Ancient Monuments Laboratory
Report 17/90

THE HUMAN REMAINS FROM HIBALDSTOW, HUMBERSIDE.

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Summary

Six adult skeletons were recovered from this Roman site, four female and two male. Both males were aged at least 45 years at death; three of the females were aged between 25 and 35 and the fourth was too fragmentary to permit an age to be estimated. Heights were calculated from long bones measurements for two males and two females; they were 1.69 and 1.72, and 1.54 and 1.56 m respectively.

Four of the skeletons showed signs of dental disease and one (a male) had arthritis of the hand and spine. Two of the female skeletons had spondylolysis, in one affecting the fifth lumbar vertebra and in the other the fourth lumbar. This is an unusually high prevalence of this condition but, because of the small numbers involved, is most likely a chance observation.

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The human remains from Hibaldstow

The human remains from this site comprised six adult skeletons most of which had suffered some *post-mortem* damage. Each was assigned an age and sex using standard anthropological techniques (see, for example, Workshop of European Anthropologists, 1980) and each was examined for the evidence of disease. Standard measurements of intact bones were taken and where possible, an estimate was made of the height of the individual from the maximum length of the limb bones using Trotter's regression equations (Trotter, 1970).

Demographic data

The demographic data are summarised in the table and a catalogue appears in the Appendix. From the table it can be seen that four of the skeletons were judged to be female and two male. The ages are given in ten year ranges and it can be seen that three of the females were aged between 25 and 35 and that both the males were aged at least 45; the fourth female skeleton was too incomplete to permit any estimate of age.

Heights could be estimated for both males and for two of the females. The males were 1.69 (± 0.030), and 1.72 (± 0.043) m, and the females were 1.54 (± 0.036) and 1.56 (± 0.036) m. These are all below the modern average heights for males and females which are 1.74 and 1.66 m respectively, but, of course, the sample is much too small a size to allow any statistical conclusions to be drawn from this.

Pathology

Despite the small size of this group of skeletons, there was some interesting pathology, including dental disease, arthritis and diseases of the spine.

Dental disease: Four of the skeletons (263, 409, 616 and 620) had signs of dental disease. Three of the four had dental caries; in 263 two molars were affected, in 409, one molar whilst in 616 no fewer than nine teeth were caried, 2 incisors, 1 canine, 2 pre-molars and 2 molars. In addition, 616 had lost some teeth during life, presumably as the result of tooth or gum disease. Skeleton 620 had no caries but had suffered from ante-mortem tooth loss.

Arthritis: Only one of the skeletons (620) had evidence of arthritis. The right thumb base and trapezoid bone were affected by osteoarthritis and the left sacro-iliac joint was fused over its entire anterior surface. In addition, the fifth lumbar vertebra was fused to the sacrum by ossification in the anterior spinal ligament and both facet joints were fused. The cause of the spondlyarthropathy is not clear but the involvement of the sacro-iliac joint may indicate that this individual was in the early stage of one of the so-called sero-negative arthropathies (Rogers et al, 1987).

Spondylolysis: Spondylolysis was found in two skeletons (384 and 409). In both cases the lesions were of the isthmic type (type II in the classification of Wiltse et al, 1976). In the case of 384 the fifth lumbar vertebra was affected but in 409, the lesion was found in the fourth lumbar vertebra.

Comment

This small group of skeletons are remarkable both in the prevalence of dental disease (4 of 6) and of spondylolysis. Dental disease is one of the most common pathological conditions seen in past populations but generally does not affect as many as two-thirds of the skeletons. However, with such a small number of subjects, it is much more likely that this is a chance observation rather than a true reflection of the prevalence of dental disease in the population from which these skeletons were drawn.

Spondylolysis is a relatively common abnormality being found in between 3 and 7% of the modern population (Resnick and Niwayama, 1989) and it is frequently found in skeletons from archaeological contexts. There is a good deal of geographical variation in the frequency of spondylolysis and some evidence that it has varied significantly in different populations in this country (Waldron, in press).

The cause of spondylolysis has been much debated and there has been a great deal of discussion as to whether it has a congenital or a traumatic aetiology. There is no doubt that genetic influence is important and there are families in which a quarter of the members have spondylolysis, frequently associated with other congenital anomalies of the spine such as transitional vertebra or spina bifida. Clinical and experimental evidence, however, tends to support the view that these lesions are acquired as the result of trauma sustained between infancy and early

adult life (Resnick and Niwayama, 1989). The fifth lumbar vertebra is most frequently affected and it is unusual for the lesion to be found in the third as in one case here.

Spondylolysis is generally asymptomatic unless the affected vertebra slips forward on the sacrum (or the lumbar vertebra below); this condition is referred to as sponylolisthesis. There was no evidence that there had been any slippage in either of the two cases here so in all probability the lesions were silent.

As with the dental disease, the small number in the group precludes the likelihood that the prevalence of spondylolysis truly reflects the true prevalence which, in other Romano-British populations has been estimated to fall in the range found in the modern population (Waldron, in press).

References

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Table

Summary of demographic data of skeletons from Hibaldstow

Number	Sex	Age (years)	Height (m)[1]
263	Male	45 +	1.72 ± 0.043
384	Female	25-35	1.56 ± 0.036
409	Female	25-35	1.54 ± 0.036
491	Female	Adult	
616	Female	25-35	
620	Male	45 +	1.69 ± 0.030

[1]The heights are shown with their standard error. The 'true' height of the skeleton is likely to lie within the range obtained by adding or subtracting this term from the height shown.

Appendix

Catalogue of human remains from Hibaldstow

As estimate is given of the amount of each skeleton present. The sex and age in years, and height in metres (with the standard error term) are also shown where these could be determined. In each case the methods used are shown in parentheses.

263. Badly damaged skeleton represented by fragments of the skull proximal left and right femora, fragments of left tibia and fibula, left humerus, radius and ulna, fragments of right humerus, some bones of the right hand and parts of the pelvis; ca 50%.

Male (skull, pelvis)

45 + (morphology of pubic symphysis, dental wear)

1.72 ± 0.043 (right ulna)

384. Generally well preserved skeleton but lacking most of the cervical spine and all the thoracic, both clavicles, right scapula, many small bones of the hands and feet and much of the skull; ca 75%.

Female (pelvis)

25-35 (dental wear)

1.56 ± 0.036 (right femur + tibia_

409. Complete skeleton except for the absence of some of the small bones of the hands and feet.

Female (pelvis, skull)

25-35 (morphology of pubic symphysis, dental wear)

1.54 ± 0.036 (right femur + tibia)

491. Extremely fragmented adult skeleton. Represented by fragments of skull, pelvis, long bones, hand and feet and some ribs; ca 66%.

Female (measurement of femoral head diameter)

616. Much damaged adult skeleton represented by skull fragments, parts of all long bones, both clavicles, right scapula, pelvis, lower thoracic and lumbar vertebrae and some bones of the hands. Ca 75%.

Female (pelvis, skull)

25-35 (dental wear)

620. Substantially intact skeleton with ossicles in lambdoid suture. Lacks only some bones of the hands and feet.

Male (pelvis, skull)

45+ (morphology of pubic symphysis, dental wear)

1.69 ± 0.030 (right femur + tibia)