



Physical Anthropology Section – 2007

H24 Bones in Aid of Forensic Pathology: Trauma Isn't Only Skin Deep

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After attending this presentation, attendees will understand how the forensic anthropologist could assist the pathologist in the autopsy room in some cases in which soft tissues are not sufficient to understand the mechanism of the wound.

This presentation will impact the forensic community and/or humanity by demonstrating how the recent demands of forensic science have paved the way for forensic anthropology to assume multiple functions in understanding cause and manner of death.

Introduction: Traditionally the role of forensic anthropology as a legal discipline has focused strictly on the study of skeletal remains. However, recent demands of forensic science have paved the way for forensic anthropology to assume multiple functions in understanding cause and manner of death.

The role of the forensic pathologist is to examine all tissues at autopsy in fresh or putrefied cadavers, but rarely do they have time or expertise to closely examine bone. Anthropologists can assist in filling that gap to produce essential information at autopsy. In many cases, bony characteristics of trauma may be more revealing and less deceptive than soft tissues. That being said, autopsies should not stop with descriptions of soft tissues and cursory descriptions of the skeleton. The areas involved with bony trauma should be removed and processed free of soft tissues for a proper examination and documentation. This presentation will introduce numerous case studies that demonstrate the utility of bone removed from autopsy as evidence, and demonstrate how bone lesions contribute to a more accurate understanding of the cause and manner of death.

Materials and Methods: Case 1. A well-preserved 35-year-old Caucasian male arrived at the morgue with multiple stab wounds to the head and thorax. The skin lesions presented with linear cuts at 90° or acute margins. After being cleaned, an examination of the underlying skull cap showed the presence of triangular puncture wounds under the overlying apparent linear cut wounds. The offending instrument was, in fact, a pick with a pointed but triangular cross-section.

Case 2. A slightly putrefied 70-year-old Caucasian female was found dismembered. Soft tissue analysis revealed illegible putrefied margins of cuts adjacent to the dismembered areas and irregular linear lacerations on the parietal region. Cleaning the bones showed the effect of blunt force injury on the head and saw mark analysis on the bone revealed characters of the saw used for the dismemberment.

Case 3. A well preserved 40-year-old Caucasian male died after being hit by a car. The legs showed only blunt soft tissue lesions, mainly lacerations. After removing the soft tissue, the analysis of the underlying tibia and fibula showed a butterfly fracture, crucial in reconstructing the direction of the impact.

Case 4. Two male Caucasian 30-year-olds, slightly putrefied, were found with illegible lacerations on the skin of the head. Cleaning and reconstructing the entire skull allowed for the interpretation of the exact site of impact, minimum number of impacts, and even the chronological order of the blows.

Case 5. The charred remains of a 30-year-old male were recovered. Nothing could be seen on the burnt head. However, reconstruction of the fragments of cranium showed clear signs of a typical burning and definite signs of trauma.

Results and Discussion: These cases illustrate the utility of skeletal examination at autopsy and demonstrate the value of trauma examination in bone as major contributors to the final and accurate analysis of cause and manner of death.

Forensic Anthropology, Trauma Examination, Pathologist