



Physical Anthropology Section – 2009

H109 Skeletal Fracture Patterns in Documented Cases of Torture, Assault, Abuse, and Accidents

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The goal of this presentation is to provide a comprehensive analysis of skeletal fracture patterns and associated soft tissue lesions resulting from inflicted and accidental injuries. The patterns of injuries based on a variety of mechanisms are described to aid in a differential diagnosis of the cause and manner of death when confronted only with skeletal or decomposing remains.

This presentation will impact the community by reviewing more than 200 cases of blunt force trauma from a variety of mechanisms including torture, assault, and accidents to demonstrate intrinsic and extrinsic patterns that lead to a differential diagnosis of cause and manner of death. The outcome is a detailed analysis of the specific distribution and types of injuries resulting from a variety of blunt force mechanisms. This information is particularly critical in cases of enforced disappearances, extra-judicial execution, and torture as investigations into such cases often lead to multiple autopsies and varying opinions. The context of these types of investigations is further discussed.

Medico-legal death investigations into enforced disappearances and extra-judicial executions provide critical physical evidence that corroborates witness and survivor testimony about the crimes committed. One of the most ubiquitous forms of human rights violations globally is torture and is often associated with extra-judicial executions. In these types of investigations it is common that multiple autopsies may be performed at the request of various stakeholders such as law enforcement, prosecutors, and families. Multiple autopsies often lead to conflicting opinions about the cause and manner of death, further complicating the investigation.

A 2005 investigation into a possible extra-judicial execution from Lagos, Nigeria resulted in three autopsies and the disappearance of critical skeletal evidence. It is an example of multiple opinions on the cause and manner of death ranging from 'suicide by jumping from a window' to a 'gunshot injury to the head with staging of the body to appear as though the victim fell from a window.' Police torture and deaths in custody in Nigeria have been documented by Human Rights Watch, Amnesty International, and even the government of the Federal Republic of Nigeria. The types of torture or cruel, inhumane, and degrading treatment of the victims most often includes repeated and severe beatings with rods, sticks, and other implements and may be associated with fatal gunshot injuries. The critical need for pathologists and anthropologists to be able to differentiate mechanisms of death from skeletal fracture patterns is exemplified by this case and discussed in greater detail.

The purpose of this paper is to investigate specific fracture patterns that resulted from various forms of blunt force trauma to identify patterns of injuries that will aid in the diagnosis of abuse, assault, or torture and help differentiate inflicted from accidental trauma as in the Nigerian example. Data for 200 cases are presented. The ages at death range from infants to 89 years old and include data from several sources. Skeletal fracture data comes from autopsy records dating 1987-2008 from the Lancaster County Coroner's Office in Lincoln, Nebraska; the Cook County Medical Examiner's Office in Chicago, Illinois; and the Knox County Medical Examiner's Office in Knoxville, Tennessee. Documented cases of torture come from medico-legal investigations in Lagos, Nigeria and published case studies from a variety of scientific sources. In all of these cases, the mechanism of death was attributed to blunt force trauma (BFT) or gunfire injuries associated with BFT at the time of death.

The number and distribution of soft tissue injuries and skeletal fractures are documented for each mechanism of injury; documented torture (n=52), assault (n=8), child abuse (n=5), falls (n=12), crushing injuries (n=5), motor vehicle accidents (MVA, n=114), blasting injury (n=2), and small aircraft accidents (n=6). Further, the specific aspects and regions of bone fractures are summarized for each category. Distinct patterns of injuries for each of the listed mechanisms and best practice recommendations for differential diagnoses are provided. Further, the association between soft tissue lesions and skeletal fractures among various mechanisms of injury are discussed.

Trauma, Skeletal Fractures, Torture