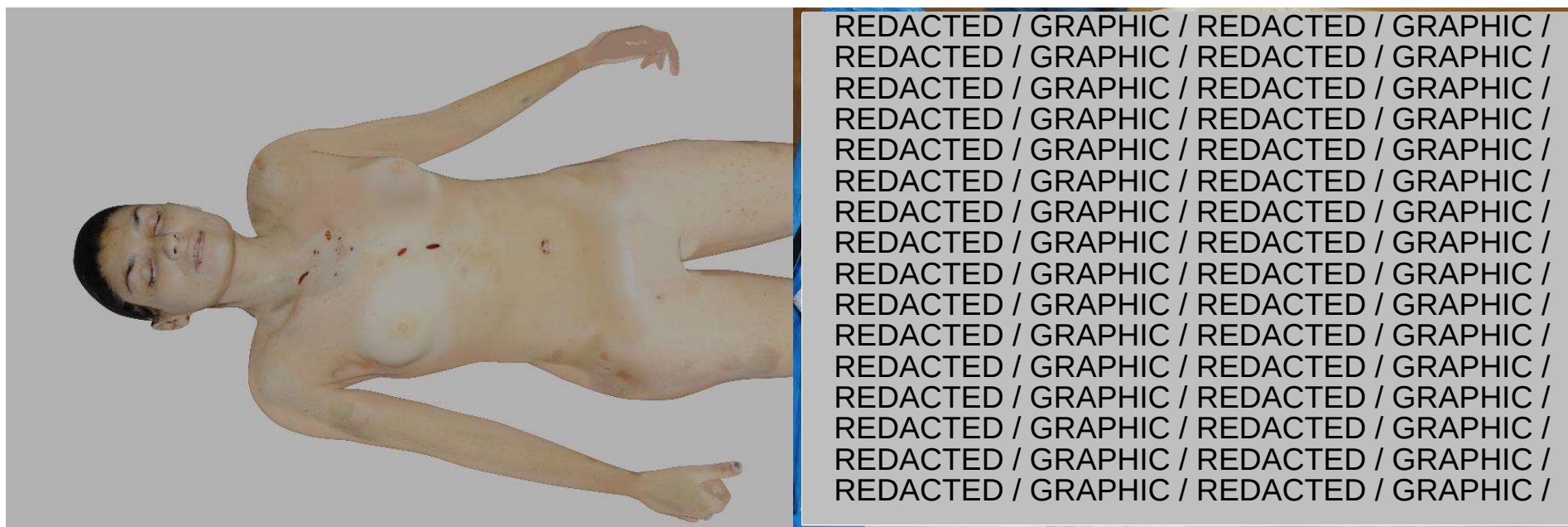


Reconstructed 3D Computer Model

- 3-dimensional female model was created based on the measurements in autopsy report
 - 27 years old
 - Height 5 foot 7 inches
 - Weight 136 pounds
- The 3D model was brought into 3D editing software
- Cameras were placed in 3D space to match the autopsy photographs
- The exchangeable image file format (EXIF) data from the digital autopsy photographs were used to set the focal length of the computer cameras
- A computer generated 3D ruler was created based on the ruler evident in the autopsy photographs
- The 3D ruler was positioned in several of the camera views to match the autopsy photographs and confirm the scale
- The autopsy photographs were used to position the wounds and bruises on the 3D model

Computer Model

Autopsy Photograph



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Computer Model

Autopsy Photograph



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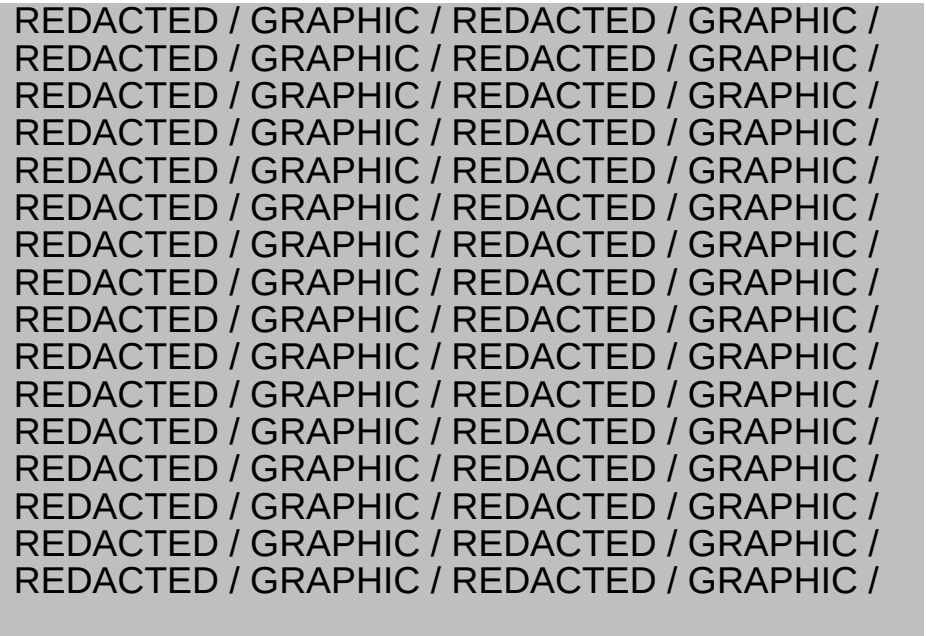
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Computer Model

Autopsy Photograph



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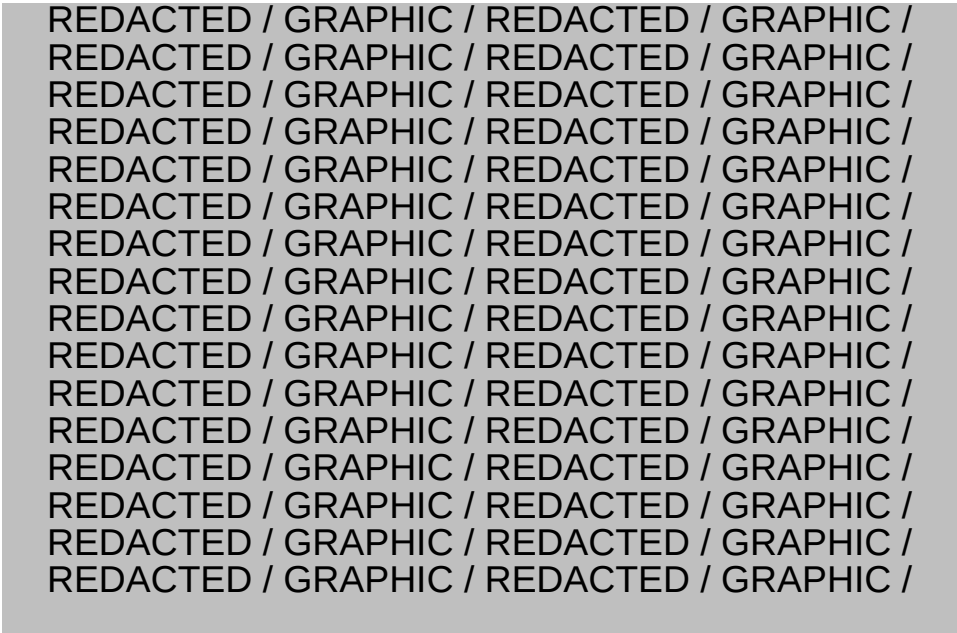
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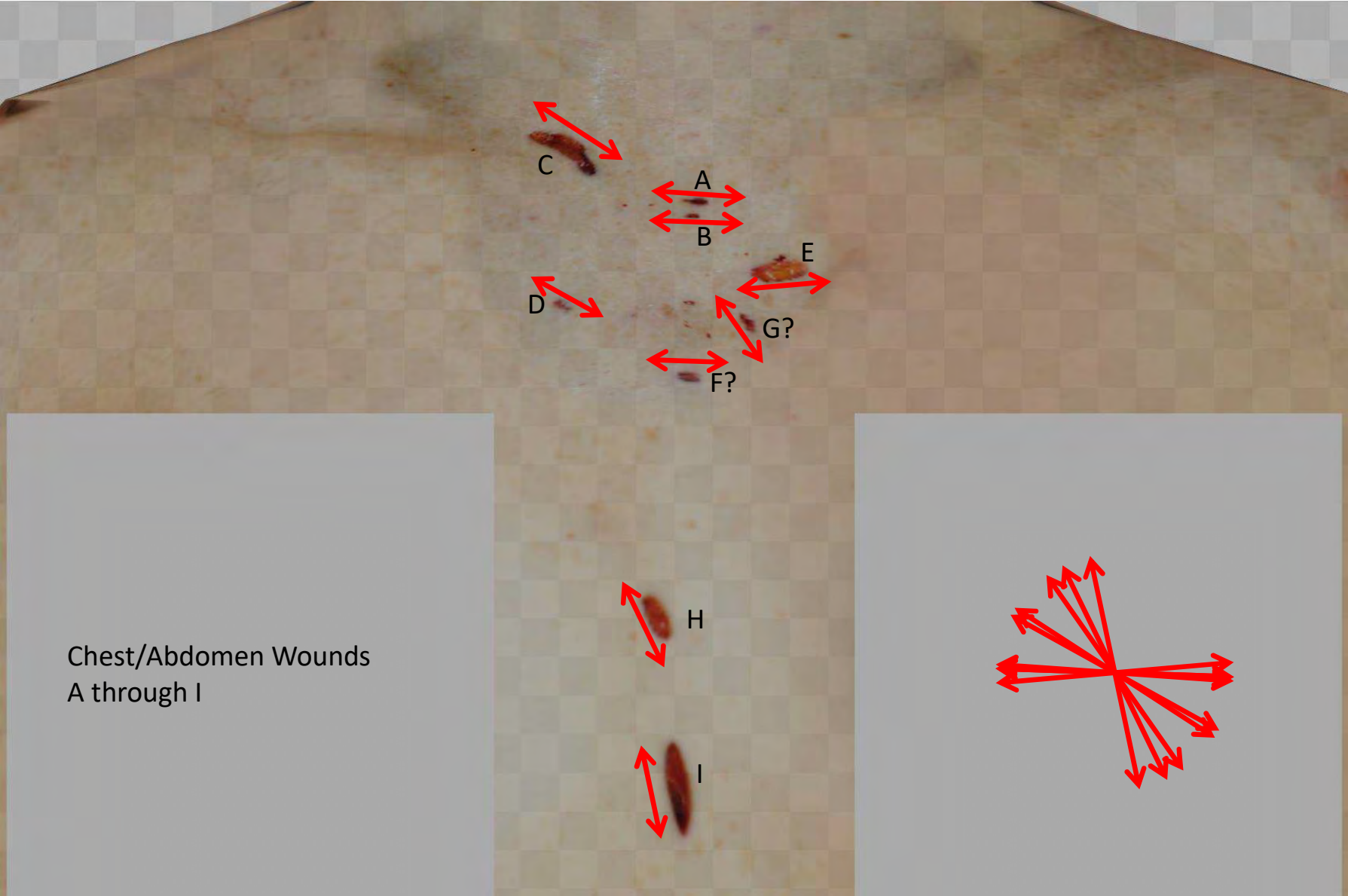
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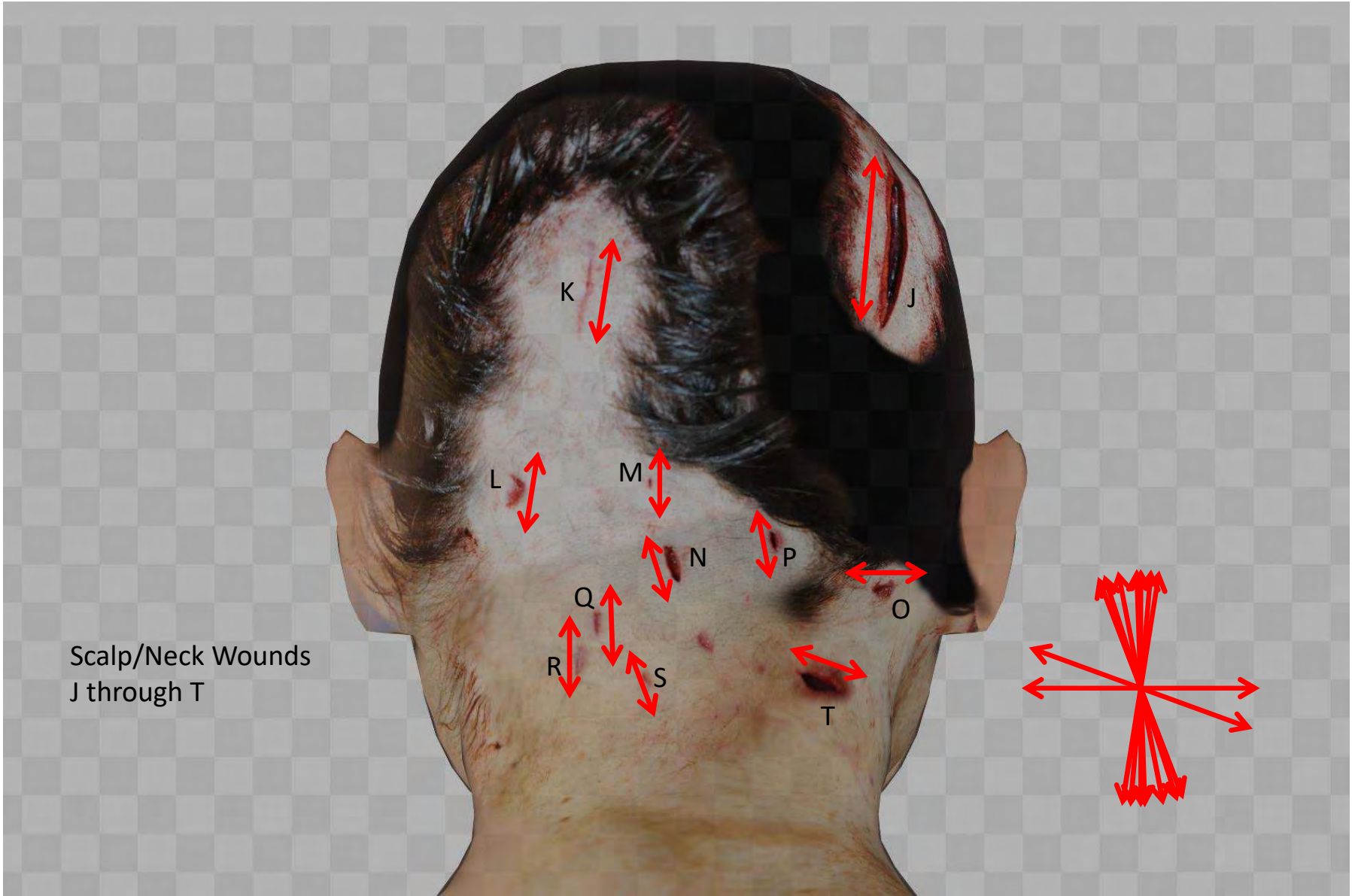
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Reconstructed Positions of Wounds





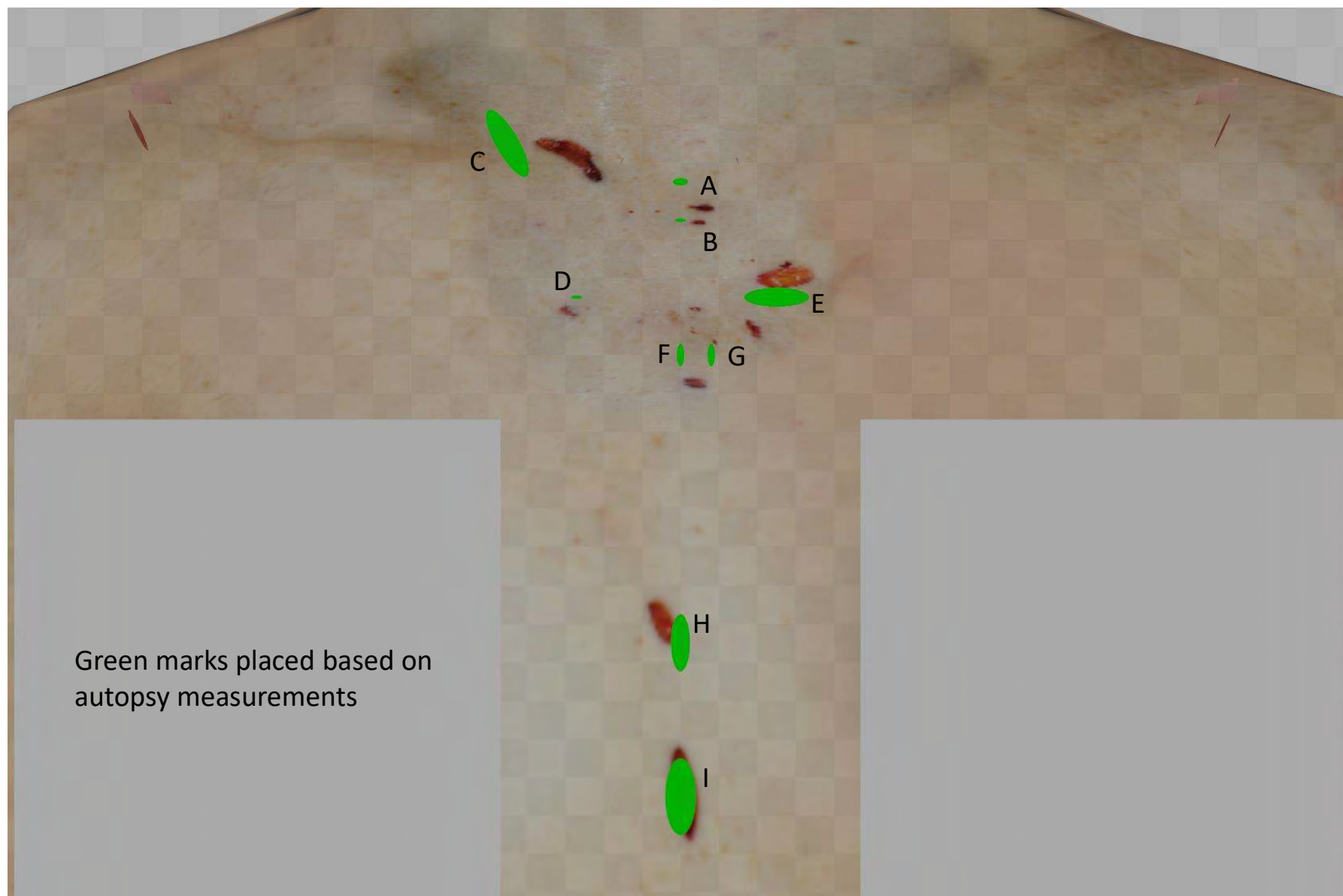


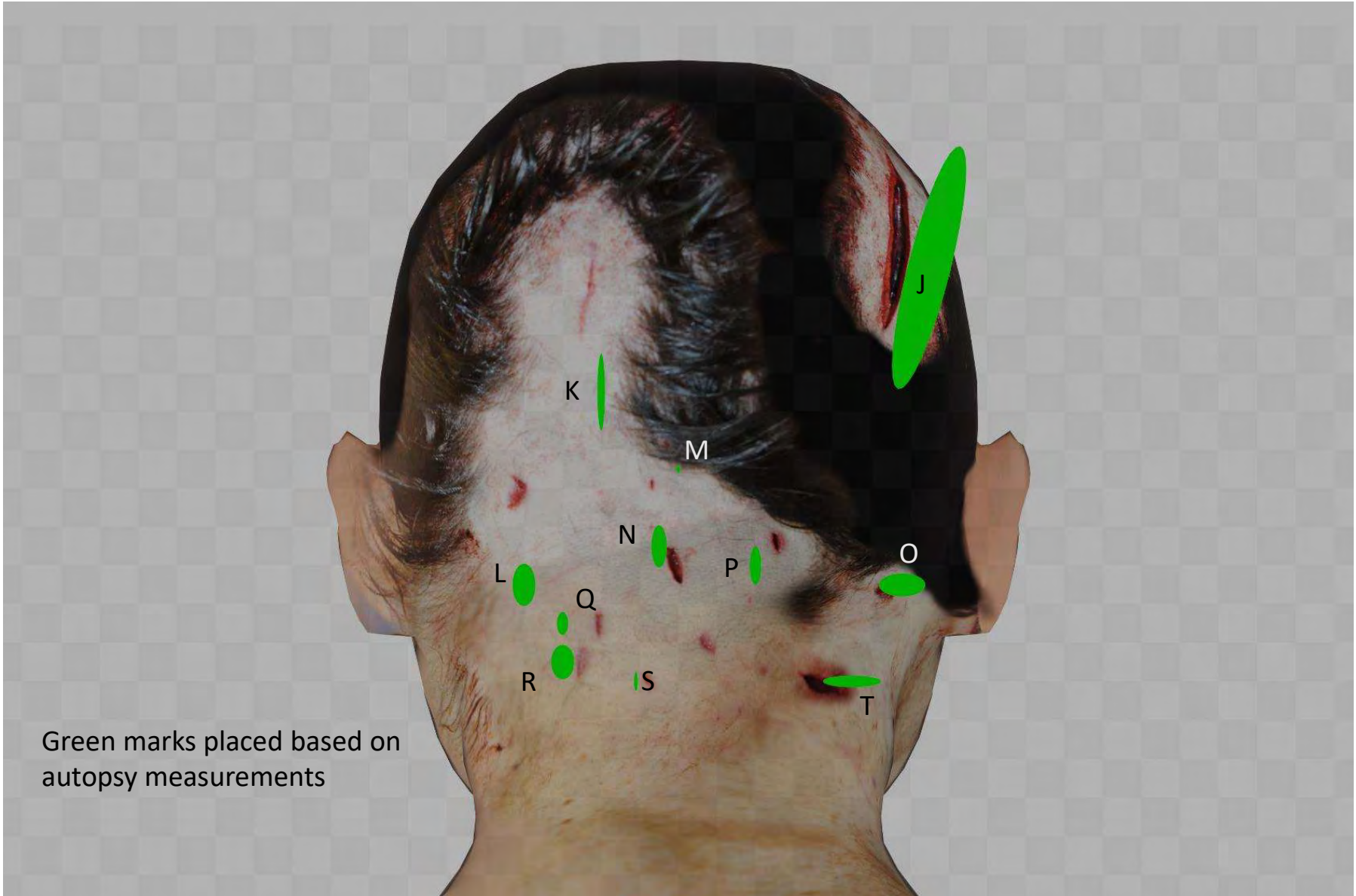


Scalp/Neck Wounds
J through T

Autopsy measurements

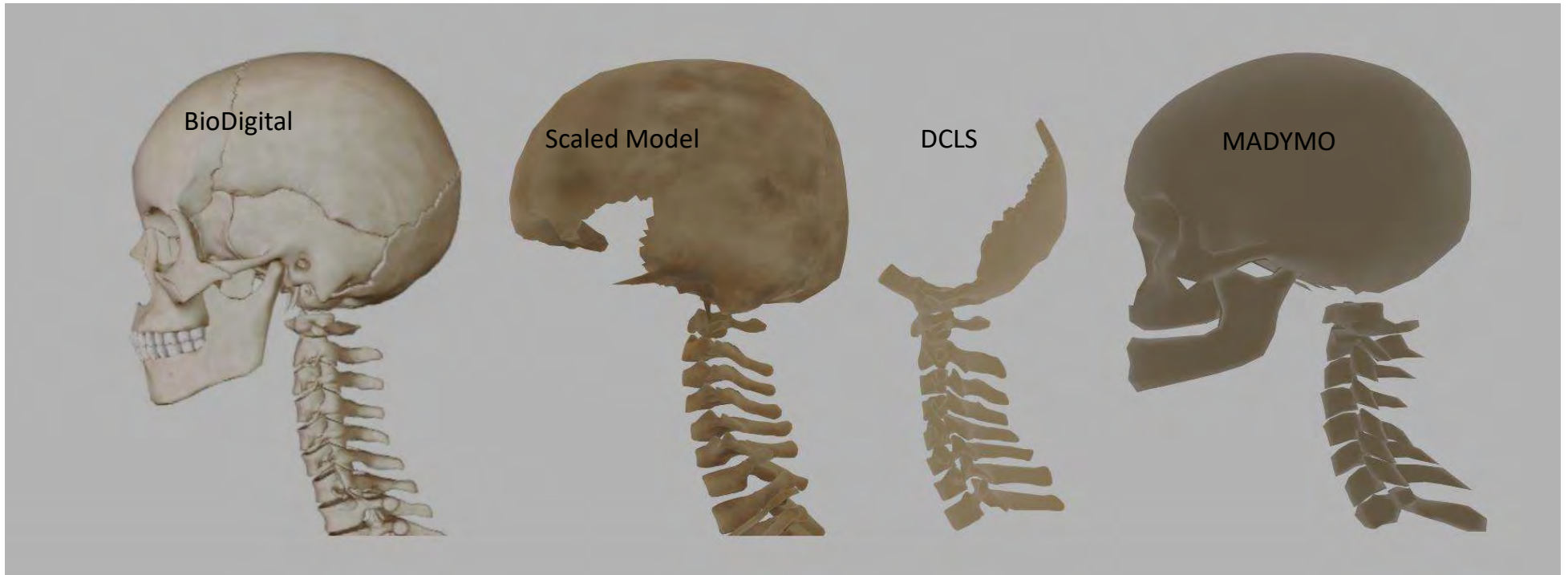
- The location of the wounds based on the autopsy measurements were overlaid on the scaled 3D model shown in green in the following slides
- There were small deviations between the measurements and the reconstructed positions from the autopsy photographs as shown in the following slides





Internal Anatomy

- A 3D female anatomy model was scaled to fit within the scaled 3D model of the body
- The anatomical model was dimensionally verified with a validated MADYMO model
- The anatomical model was also compared to the Female anatomical model maintained by BioDigital, and the anatomical model maintained by Database Center for Life Science (DCLS) at the University of Tokyo

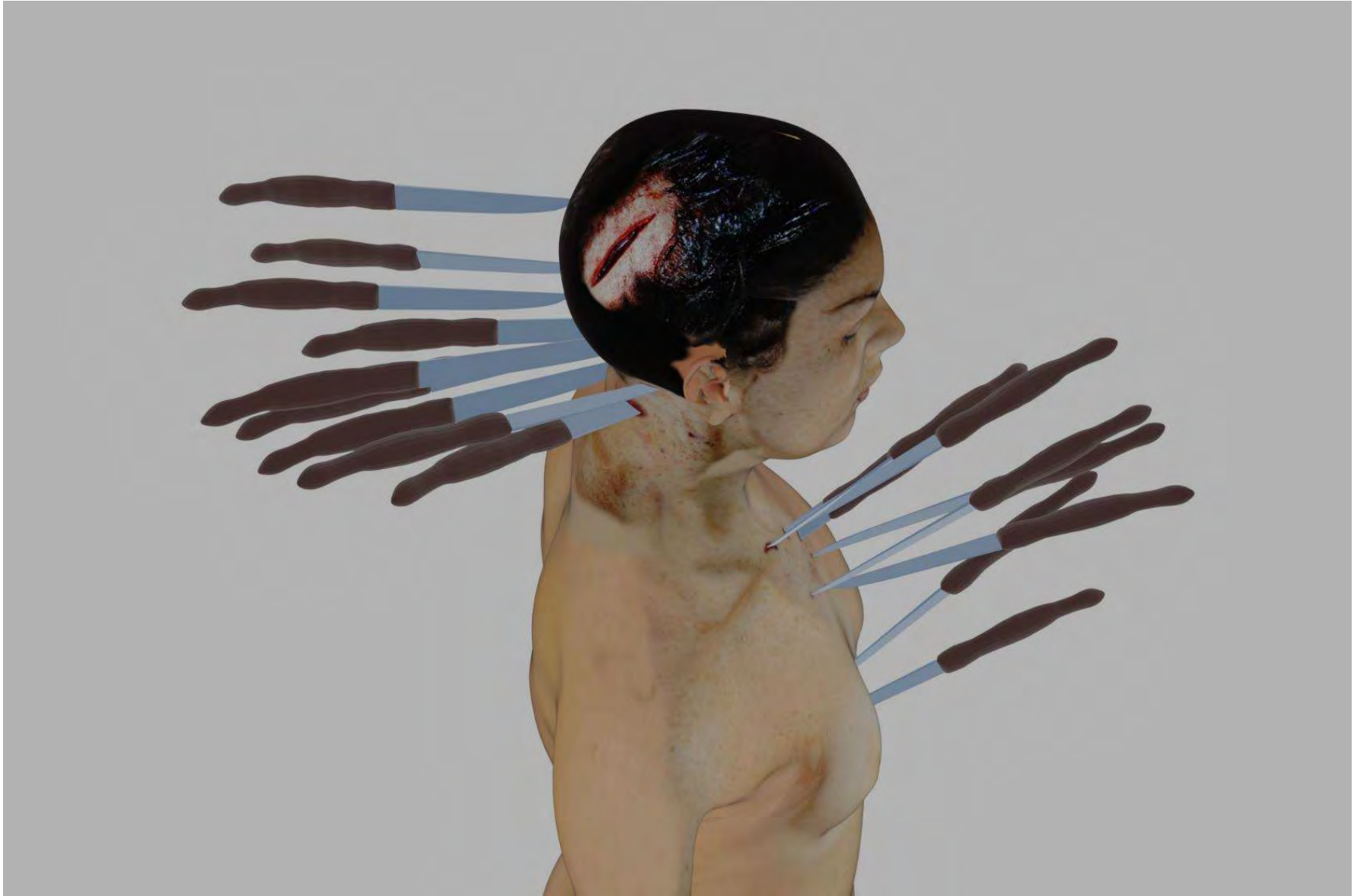


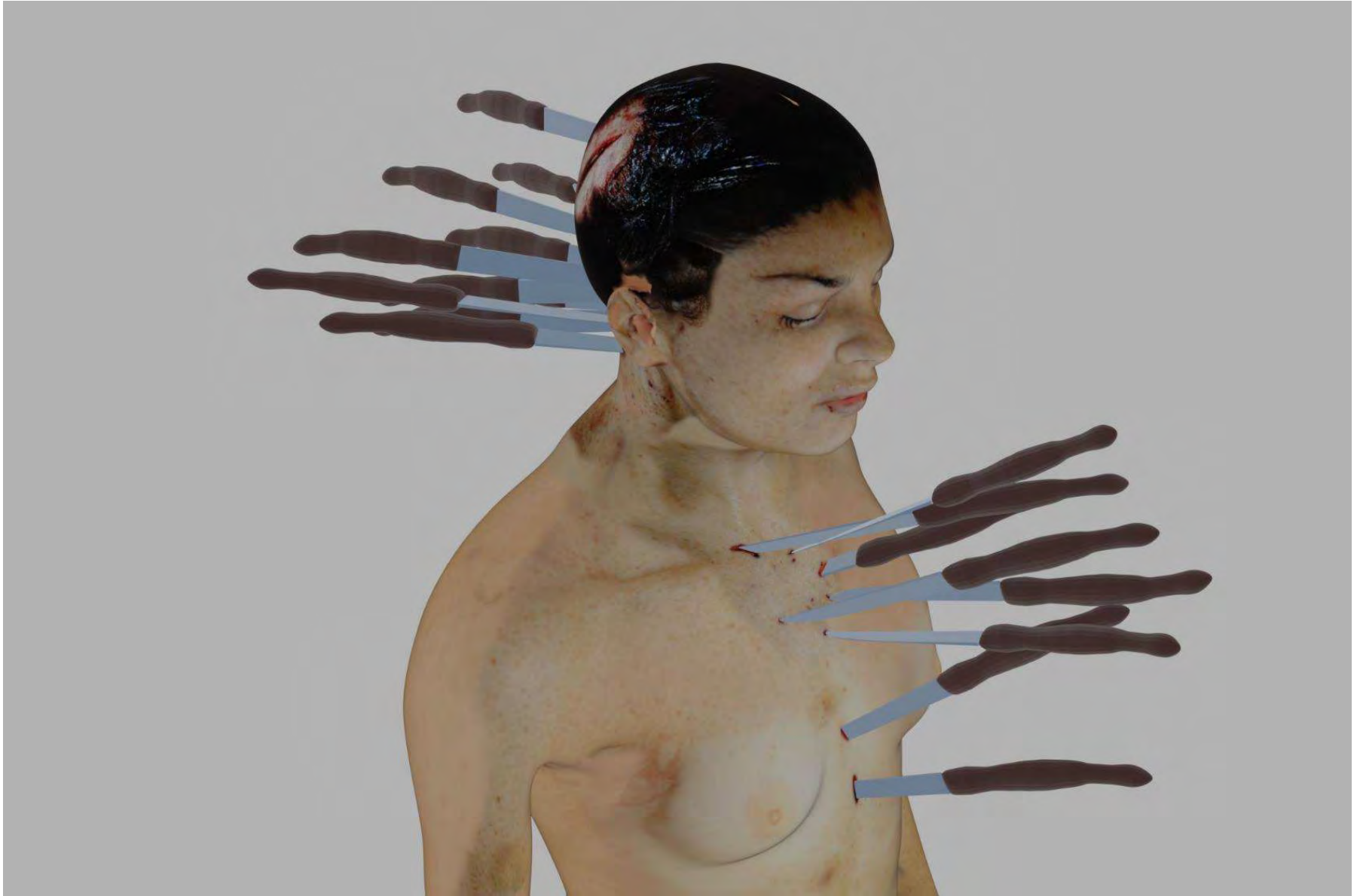
Knife Positioning

- A 3D model of the knife was created from the autopsy photographs
- A 3D knife was positioned in Wounds E, H, I, N and T to the depth indicated in the autopsy report
- The angle was estimated from the information provided in the autopsy report
- Cutaway views were created to illustrate the knife penetration

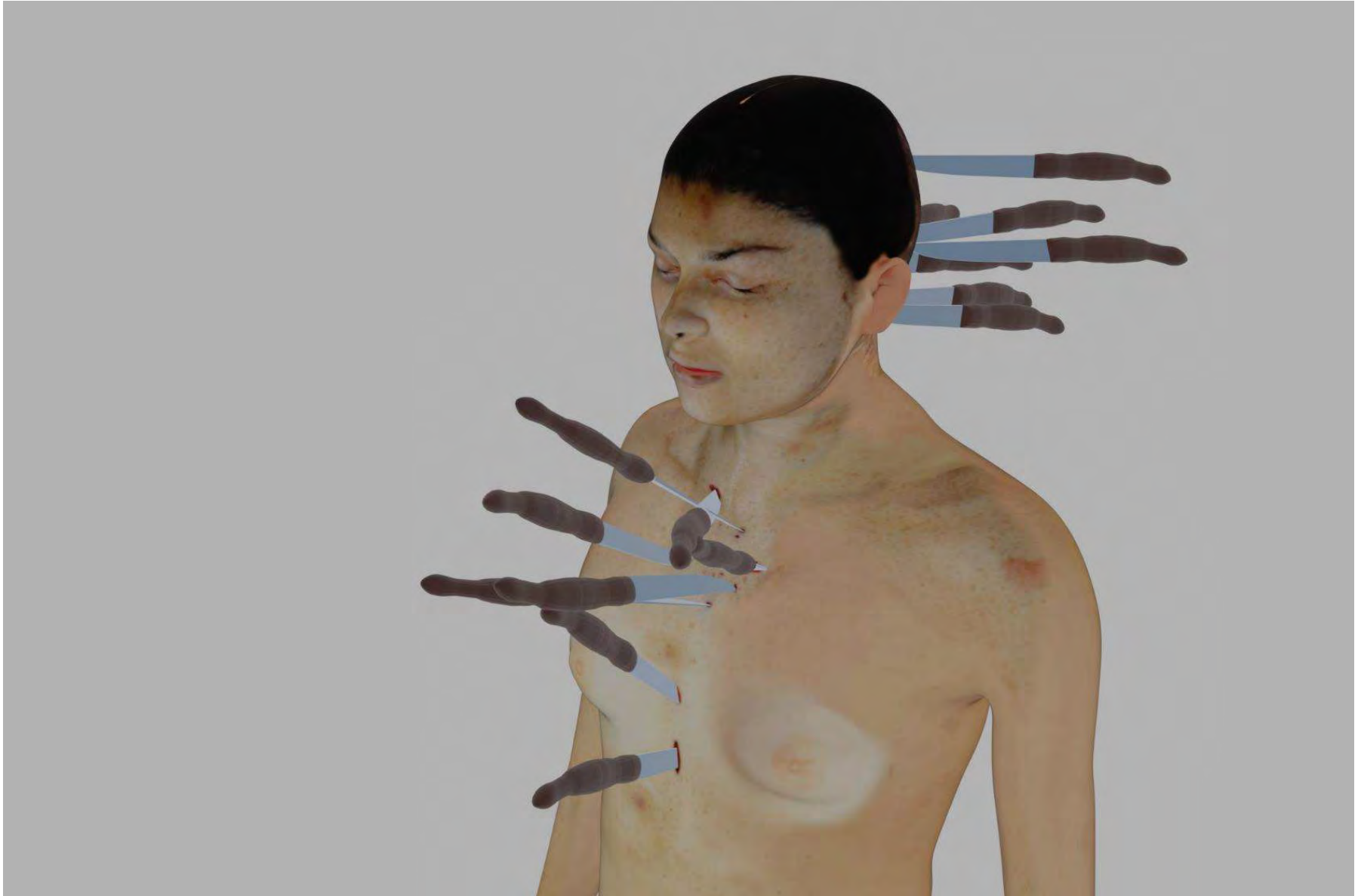


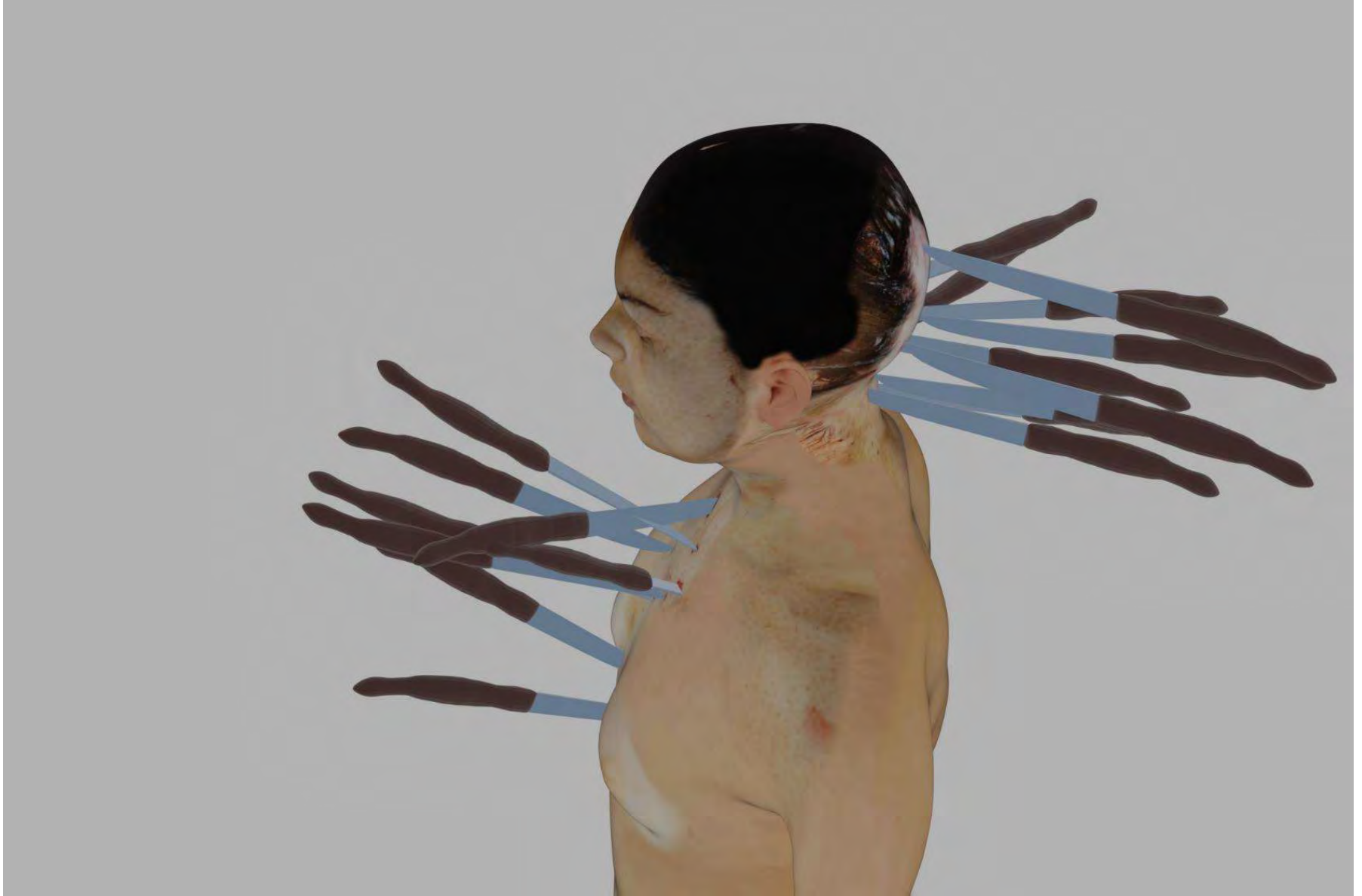
Computer Model of Knife











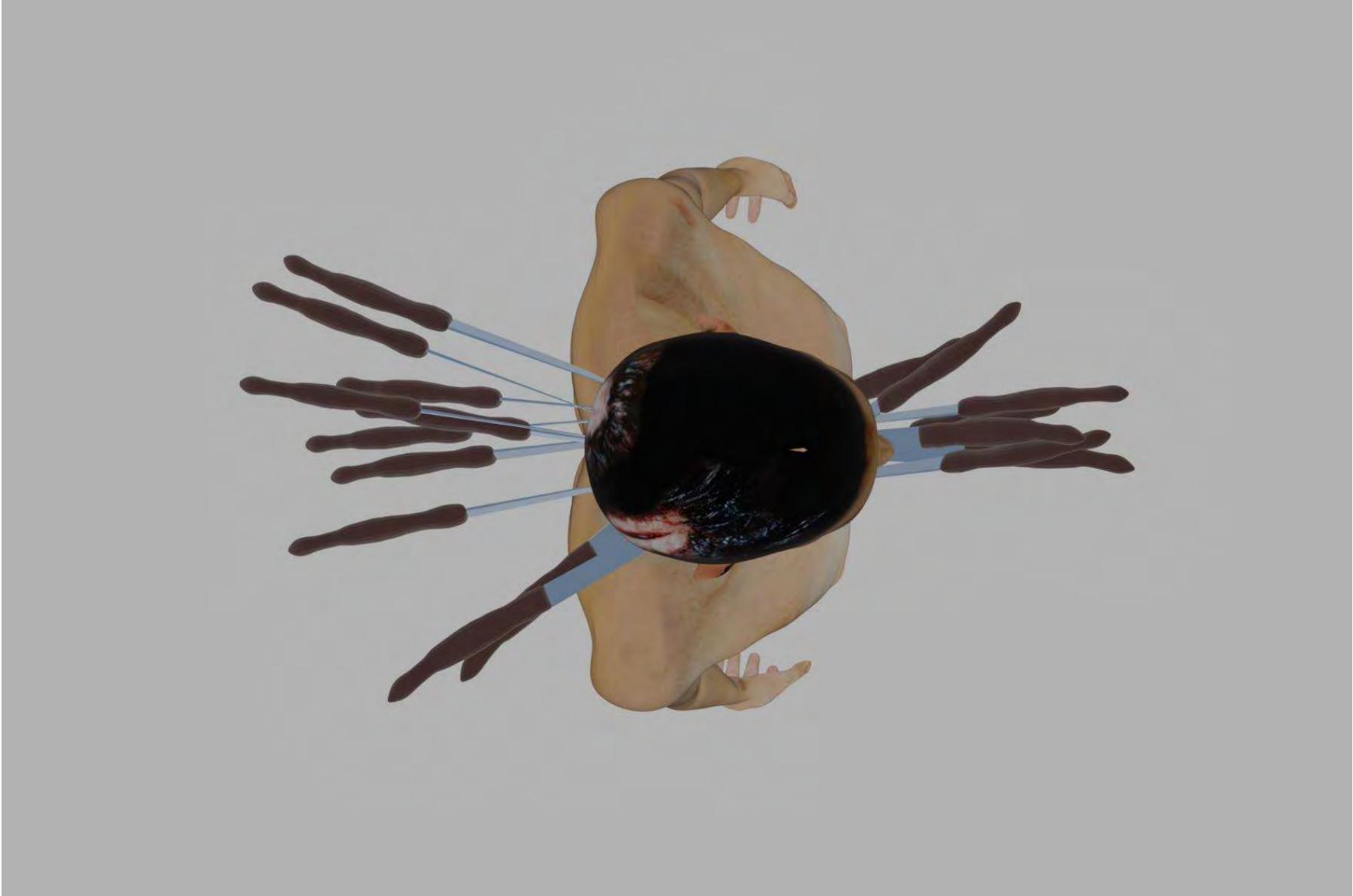


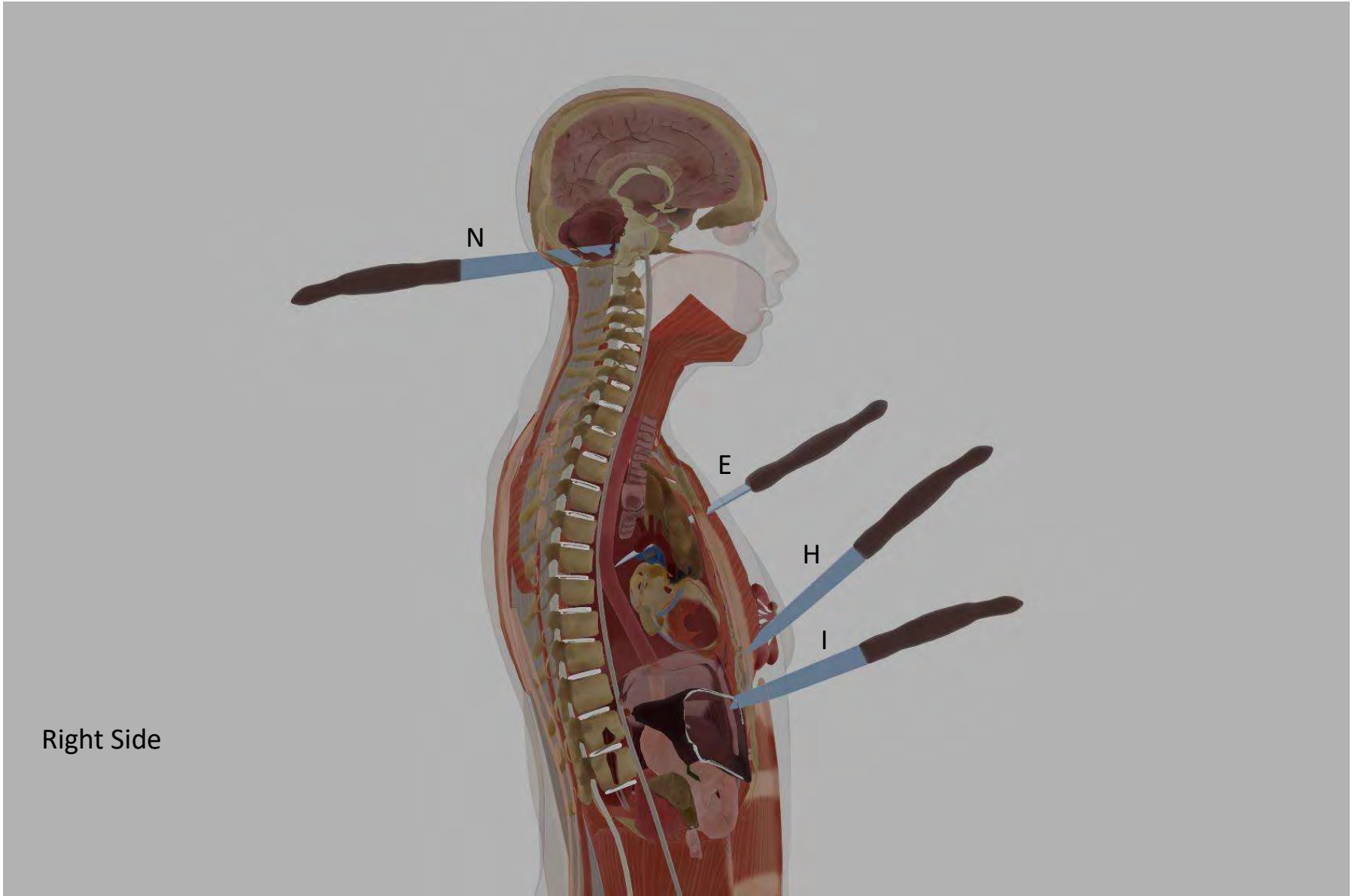


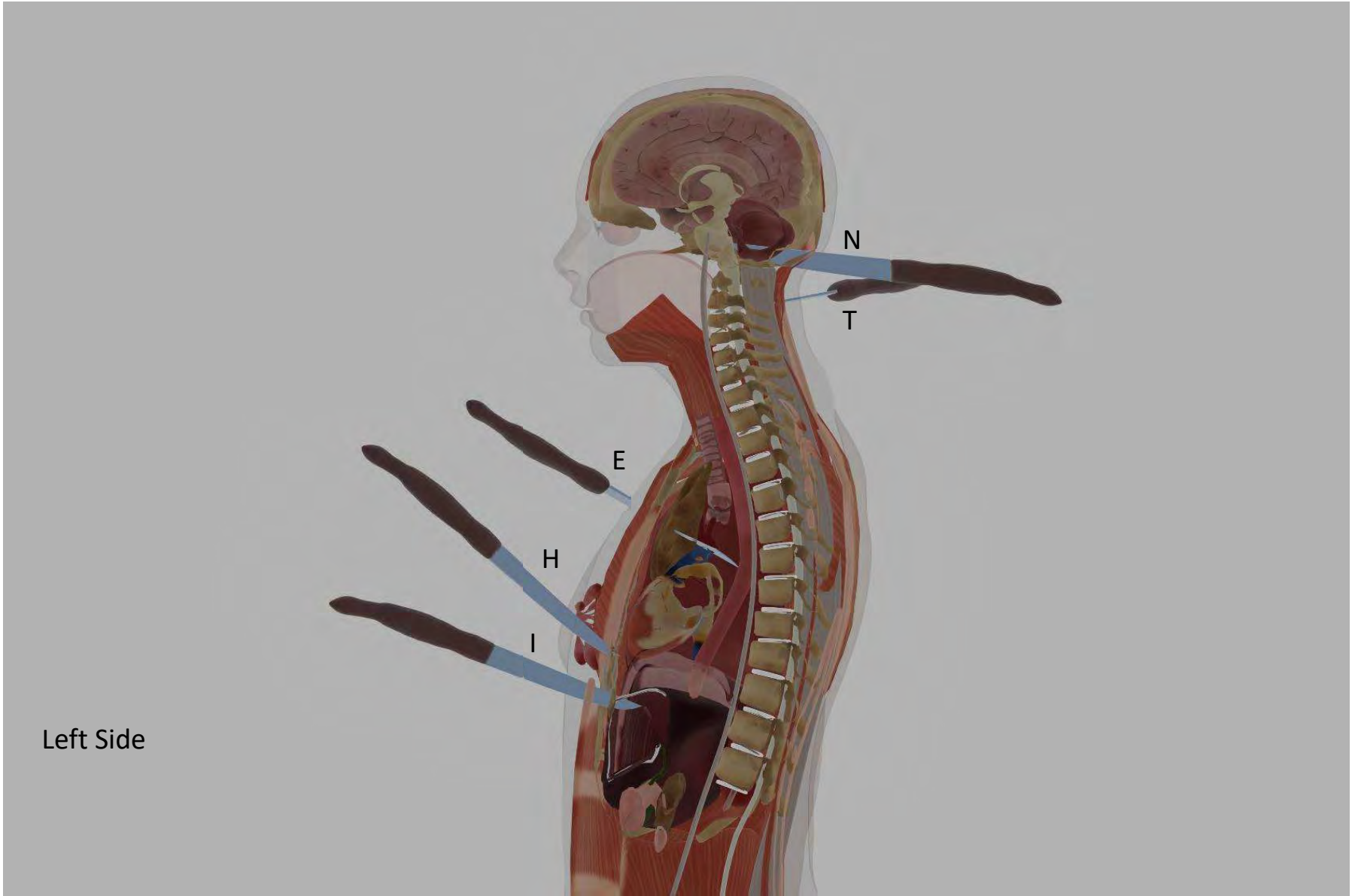


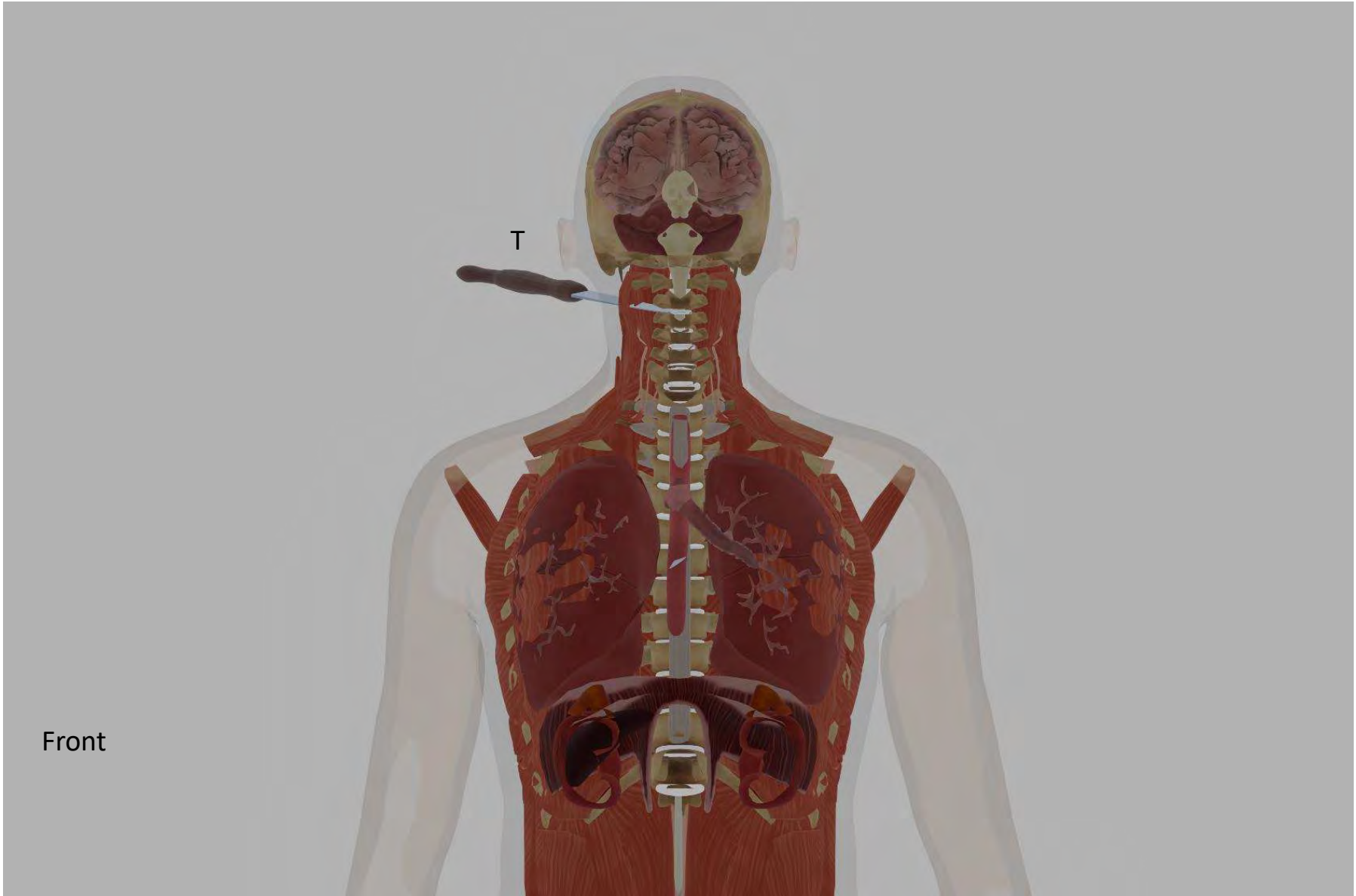




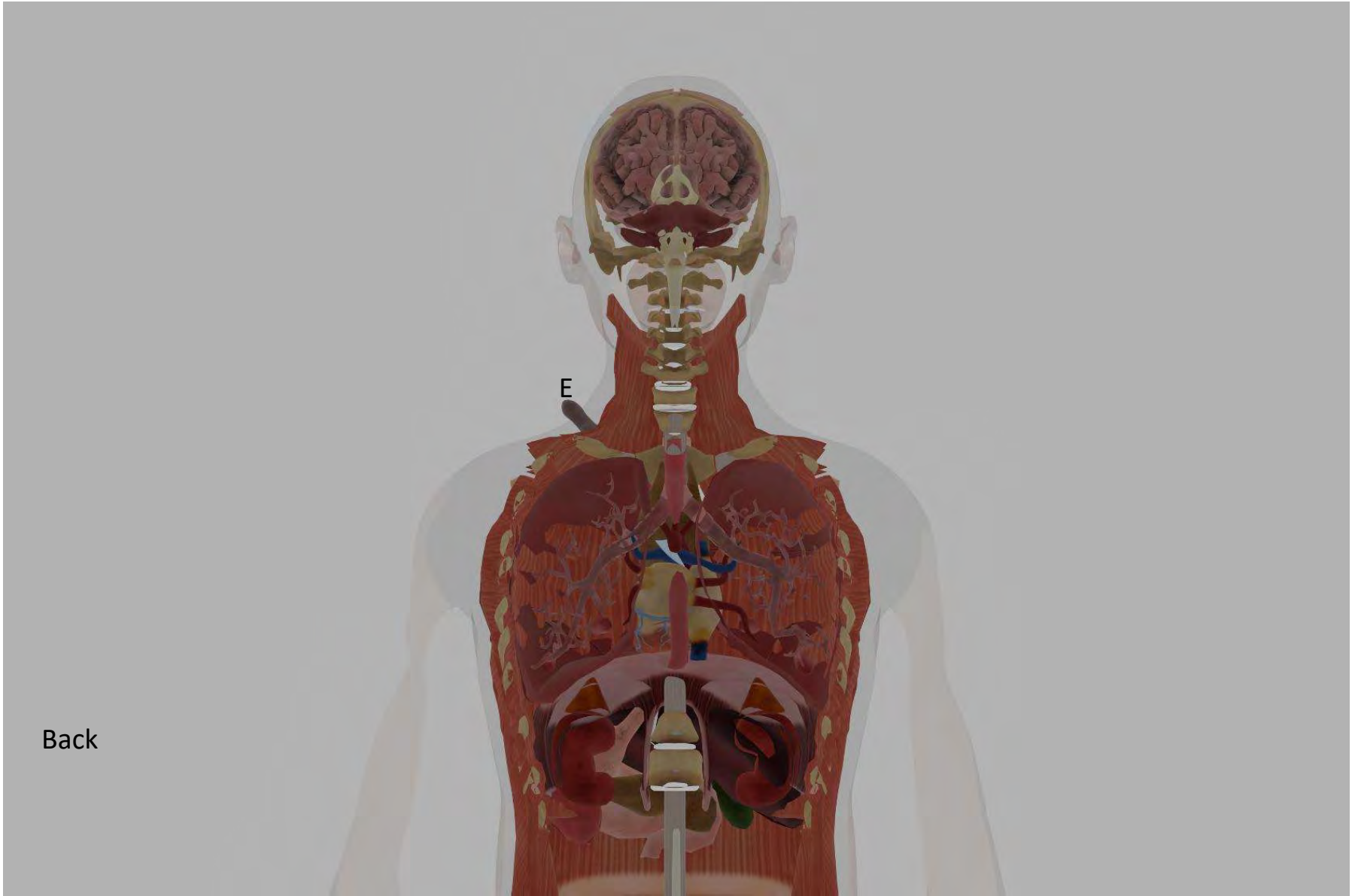








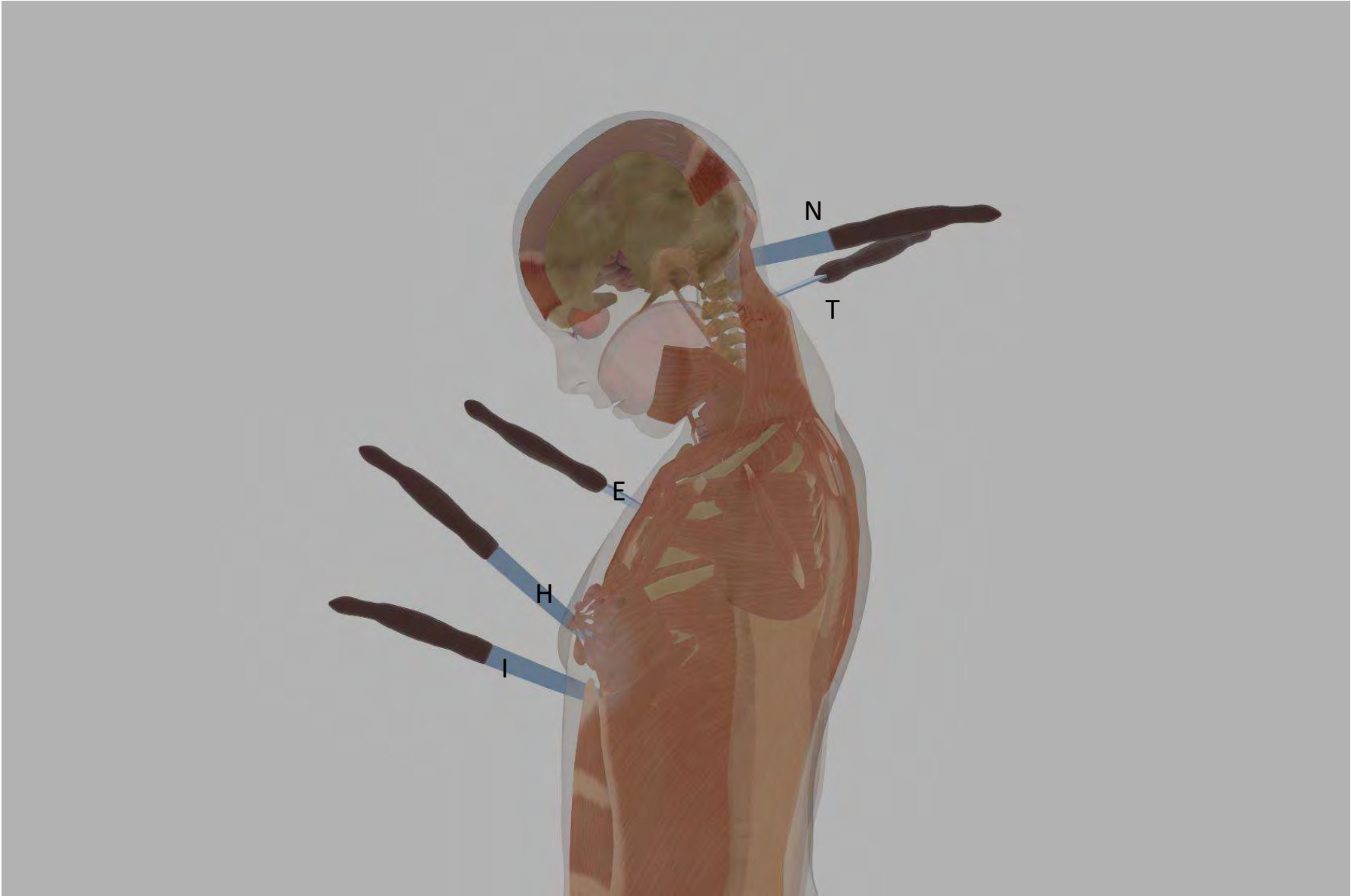
Front

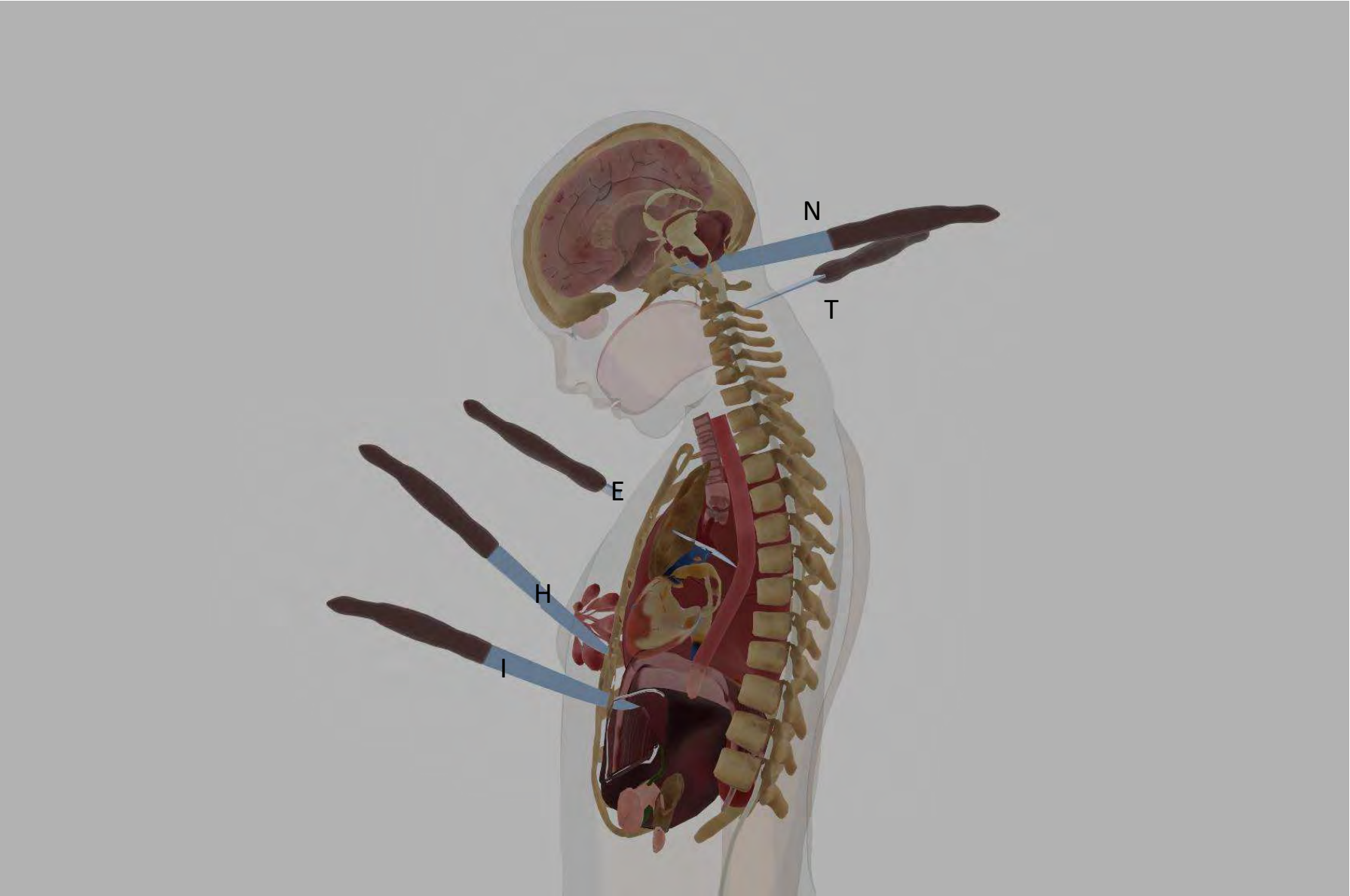


Back

Head bent down

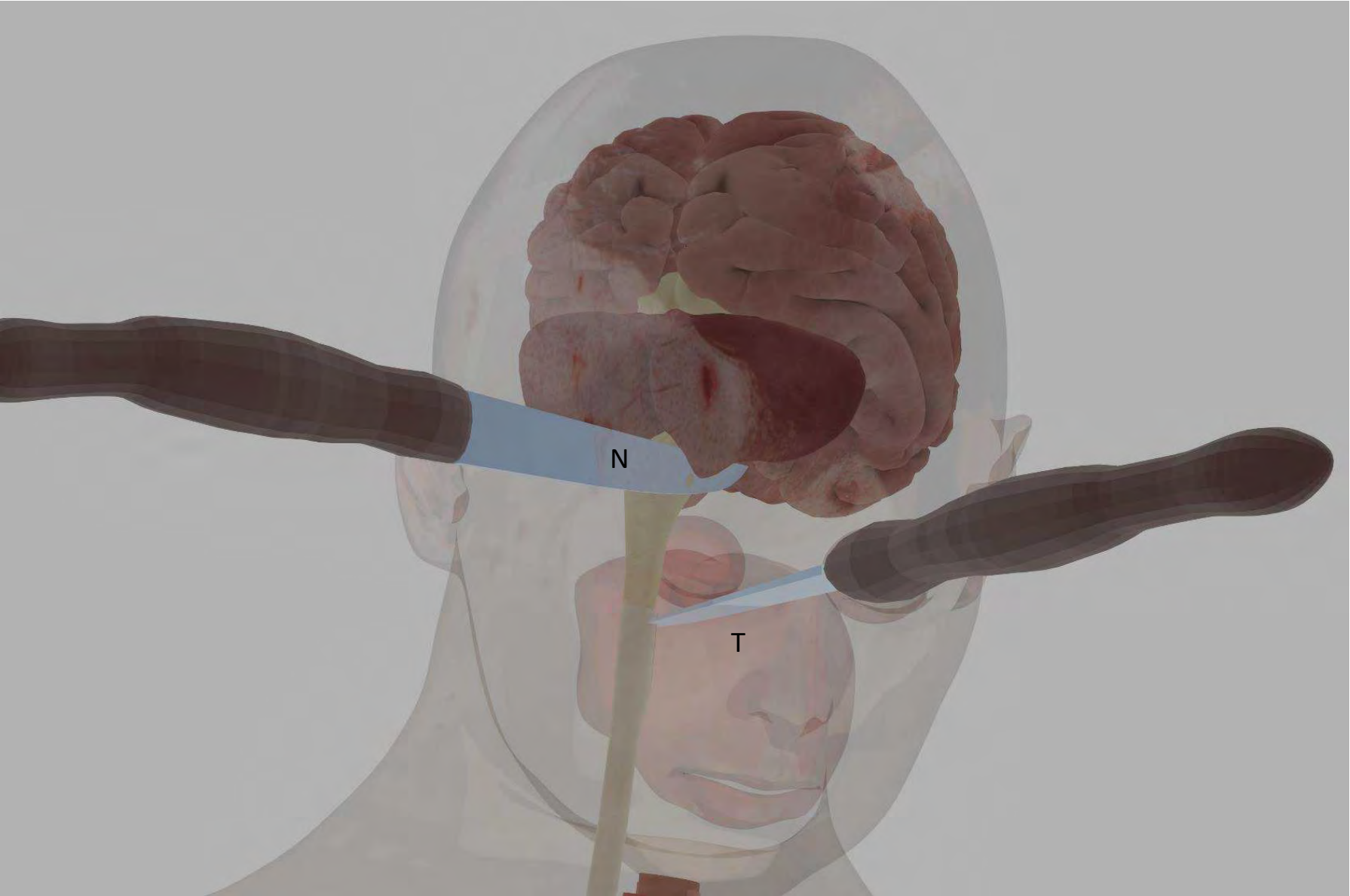
- The autopsy report indicated that wound N was 8 centimeters deep and extended through the occipital triangle, incising the vessels overlying the cerebellum
- In order for the knife to enter through the reconstructed wound location and pass below the occipital bone into the area of the cerebellum, the head had to have been bent down as shown in the following slides



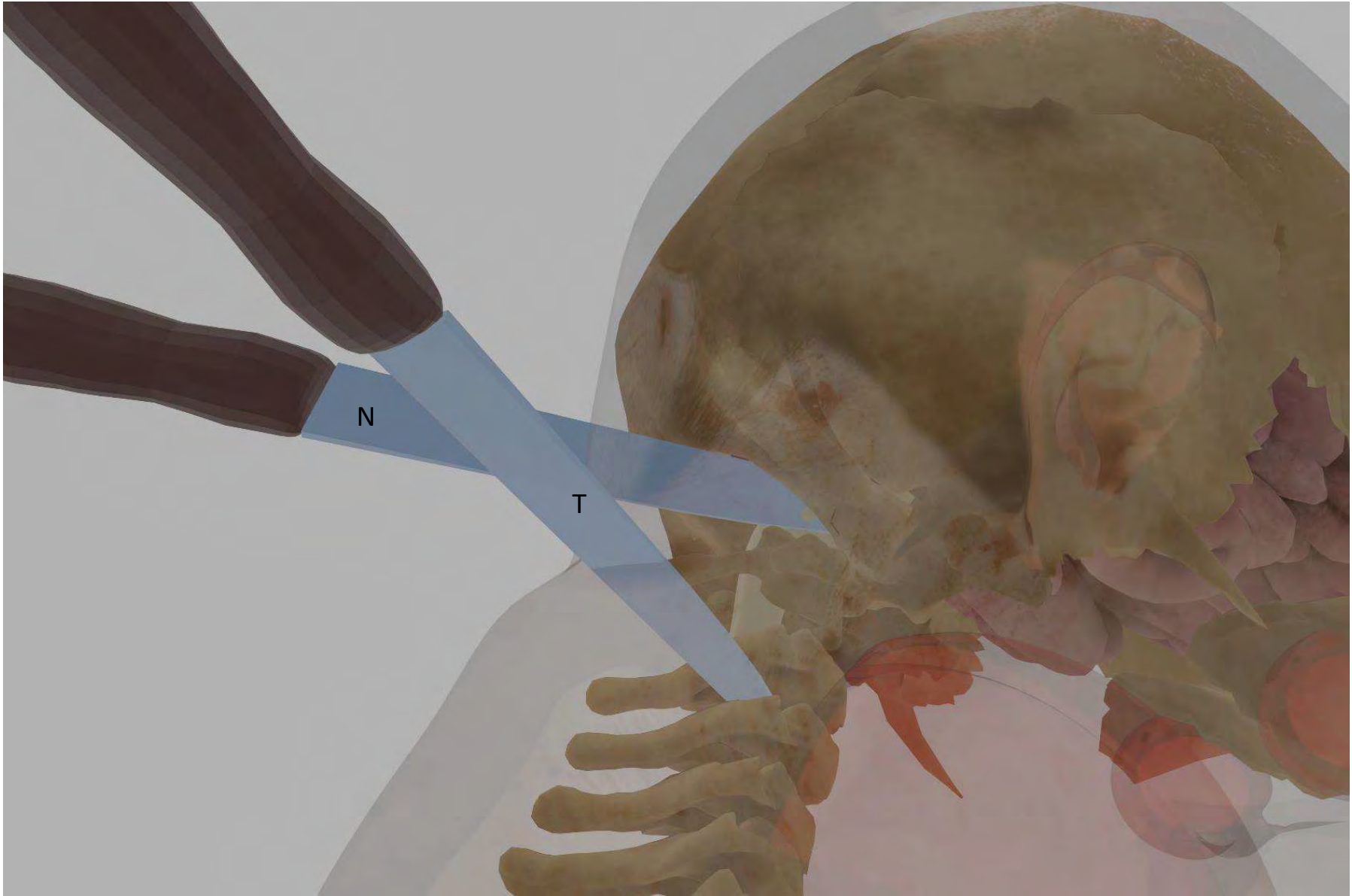


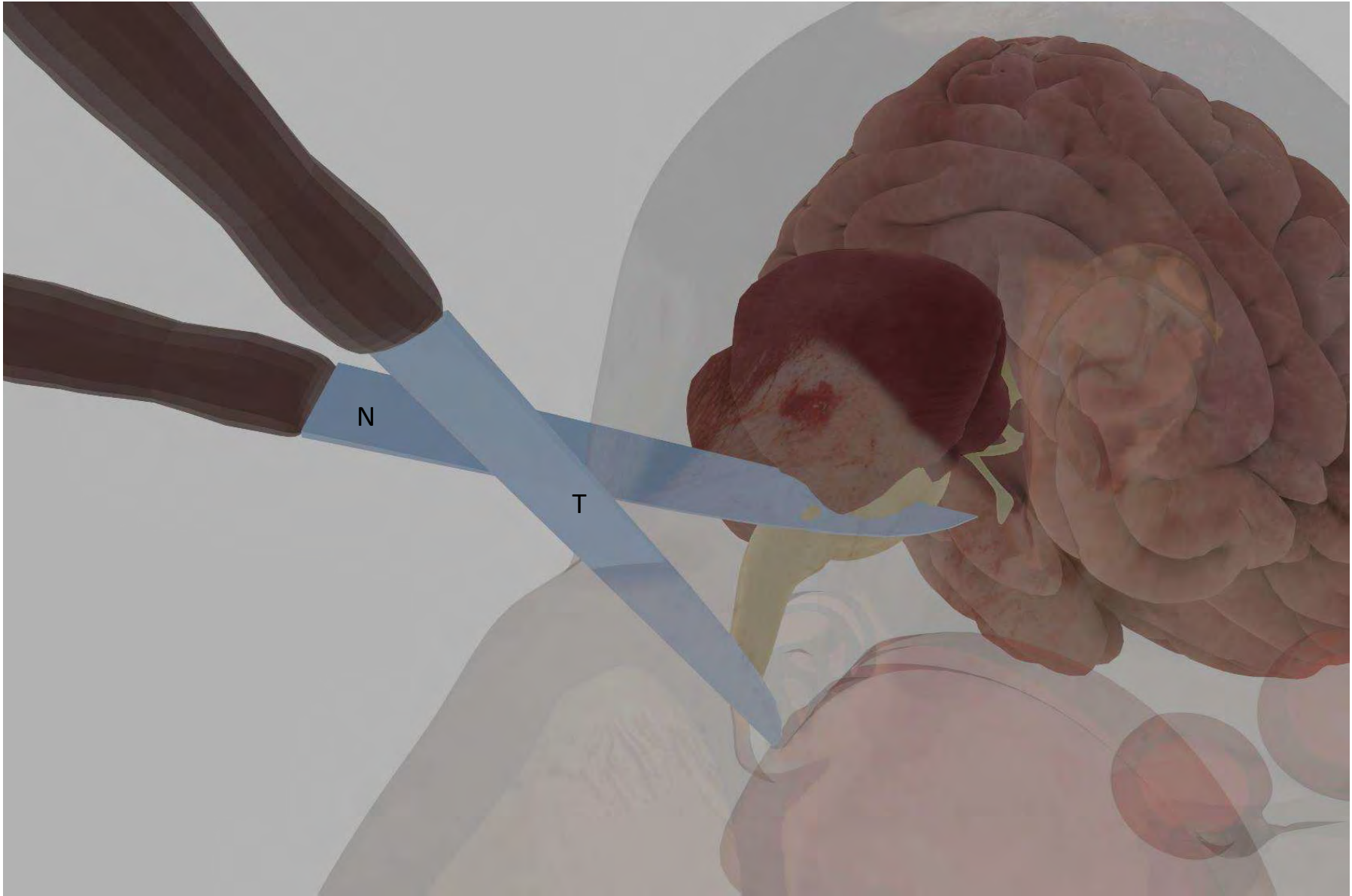


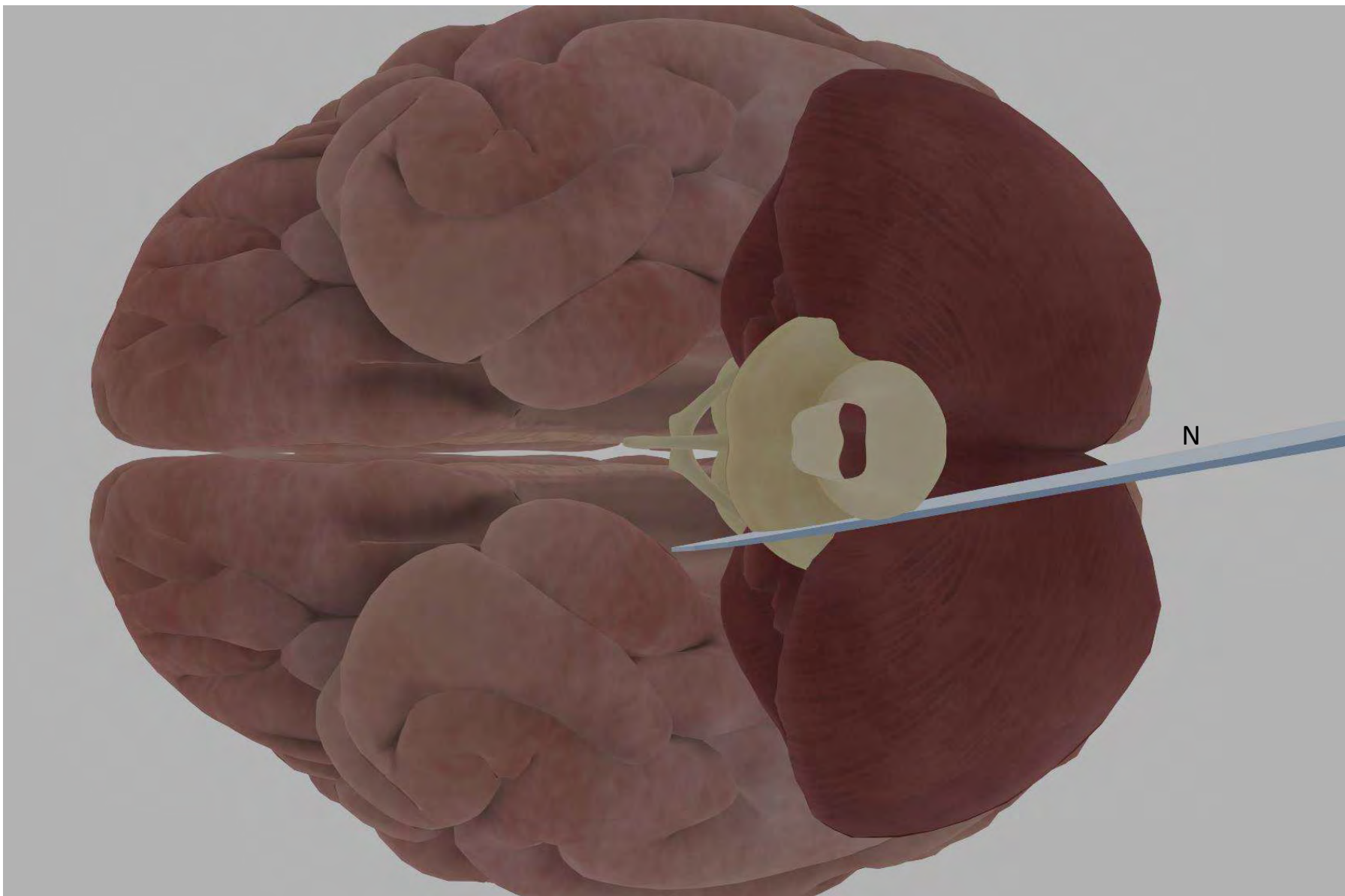












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Case ID: 191001241
Control No.: 21070559

Case ID: 191001241
Control No.: 21070559

11-0420



This anatomical dissection shows the posterior thoracic wall. The serratus posterior superior muscle is visible, along with its innervation by the intercostal nerves. The muscle is shown in a deep dissection, revealing its fibers and the associated neurovascular structures.

This anatomical dissection shows the posterior abdominal wall with the lumbar plexus and its branches. The plexus is formed by the ventral rami of the first four lumbar nerves. Key structures visible include the iliohypogastric and ilioinguinal nerves, the genitofemoral nerve, and the femoral nerve. The dissection also shows the relationship between the plexus and the underlying muscles and vessels of the posterior abdominal wall.

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Case ID: 191001241
Control No.: 21070559

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Reconstructed Positions of Bruises

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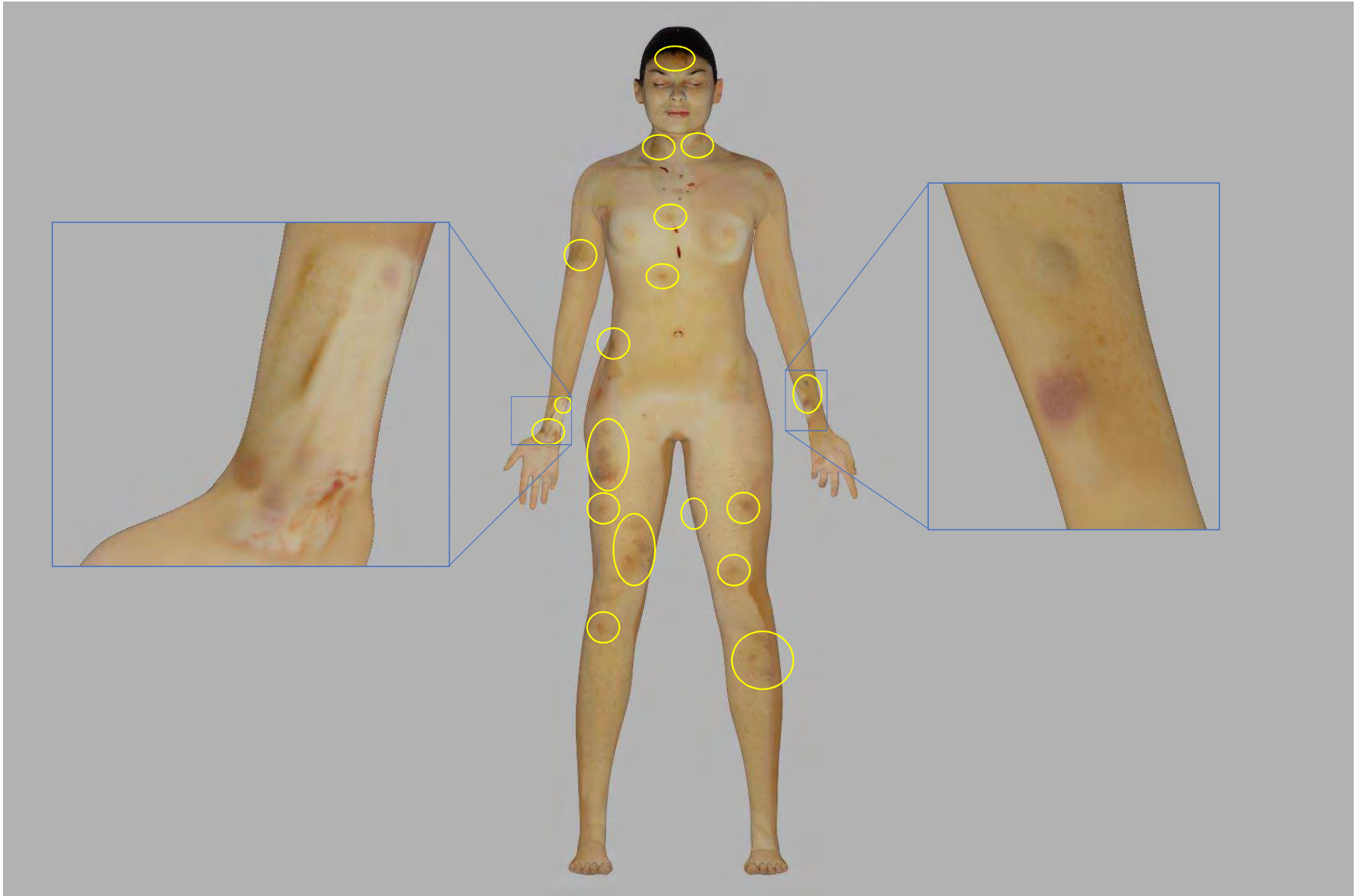
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Reconstruction of Wounds and Bruises

- The position of the wounds and bruises on Ms. Greenberg's body were placed on a 3-dimensional computer model of Ms. Greenberg using an analysis of the autopsy photographs coupled with the information provided in the autopsy report.

Biomechanical Opinions

- Eleven posterior head & neck wounds sustained by Ellen Greenberg are not biomechanically consistent with self-infliction. The subject posterior head & neck wounds are consistent with focalized stabbing by an assailant.
- Self infliction of the multiple posterior oriented head and neck angulated subject wounds would require multiple intentional dynamic motions of the proximal and distal radioulnar joints, which is not biomechanically probable by Ellen Greenberg.
- The location, angulations and various depths of Ellen Greenberg's eleven posterior head & neck wounds are not consistent with self-inflicted radioulnar motions and the necessary inertia to inflict the subject multiple head and neck wounds upon one's self.
- Multiple contusions of Ellen Greenberg's upper and lower extremities of various resolutions are biomechanically consistent with assailant oriented trauma and not self-inflicted injury.

Signs and symptoms associated with stab wounds to the head neck and body

- Unconsciousness
- Semiconsciousness
- Headache
- Cranial nerve defects
- Severe facial pain
- Dizziness
- Impaired coordination
- Impaired or loss of vision
- Tinnitus
- Confusion
- Seizure
- Impaired thinking
- Weakness
- Emotional discomfort
- Anxiety
- Fear
- Loss of blood pressure
- Loss of heart rate
- Blood loss
- Hypoxic brain damage
- Respiratory failure
- Hypotension
- Chest pain
- Cardiac dysrhythmias
- Loss of cerebrospinal fluid
- Loss of blood pressure due to loss of blood