FRACTURED CHILDHOOD: A CASE OF PROBABLE CHILD ABUSE FROM THE KELLS 2 CEMETERY, DAKHLEH OASIS, EGYPT

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INTRODUCTION
Much can be learned about cultural attitudes of violence towards children from the analyses of their skeletal remains. Studies of contexts within which skeletal evidence of childhood abuse are found provide valuable information on proximate and distal factors that contributed to the infliction of such injuries in society. Past research of skeletal remains with evidence of childhood abuse in Egypt has not previously been carried out. In this study, a series of fractures from skeletal remains found in the Kells 2 Cemetery is examined in order to investigate the frequency and nature of childhood abuse at the site.

KELLS 2 CEMETERY

Dakhleh Oasis is located approximately 200km west of the Nile Valley and about 60 km north of the Wadi Barum Desert, in the Western Desert of Egypt. The oasis is a fertile region characterized by oases located along an ancient desert trade route that supported flourishing communities throughout thousands of years of its existence. The oasis is the sixth of the seven oases in the Western Desert and was a major trade route during the time period under study. The Kells 2 Cemetery extends for at least 100 m east-west and 60 m north-south and is characterized by a very dense concentration of burials. Excavations revealed that a large number of burials were laid out side-by-side or in rows. In addition, some skulls were wrapped in linen bands and bound with cords or wires.

METHODS

Macroscopic Analysis & Radiography

This was the first series of cases that provided a complete picture of the skeletal remains with evidence of childhood abuse. A thin section of each bone was first made to determine the age of the child (Fig. 13). The bone was then cleansed and dehydrated using an ascending alcohol series to remove surface moisture and chemically-induced odors from the soft tissues. The bone was then placed into a Becher Polishing System. Microscopic analysis was conducted under a microscope and an Olympus U-MAP microscope was used to examine the surface topography of the bone. For detailed analysis, a thin section of the bone was made to look at the radiographs of the age and sex were determined. The bone was then cleansed and dehydrated using an ascending alcohol series to remove surface moisture and chemically-induced odors from the soft tissues. The bone was then placed into a Becher Polishing System. Microscopic analysis was conducted under a microscope and an Olympus U-MAP microscope was used to examine the surface topography of the bone. For detailed analysis, a thin section of the bone was made to look at the radiographs of the age and sex were determined.

MicroCT & Histology

The left humerus also exhibits circumferential superficial fracture. MicroCT of the left proximal humerus displayed a vascular pattern of the bone. The upper arm bone was made to look under a microscope. A thin section of the bone was made to look at the radiographs of the age and sex of the individual. The bone was then placed into the Becher Polishing System. Microscopic analysis was conducted under a microscope and an Olympus U-MAP microscope was used to examine the surface topography of the bone. For detailed analysis, a thin section of the bone was made to look at the radiographs of the age and sex were determined.

Isotopic Analysis

Isotopic analysis of hair, skin, and nails were done to determine if any physical effects of abuse were observed through nutritional micronutrient use. Hair, skin, and nails were analyzed for stable carbon (13C) and nitrogen (15N) isotopes and compared with those of non-abused children from 13C. 15N values range from 0 to 10% and represent variation for children aged between 10 and 13 years. However, the hair value reflects a diet high in 

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REFERENCES

3. Flad et al. 2012. Fractures of the proximal humerus most often occur in younger individuals, a directed high-speed drill was used to remove samples. These samples were sent to the University of Western Ontario for analysis.