A136 Putting Life Back Into the Bones: The Symptomatology of Pain and Suffering in the Cyprus Research Reference Collection and Its Relationship to Positive Identification

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Learning Overview: After attending this presentation, attendees will understand the variety, complexity, and distribution of spondyloarthropathies in a modern Cypriot skeletal population and how the diagnosis and symptomatology of the spine associated with clinical research can reveal information regarding how an individual may have lived with these specific joint diseases.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by evaluating the combination of signs and symptoms of spondyloarthropathies as indicators of pain in living individuals and will develop a diagnostic framework for positive identification.

Despite that skeletal remains do not communicate an understanding of pain and suffering during one's life course, per se, the prevalence of spondyloarthropathies and those physical signs of their manifestation warrants that, in combination with clinical research, the human side skeletal remains can achieve, ultimately allowing forensic anthropologists to aim for a more holistic understanding of unknown remains and enable a more detailed antemortem profile of the deceased to be comprised.

The use of pathology to complement positive identification is well known. Diseases can be as important as trauma in reconstructing the antemortem profile of the deceased. While a biological profile is the first step in human identification, disease can also contribute to positive identification. Traditional forensic anthropology relies on skeletal pathology that is abnormal. The rarer the occurrence, the greater likelihood it can be matched with antemortem medical records. However, common conditions, such as diseases of the spine (spondyloarthropathies) can be useful. It is hypothesized that there is a relationship between skeletal signs of disease and symptoms; a relationship that is dynamic and could point toward aspects of pain, suffering, and other possible debilitating reactions that may have affected the daily lifestyle when the individual was alive. It is suggested that a symptomatology of pain can be diagnosed in the presence, distribution, and degree of expression of the skeletal traits relating to spondyloarthropathies. Diseases of the spine are very common in human remains, and their association with symptoms is well reported in the clinical literature. This study seeks to explore and bridge the divide between forensic anthropology and clinical research in this sense and attempt to combine the two in understanding skeletal remains in human terms through the study of osteological traits of disease. The objective of the study is to enable forensic anthropologists to more objectively argue in favor of the human state of skeletal remains providing information that is useful to police investigators and could be related to personal, socio-economic, and cultural perceptions associated with the deceased.

A detailed macroscopic analysis was conducted of 20 vertebral columns of known age and sex from the Cyprus Research Reference Collection. Two methodologies were employed, and an inter-/intra-observer error analysis was conducted to confirm the reliability of the tests. The method recorded diagnostic spondyloarthropathies criteria, such as erosive changes, eburnation, osteophytes, syndesmophytes, and ankylosis. More than 4,000 points of analysis were collected by the end of the study. Overall, the sample population exhibited no significant difference between males and females as well as age. Ninety-five percent of the study sample expressed osteoarthritis as well as a significant overlap of other spondyloarthropathies, such as DISH (10%), AS (20%), combination of DISH/AS (10%), ankylosis (10%), and Schmorl's nodes (30%). However, the additional five percent of the remaining set expressed only a singular spondyloarthropathy. These distributions were then statistically analyzed according to the known demographics of each individual and compared to clinical data assessing possible degree of pain and associated symptoms in living individuals diagnosed with spondyloarthropathies. The results showed that patterns of skeletal signs may be indicative of symptoms, some of which may associate with pain and suffering.

It is concluded that combining osteological traits associated with symptoms of spondyloarthropathies reported in clinical literature may also be deduced for the deceased. These symptoms can and would be viewed by those who knew the individual, as their quality of life would be affected by the spondyloarthropathy. Understanding how these symptoms affect an individual within their everyday life would better prepare a forensic case report for investigators to make a positive identification in the absence of medical records.

Pain and Suffering, Spondyloarthropathies, Positive Identification