Assessment of Human Remains from Archaeological Site 44YO2

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Michael Blakey and Shannon Mahoney
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On Wednesday 9 April, 2003, Dennis Blanton, director at the William and Mary Center for Archaeological Research contacted Michael Blakey, director of The Institute for Historical Biology, concerning the identification and inventory of human remains located at a local archaeological site during project testing. The human remains were picked up from the WMCAR labs on Tuesday, 15 April 2003 and the inventory and identification list followed a week later. This report is an in-depth description of the conclusions reached through the study of the remains.

The Institute for Historical Biology would like to thank the William and Mary Center for Archaeological Research for the opportunity to examine these remains. Michael Blakey supervised the project in its entirety. Autumn Barrett and Shannon Mahoney, both doctoral candidates in the Anthropology Department at the College of William and Mary, conducted the identification and inventory of the remains. Dr. Michael Blakey and Shannon Mahoney co-authored this report.

Methodology

The human remains were brought to the Institute for Human Biology on the College of William and Mary campus for identification and inventory. Using a comparative skeleton, each fragment was identified to element, side and assessed for potential pathologies. A few of the smaller fragments were listed as unidentified and not sided. An inventory was created using the "Inventory Recording Form for Commingled Remains and Isolated Bones" from the Chicago Standards. The inventory (Appendix I) was created by the provenience listed on the bags. Once the inventory was complete, the remains were examined for duplicated element fragments to assess a minimum number of individuals. The remains will be returned to the William and Mary Center for Archaeological Research Lab by 1 May 2003.

Assessment

Number of Individuals

After completion of the inventory, particular attention was paid to whether or not the remains represented more than one individual. No specific portion of any element was represented twice in this sample (Appendix II). This information coupled with the fact that all of the remains were relatively the same size (small) contributed to the conclusion that there is one individual represented in the assessed human remains. One small fibula fragment (F14I – E ½) was

particularly robust for this individual and had a unique, flattened shape. We did not feel that this fragment alone warranted the decision for a second individual.

Age

There are three potential indicators of age for these remains. As indicated above, all of the human remains were relatively small and smaller than our comparative skeleton of an adult male. Upon this assessment alone, the remains could have been from a small adult or youth.

Among the remains was a fragment of the fifth lumbar vertebra (F14I – E ½), which indicates that the neural arches had fused to the centrum. This fusion is complete at age six.

There are two fragmentary remains of the proximal left tibia (F14I – W ½), which indicated that the diaphysis of the tibia had not yet fused with the epiphysis. This union is one of the last to occur in the human skeleton. Based on the Chicago Standards, the estimated age of fusion in the proximal tibia begins at15 years of age.

Also represented in the remains is the distal end of the right femur whose superior surface indicated that the diaphysis had not yet fused with the epiphysis. Based on the Chicago standards, the distal femur begins fusion between ages 14 and 15 in males.

All this information combined leads us to believe that the approximate age of the individual represented by these remains is between eight and fourteen years of age but most likely falls within the latter portion of this age range (Appendix III).

Pathology

There are two pathologies visible in the remains.

The right ulna shows an ossification of connective tissue at the site of attachment with the brachialis muscle. The brachialis is a flexor for the elbow joint and the ossification of this tissue may have resulted from a muscle tear in this area (Williams 1995: 843)

Both the left and right femur fragments (F14I – E ½) exhibit pronounced (hypertrophic) muscle attachments on the posterior portion of the proximal end for someone of this age. The muscle attachments for the gluteus maximus, pectineus, abductor magnus and abductor brevus all show evidence of hypertrophy indicating that these muscles were used often. This muscle group is used for extension and rotation of the leg in activities such as squatting, running, and walking (Williams 1995: 874-875)

Sex

Sex identification is not possible on this individual due to the fragmentation of the remains. Innominate and cranial indicators are most commonly used to assign sex to an individual and the remains had no substantial portions of either.

It is also extremely difficult to assign sex to a subadult, given that the morphology of the bone is not entirely complete.

Population Affiliation

Cranial measurements are most commonly used to determine population affiliation in human remains. These remains had no cranial elements available for assessments so we are not assigning a population affiliation to these remains. This determination might be best made given the original context for the remains.

Summary

In conclusion, the human remains represent one individual, a subadult, between the ages of six and fourteen, although they most likely fall into the latter portion of this age range. The individual has evidence of strenuous activity related to running, walking or squatting and a muscle tear or strenuous activity associated with the right elbow joint. A majority of the fragments examined come from below the neck and above the knee, except for a few small fragments from the lower leg. This may give some indication of the position of the burial before being disturbed.

Resources

Buikstra, Jane E. and Douglas H. Ubelaker eds.
1994 Standards: For Data Collection From Human Skeletal Remains Arkansas Archaeological Survey Research Series No. 44: Arkansas

Larsen, Clark Spencer
2002 Bioarchaeology: Interpreting Behavior From the Human Skeleton Cambridge University Press: Cambridge

Williams, Peter ed.
1995 Gray's Anatomy Thirty-Eight Edition. Churchill Livingstone:London

Time Sheet

	Hours
Identification and Inventory of Remains	5
Report Write Up	4
Total	9

Appendix I

Inventory Recording Form for Commingled Remains (Modified from Chicago Standards)
Institute for Historical Biology

Site Name/Number 44YO2
Feature/ Burial Number F14I
Present Location of Collection William and Mary Center for Archaeological Research
Observer Dr. Michael Blakey, Shannon Mahoney, Autumn Barrett
Date 21 April 2003

KEY

Side	Segment	Completeness
R – Right	P 1/3 – Proximal 1/3	1 = >75%
L – Left	M 1/3 – Middle 1/3	2 = 25% - 75%
M – Midline	D 1/3 – Distal 1/3	3 = < 25%
NS – Not sided (incapable of siding)	NA – Neural Arch	

Inventory #	Location	Bone (Element)	Side	Segment / Aspect	Completeness	Frag. Count	Mended?	Age	Comments
001	F14I- E ½	Ulna	R	P 1/3 M 1/3	1	1	Yes		
002	F14I- E ½	Femur	R	P 1/3	2	1	No		
003	F14I- E ½	Femur	R	M 1/3	2	1	Yes		
004	F14I- E ½	Femur	L	P 1/3	3	1	No		
005	F14I- E ½	Radius	R	M 1/3	2	1	No		
006	F14I- E ½	Fibula	R	D 1/3	3	1	No		
007	F14I- E ½	Rib Fragments	NS	-	3	16	No		
008	F14I- E ½	Rib head Fragments	NS	-	3	3	No		
009	F14I- E ½	Thoracic Vertebra	M	NA	2	1	No		
010	F14I- E ½	Lumbar Vertebra #5	M	NA	2	1	No		
011	F14I- E ½	Sacrum	M	-	3	1	No		Left Articular Surface
012	F14I- E ½	Cervical Vertebra	M	NA	3	1	No		Left portion
013	F14I- E ½	Thoracic Vertebra	M	NA	3	1	No		Right portion
014	F14I- E ½	Proximal Hand Phalange	L?	-	1	1	No		
015	F14I- E ½	Intermediate Hand Phalange	NS	-	2	3	No		
016	F14I- E ½	Metacarpal	NS	-	2	1	No		

Inventory #	Location	Bone (Element)	Side	Segment / Aspect	Completeness	Frag. Count	Mended?	Age	Comments
017	F14I- E ½	Manubrium	M	-	2	1	No		
018	F14I- E ½	Unidentifiable Frags	-	-	-	5	No		
019	F14I –W ½	Radius	R	P 1/3	3	1	No		
020	F14I –W ½	Rib Fragment	NS	-	3	1	No		
021	F14I –W ½	Fibula	R?	M 1/3	3	1	No		
022	F14I –W ½	Metacarpal 4th	L?	-	1	1	No		
023	F14I –W ½	Proximal Hand Phalange	R?	-	1	1	No		
024	F14I –W ½	Femur	R	DE	3	1	No	< 14	Medial Condyle
025	F14I –W ½	Tibia	L	PE, P 1/3	3	1	No	< 15	Proximal
026	F14I	Rib Fragments	NS	-	3	3	No	-	
027	F14I	Patella	NS	-	3	1	No	-	
028	F14I	Innominate	NS	-	3	1	No	-	Portion of acetabulum
029	F14I	Thoracic Vertebra	M	NA	3	1	No	-	
030	F14I	Thoracic Vertebra	M	NA	3	1	No	-	
031	F14I	Unidentifiable Fragments	-	-	-	9	No	-	

Appendix II

Appendix III