FEEDBACK TO THE FIELD (FT2F) #5:
*Emergency Tracheostomy Placement**

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Original Release

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Emergency Tracheostomy Placement

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OVERVIEW:

•Emergency trachesotomy is a procedure employed in the Combat Zone.

•Preferred site to incise the trachea is through the 2nd -4th tracheal rings with cricothyroidotomy an emergency alternative. (Emergency War Surgery, 2nd Edition)

•We observe tracheostomy tube placement when performing Multidetector Computed Tomography (MDCT) imaging preceding autopsy at the Dover AFB Mortuary.

OVERVIEW: H

Drawings by Netter
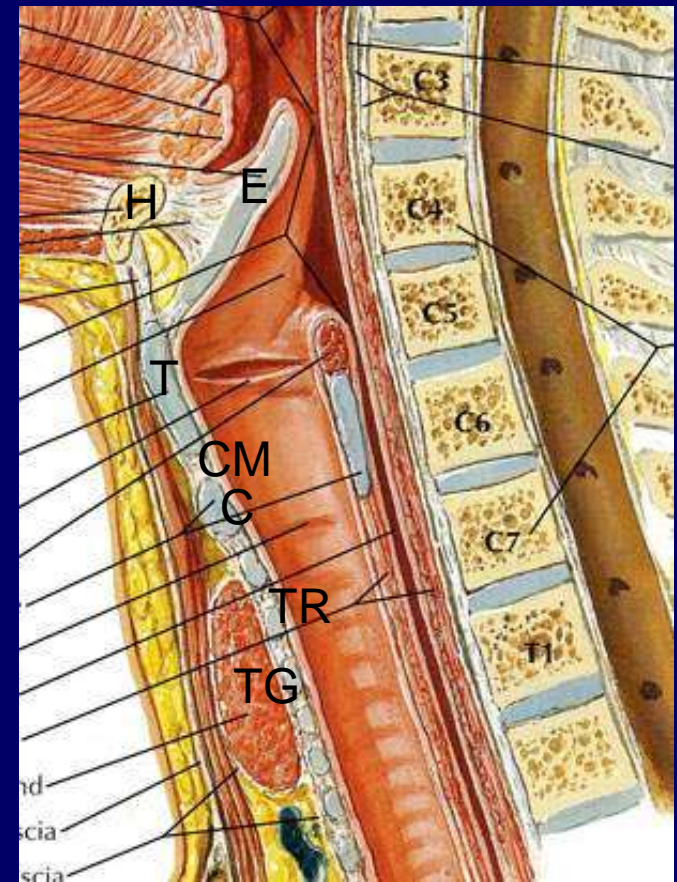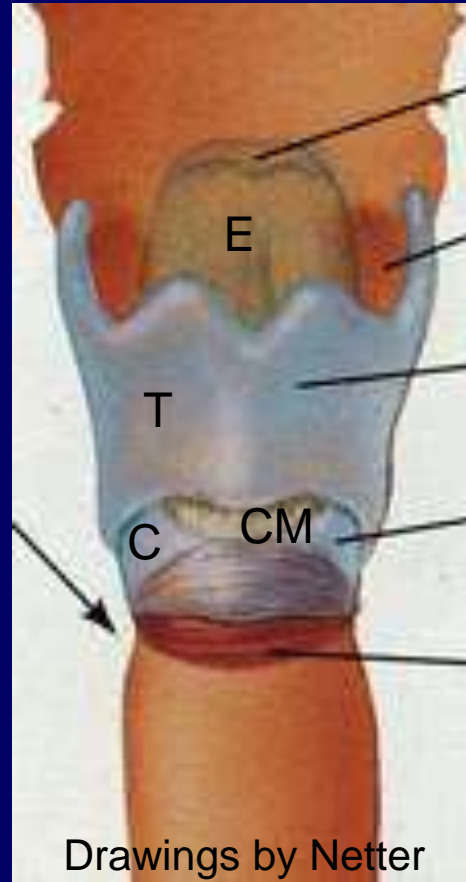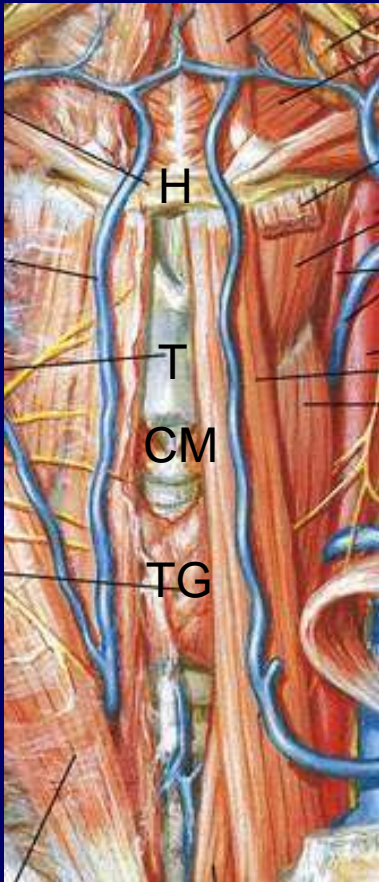
Key Anatomic Landmarks: Thyroid Cartilage (T), Cricoid Cartilage (C), Hyoid Bone (H), Cricothyroid Membrane (CM), Thyroid Gland (TG), Epiglottis (E), Trachea Rings (TR)
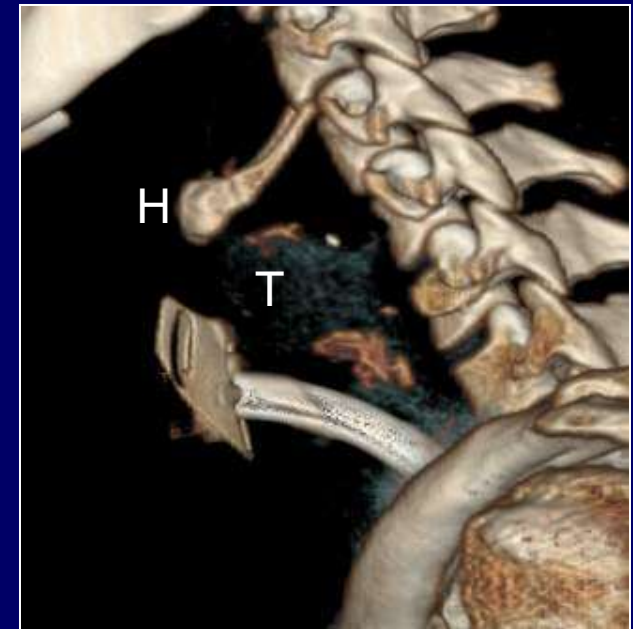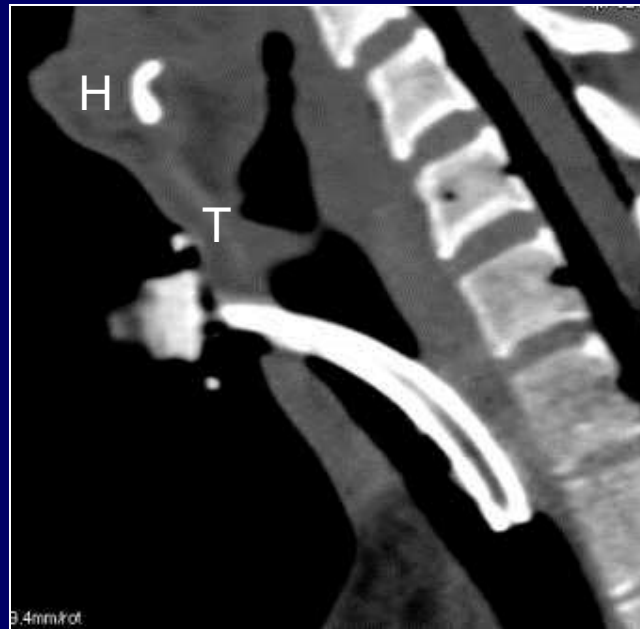
OVERVIEW:

Example of placement at a recommended site. Postmortem MDCT shows the tracheostomy tube enters the neck through the cricothyroid membrane.

Incision post tube removal

Note the position of the tube with respect to the thyroid cartilage (T) and hyoid bone (H).

OVERVIEW:

• In this communication we present images from two cases where emergency tracheostomies were placed with the tube passing through the epiglottis.

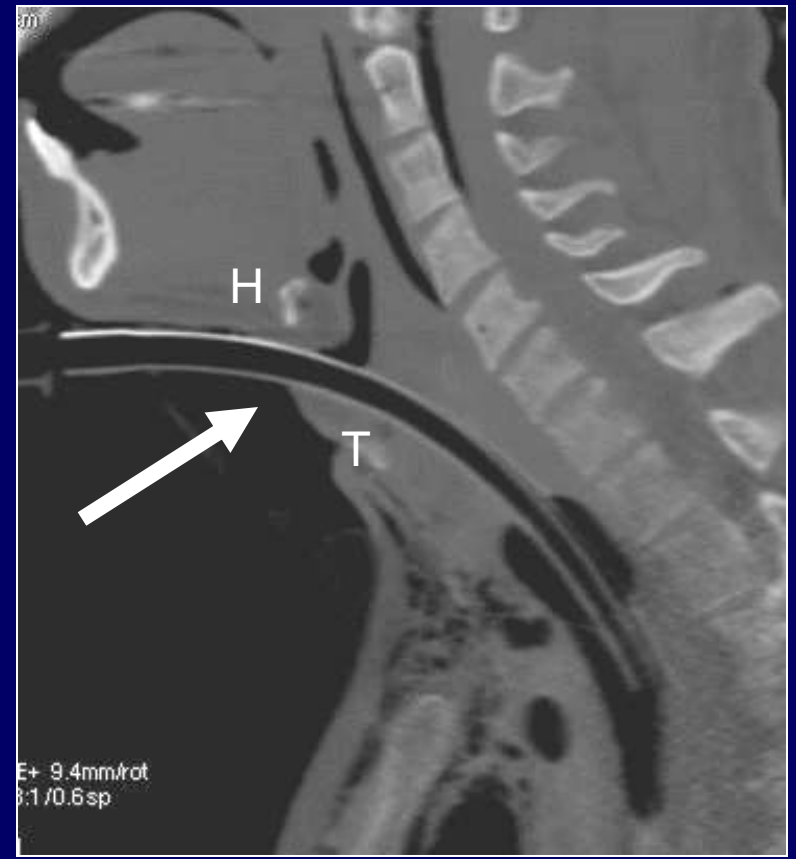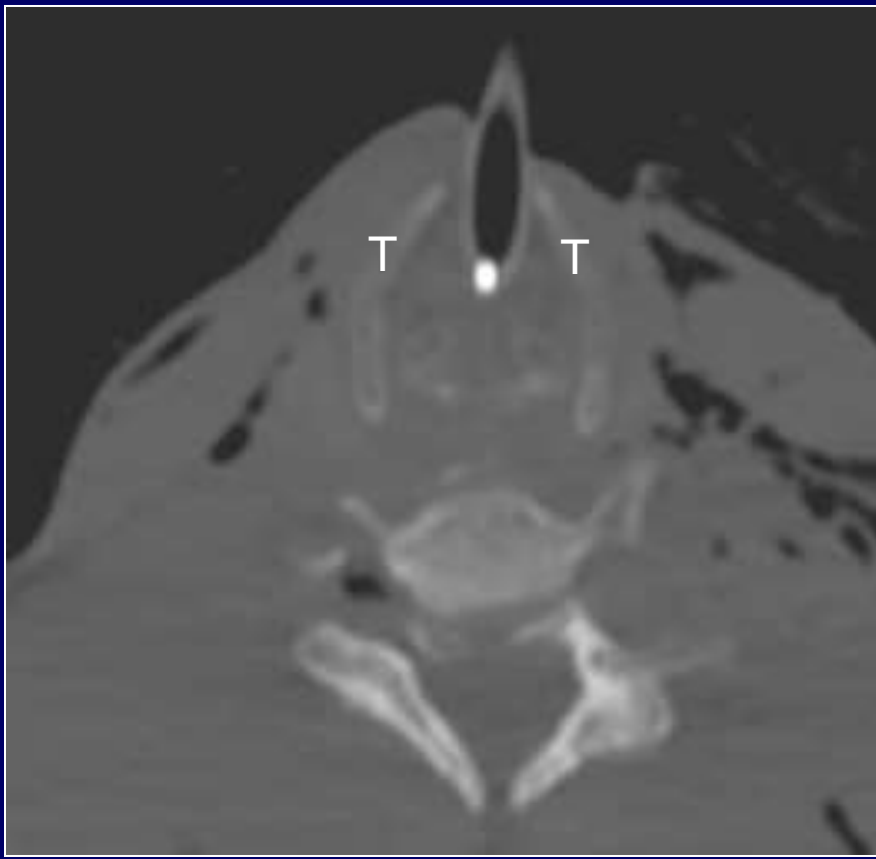• Both individuals sustained multiple traumatic injuries including lethal head injury.

CASE 1

Postmortem MDCT showed the tracheostomy tube entered the neck between the hyoid bone and the upper margin of the thyroid cartilage.

Incision post tube removal

Postmortem axial and sagittal MDCT images of the neck show the tracheostomy tube enters the neck (arrow) below the hyoid bone (H) and above the thyroid cartilage (T).

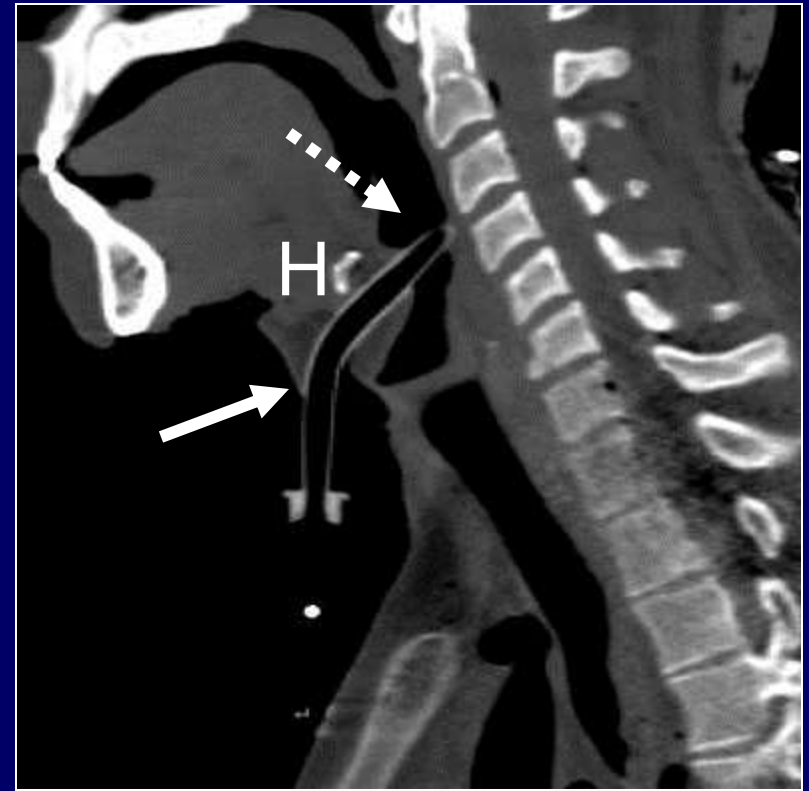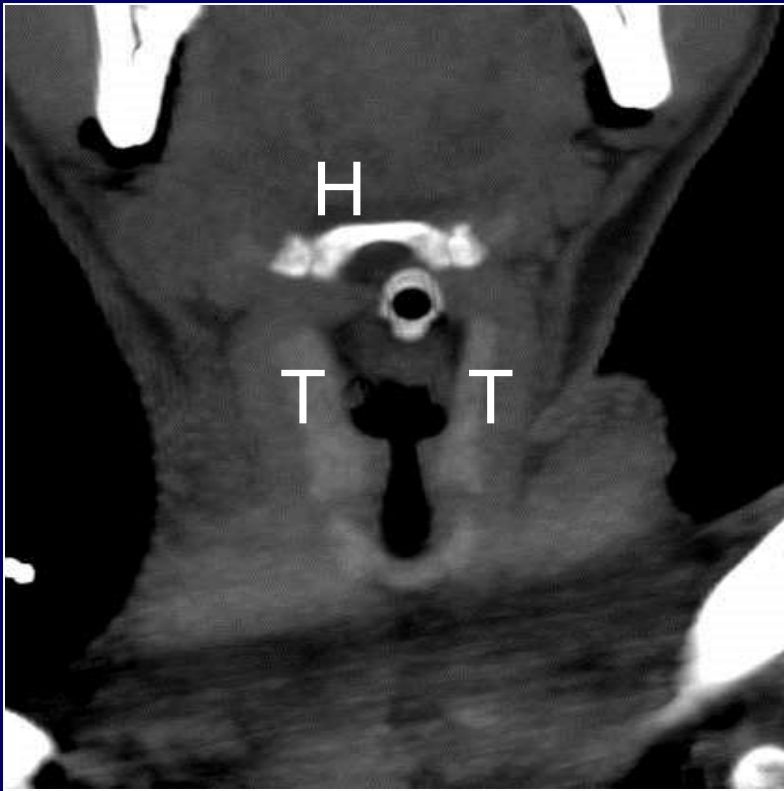Note tube tip (with balloon cuff) is in the trachea.

3-D MDCT images of the neck demonstrate the tube track (arrow) and the post mortem specimen shows epiglottis injury (arrowhead).

CASE 2
Postmortem MDCT showed the tracheostomy tube entered the neck between the hyoid bone and the upper margin of the thyroid cartilage.
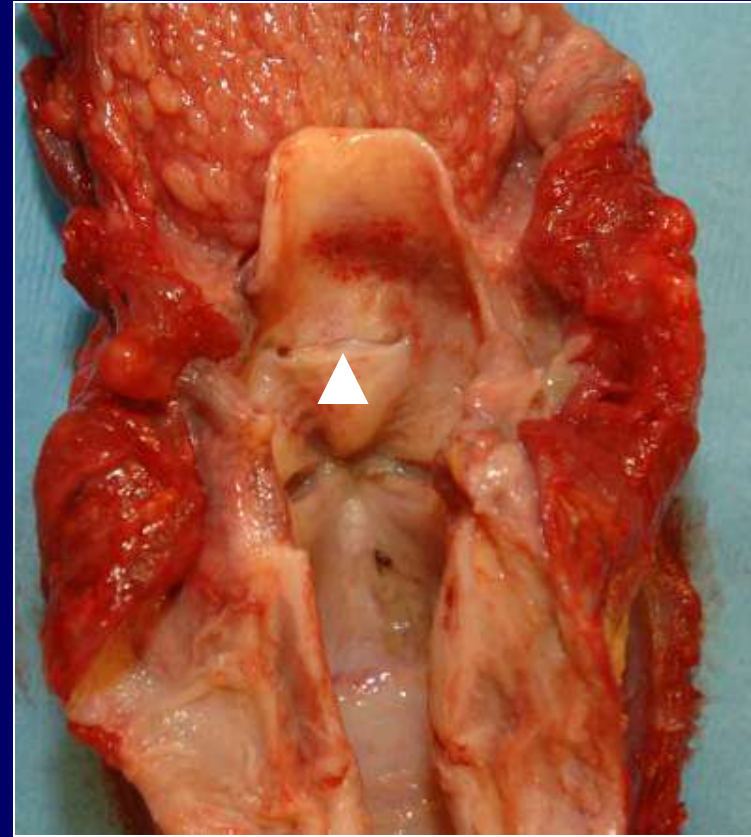

Incision post tube removal

Postmortem coronal and sagittal MDCT images of the neck show the tracheostomy tube enters the neck (arrow) below the hyoid bone (H) and above the thyroid cartilage (T).

Note tube tip is in the larynx. (dotted arrow)

3-D MDCT image of the neck demonstrates the tube track (arrow) and the post mortem specimen shows epiglottis injury (arrowhead).

CONCLUSION:

Placement of an emergency tracheostomy tube between the hyoid bone and thyroid cartilage may result in injury of the epiglottis (Cases 1 and 2) and in difficulty entering the trachea (Case 2).

CAUTION:
The clinical circumstances and specific details surrounding the delivery of emergency treatment in these cases are unknown.

This material is intended for educational and training purposes. If portions are extracted, the following statement must be included:

"Source: Armed Forces Medical Examiner System"

NOTES of CAUTION:

- The clinical circumstances and details surrounding emergency treatment in these cases is unknown

- This presentation makes no association between device placement and outcome of treatment

- This case series is drawn from cases with fatal injuries, which may skew data

For FT2F Comments / Questions / Requests:
Contact the Armed Forces Medical Examiner System (AFMES)

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