



Physical Anthropology Section – 2009

H80 Biology and Culture in the Modern Era: How Cultural Evidence Can Conflict With Forensic Significance

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After attending this presentation, attendees will have seen an extreme case of ankylosing spondylitis. Attendees, most importantly, will understand that pathology and individual circumstance can help solve a case, but can also be greatly misleading. This presentation will demonstrate how evidence, circumstance of burial, and burial artifacts must be analyzed in both biological and cultural contexts.

This presentation will impact the forensic community by demonstrating the importance of the cultural assessment of evidence, determining forensic significance in the face of conflicting evidence, and the presentation of a rare and extreme case of ankylosing spondylitis.

One of the responsibilities of a forensic anthropologist is to determine the forensic significance of unknown human remains that are presented to the Office of the Medical Examiner. Often times the biological conditions and cultural circumstances of the case can be misleading. The analysis of evidence, circumstance of burial and burial artifacts must be done in both biological and cultural contexts and is required to understand whether a forensic case falls into the purview of the medical examiner. In the case described below, the remains were recovered from a shallow grave near Flagstaff, Arizona. The Federal Bureau of Investigation (FBI) had concerns that the grave might be clandestine and an attempt to hide a homicide. The recovery of the remains followed standard forensic protocols and revealed interesting clues to the identity of the individual.

In April 2005, the FBI in Coconino County, AZ recovered skeletonized human remains from a shallow grave. The remains were consistent with those of an adult male of Asian ancestry (including Native American ancestry) and appearing to be 40-55 years old at the time of his death. Artifacts including a pair of black, lace top boots, two clear colored bottles, and a silver colored spoon were also submitted. The analysis of the decedent revealed that he had an advanced and severe case of ankylosing spondylitis.

Ankylosing spondylitis is a chronic disease that causes inflammation of the joints between the vertebrae and the joints between the spine and the pelvic girdle. Over time, if it progresses, it will eventually cause the affected vertebrae to fuse by means of a layer of additional bone connecting the vertebrae. This condition is sometimes referred to as dripping candle wax because of its appearance. There is no known cause of ankylosing spondylitis, but heredity seems to play a role. The disease most frequently begins between ages 20 and 40, but can initiate before age 10. It affects more males than females and the risk factors include a family history of ankylosing spondylitis and male gender. Some symptoms include hip and back pain that may begin in the sacroiliac joints and involve all or part of the vertebral column, chronic stooping, fatigue, joint pain and joint swelling in the shoulders, knees, and ankles, limited expansion of the chest, and limited range of motion (especially involving spine and pelvic girdle).

The location and manner of the individual's burial prompted the FBI to treat this case as a possible homicide. The artifacts and some of the biological evidence, at first, led the forensic anthropologist to deem the case historic. However, when dealing with Native Americans living on or near the reservation, it is imperative to consider that Native Americans lived in "historic" conditions well into the modern age. It is the forensic anthropologist's agenda to consider all evidence in an appropriate manner in order to determine forensic significance. The authors will present literature and photographs of the decedent and the evidence recovered from the grave to illustrate the conflicting evidence and the extent of the disease in this individual and to give participants in the meeting the opportunity to examine an advanced case of the disease.

Ankylosing Spondylitis, Biology vs. Culture, Forensic Significance