



Pathology/Biology Section - 2013

G55 Autopsy Approach in Forensic Investigation of Child Abuse

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After attending this presentation, attendees will hear standardized recommendations followed by investigative procedures and data collection instruments in child abuse fatality autopsies at the North Branch of the National Institute of Legal Medicine and Forensic Sciences in Portugal, as well as contributing to a new approach in these types of autopsy by standardizing methods and procedures.

This presentation will impact the forensic science community by showing the importance of standardization of investigative procedures in forensic investigation of fatal child abuse situations. This type of investigation must be as complete and thorough as possible, and ideally, observe standardized procedures. It must also be executed by experienced professionals in the area of child abuse who are able to adjust and adapt to standard techniques for every specific situation.

Although a high-detail skeletal survey reported by a radiologist is mandatory in order to identify and record skeletal injuries suggestive of or consistent with abusive situations, imaging techniques may sometimes over or under diagnose some of these injuries. Taking this fact into consideration, in fatal child abuse situations, disarticulation and removal of the entire costal grid, followed by a maceration process for a non-traumatic soft tissue removal may be very useful for an adequate documentation of any skeletal fractures (ribs and sternum) with minimal artifact formation.

Methods: Internal examination begins with the incision of the scalp, either through a bi-mastoid incision, or a posterior approach. A “stem-to-stem” double Y incision at both the anterior and posterior aspects of the trunk is a fine approach to initiate internal examination of neck, thoracic, and abdominal structures. Incisions performed in cases of fatal child abuse should allow for optimal visualization of the underlying structures and eventual lesions, without causing, however, a great negative visual impact. All major cavities, cranium, thorax, and abdomen, should be examined and dissected “layer by layer” and whenever is necessary, special autopsy procedures should be applied, such as eye and middle ear removal. Removal of the entire thoracic cage includes the spine, from C5 to L2, clavicles, the sternum, and all ribs, keeping all the bony structures completely articulated between them. Soft tissue elimination and disarticulation of the bony elements is achieved through a maceration process with enzymatic detergent. Careful reconstruction of thorax morphology with prosthetic devices followed by proper suture of all incisions allows the performance of this technique without causing, however, a negative visual impact on the body.

Results and Conclusions: The implemented procedure allows a neat observation in order to rule out recent and non-recent fractures with minimal artifact formation due to instrumentation otherwise caused by standard autopsy techniques and without causing a negative visual impact on the body.

Child Abuse, Skeletal Trauma, Autopsy