What is an Ossuary?

Ossuary burials are secondary deposits of human remains resulting from multi-stage treatment of the dead. Typically, these burials include two or more stages: the removal of flesh from bones, through tools or by natural decomposition above or below ground; the collection of these cleaned bones, which may be temporarily stored for some length of time; and the final reburial of the disarticulated bones into a communal deposit.

The most commonly studied and documented types of ossuaries are found within prehistoric North America, in which ossuary burials appear as large pits serving as mass graves. These ossuaries represent a periodic reburial event which sometimes involved several villages and often accompanied an elaborate ceremony.

Research Objectives

The present study conducts a comprehensive osteological analysis within a Late Woodland Algonkian ossuary from coastal North Carolina in order to determine demographic characteristics and assess overall levels of health and nutrition.

The primary objective of this thesis study is to curate and analyze remains from the Piggot ossuary site (31CR14). The Piggot sample comprises skeletal remains retrieved from the Piggot site (31CR14) located in coastal North Carolina, within Carteret County near Gloucester. Based on material culture remains and geographic locale, the Piggot site represents a Carolina Algonkian population. Calibrated radiocarbon dating of skeletal material indicates a date of AD 1420-1645, situating the collection within the Late Woodland/Protohistoric (Contact) period.

The goals of this study are to: inventory and catalogue the collection; determine the demographic characteristics of the site including age and sex distributions; estimate a most likely number of individuals (MLNI); and evaluate pathological conditions in order to interpret overall levels of health and nutrition. These analyses will help elucidate the mystery surrounding ossuary use, as well as provide valuable insights into the past lifeways of a protohistoric Carolina Algonkian population.

Materials and Methods

The skeletal remains from the Piggot site were not inventoried or catalogued prior to this study. Skeletal material was processed via gross groupings according to bone type, side, age, pathology, and provenience. All specimens were recorded using cataloging cards, and a comprehensive site inventory was created. All archival materials were provided by OSA and meet Federal standards. Through this process, the Piggot skeletal series was brought to Federal curatorial and preservation standards.

Biological sex estimations for adults are based on pelvic and cranial morphology. The study does not assess biological sex for subadults due to the general inaccuracy of these methods, which is increased further with fragmentary remains. Age estimations for subadults are based on the maximum length of long bones, stage of epiphyseal union of long bones, and dental development. For adults, age estimations are based on dental and pelvic degeneration, as well as Lamendin et al’s (1992) technique for adult aging based on dental root transparency.

Given a representative skeletal sample, age and biological sex estimations are utilized within various palaeodemographic analyses. A skeletal sample that represents a complete population should contain a relatively equal ratio of males to females and normal expected ratios of age categories. Results indicate that the Piggot ossuary sample represents an incomplete, non-representative population, containing a higher than expected ratio of subadults. Therefore, most palaeodemographic analyses are not possible.

The study additionally evaluates any disease-related pathologies. In all cases, pathology was scored as presence or absence, due primarily to logistical and time constraints.

Results and Discussion

Osteological analyses indicate that the Piggot ossuary was a relatively large mass interment, originally containing the remains of approximately 121 individuals, utilizing the MLNI estimator. The ossuary contained individuals of all ages, although subadults (0-19 years) comprised the overwhelming majority of individuals (79%). The maxilla, mandible, and femora indicated a large number of fetal/peri-natal (36-40 weeks), infant (0-1 year), and early child (1-5 years) remains. According to the dentition, subadults under the age of five comprised 60% of the skeletal sample. Adults represent only 21% of the total sample, and the majority of these individuals are older adults (40-60+ years). Thus, the Piggot ossuary contains an incomplete, non-representative population with a significantly higher-than-expected percentage of subadults.

Prominent pathologies among individuals within the Piggot ossuary included scurvy, periostitis, osteomyelitis, and osteoarthrits. Although there are few reports of scurvy in Native North American remains, there is ethnographic (and some archaeological) evidence to suggest that scurvy was a significant source of morbidity among Late Woodland and protohistoric populations. The pathognomonic feature of scurvy consists of bilateral scurbitis (i.e., abnormally porous and hypertrophic) lesions of the greater wing of the sphenoid. These scurbitic lesions were found in abundance among the sphenoid fragments, as well as other areas commonly affected by scurvy, including the eye orbits and zygomatic bones. Pathological analyses additionally indicated the presence of congenital syphilis within the Piggot ossuary, as evidenced by six Hutchinson’s incisors. However, due to the protohistoric nature of this sample, results of this investigation cannot contribute to the debate concerning the origins of venereal syphilis in the New World.

Conclusion

Osteological analyses indicate that the Piggot ossuary site (31CR14) represents a diseased population composed primarily of subadults who were afflicted by scurvy and congenital treponematoses, among other diseases. The ossuary contained a large percentage of children under the age of 5 (60%) along with old adults aged 40 to 60 years (11%). A mortality curve emphasizing very young and elderly individuals seems to suggest a disease-related die-off, which is plausible given the pathological nature of the skeletal sample. Pathological evidence along with a dramatic over-numeration of subadults suggests the Piggot ossuary site represents a Carolina Algonkian population experiencing the first wave of disease resulting from European contact.

References