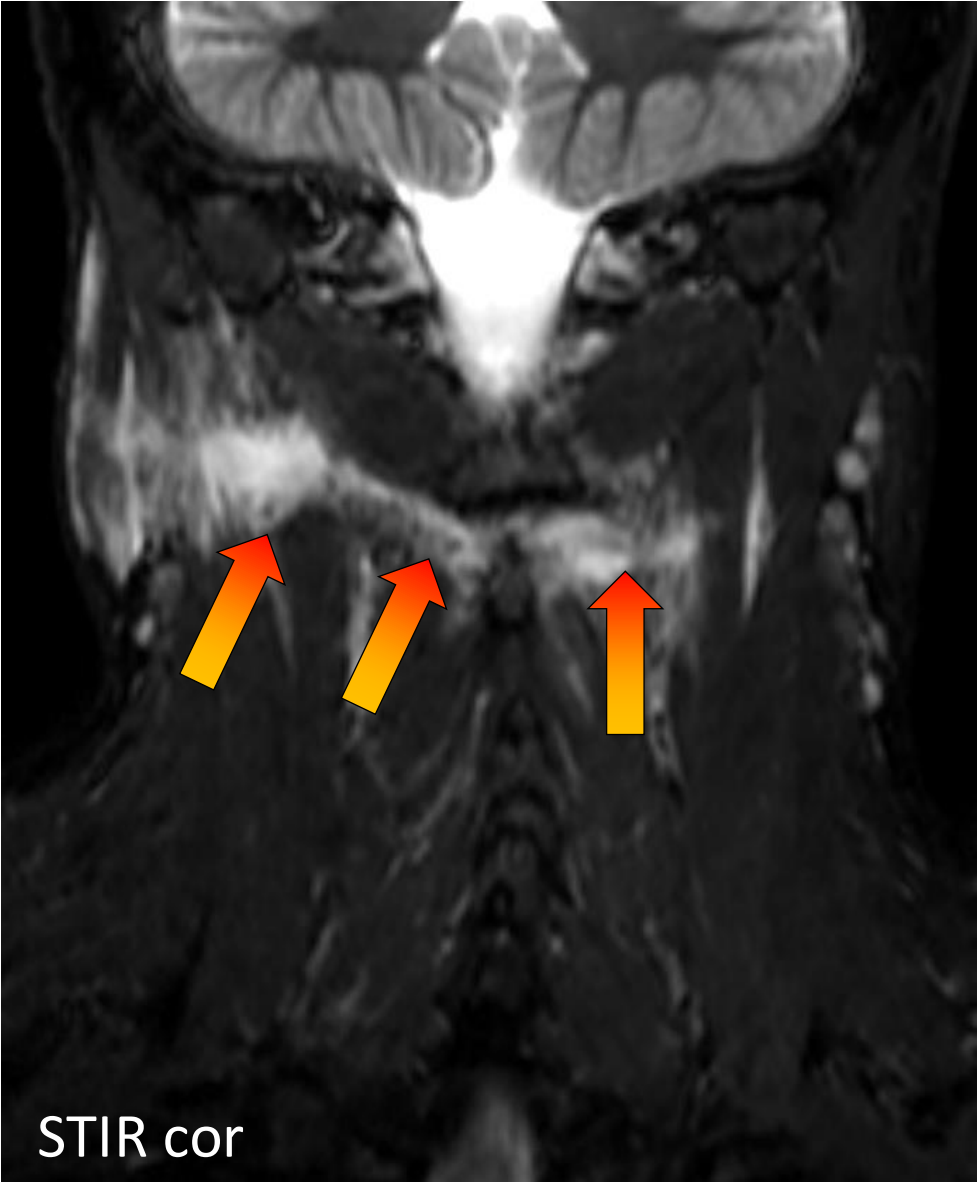
## Case 6: 42F stabbed



# Case 7: 42F stabbed



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  - Delay (need for delayed scanning?)
  - Dialogue (trauma team, surgeon, technologists)
- **E**
  - Exposure (read carefully at the workstation)

Thank you!

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