

A Human Skeleton from Marmont Priory, Upwell, Norfolk.

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Introduction

A single inhumation was available for analysis. The remains consisted of a single adult skeleton from which the only part of the hands, both patellae and most of the feet were missing. The bone was in very good condition and most bones were intact, including the cranium.

Methodology

Methodology follows Brothwell (1981) and the Workshop of European Anthropologists (WEA 1980).

Age and Sex

The individual was male, based on the robusticity of the cranium, mandible and long bones and the morphology of the pelvis. Cranial suture closure, heavy attrition on the remaining teeth and presence of degenerative changes suggested that he was probably old at the time of his death. A more precise age cannot be suggested, although he may well have been over 60 years old.

Metrical and Morphological Analysis

Measurements were taken from the skull and most of the long bones and these are listed in the archive. Estimated living stature from the femur and tibia was 170cm (5' 7"). The cranial indices show that the individual had a relatively broad, short skull with a broad face, and was typical of the medieval period.

Non-metric traits were scored and a list of traits is available in the archive. The only positively scored traits were a lambdoid wormian bone on the left, bilateral parietal foramina, a right post-condylar canal and double hypoglossal canal, zygoma-facial foramina, bilateral atlas double facet, bilateral plaque formation of the femoral head, and small bilateral femoral third trochanters.

Dental analysis

The teeth were recorded as follows:

X	X	X	X	X	3	2	1	/	/	3	/	/	X	X	X
X	X	X	/	4	/	X	X	X	X	3	4	5	X	7	8
															C

Numbers represent teeth present, X = teeth lost ante-mortem, / = teeth lost post-mortem, and C = caries.

A carious lesion in the lower left third molar was large and buccal-cervical in origin. This had partially destroyed the tooth below the enamel, but had not produced a periapical abscess. Alveolar resorption was advanced, particularly in those areas from which teeth had been lost in life. Periodontal disease had occurred, but much of the evidence for this was lost due to the extreme resorption. Any signs of calculus had also been lost, and there was little enamel surviving so the presence or otherwise of enamel hypoplasia could not be recorded. This high level of tooth loss, which left very few occluding teeth, would have made chewing difficult for this individual and no doubt towards the end of his life, soft or liquid foods were a necessity.

Pathology

Most of the pathological changes seen on the bones of this individual were related to his advanced age. Signs of degeneration including osteophytic lipping of most joints, particularly those of the spine and ribs, but also the shoulders, hips, knees and hands. The fingers were particularly affected between the proximal and medial phalanges, particularly of the thumb and middle finger, probably indicating severe pain and inflammation of these knuckles. The right hand was slightly worse than the left, but otherwise the occurrence is bilateral and symmetrical, which could indicate a specific arthropathy. However, there is no evidence for rheumatoid arthritis in these bones.

Osteoarthritic changes were noted in the vertebrae of the neck, particularly the zygapophyseal facets on the left side of the C2-5 vertebrae, which were porous and eburnated. The three lower cervical vertebrae had porous surfaces to the bodies, suggesting a lower degree of arthritic change. Some arthritis was also present on the costo-vertebral facets, particularly on the T9 vertebra lateral facets and corresponding joint surfaces of the ninth ribs.

Both acetabuli (hip sockets) had small porous lesions at the superior edge, but the femoral heads were not affected. However, this may be related to a habitual squatting or kneeling posture, and could correspond to the area of plaque formation seen on both femoral necks. A similar lesion was also noted on the left temporo-mandibular joint, but in this case could be related to the difficulty experienced in eating with so few teeth. Arthritic changes were also present on both acromio-clavicular joints, with porosity and eburnation.

One other degenerative disease was present in this skeleton, and has been noted previously as a disease common in elderly monks (Waldron 1985). Diffuse idiopathic skeletal hyperostosis (DISH) is a disease associated with overweight men in middle or old age, particularly those who have access to rich food and drink. This individual presented several typical symptoms of this disease, including calcified costal and thyroid cartilage, roughened new bone formation on areas of muscle and ligamentous attachment, particularly the iliac crest and ischial tuberosities of the pelvis, the linea aspera and gluteal tuberosities of the femurs, and the posterior spines of some thoracic vertebrae. In addition, ankylosing hyperostosis of the lower thoracic and lumbar vertebrae had commenced, with the T9-12 affected on the left side and the L3-4 on the right side of the bodies. None had actually fused, but those on the lumbar vertebrae were touching.

Some evidence for inflammatory or infectious conditions was seen. The dorsal surfaces of all proximal hand phalanges had a slightly 'lumpy' appearance with small shallow areas of rounded new growth. This suggested that some healing had occurred, or that the condition had caused continual remodelling of the bone surface. The cause is uncertain, but inflammatory conditions of the hands could include some forms of arthropathy or possibly even chilblains. A small area of new bone growth on the proximal shaft of the left tibia and fibula suggested periosteal infection in this area, but again the cause is unknown. Inflammation of the ischial tuberosities may have been present, suggesting a condition known as 'Weaver's Bottom', since it is caused by habitual movement on a hard seat.

The right proximal joint between the tibia and fibula was ankylosed. Unfortunately the proximal fibula was broken and eroded at this point, so the cause was difficult to ascertain. However, this type of lesion is often related to trauma, for example a fall onto the heel which causes jarring of the knee. It is unfortunate that the ankle bones were not available for study as they may have provided further evidence for the type of trauma most likely to cause this. Other possible traumatic conditions included a detached neural arch of the fifth lumbar vertebra — although

showing no evidence for the forward slippage of the vertebral body (spondylolisthesis) so often associated with this condition — and slight wedging of the body of the T11 vertebra to the left side. The latter may be related to weakening of the spine due to slight age-related osteoporosis.

The presence of maxillary sinusitis could not be confirmed as the sinuses were not visible. However, given the degree of tooth loss in the maxilla and the presence of periodontal disease, this condition may well have been present.

Schmorl's nodes were present on the T10-12 and L1-2 bodies, in all cases very small. These small pits in the surface of the vertebral body are related to physical stress on the spine and generally occur in younger individuals. It is possible that the lesions in this individual were more severe during his youth and that they were later remodelled, but the size of the lesions at death suggests that stress on the spine was not a problem in his later years at least.

The fourth left rib was divided at the anterior end, a congenital condition known as bifid rib. No other congenital anomalies were seen.

One other pathological change seen in this individual may be age-related. The left humerus was generally larger in all dimensions than the right. In terms of length and humeral head size, this difference was within normal variation and may suggest a left-handed individual. However, the overall thickness and porosity of the shaft of this bone is not normal. The external macroscopic appearance of this bone is highly suggestive of Paget's Disease. Alternative diagnoses could include a well-healed low-grade osteomyelitis or osteitis, but there is no evidence for a cloaca and the bone changes appear too even for this type of infection. Paget's Disease, the cause of which is unknown, is common in old age and often affects only a single bone. In the absence of radiographic confirmation, this is suggested as the most likely cause of the observed lesions in the left humerus.

Summary and Conclusions

The skeleton is that of an elderly man who was affected by several diseases related to his advanced age, including poor dental health and arthritis. He probably suffered much discomfort towards the end of his life, perhaps suffering from Paget's Disease in his left arm, and with pain in many of his joints, which would have hindered in particular movement of his neck, lower back, fingers, shoulders and hips. He probably had difficulty in chewing and may have been subjected to a largely gruel-based diet. Although many of the conditions noted above are consistent with the monastic life, it should be noted that they could also indicate a high status lifestyle perhaps with no direct connection to the Priory beyond its use as a final resting place.

References

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