



Physical Anthropology Section – 2008

H6 Homicide by Lapidation in Neolithic Age: Results of Two Cases

Antonio De Donno, PhD, Section of Legal Medicine - DiMIMP - University of Bari, P.zza Giulio Cesare n.11, Bari, 70124, ITALY; Simona Corrado, MD, Sezione di Medicina Legale, Bari, 70100, ITALY; Valeria Santoro, PhD, Domenico Urso, MD, Piercarlo Lozito, DDS, and Francesco Introna, MD, Section of Legal Medicine, Department of Internal and Public Medicine (DiMIMP), University of Bari, P.zza Giulio Cesare n.11, Bari, 70124, ITALY; Aldo Di Fazio, MD, Section of legal medicine - Matera Hospital, via Montescaglioso n.5, Matera, 75100, ITALY; and Rocco Maglietta, MD, Section of Legal Medicine - San Carlo Hospital Potenza, via P.Petroni n.6, Potenza, 85100, ITALY*

The goal of this presentation is to identify the process of recovery and describe physical findings from skeletonized remains performed by a team of forensic anthropologists and archeologists.

This presentation will impact the forensic community by identifying the process of recovering skeletal remains and presenting the methodologies and results used to reconstruct the biological profiles, race, sex, age, and stature of skeletal remains, date of death and probably manner of death.

Introduction: While preparing a grave for oilduct in the little country of Marsicovetere in the South of Italy, workers discovered the remains of two skeletonized unknown individuals placed 2 mt of depth close to the other not in genu-pectoral or classic deposition. At the beginning it was performed a scanning of the archeological area to obtain digital 3D excavation map. Archeological recovery testifies Neolithic installation about the epoch of 4,000 years Before Christ. Records were taken and kept in the Ridola Museum in Potenza. Remains consisted of two full human skeletonized bodies highly fragmented. They were presumed to belong to prehistoric period in virtue of their extreme lightness and porosity; they were very fragile and then moved from grave, digging around skeletal remains and taking out together with ground. No clothing or other articles were found with remains, but just a stone with a pyramidal shape and dimension 4x4x5 cm.

Forensic Anthropological and Odontological Examination: The general identity of the skeletal remains was determined by estimation of age and stature and the determination of the sex using anthropological methods for old remains. The estimation of age was based on pubic symphyseal phases and cranial suture closure. These criteria determined that the deceased was closer to 20 years than 40 years. The determination of sex was basically performed using morphological features of skull and pelvic bones and metric analysis of long bones fragments. The sex was clearly that of a female for both. The stature was estimated using the lengths of long bones, not fractured, which were measured using an osteometric board; the bones were used individually and in combination using tables available to determine the average stature, which was found to be respectively 161 + 1 cm and 152 + 2 cm.

Odontological analysis showed that high maxillary was wide, characterized by a round palate with an intermolar distance of 6.5 cm. There were all the dental elements except for the second left molar (antemortem lack) and completions not damaged by decay. This aspect is coherent with the alimentary habits of Neolithic period that were lacking in sugars, even though carbohydrates, associated with game were introduced in feeding. The deep usury with dentinal exposure of incisive and molars is due to not refined feeding and the impurities of cereals. Typical of the period is also the wide diastem (6mm) between the middle incisives that is noticeable between the central and the lateral incisive and this last one and the left canine (3mm) too. The characteristics of the high maxillary can be referred to the jaw, where it can be observed the absence of decay and the deep usury of the canines and posterior sectors, characterized moreover by the disappearance of the cuspids particularly on the second premolars and molars.

Radiocarbon Dating: Radiocarbon dating can provide useful information to elucidate the date of death of skeletonized human remains; interpretation was enhanced with analysis of different bone fragments within each skeletons by high resolution mass spectrometry. Radiocarbon analysis was conducted in this study on cortical and trabecular bone samples in dating and diagnostic laboratory of the University of Lecce. The radiocarbon analysis clearly assigned the bones to 4000 years BC.

Instrumental Analysis: The skull showed an antemortem fracture pattern on the right temporal bone; this fracture was depressed, had a negative pyramidal shape 4x4x5 cm, and was not related with all the other skull post-mortem fracture. Multislice-computed tomography (MSCT) and magnetic resonance imaging (MRI) are increasingly used for forensic purposes. To elucidate the skull fractures and pattern of injuries it has been used 3D computerized imaging; three-dimensional volume-rendered (VR) CT images can be helpful to understand the temporal bone. Matching between shape of injuries in temporal bone and shape of stone, found close to the skull, allowed to support the hypothesis of lapidation. At the moment remains are stored in the Ridola Museum in Potenza (Italy).

Personal Identification, Neolithic Recovery, Radiocarbon Dating