G135 Postmortem Computed Tomography as a Valuable Tool for Diagnosing Trauma Prior to Medicolegal Autopsy

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After attending this presentation, attendees will understand the importance of computed tomography, which provide the detailed picture of trauma before a medicolegal autopsy in traumatic deaths.

This presentation will impact the forensic science community by increasing knowledge about the benefit of the combination of whole body postmortem computed tomography with a medicolegal autopsy. This procedure gives high quality and specificity in diagnosing fractures and other traumas in a deceased. The 3D reconstruction helps to assess the extent of damage and trauma mechanisms. It is also shown how a medico-legal autopsy on a deceased with many traumas is best performed with an ancillary computed tomography. The computed tomography without medico-legal autopsy cannot provide the sufficient diagnostic information.

A case of a traffic accident with two victims is presented. A car with four people was hit from the left side by a fast-moving car with two people inside. Driver and passenger sitting in the front of the car with four people were killed instantly. Whole-body computed tomography was performed before medico-legal autopsies were performed in the Department of Forensic Medicine, Aarhus. The driver suffered fatal traumas in the form of multiple fractures on the left side of thorax, laceration of diaphragm, fractures in cervical column, contusions in the left side of the brain, pelvic fractures, and fractures in the left ankle. The passenger on his right side suffered traumas in his thorax, in column and fractures of the pelvis. The two other passengers sitting in the back got minor traumas. Driver and passenger in the other car were practically without traumas.

With this case are shown photos of the two cars involved in this accident, 3D reconstructions made from the computed tomography scanning results and the subsequent clinical photos from the medico- legal autopsies. It is shown that with these documents the trauma mechanisms can be evaluated with high reliability. Some of the diagnosis of traumas in this case could have been lost without a postmortem computed tomography scanning. Also a computed tomography scanning before a medico-legal autopsy saves time and resources for the forensic examiner and the dissection of the deceased is not necessarily as comprehensive as it can be without an ancillary scanning.

This case will be presented as an example to highlight how with a whole-body postmortem computed tomography, it is possible to achieve comprehensive information about traumas and the trauma mechanisms. It improves the quality of a medico-legal autopsy and is recommended to be used in cases of fatal traumas.

Postmortem, Computed Tomography, Trauma

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