



## Pathology Biology Section - 2012

### G113 Skeletal Trauma Observed in Exhumed Skeletons Compared With Trauma Recorded in the Corresponding Forensic Autopsy Reports

*Maria D. Morcillo, MD\**, National Institute of Legal Medicine and Forensic Sciences, Cra. 7A No. 12-61. Piso 3., Bogota, COLOMBIA; *Elia Lasso, MD*, National Institute of Legal Medicine and Forensic Sciences, Cra. 24C #61-30, Manizales, COLOMBIA; and *Silvia Lopez, MD*, National Institute of Legal Medicine and Forensic Sciences, Cra. 7A No. 12-61, Bogota, COLOMBIA

After attending this presentation, attendees will understand important recommendations for medical examiners when performing autopsies in violent death cases where bone structures are compromised. This information is important for the medical examiner and forensic anthropologist alike for the determination of the mechanisms and causal agents of injuries during autopsies and analysis of skeletonized bodies or skeletal remains.

This presentation will impact the forensic science community by demonstrating particularly to anthropologists and medical examiners the importance and the advantages of interdisciplinary, simultaneous and integrated casework in cases where hard tissues have been affected.

The purpose of this paper is to determine the consistency between the analysis of trauma obtained from exhumed skeletons and the findings described from the corresponding fresh body autopsy reports. One hundred and thirty seven skeletons from the modern skeletal collection curated by the National Institute of Legal Medicine and Forensic Sciences (INMLCF) in Colombia were analyzed. The presence of traumatic injuries to bone was observed on 42 individuals. Of this sub-sample, all individuals died between 2005 and 2006 and there were thirty-three males and nine females, with an age range of 18-84 years old. The following features were documented: (1) compromised bone structure and location; (2) type of traumatic injury; (3) fracture characteristics; (4) possible lesion mechanism and causal agent; and, (5) number of gunshot wounds when applicable, including number of entrance and exit wounds. The review of the autopsy reports for these individuals included a search for description of these same five features.

The results of the analyses and the comparison of the information will be presented in terms of consistency between the findings described on autopsy reports and the findings of the examination of skeletonized remains, particularly in terms of the affected bone structure, type of fracture and its characteristics, mechanisms of the injury and causal agent, number of gunshot impacts, and number of entrance and exit wounds.

Regarding the exhumed cases examined, in 30 (71%) cases gunshot trauma was observed, sharp trauma in one (2%) case, blunt trauma in six (14%) cases and in five (11%) cases mechanism of trauma could not be determined with sufficient degree of certainty. The information obtained from the autopsy reports in these same cases stated that in 27 (64%) cases death was due to gunshot wounds, in three (7%) cases due to stab wounds, in 10 (24%) cases due to blunt force trauma and in two (5%) cases the cause of death was not determined and trauma to the skeleton was not described.

After comparing both groups of results, in 32 (76%) cases the information regarding mechanism of trauma was consistent with the information registered in the autopsy reports. However, in five (12%) cases, the information was not consistent and in five (12%) cases trauma was observed but the mechanism was not determined. Considering the number of impacts in gunshot cases and sharp trauma (30 in total), in 19 (63%) cases the number of impacts observed on the dry bones was not consistent with that recorded in autopsy reports. In eight (27%) cases the information of number of impacts is consistent with the information registered by the medical examiner in the autopsy report.

The accurate determination of traumatic bone injuries and the causal mechanism during the autopsy of fresh bodies or bodies with a large percentage of soft tissue remaining requires extensive dissection and good medical knowledge. On the other hand, when examining skeletonized remains, medical examiners and anthropologists must consider the physiopathology of aspects of trauma and anatomic relationships in order to make adequate interpretations of trauma, the number of impacts, and cause of death. The simultaneous and integrated participation of the anthropologist in the morgue, together with the medical examiner, is strongly recommended for cases where bony structures have been compromised.

**Bone Trauma, Medico-Legal Autopsy, Forensic Anthropology**