

[Supplementary material]

Make a desert and call it peace: massacre at the Iberian Iron Age village of La Hoya

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Osteological methods

Standard osteological methods were used for age and sex estimation of the individuals (Buikstra & Ubelaker 1994). Age estimation was based on a complete assessment of skeletal and dental development, maturation, wear and degeneration of all available skeletal elements (White & Folkens 2005). Adolescent and adult sex estimation primarily made use of dimorphic pelvic features, followed by cranial morphology (Ferembach *et al.* 1980; Buikstra & Ubelaker 1994). Pathological alterations of the bones were assessed with reference to the respective standards of the field (Ortner 2003; Knüsel 2005; Martin & Harrod 2015). Perimortem injuries (i.e. those that occurred around the time of death) are of particular interest in this context (Sauer 1998). On post-cranial remains (primarily long bones) blunt force injuries are characterised by curved or V-shaped fracture outlines with oblique angles and smooth patinated margins showing no signs of healing. Sharp force blade injuries are characterised by narrow V-shaped incisions resulting from perpendicular blows, or smooth polished surfaces resulting from tangential blows, often exhibiting fine parallel striations. Analysis of the direction and the point of impact aids in interpreting how trauma occurred, the type of weapon used and the circumstances of death (Walker 2001). Macroscopic examination of the bone surfaces, aided by the use of low-magnification lenses, was used to closely examine the surfaces of potential perimortem trauma. Evidence for taphonomic damage and burning was also assessed (Shipman *et al.* 1984; White & Folkens 2005).

Detailed osteological and pathological description of the skeletons associated to the attack to the village at Iron Age II (layer A3, sector I)

The remains, both articulated and disarticulated, of a minimum number of 13 individuals (comprising nine adults of both sexes, two adolescents, a child of about three years age, and an infant of about six months age found on the streets and the floors of households of layer A3), have been subjected to osteological analysis as potential victims of the attack. This number has been estimated based on the individuals' age and sex estimations, available DNA data (Núñez *et al.* 2016; Olalde *et al.* 2019) and the location of the human remains within the site. Other human remains recovered during the excavations from this and earlier levels, which are restricted to the intramural burial of infants (Galilea & García 2002), have not been studied here because they come from normative funerary contexts.

Individual LHY1 corresponds to inventory numbers ACC-51 and ACC-74, and its skeleton was found in supine position, partially charred and underneath the eaves of a collapsed building located in unit squares A17-Z19. The right side of the postcranial skeleton was mostly complete, while the left side, the skull and the majority of vertebrae were not recovered. This individual is a probable male adult of indeterminate age. It shows a perimortem fracture on the distal metaphysis of the right humerus of 10 × 12 mm. The injury shows curved and V-shaped fracture outlines, oblique angles and patinated smooth margins with no signs of healing (cf. Figure 6a). There is also another possible perimortem trauma affecting the middle shaft of the right femur, showing an unusually right-angled outline, mixed angles and patinated margins (cf. Figure 6b). The distal end of this bone was not found. Both injuries may be tentatively interpreted as sharp force traumas resulting from an attack with a bladed weapon.

Individual LHY2 (inv. no. ACC-73) was found in supine position underneath the eaves of a collapse building, in unit square Y19 (cf. Figure 2). It is an almost complete skeleton of a young adult male (approximately 30 years old). The maxilla shows tooth decay in both first premolars and in the left canine, together with two oral abscesses. Mild degenerative changes are seen in vertebrae and ribs. Regarding trauma, the skeleton shows evidence for arm amputation at the distal shaft of the right humerus. This exhibits a cut with curved outlines, oblique angles and patinated smooth margins, with no signs of healing (cf. Figure 4). Neither the distal area of the humerus nor the forearm were found near the skeleton at the time of the discovery, which might be explained by body-part trophy practices among Iberian Iron Age groups (e.g. Armit 2012). The skeleton has been dated to 361–195 cal BC at 95.4% (2195±25 BP, PSUAMS-2078) (Olalde *et al.* 2019).

Individual LHY3 (inv. no. ACC-108) was found lying in a lateral decubitus position in a street near the village's main square, in unit square B33. It corresponds to the skeleton of a young adult male (approximately 35 years old), whose skull is missing (cf. Figure 2). This individual provides clear evidence of having been beheaded. The fourth cervical vertebra shows an oblique cut in the transverse plane directed from the anterior left side that has completely removed the right superior articular facet and its transverse process, the superior margin of the body and the right part of the lamina. The injury appears to have resulted from a single blow to the anterior neck from left to right, at a downward angle (cf. Figure 3a). As the cut is to the inferior surface, this part of the vertebra would have remained attached to the body, while the remaining fragment (unfortunately not found in the excavations), together with the third cervical vertebra, the axis and the atlas would have remained attached to the skull. This cut marginally affected the right superior articular facet of the fifth cervical vertebra. The skeleton also shows a V-shaped fracture in the right clavicle with oblique and smooth margins and no signs of healing compatible with a perimortem injury (cf. Figure 3b). In addition, the right scapula has two perimortem sharp traumas that sectioned the edge of the acromion on the posterior and lateral sides, and another affecting the inferior part of the glenoid fossa, showing curved outlines, oblique angles and patinated smooth margins (cf. Figures 3d–e). Finally, a first sacral vertebra fragment shows a cut affecting at least the right articular facet and transverse process (cf. Figure 3c). All aforementioned injuries seem to have been inflicted in a face-to-face confrontation, suggesting that this individual was subject to repeated blows in the moments leading up to their death. The fact that no skull was found may be tentatively seen as evidence for headhunting practices (Llanos 2007/2008; Armit 2012).

Individual LHY4 (inv. no. ACC-142) is represented by the skull, part of the hyoid and the first cervical vertebra (cf. Figure 2). It was found on the street, unit square B37, approximately 11m away from individual LHY3, who as mentioned was beheaded and whose skull was not found. For that reason, this bone assemblage has been traditionally linked to that individual. However, high dental attrition and gracile sexual dimorphic features indicate a mature adult female rather than with a young adult male, which has been recently confirmed by DNA analysis (Olalde *et al.* 2019). These cranial remains show no clear evidence for trauma.

Individual LHY5 (inv. no. ACC-136) consists of an isolated right mandible fragment, two hyoid splinters and two small cranial vault fragments, which were found on the street in unit square C37. The remains belong to a mature adult female (approximately 45–55 years old)

with severe dental wear. Despite their spatial proximity with LHY4, DNA analysis has confirmed that the remains belong to different individuals (Olalde *et al.* 2019). No signs of trauma are evident. The skeleton has been directly dated to 365–204 cal BC at 95.4% (2215±20 BP, PSUAMS-3466) (Olalde *et al.* 2019).

Individual LHY6 (inv. no. ACC-112, ACC-158, 742-1413) was also found on the street, in unit square F15 (cf. Figure 2). It corresponds to an almost complete skeleton of a probable female adolescent of approximately 12–15 years. It shows clear evidence for arm amputation at the proximal shafts of both the right ulna and radius, produced by a single cut. In this case, the amputated forearm (medial/distal ulna and radius together with hand bones) was found separated but within the same square. Affected bones exhibit continuous curved fracture outlines, oblique angles and patinated smooth margins with no sign of healing, suggesting a bladed metal weapon, either a sword or an axe (cf. Figure 5a). The cut starts at the posterior sides of both bones following an oblique angle, consistent with the forearm being in pronation. The distance of approximately 2.8m between the forearm and the rest of the skeleton has served as tentative evidence that the individual, once injured, was able to move some meters before falling dead (Etxeberria *et al.* 2005). The skeleton also shows an unhealed superficial incision of 4mm on the anterior shaft of an indeterminate left rib, near the vertebral metaphyseal area, that exhibits transverse and/or V-shaped fracture outlines, oblique angles and patinated smooth margins, together with small concomitant fractures (cf. Figure 5b). This injury was potentially inflicted perimortem by an attacker positioned behind the victim.

Individual LHY7 (inv. no. LHY.X16.x130.y270.z267), located on the street in unit square X16, is solely represented by an isolated right ilium. It shows no signs of trauma and belongs to a male adolescent older than 15.

Individual LHY8 (inv. no. LHY.A3.Y16.x390.y345.z250) has been identified through an isolated proximal fragment of a right humerus that was found on the street in unit square Y16. It corresponds to an indeterminate adult of unknown sex and shows no evidence of trauma.

Individual LHY9 (inv. no. ACC-87, LHY.29A.125.C and LHY.79(A3.A27.x300.y289.z108) was found underneath the eaves of a collapsed building, in unit squares A27-A29. The skeleton is partially charred and was preserved almost complete, although lacking the skull, cervical vertebrae (except for C1) and both forearms and hands. It belongs to an indeterminate adult male exhibiting an antemortem left hip dislocation and two possible perimortem sharp injuries on the capitulum of the right humerus and on the distal epiphysis of

the right fibula (cf. Figures 7–b). Both cuts exhibit continuous curved fracture outlines, oblique angles and patinated smooth margins with no signs of healing, suggesting a bladed metal weapon.

Individual LHY10 (inv. no. LHY.A3.x163.y53.z10) is represented by an isolated distal fragment of a left humerus. It belongs to an indeterminate adult of unknown sex and shows no evidence of trauma. The inventory number has lost any reference to the unit square where it was recovered and thus prevents establishing any spatial link to other human remains.

Individual LHY11 (inv. no. ACC-63) corresponds to an isolated frontal bone that was found on the street in unit square Y9, at some distance from any other human remains. Its features are compatible with a probable male young adult, and it shows evidence for mild *cribra orbitalia*. No traumatic injuries are visible.

Individual LHY12 (inv. no. ACC-129) consists of the cranium and the mandible of a three year-old child, found in association with a horse-shaped fibula/brooch and a bracelet and on the floor of household 61, in unit square X35. It shows no signs of trauma.

Finally, individual LHY13 (inv. no. ACC-13) corresponds to an almost complete skeleton that was also found lying on the floor of household 19, in unit square A15. It belongs to an infant of approximately six months of age, showing no evidence for trauma.

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