



Physical Anthropology Section – 2011

H84 Comparison of Fresh Tissue Autopsy and Skeletal Analysis Reports in Colombia

Karen R. Burns, PhD, University of Utah, Department of Anthropology, 270 South 1400 East, Salt Lake City, UT 84112-0060; and Ana C. Guatame-Garcia, MSc, Calle 126A #7C-45, Bogota, COLOMBIA*

After attending this presentation, attendees will be presented with a set of recent cases from Colombia that provide the rare opportunity to compare postmortem examinations of skeletonized remains with fresh-tissue autopsy reports of the same individuals at the time of death. The attendees will be able to compare and identify disagreements, additions, and omissions between types of analysis. This presentation will help the forensic scientists who are focused on human identification and determination of circumstances of death to anticipate differences in reports and adjust expectations and methods accordingly. It will also highlight the value of multidisciplinary teams in postmortem exams.

This presentation will impact the forensic science community by demonstrating the need for flexibility and cooperation between experts in the analysis of human remains. Problems concerning both human identification and circumstances of death are highlighted.

In the summer of 2008, eighteen cases of unidentified combat dead from 1995-2003 were disinterred from a cemetery in the Department of Antioquia, Colombia. All were analyzed by standard anthropological methods. The skeletal analyses were then compared with the records of forensic autopsies (necropsies), which had been conducted locally near the time of death. The autopsies provided a superficial description of the remains, including skin and hair color, tattoos, and scars. The autopsy reports then focused on superficial perimortem trauma (recent wounds), but did not include radiographs. The anthropological analyses included a basic description of sex, age, race, and stature. They then focused on a more detailed analyses of bone trauma, both antemortem and perimortem. (Postmortem trauma did not present a problem because the bodies had been maintained in crypts and carefully removed from the original coffins.)

Of the eighteen research cases, the autopsy reports of fifteen individuals contained enough material for serious comparison. Of the fifteen, there was complete agreement in sexual identity, but 31 percent disagreement regarding age at death. Part of this can be attributed to the differences in method of reporting. The autopsy reports tended to state a unique age and the anthropology reports stated an age range. Another problem is the lack of local population data. The stature estimates were surprisingly inconsistent and cannot be easily explained. The error might have been introduced by overly rapid estimations during autopsy, or the errors may be the result of the lack of local population data. It was almost impossible to compare the conclusions regarding race. The vocabulary used by the pathologists was based on skin color and local terminology. The vocabulary used by the anthropologists was based on cranial observations and measurements described in terms of global populations. The anthropological reports revealed 54 elements of additional information potentially critical to success in personal identification.

The most significant report differences were in the analysis of peri-mortem trauma. The anthropology reports revealed that many of the discrepancies and errors were in the original (autopsy) trauma analysis.

Forty-nine injuries were not recorded in the autopsies; fourteen gunshot trajectories were reported to have occurred in the wrong direction; and two injuries were recorded in autopsy on the wrong side of the body (left/right error). There were also five differences of opinion about the specific weapon of injury, and several inconsistencies in the general interpretation of injuries.

Methods, materials, and often motives differ between fresh tissue autopsy and skeletal analysis. The result is a separate set of findings, sometimes congruent, but sometimes very different. As expected, autopsies provide more information about soft tissues, whereas osteoanalyses provide more information about both antemortem and peri-mortem trauma to osseous tissues. The combination of reports provides a more complete description of the circumstances of death, significantly improves accuracy, and increases the probability of personal identification. Cooperation between professionals as utilized for example, in DMORT post-disaster operations, is recommended.

Osteoanalysis, Autopsy, Colombia