

THE HUMAN SKELETONS FROM WINCHESTER STREET, ANDOVER (A1984.2).

Sue Anderson, October 1991; revised with additions February 2000.

Introduction

The skeletons of ten individuals were recovered during excavations to the south of Andover. They are probably of Roman date. Since it is likely that the cemetery from which they are derived was of much greater extent, any conclusions reached concerning these few skeletons must be seen as preliminary and probably unrepresentative.

Condition

Three individuals were in poor or very poor condition, four were fair and three were fair-good. Only five were complete, and only two skulls were measurable in their entirety.

Demographic analysis

All except one of the skeletons were of adult individuals. Skeleton 4021 was probably a sub-adult. Fragments of two other children were present: a few foetal bones were included with Skeleton 3001, and three fragments of calcined juvenile skull were found with Skeleton 3010. Five of the adults were thought to be male, two female and two possible female.

Age was estimated using a combination of factors including the state of wear of the teeth, the stage of pubic symphyseal change, and the amount of degeneration of the bone. Due to the proven inaccuracy of current methods of age estimation in skeletal material, age categories have been assigned, rather than numerical age ranges which are felt to suggest greater confidence in the attribution of an age than is really feasible. One male and one female were considered 'young', one male was 'young/middle-aged', two males were 'middle-aged/old', and one male and one female were thought to be 'old'. Two females could not be aged more precisely than 'adult'.

Metrical and Morphological Analysis

Stature was calculated for all five males and for two females. The males ranged from 1.58m to 1.78m (5'2"-5'10"), and the females were both just over 1.5m (5'-5'1"). Although short by modern standards, these figures are quite normal for the Roman period.

Cranial and post-cranial measurements were taken whenever possible, and these are recorded in the appendix. Cranial indices were calculated for three males and one female. Two males and one female were mesocranial (medium skulls) and the other male was dolichocranial (long-headed). Both types were normal for the period.

Non-metric or genetic traits were scored for the cranium and the post-cranial skeleton. These are recorded in the catalogue. One unusual congenital anomaly was found to occur in two individuals, suggesting a possible relationship between them. This was the presence of lumbar ribs. Skeleton 3008 had a pair, and Skeleton 4022 had at least one. Unfortunately the spatial relationship of these two individuals within the cemetery is not known, since they were excavated in 1984 and 1987 respectively.

Dental Analysis

All five males, two females and the sub-adult had fairly complete dentitions, and four teeth were present from another female. Tooth charts are presented in the catalogue. Unfortunately the numbers involved are too small to allow for detailed analysis, but some generalisations can be made.

The youngest individuals showed the least dental disease, as is normally expected. Only one of these three individuals showed signs of caries (4022, young male) in the upper right third molar. There were no other carious lesions, abscesses or ante-mortem tooth losses in these dentitions. The young/middle-aged male (3008) probably had at least one abscess, judging by the open pulp cavity in his upper left first molar, but much of the left maxillary alveolar bone was missing. One middle-aged/old male (4041) had at least six abscesses, three carious teeth and two teeth had been lost before death. The other (3028) had nine abscesses, one carious tooth (the only tooth surviving), and six teeth lost ante-mortem. The old woman (4031) had lost three teeth ante-mortem, and was affected with at least four carious cavities and one abscess. The old man (3025) was almost edentulous in the maxilla, only the left upper second molar having survived, and he had lost seven teeth in the lower jaw, with abscesses forming below three others. Although he had no signs of caries, it is likely that this was the major cause of his lack of teeth. The skeletons present here provide a good example of the way dental disease can increase with age in a society without the benefits of dental care and hygiene. In comparison with Saxon and medieval populations, the level of dental pathology is high in this small group.

Congenital absence of teeth, other than the common lack of third molars, was noted in one individual (3008), the missing tooth being the right upper lateral incisor. The left tooth may also have been absent, but unfortunately the alveolar bone was lost from this area. Unerupted or congenitally absent third molars were recorded in one male (3008) and possibly another male (3028) and a female (4031).

Pathology

Over half the ageable individuals in this group were no longer young. It is therefore not unexpected that the most common osseous diseases observed in these skeletons are connected with ageing processes. As with diseases of the dentition, degenerative diseases increase with age, and again this small group demonstrates the pattern well. The youngest individuals show no signs of disease connected with ageing, but those in middle- or old age show osteophytosis of the joint margins, osteoarthritis of one or more joint surfaces, and sometimes osteoporosis. Details of individual cases are recorded in the catalogue. In general, degenerative changes were most common in the vertebral column, but were also prevalent in the hip and shoulder joints and the pubic symphyses of at least three of the older individuals. The old man (3025) was the worst affected, with osteoarthritis of many joints, in particular the neck, hips, wrists, and one big toe.

The most common pathological change in bone after degeneration is often physical trauma. Two individuals had lesions which may have been traumatic in origin. The young male (4022) had a small rounded bony protrusion below the superior articulation of the right tibia to the fibula, which may have been caused by a blow to the leg followed by bleeding, clotting and eventual bone formation (ossified haematoma), although certain types of benign neoplasm are also found in this area. The old male (3025) had evidence of two fractures, both well-healed and probably occurring well before death. One was at the distal end of the right radius (the corresponding area of the ulna was missing), and the other at the distal end of the right fibula. They were both well-aligned, suggesting that the bones beside them may have acted as natural splints even if external splinting had not been carried out. It is conceivable that both occurred at the same time, perhaps the result of a bad fall. The presence of an infection (osteomyelitis?) in this man's right second proximal finger phalanx and gross arthritic changes to the right first metatarso-phalangeal joint (big toe) might also be related in some way to this accident.

It was possible to score six pairs of orbits for cribra orbitalia. Of these, two pairs were found to have the cribrotic type and one right and one left orbit (two individuals) had the porotic type. The remainder were unaffected. Possible healed porotic hyperostosis was also observed on two skulls (3008, 3028), one of which had the cribrotic type of cribra orbitalia. Both conditions have been associated with iron deficiency anaemia, occurring most frequently in childhood.

Skeleton 3028 showed evidence for congenital bilateral coxa vara with retrotorsion (although only one femur was present). This is a condition in which the angle between the neck and shaft of the femur is abnormally reduced (90° and less), resulting in shortening of the leg and a possible waddling gait (Cotta 1978). There is limitation in the rotation of the femoral head in the socket. Bilateral cases tend to have protruding abdomen and buttocks as a result of forward tilting of the pelvis. This abnormal position often results in lower back pain and arthritic changes to the hip. Evidence for both was found in this skeleton, with large Schmorl's nodes and some osteoarthritis present in the surviving lower thoracic vertebrae, possibly with slight anterior wedging, and porotic areas in the superior parts of both acetabuli. The femur shaft was abnormally straight with virtually no anterior curvature, and was also relatively flat and narrow in section anterior-posteriorly. A supra-acetabular cyst (Wells 1976, 176) was present in the left ilium, with ragged new bone growth above. This is probably related to the musculo-skeletal problems associated with the coxa vara, but may also be a result of synovial fluid entering the cancellous tissue through the porotic areas of arthritis which were present immediately below the cyst.

A few other minor pathological changes were observed in these skeletons, and these are recorded in the catalogue.

Summary

Remains of nine adults, one sub-adult, one child and one foetus were examined. The sex ratio was found to be normal (approximately 1:1), and the age range, metrical and morphological features were not unusual for an archaeological population. Quite a high prevalence of dental disease was observed, in part due to the high number of older adults, and degenerative disease was also common for the same reason. Some evidence of injury was noted in the bones, and signs of infection were also recorded. More detailed analysis of this group may be possible if the rest of the cemetery is excavated in the future.

CATALOGUE

Notes

Measurements were taken using the methods described by Brothwell (1981), together with a few from Bass (1971). Sexing and ageing techniques follow Brothwell, and the Workshop of European Anthropologists (WEA 1980). Stature was estimated according to the regression formulae of Trotter and Gleser (Trotter, 1970). Non-metric traits are from Brothwell.

Teeth are recorded in the form illustrated below.

Maxilla	R.	8	7	6	5	4	3	2	1	1	2	3	4	5	X	7	U		L.
Mandible		O	7	6	5	4	-	-	-	/	/	3	4	5	6	7	-		
				A		C													

Code	Meaning
1 2 3 etc.	Tooth present in jaw.
X	Tooth lost ante-mortem.
/	Tooth lost post-mortem.
O	Tooth not fully erupted.
U	Tooth unerupted.
- - -	Jaw missing.
A	Abscess present.
C	Caries present.

Lower case letters a-e are used for deciduous teeth. Attrition patterns are coded according to the scores suggested by Bouts and Pot (1989, modified version of Brothwell's original tooth wear chart).

Methods of age and sex determination are generalised to give an idea of the bones used. Sexing based on the skull and pelvis used more traits than entries might suggest.

A few abbreviations have been used in the catalogue for commonly occurring pathological conditions and anatomical regions. These are as follows:

OA	osteoarthritis
OP	osteophytosis, osteophytes
C	cervical)
T	thoracic) vertebrae
L	lumbar)
L. & R.	left and right

Skeleton 3001 Sex: ?F, Age: Adult

Condition: Fair. Fragmentary bones, some surface erosion. No skull. A few fragments of foetal bone (R. femur length c.60mm).

Determination of age: Very little wear on teeth, suggests young, but not enough evidence.

Determination of sex: Pelvis appears female, bones medium.

Teeth:

-	-	-	-	4	3	2	-	-	-	-	-	-	-	-	-	O
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Skeleton 3008 Sex: M, Age: Y-MA

Condition: Fair-Good. Almost complete skeleton, skull broken. Green staining in neck area.

Determination of age: Tooth wear slight, some degeneration, pubic symphysis Todd V (27-30).

Determination of sex: Skull and long bones robust, pelvis male.

Height: 163.5cm from L. femur.

Teeth:

U	7	6	5	4	3	U	1	1	-	3	4	5	6	7	-
U	7	6	5	4	3	2	1	/	2	3	4	5	6	7	U

All unerupted teeth appear to be congenitally absent. Lower incisors overcrowded, laterals pushed back towards lingual.

Calculus: Medium Hypoplasia: Slight (c.5 years, lower PM1s)

Attrition scores:

- 3 4 3- 3- 3 - 3+ 3 - 3 2+ 2+ 6 3- -
 - 4 4+ 3- 2+ 4+ 5 5 - 4+ 2+ 3- 3- 3+ 3 -

Non-metric traits: Lambdoid wormians L., R&L parietal foramina, L. supraorbital foramen complete, R&L double cervical transverse foramina, sterno-manubrial fusion, R&L septal aperture, R&L slight acetabular crease, R&L Poirier's facet, R&L third trochanter.

Pathology: Cribra orbitalia R&L (cribrotic), slight pitting and striation biparietally (healed porotic hyperostosis?). Schmorl's nodes T5-12. OP T3-11, L3. OA T1 left vertebral rib joint at head (Grade I), transverse facets five L. and one R. mid ribs. Slight ligamentous ossification in spinal canal on vertebral arches. Slight degenerative change bilaterally on superior edges of acetabuli around foramina. ?Cyst in proximal first phalanx of L. foot, distal medial plantar articulation edge (2mm diam), R. unaffected. Necrotic lesion in sup-ant surface L4 body, some destruction internally causing formation of a "lump" anteriorly externally, poor condition. L1 lumbar ribs (R&L) present.

Skeleton 3010 Sex: ?F, Age: Adult

Condition: Poor. Very fragmentary skull, legs and fingers, eroded. 3 fragments of calcined skull of juvenile.

Determination of age: Distal femoral epiphysis fused.

Determination of sex: Long bones seem gracile and small.

Skeleton 3025 Sex: M, Age: Old

Condition: Fair. Almost complete skeleton, skull broken.

Determination of age: Tooth wear heavy, pubis arthritic, much degeneration.

Determination of sex: Skull and long bones fairly robust, pelvis masculine.

Height: 168.7cm from R. femur & tibia.

Teeth:

? X X X X X X X X X X X X X X 7 -
 X X 6 X 4 / 2 / 1 2 3 4 X X X X
 A A A A

Attrition scores:

- - - - - - - - - - - 2+ -
 - - 7 - 4+ - 5 - 6- 4+ 6 5 - - - -

Non-metric traits: L. asterionic ossicle?, R. exsutural mastoid foramen?, R&L zygomatico-facial foramina, R. supraorbital foramen complete, L. frontal foramen, R. accessory cervical transverse foramina (C4-5), sacralisation of L6? (fused at ala on L. and body on R.), R&L acetabular creases, R. os acromiale unfused (not present).

Pathology: New bone growth along endocranial surface of sagittal sulcus, running from frontal to occipital, suggesting infection or inflammation of the superior sagittal sinus? Schmorl's nodes T9-L1. OP C3-6, T11-L5. OA: eburnation of odontoid process joint of C1-2, bodies of C3-6 (Grade II); T9-L1 bodies around Schmorl's nodes, destruction and new bone, ?cysts; T12 rib joints (Grade III); T5-8 zygapophyseal joints (Grade II), T8 rib facets (III); L5 inferior zygapophyseal joints (III); loss of joint space lower T's; lower rib heads (II-III); prox MC1's and trapeziums with eburnation; eburnation and pitting both joint surfaces L. scaphoid and radius; R. lunate and distal ulna joints with eburnation; pubic symphysis (II); both acetabuli (II) and femoral heads (especially foveae); extensive destruction head R. MT1 with loss of medial side, proximal phalangeal articular surface very pitted and deformed with large OP formation on medial, possibly secondary to trauma or infection; head L. MT1 plantar surface eburnated. OP wrist bones, most joints and ligamentous attachments, new bone SIJ. Osteomyelitis? R? prox second phalanx, widening of shaft proximally, possibly following fracture? Fracture dist R. radius (distal ulna missing), some callus on posterior surface, well-aligned. Fracture dist R. fibula, well-healed, well-aligned, some callus. Osteochondritis dissecans? concave articular surface L. navicular (8x4mm), rounded edges through to cancellous bone. Small pit in R. talus sup facet at ant-med edge (c.4mm diam).

Skeleton 3027 Sex: F, Age: Young

Condition: Poor. Skull and fragments of long bones, pelvis, feet, very eroded and fragmentary.

Determination of age: Tooth wear medium.

Determination of sex: Skull and bones gracile, small acetabulum.

Height: 152.3cm from L. tibia.

Teeth:

| | | |
|-----------------|-----------------|-------------------|
| 8 7 6 5 4 3 2 1 | 1 2 3 - - 6 7 - | (maxilla missing) |
| 8 7 6 - 4 3 2 1 | 1 2 3 4 5 6 / / | |
| | A | |

Calculus: None Hypoplasia: Slight

Attrition scores:

| | |
|---------------------|--------------------|
| 1 3 4 3- 2+ 3 2+ 4 | 4 2+ 3 - - 3 2+ - |
| 2+ 4 3+ - 2 2 2+ 3+ | 3+ 2+ 3 2+ 2 7 - - |

Non-metric traits: R. acetabular crease?

Skeleton 3028 Sex: M, Age: Middle-aged+

Condition: Good, but fragmented in places. Skull, most arm bones, fragmentary torso, pelvis, leg bones except right femur, fragments of hands and feet. Disarticulated in the grave of 3025.

Determination of age: Tooth wear medium (but some teeth lost ante-mortem), some degeneration.

Determination of sex: Skull and bones medium-robust, narrow sciatic notch.

Height: 158.3cm from L. femur.

Teeth:

| | | |
|-----------------|---------------|-----------|
| A | A | A A A A A |
| X X / / / / / / | / / / / / / / | X X |
| / 7 X / / / / / | / / / / / / / | X / U? |
| C | A A | |

Calculus: Medium (only 1 tooth).

Caries: Interstitial cervical.

Periodontal disease: heavily pitted palate and alveolar bone.

Attrition score: 3+ for lower right M2.

Non-metric traits: R. lambdoid wormians, R&L parietal foramina, R. asterionic ossicle, L. Huschke's foramen, L. double hypoglossal canal, R&L extra palatine foramina, R&L zygoma-facial foramina, R. extra infraorbital foramen, R&L atlas bridge posterior, R&L acetabular crease, L. Poirier's facet.

Pathology: Cribra orbitalia (slight, porotic) of L. orbit only. Pitting and striation at rear of both parietals. Maxillary sinusitis both sides (due to abscesses). Large Schmorl's nodes of two lower T vertebrae - these also have large OP of R side, pitting and enlargement of inferior anterior body, and possible crush or wedging (or anterior epiphyseal dysplasia?). OP of L3-4. OA upper L. zygapophyseal facet C4 (Grade III). Superior parts of both acetabuli have pitting and erosion (Grade II). Above the rim on the left there is roughened new bone formation and a possible cyst within the bone (similar to supra-acetabular cyst described by Wells 1976, 176). There is coxa vara with retrotorsion of the left femur (the evidence of arthritic change in the hip joints suggests that this was probably bilateral). The anterior femoral shaft has little curvature and is unusually narrow anterior-posteriorly. There is an erosion of the inner table of the R. parietal, possibly due to post-mortem solution, but could be a myeloma or other lytic lesion. Other areas of granuloma and venous lines in parietals and frontal may have been enlarged by post-mortem erosion.

Skeleton 4021/4017 Sex: ?, Age: Sub-adult

Condition: V. poor. Very fragmentary skull, arms and legs.

Determination of age: Third molars unerupted.

Teeth:

| | |
|-----------------|-----------------|
| U 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 U |
| U 7 6 5 4 3 - 1 | 1 2 3 4 5 6 7 U |

Attrition scores:

| | |
|---------------------|-----------------------|
| 1 2- 2 2- 2- 2 2 2+ | 2+ 2- 2 2- 2 3- 2+ 2- |
| 1 2 3+ 2- ? 3- - ? | ? 2 3- 2- 2- ? 2 1 |

Non-metric traits: Both upper lateral incisors shovel-shaped.

Skeleton 4022 Sex: M, Age: Young?

Condition: Fair-Good. Almost complete skeleton.

Determination of age: Tooth wear light-medium, no degeneration.

Determination of sex: Skull and bones robust, pelvis masculine.

Height: 170.7cm from L. femur and tibia.

Teeth:

| | |
|-----------------|-----------------|
| C | |
| 8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8 |
| 8 7 6 5 4 / 2 1 | 1 2 3 4 5 6 7 8 |

Calculus: Slight-medium

Hypoplasia: Slight (3 bands lower incisors)

Caries occlusal.

Attrition scores:

| | | | | | | | | | | | | | | | |
|---|----|---|----|----|---|----|----|----|----|---|----|----|----|----|----|
| 1 | 2+ | 3 | 2+ | 2+ | 3 | 3- | 4+ | 5 | 3- | 3 | 2+ | 2+ | 3+ | 2+ | 2- |
| 1 | 2+ | 3 | 2 | 2+ | - | 4 | 6- | 6- | 5 | 3 | 2+ | 2 | 3 | 3- | 2- |

Non-metric traits: R&L lambdoid wormian bones, R. parietal foramen, R&L parietal notch bones, L. asterionic ossicle, L. mastoid foramen exsutural, R. post-condylar canal, L. precondylar tubercle, R&L double hypoglossal canal, R&L maxillary tori, R&L zygomatico-facial foramina, R. supra-orbital foramen complete, L. acetabular crease, perforated sternum, Carabelli's cusp upper R. M3 labial surface, slight shovelling both lateral maxillary incisors.

Pathology: Cribra orbitalia of R. orbit only (porotic), Schmorl's nodes T5-6, T9-12, L1-2, L4, very deep in inferior surfaces. OP slight L1. Small rounded exostosis (15x11mm) below sup-lat articulation of R. tibia to fibula, slightly anterior to articulation, possibly ossified haematoma? Tubercle of R. navicular is flattened with OPs around edge (traumatic?). Shaft R. fibula slightly enlarged on lateral edge c.90mm down, fairly smooth exterior, c.40mm long, possibly connected with other traumas, or infection, or neoplastic? Extra (lumbar) rib present (L1).

Skeleton 4031 Sex: F, Age: Old?

Condition: Fair. All bones represented.

Determination of age: Tooth wear medium, OA of pubic symphysis, some degeneration.

Determination of sex: Skull has a number of masculine traits as well as feminine, but sciatic notch and pubic angle wide.

Height: 154.6cm from tibiae and femora.

Teeth:

| | | | | | | | | | | | | | | | |
|---|---|---|---|----|---|---|---|---|---|---|---|---|---|---|---|
| ? | 7 | X | X | 4 | 3 | 2 | 1 | 1 | 2 | 3 | - | - | - | - | - |
| 8 | 7 | X | 5 | 4 | 3 | 2 | 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | C | | CA | | | | | | | | C | C | | |

Calculus: Slight-medium

Hypoplasia: Slight (lower canine, c.4 years)

Caries interstitial cervical.

Attrition scores:

| | | | | | | | | | | | | | | | |
|----|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| - | 4 | - | - | 4+ | 3- | 2+ | 3+ | 3+ | 2+ | 2+ | - | - | - | - | - |
| 3+ | 4 | - | 2+ | 3- | 3- | 2+ | 3- | 3+ | 2+ | 2- | 2+ | 2- | 3- | 2+ | 2+ |

Non-metric traits: R&L parietal foramina, partial metopism, R. mastoid foramen exsutural, R&L zygomatico-facial foramina, R. accessory infraorbital foramen, L. septal aperture, L. third trochanter?

Pathology: Skull very eroded in patches, but one or two erosions do not appear to be post-mortem, especially pitting on occipital which is also present endocranially (multiple myeloma??). OA pubic symphysis. Possible osteoporosis, especially noticeable on pelvic bones. Lipping L. scapula glenoid, both acetabuli, iliac crests, new bone linea aspera. OP T5-12 and L1-5, OA L3-5 facets (Grade II). Extended pubic tubercle on L., suggests at least one pregnancy. Possible infection of L. first rib distal end, both surfaces grained.

Skeleton 4041 Sex: M, Age: MA-Old

Condition: Fair. Almost complete skeleton.

Determination of age: Tooth wear medium-heavy, degenerative changes.

Determination of sex: Skull and long bones robust.

Height: 175.5cm from L. humerus, sciatic notch quite narrow.

Teeth:

| | | | | | | | | | | | | | | | |
|---|---|---|---|-----|---|---|---|---|---|----|---|---|---|---|---|
| | | | | A | | | | | | CA | | | | C | |
| 8 | 7 | X | 5 | / | 3 | 2 | 1 | 1 | 2 | 3 | 4 | 5 | X | 7 | 8 |
| - | - | 6 | 5 | 4 | / | / | / | 1 | / | / | 4 | 5 | 6 | 7 | / |
| | | | | CAA | | | | | | | | A | A | | |

Calculus: Medium

Caries interstitial/occlusal?

Attrition scores:

| | | | | | | | | | | | | | | |
|---|---|---|----|---|---|---|----|---|----|----|---|---|----|---|
| 1 | 5 | - | 5+ | - | - | 5 | 5 | 5 | 6- | 5+ | - | - | 6- | 5 |
| - | - | 7 | 5 | - | - | - | 5+ | - | - | 5 | 7 | 7 | 4+ | - |

Non-metric traits: R&L lambdoid wormian bones, R&L parietal foramina, R&L mastoid foramina exsutural, L. post-condylar canal (double), L. maxillary torus, R&L acetabular crease, R&L third trochanter, R. epicondylar process?.

Pathology: Cribra orbitalia both orbits (cribrotic?). OP C2-3, T4-12, L1-2, S1. OA C2-3 bodies (Grade II). Schmorl's nodes T8-L1. OA head L. first rib (II), and most rib heads. OA T10-12 rib head facets, especially

R. OA lesion most distal part L3-4 L. zygapophyseal joint, L3 resting on spinous process of L4, suggesting a possible crush fracture? OA anterior tubercle R. humerus (II).
Extra bone: Juvenile vertebral spine frag, frags of infant skull and two ribs.

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