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TRAUMATIC PATHOLOGY AND VIOLENCE BETWEEN THE 7th AND 11th CENTURIES IN THE HERMITIC NECROPOLIS OF LAS GOBAS (LAÑO, TREVIÑO, BURGOS)

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Abstract

We present here an osteoarchaeological study of the human remains exhumed from the necropolis of Las Gobas (Burgos, Spain), a hermitic community settled in a distant valley under the protection of a large rocky outcrop, where these persons dug out their churches and dwelling places. The necropolis corresponds to a chronology extending from the 7th to the 11th centuries, and it consisted of graves excavated in the rock, simple pits, and a sarcophagus-like burial, with a total of 42 individuals from both sexes and from different age groups. The steep, stony physical environment could explain the high frequency of fractures in the limb bones, possibly related to accidental falls or blows. However, perimortem and antemortem lesions caused by sharp-edged weapons indicate the presence of episodes of interpersonal or intergroup violence in this Christian hermitic settlement.

Key words: Trauma, Violence, Early Medieval, Necropolis.

Introduction

The rock complex of Las Gobas is located in a small gorge pierced by the Laño River and its Barrundia tributary, in the basin of the Ayuda River, in the town of Laño (Treviño, Burgos). The current town of Laño lies at the bottom of a small valley in whose rocky margins were excavated two of the most important rock complexes in the north of the Iberian Peninsula: Las Gobas, located on the western side of the valley, and Santorcaria, on the east side. Las Gobas is composed of 13 caves, two of them with an unequivocal liturgical function (Las Gobas 4 and 6). The other 11 caves have a residential or storage function (Azkarate 1988; Azkarate-Solaun 2008; Azkarate-Solaun 2015). The archaeological work carried out throughout the years 2007 and 2010–2013 consisted of the excavation of the large terrace (ca. 1500 m²), located at the foot of the rocky outcrop in which the caves were excavated. This archaeological intervention has

allowed for the recording of a rich occupational sequence that started in the 7th century and continued until the 11th century.

The data collected from the excavation suggest an occupation of the area in prehistoric times, as it was shown for the neighboring complex of Montico de Charratu (Baldeón et al. 1978), and even in Roman times, although it would not be until the 6th century that the first caves were conditioned and the adjacent spaces urbanized. The history and evolution of the site is divided into the following two main phases based on radiocarbon dating (Azkarate-Solaun 2008, Azkarate-Solaun 2015).

Phase I. 7th – 9th centuries AD

It would have been throughout the 6th century that in addition to the church of Las Gobas 6 some of the caves currently visible would have been opened. In this same century, along with these rocky spaces a large wooden building was constructed in the hillside, annexed to Las Gobas 6. It was built at ground level with large wooden poles around the perimeter and rectangular in shape, and it was later reconstructed together with another domestic building completely erected in stone in the second half of the 7th century. Alongside these structures, a large burial area was created, which ended up occupying most of the space in front of the caves. The archaeological evidence points directly to the presence of an important center: the development of the hillside required the mobilization of important resources; the presence of domestic constructions built in stone is intimately related to power and wealth (Wickham 2008, Bianchi 2012); ceramic production related to the middle valley of the Ebro River have been recorded (Azkarate-Solaun 2016: 220); parietal inscriptions can be observed inside the caves (Azkarate-García Camino 2012). All these indicators, together with

other evidence (anthropization of the landscape, livestock, hunting, storage capacity) point in this direction (Azkarate-Solaun 2015).

The necropolis associated with this phase of occupation was in use since the beginning of the 7th century until the 9th century. During the 7th century and the first half of the 8th century, the necropolis occupied the space at the foot of Las Gobas 4, adapting to the space between Las Gobas 4 and the beginning of the slope. Subsequently, during the second half of the 8th century and the 9th century, it extended in a meridional direction until it occupied the space in which the wooden dwelling was located. In total, 15 burials are assigned to this period, organized in the two periods mentioned above (Figure 1). To the first period belong burials 1, 8, 26 and 28, while burials 22A, 22B, 31, 32, 33, 34, 36, 37, 38, 47 and 104 correspond to the second period. Most of the burials (except burials 32, 47 and 104), present an orientation similar to that of Las Gobas 6. The isotopic studies carried out on these burials indicate that most of these persons come from the valley or its surroundings.

Phase II. 10th – 11th centuries AD

The final years of the 9th century would bring significant changes to the place that affected both the terrace and the caves. It would be throughout the 10th century that the second church was built (Las Gobas 4). The material from its construction, together with other material, would be used to amortize and level the area where the domestic buildings were previously located. The gradual abandonment of the settlement and the transfer of the population also accompany this amortization to a new site (the current town of Laño). However, this abandonment does not imply the disappearance of the cemetery and the liturgical use of the place. A new level of burials with 28 graves, all of them with similar E–W orientation, is placed on the aforementioned levelled filling.

The burials took place gradually over the filling of the terrace at first, and later in the surroundings of the caves and even inside them. On the southern terrace, 13 burials are distributed unevenly (burials 101, 102, 103, 40, 30, 29, 43, 41, 44, 42, 45, 39, 35), with a similar E–W orientation, with the exception of burial 46, oriented NW–SE. The remaining 15 burials (burials 2, 3, 4, 5, 7, 9, 10, 11, 12, 13, 14, 17, 23, 24, 27), are distributed profusely in the front space of Las Gobas 4 and 5 and, to a lesser extent, Las Gobas 6 and 7. All of them have a similar E–W orientation. This second burial phase starts at the beginning of the 10th century, with the construction of Las Gobas 4, and continues until the beginning of the 11th century, at which time both the settlement and the burial are amortized. Unlike what happened with the previous burial phase, the isotopic studies indicate that many of these burials correspond to foreign individuals and, interestingly, the great majority are women and children.

Anthropological analysis

First, a complete inventory of the skeletal remains was undertaken, followed by a taphonomic and biological profile. For the estimation of sex and age, the recommendations of human osteology manuals were followed (Ubelaker Buikstra 1994). Specifically, for sex estimation, the morphology of several features of the skull (Acsadi-Nemeskeri 1979, Walker 2008), the coxal bone (Klales et al. 2012), and the diameter of the head of the femur (Albanese et al. 2008), were used. For the estimation of age, several methods were used, namely the state of general fusion of the bones and, in particular, of the clavicle and sacrum (Scheuer-Black 2004), the morphological characteristics of the sternal end of the fourth rib (Iskan-Loth 1989), the morphology of the pubic symphysis and the auricular surface of the coxal bone (Brooks-Suchey 1990, Meindl-Lovejoy 1989), as well as the closure of the cranial sutures (Meindl-Lovejoy 1985).

Traumatic pathology

One of the greatest problems in the paleopathological diagnosis of skeletal remains is the adequate interpretation of bone breakages in the absence of signs of healing. Although in some medical definitions the term breakage is similar to that of fracture, it is useful to clarify the difference between the final result (broken bone) and the mechanism of the breakage produced in life (fractured bone). In the context of paleopathological studies, the simple manifestation of bone breakage can happen in three different situations (Etxeberria 2006): Antemortem breakages, produced during the life of a person, by accident or by intentional blows, where the fractured bone underwent remodelling through a process of osteogenesis resulting in a bone callus; perimortem breakages, directly or indirectly related to the final death of the person; postmortem breakages, not related to the life or death of the person, and not being of interest to pathology. The latter may be the result of: taphonomic processes from the time of death until the remains are recovered, damage during the archaeological excavation and recovery of the remains, damage during transportation and storage at the laboratory, or damage due to inappropriate handling during the study.

Thus, the interpretation of the bone breakages without in situ information from the site of recovery might represent an insurmountable problem. In order to arrive at a correct interpretation of the breakages observed, we should take into account two steps of analysis. First, information obtained in situ through appropriate archaeological methodologies by specialists. The presence of professionals with experience in human remains can assure a meticulous collection of field data crucial for later interpretations, like displaced perimortem fractures with the overlapping of fragments as a consequence of muscle contraction. Second, information derived from the study of the remains at the laboratory, with special attention to absence, incipient presence or presence of bone healing. With regard to bone healing, after a fracture, a granulation tissue forms a bone callus that will be replaced by laminar bone, which in turn will undergo

remodelling, with the definitive consolidation of the fracture in 4 or 5 months, depending on the bone considered. During this process, the bone passes through hematoma and inflammation, angiogenesis and cartilage formation, cartilage calcification, cartilage removal and bone formation, and finally remodelling. What is important for interpretation in paleopathology is that 32 hours after the fracture, there is a cellular response as a consequence of the hematoma; in three days there is communication established between active cells from the outside to the inside of the cortical bone; and finally, in approximately five days, the periosteal reaction produces new bone that can be observed, with a maximum response by approximately 9 days. Of course, these times are approximate and vary according to age, sex and the general condition of the person. With this brief introduction to bone trauma and healing, we present here the traumatic pathology observed in the necropolis of Las Gobas.

Burials

A team of archaeologists and anthropologists led by Herrasti carried out the excavation, documentation and recovery of the burials. A total of 43 individual graves were studied, excavated in pits in the rocky substrate or in tombs delimited by slabs carved and squared. In two of the graves (3 and 27) only loose bones and bone splinters were recovered, while burial 22 contained two individuals buried together. Therefore the number of individuals analyzed is 42.

Following Christian ritual, the bodies were placed in supine position, with the arms flexed at the level of the thorax or the pelvic girdle, and the legs extended in parallel. The position of the head vary, facing to the left or right side, or facing the front. For some burials there was evidence that the corpses were shrouded and then inhumed in plain earth or in rocky graves, covered with soil (filled space burials). This allowed the anatomical connections to remain tight and intact (Fig. 7.2). In the case of the graves covered with slabs of stone, the body was not covered with soil (empty space burial). In these ones, the bony joints, and particularly the labile ones, like the carpal ones, became loose or detached during the decomposition process. Post-depositional alterations were also observed which led to the loss of some remains, and several burials were affected by new burials or by the construction of new structures after the use of the necropolis finished. Changes in the position of the bones were also observed due to the action of roots. As a result of these factors, conservation was unequal across burials, and bone preservation was partially affected.

With regard to the age profile, 8 individuals were children, one was a juvenile, and 33 were adults (Table 7.1). Most of the skeletons were sexed as male, 21 out of 34, a total of 62% of the sexed individuals (Table 7.1). The absolute chronology extends from the 7th to the 11th centuries, and as aforementioned, two phases of burial were differentiated based on radiocarbon dating: a) 7th to 11th centuries, b) 10th century and 11th century (Graphs

7.1 and 7.2). The individuals for whom signs of traumatic lesions have been observed are presented according to these chronological phases.

7th – 11th centuries

Burial 1

This is the only double inhumation of the necropolis, with individual 1B above individual 1A. Both were in a supine position and oriented E–W (Fig. 7.3). The grave was carved out of the rock and delimited by vertical stone slabs shared by adjacent graves. The lower half of the burial was disturbed since it was left unprotected, and there was a passing area next to the rock wall for pedestrians and animals.

For individual 1A, only the upper half of the skeleton, and the left pelvis and femur were preserved. Since the burial was superficial and it was located in the upper part of the rocky outcrop, very close to the wall, the bone preservation was affected by dehydration. It corresponds to a male in supine position, flexed arms and hands on the abdominal area, placed directly on individual 1B. The proximal third of the fifth left rib presents a consolidated bone callus.

Individual 1B underwent post-depositional alterations with loss of the bones of the lower limbs. It was found in a supine position, with arms flexed and hands over the pelvic area, and the legs extended in parallel. The head was tilted, resting on the right side and with the jaw completely disarticulated (Fig. 7.4). It corresponds to a mature male adult with a robust constitution. On the left side of the frontal bone it presents a scalp lesion, oval in shape, of an incised-blunt type (Fig. 7.5). The wound was caused by a cut with a sharp-edged blade that incised tangentially and sectioned the surface of the skull from back to front and from the superior to inferior. The edge of the weapon, probably a sword or ‘falcata’ type, collided with the anterior wall of the injury, where the change towards an upward direction is observed. There are no signs of osteogenesis, so it can be circumscribed to the perimortem period, and probably associated with the cause of death (Fig. 7.6).

The simultaneous nature of the two inhumations and the existence of a perimortem injury allow us to suggest that both deaths took place in the same violent episode or in the circumstances related to it.

Burial 26

An almost rectangular grave was excavated in the rock floor. It is interesting to note that the grave was wide but the inhumation only occupied half of it. This tomb remained filled with soil and, therefore, the bones were in a good state of preservation, with the exception of the cranium, which was more superficial (Fig. 7.7). It was a young adult male, buried with his arms flexed and his forearms crossed over his chest (Fig. 7.8). The persistence of the articulated anatomical connections suggest that the deceased was shrouded and covered with soil, allowing the preservation of labile anatomical connections. The first and fifth right metacarpals present

consolidated, antemortem fractures, with a secondary arthrosis of the carpus (Fig. 7.9).

Burial 22

This is a sarcophagus tomb, excavated in the rock, containing the remains of two male individuals (Figure 7.10). Individual 22B was in anatomical connection on the floor of the tomb, with the unconnected remains of individual 22A on top. Individual 22B is well represented and corresponds to a tall man, with an estimated height of 181 cm, who barely fit in the grave. It presents a large lesion in the middle superior area of the frontal bone. It is an incised-blunt wound with a deep central axis, 5 cm long and 2 cm wide, which draws the imprint of the injury caused by the cutting edge of a sharp-edged weapon (Fig. 7.11). The surrounding area of the wound presents an oval shape with a lipped appearance and signs of regeneration.

Thus, this individual was hit with a sharp weapon, sword-like by the length of the injury, which struck him diagonally. The attacker was in front of the victim and hit him from left to right, and from the superior to inferior. Despite the greatness of the injury, this individual survived, since the lesion was remodeled adequately as the cutting weapon did not affect the intracranial aspect, which remained undamaged. However, the lesion would be noticeable externally, because the entire area was depressed (Fig. 7.12). This individual also presents an antemortem fracture in the third metacarpal of the right hand, an injury that could have been caused by a fall or by a blow of the fist against a hard object (Fig. 7.13).

Burials 32, 34 and 36

These burials present signs of antemortem trauma. Individual 32 presents a bulge derived from a well-consolidated fracture callus on a right rib, while individual 34 presents an angulation due to a consolidated fracture of the left fifth metatarsal. Individual 36 presents several consolidated fractures to the distal end of the right ribs, with calcification of the intercostal ligaments as a consequence (Fig. 7.14).

Burial 47

This is a single grave of an adult female individual. In the proximal third of the left ulna a well-consolidated fracture callus is observed. It corresponds to an oblique fracture of the diaphysis of the ulna, manifested in a thickening of the diaphysis, but without deformation or misalignment (Fig. 7.15). This lesion would be compatible with a so-called defense fracture, interpreted as defensive wounds caused when an individual uses the forearm to shield a blow to the head, so that the ulna is exposed and receives the blow. This individual presented another fracture at 7.15). A slight relief and widening can be observed close to the epiphyseal line, with little deformation. The most common etiology for the Colles fracture is a fall, with extension of the arm and hand to soften the impact against the ground, transmitting the opposing force to the radius and causing the fracture. Colles fractures are more common in females.

10th to 11th century

Burials 39, 46

Both belong to male individuals. Individual 39 presents an antemortem fracture at the mid-diaphysis of the fourth left metacarpal. The fracture is of the oblique type, which diagonally sectioned the shaft with a thrust of both halves. A bulky callus was formed in the remodeling process, with shortening and deformity from the finger (Fig. 7.16a). In the radiographic image, the plane of fracture can be observed (Fig. 7.16b).

Individual 46 presents a callus on the third right metatarsal. There is a misalignment and thickening of the distal diaphysis, with a slight detachment of the epiphysis, but it resolved in an adequate manner (Fig. 7.17).

Burial 29

This is a complete skeleton buried in a tomb of stone squared slabs, in a supine position, with arms flexed with hands on the thorax and pelvis, and legs extended. The mandible is disarticulated and slightly rotated. This individual presents a Colles type fracture on the right radius, with deformation and misalignment, and another antemortem fracture on the left fifth metacarpal, a well-resolved fracture callus with slight swelling of the diaphysis and slight angulation (Fig. 7.18). Besides this, signs of generalized osteoporosis are observed, with a clear reduction in bone weight and cavities in the vertebral bodies. This is probably related to the collapse of the third lumbar vertebrae, with visible wedging of the body, with the line of diagonal failure that runs through the vertebral body visible on the radiograph and, secondary to this condition, osteophytic development in the adjacent vertebrae (Fig. 7.19, 7.20 and 7.21).

Burial 41

This is a young adult male with a robust constitution. Another Colles fracture can be observed on the right radius (Fig. 7.22), with a widened distal end.

Burial 101

This is a grave made of slabs in which an individual was buried in a supine position with the right arm extended, the left one flexed over the abdominal area, and the legs extended (Fig. 7.23). It corresponds to a mature adult male, older than 40 years old.

The most prominent lesion is located on the upper part of the frontal bone. It is a lenticular bone loss with two depressed areas at the corners of both ends (Fig. 7.24). No signs of regeneration are observed, so it is a perimortem injury that could be associated with the cause of death of the individual. A sharp-edged weapon hitting the superior part of the head of this person probably caused it. Other antemortem lesions of potential traumatic origin were observed. The left side of the mandibular body is deformed with an ostensible reduction in body height, and a misalignment of the lower part of the bone, with a very marked notch (Fig. 7.25). The etiology of the

lesion could be related to a traumatic lesion to the face of this person that produced a mandibular fracture. The lesion healed adequately, but as a consequence, the morphology of the mandibular body was modified and suffered the derived loss of premolars and molars with complete reabsorption of the alveoli.

Adhesions on the visceral faces of the ribs can be observed, consisting of apposition of bone over the cortex, by regenerative remodeling of a previous lesion. The arrangement of the alterations in a line that runs along those left ribs suggests a traumatic type of injury on the left side of the thorax, as a blunt force struck from the right side of the victim (Fig. 7.26).

Finally, the 11th and 12th thoracic vertebrae suffered a collapse of their respective bodies that led to a reduction in their height. Since neither osteophytes nor cavitations or abscesses were observed, the simplest hypothesis would be a vertebral collapse due to osteoporosis, since in general, all the bones have lost structure and are fragile. Thus, this individual presents antemortem lesions with satisfactory regeneration, although with sequelae, in addition to a head injury that could be related to his death.

Discussion and conclusions

It is always important to first indicate that studies on episodes of violence in the past are limited in terms of the ability to interpret their true incidence and consequences. In the same way that establishing the diagnosis of injuries and illnesses is always a challenge in current medicine, which often offers better conditions than paleopathological studies, appreciating the signs and symptoms establishing the causes of death in the past is a very difficult task, whose approach is biased and always approximate.

A total of 20 traumatic lesions were observed in 42 individuals from Las Gobas. If we consider that these lesions were observed only in adult individuals, specifically in 14 out of 32 adults, the frequency of traumatic conditions can be considered high (43.7%). The distribution of these lesions by individual and throughout the skeleton is presented in Tables 2 and 3. Males were most affected, since only one female skeleton (burial 47) presented traumatic pathology, in agreement with findings from other studies in medieval populations from other geographical locations (the United Kingdom, France, Serbia, Poland) (Geber 2012; Carty 2014; Djuric et al. 2006; Agnew et al. 2015). The distribution of the injuries indicates a predominance in the upper half of the body (thorax, upper extremities and head), with no traumatic injuries observed in the lower extremities, in contrast with observations from other cemeteries, where fractures in the lower limbs are observed (Judd-Roberts 1999, Djuric et al. 2006). It is interesting to note that 35% of the fractures are located on the bones of the hands and feet. These are fractures of metacarpal or metatarsal diaphyses, which were remodeled in a varied manner, with greater or lesser misalignment or shortening. The presence of trauma to the ribs, forearms, hands and feet

can be related to accidents due to agricultural activities practiced in a rural environment (Molleson 1992; Djuric et al. 2006: 167). The interpretation of some of the traumatic pathology observed at Las Gobas could be related to the rocky environment in which the settlement is located, which would explain these injuries as due to the transit through this rugged terrain and the need to move from the valley to the mountain. Thus, the 11 left ribs with healed fractures from individual 101 could have been caused either by an accidental fall or by an episode of interpersonal violence. Similarly, the forearm fractures observed in the female individual 47 could be associated with accidental falls (a Colles fracture in the right radius), and to an episode of defense with an aggressor (the parry fracture in the left ulna). The antemortem lesions observed in the ribs, hands and feet would be associated with accidental blows or falls (Fig. 7.27).

Of special interest are the incised-blunt lesions observed on the crania of skeletons 1B and 101, inflicted by a sharp-edged blade in the perimortem period and which were probably associated with the cause of death (Fig. 6). The healed (antemortem) cranial lesion observed in individual 22B was also probably caused by a long, sharp-edged blade. So, in three out of 32 adult individuals from Las Gobas (9.4%), lesions probably associated with episodes of interpersonal violence can be observed. The antemortem lesion observed in the mandible of individual 101 could have also been caused by a sharp-edged blade, with subsequent infection, tooth loss, healing and permanent alteration of the shape of the bone (Fig. 25). Furthermore, from the double inhumation of individuals 1A and 1B, and the perimortem lesion of the latter, it could be suggested that individual 1A (a young adult male) could have also died from violent causes.

Most of these injuries that can be attributed to violent episodes of interpersonal or intergroup conflict are located on the frontal bone and the left side of the skull, suggesting the attack of a right-handed opponent (Roberts-Manchester 2005, Djuric et al. 2006: 174). Individual 1B was buried in the only double and simultaneous burial, lending more support to the interpretation of a violent death due to a violent episode involving several persons. Similar cases of violence have been published for Al-Andalus, for the period between the 8th and 15th centuries, in Tolmo de Minateda (Hellín, Albacete), and in the maqbara of La Torrecilla (Arenas del Rey, Granada), with examples of incised wounds, or in the House of Charity of Valladolid (Castillo et al. 2004: 530–532), in addition to those presented by de Miguel in this volume. Individual 22 fits the prototype of the medieval warrior by its size, with an estimated stature of 181cm, and great skeletal robustness, features that have been considered as criteria in the selection of professional warriors (Bolyston et al. 2017). Furthermore, he was buried in a clearly differentiated tomb consisting of a sarcophagus carved into the rock. The lesion presented is an extensive diagonal wound with a 'V' section that did not penetrate the endocranium, pointing to the possible protective presence of a helmet or chain mail (Fig. 7.28). These types of shallow injuries were

already described by Ingelmark (1939: 168) on the skeletons of the fighters of the battle of Wisby, who wore chain mail. The provision of medical care cannot be ruled out in this case, for the recovery of such a great injury. In another hermitage center near Las Gobas, located in La Virgen de La Peña in Faido (Treviño, Burgos, Figure 29), a skull was found with a cranial trepanation performed by drilling with clear survival of the individual, indicative of medical knowledge able to undertake that type of intervention (Etxeberria et al. 2006). On the contrary, in the example of the male individual inhumed in a doubleaged medieval tomb of San Miguel de Molinilla (Fig. 7.30), the cutting edge of a sword penetrated diagonally into the cranial cavity causing his death, as there are no signs of regeneration (Etxeberria et al. 2006). The necropolis of Las Gobas (Laño, Treviño, Burgos) is part of a hermitic phenomenon that extended to the north of the Iberian Peninsula, particularly in the area of the upper Ebro River and its tributaries, which experienced its peak period between the 6th and 11th centuries. Many Christian communities of reduced population settled in marginal areas of the territory, but close to water courses that allowed the maintenance of agricultural activity and the use of the forest. In these settlements, the living, the religious and the funerary spaces were close to each other, in dwellings carved into the rock cliffs. The need to live in marginal areas seeking refuge and distance from the most disputed areas during the so-called Reconquista did not prevent conflicts, which are not known documentarily, but that have left testimony in the skeletal remains. Not in vain, violence has served as a means of social and administrative control of the territory throughout history.

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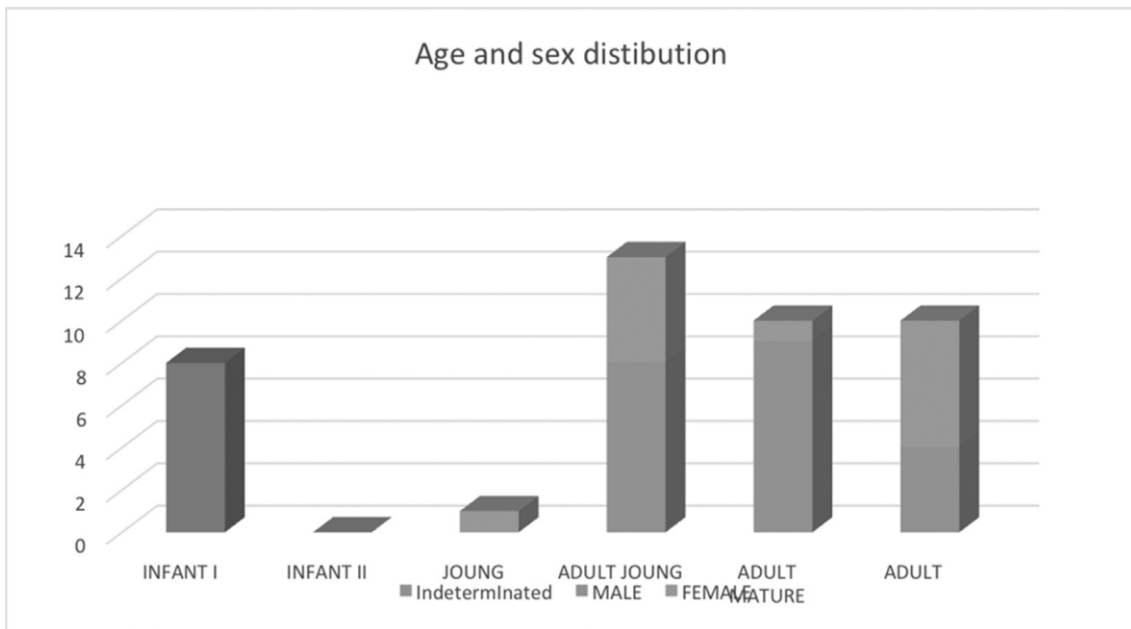
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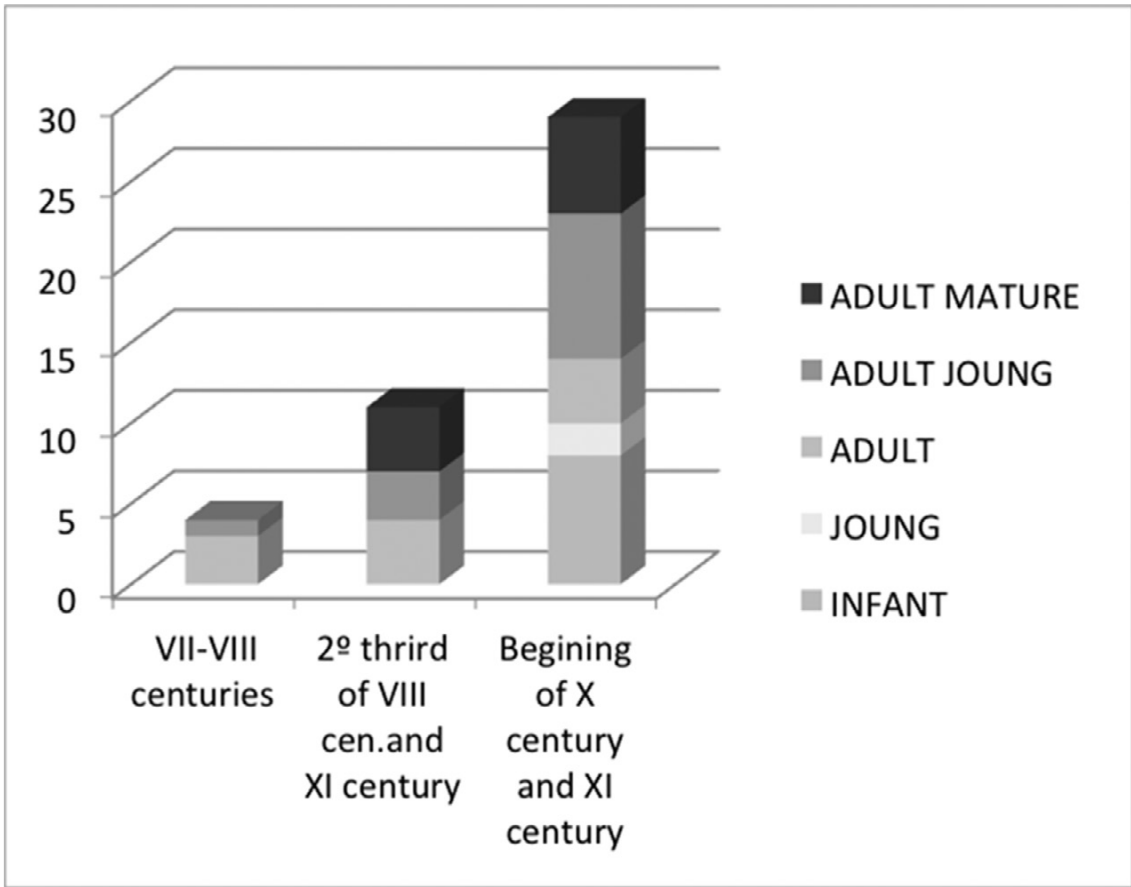
TABLES AND GRAPHS

Age group	Undetermined	Male	Female	Total
Infant I	8			8
Infant II				
Juvenile			1	1
Young Adult		8	5	13
Mature Adult		9	1	10
Adult		4	6	10
Total	8	21	13	42

Table 7.1. Distribution by age group and sex of the individuals from Las Gobas.



Graph 7.1. Distribution by age group and sex of the individuals from Las Gobas.



Graph 7.2. Distribution by age group and chronological phase.

BURIAL	CHRONOLOGY	SEX	AGE	FRACTURE LOCATION				
				Cranium	Mandible	Thorax	Forearm	Hands and feet
1A	s. VII-s. VIII	M	Young Adult			Rib fractures		
1B	s. VII-s. VIII	M	Young Adult	Scalp lesion, perimortem				
26	s. VII-s. VIII	M	Young Adult					Right 1 and 5 metacarpals
22A	s. VIII-s. IX	M	Young Adult			Rib fractures		Right metacarpal 3
22B	s. VIII-s. IX	M	Mature Adult	Sharp blunt lesion, regeneration				
32	s. VIII-s. IX	M	Mature Adult			Rib fracture		
34	s. VIII-s. IX	M	Young Adult					Left 5 metatarsal
36	s. VIII-s. IX	M	Mature Adult			Rib fractures		
47	s. VIII-s. IX	F	Adult				Left ulna Right radius (Colles fracture)	
101	s. X-s. XI	M	Mature Adult	Sharp lesion, perimortem	Left body	11 left ribs fractures		
29	s. X-s. XI	M	Mature Adult			Lumbar fracture	Right radius (Colles fracture)	Left 5 metacarpal
39	s. X-s. XI	M	Young Adult					Left 4 metacarpal
41	s. X-s. XI	M	Young Adult				Right radius (Colles fracture)	
46	s. X-s. XI	M	Mature Adult					Right metatarsal 3

Table 7.2. Distribution of traumatic lesions by individual, chronology, sex, age.

TRAUMATIC LESIONS	N°	%
Cranium	3	15%
Mandible	1	5%
Ribs	5	25%
Vertebral column	1	5%
Forearm	3	15%
Hands	5	25%
Feet	2	10%

Table 7.3. Distribution of traumatic lesions by skeletal location.

FIGURES



Figure 7.1. Cenital view of the necropolis. Figure 7.2. The corpse was probably shrouded. Forearm crossed on the thorax. Detail of the close connection of the carpal articulations.



Figure 7.3 (left). Double inhumation in Burial 1. Figure 7.4 (right). Direct overlay of Individuals 1 and 28 (1A and 1B).



Figure 7.5 (left). Superior view, incised injury in frontal bone. Figure 7.6 (right). Closer view of the tangential cut on the frontal bone.



Figure 7.7 (left). View of burials 26 and 01. Figure 7.8 (right). Burial 26, a young adult male.



Figure 7.9. Right hand, antemortem fractures of the first and fifth metacarpals.



Figure 7.10. Tomb 22, in the shape of a sarcophagus.



Figure 7.11 (left). Traumatic injury on the metopic suture. Figure 7.12 (right). Lesion around the wound.



Figure 7.13. Angulation and shortening of the third right metacarpal compared to the left.



Figure 7.14. Rib fractures with ossification of intercostal ligaments.

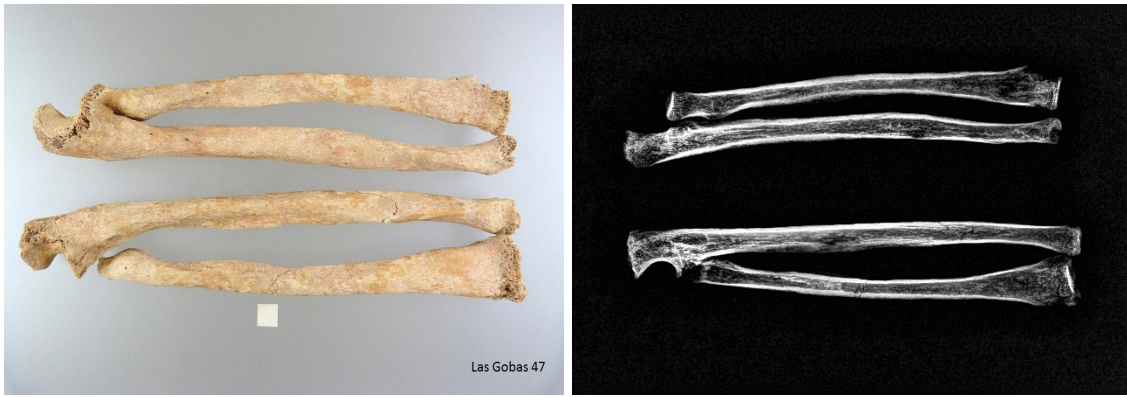


Figure 7.15. Diaphyseal antemortem fractures of the left ulna and right radius (Colles fracture).

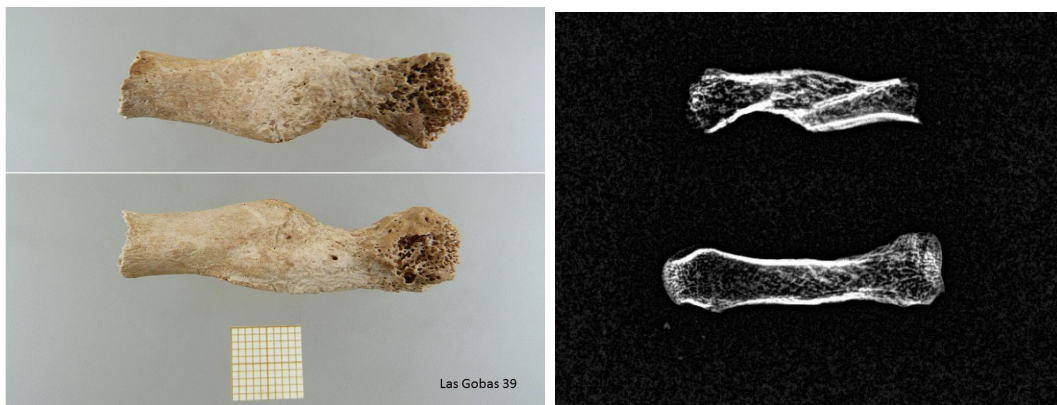


Figure 7.16a (left). Fracture callus in internal and external lateral view. Figure 7.16b (right). X-ray of the anterior fracture callus.



Figure 7.17. Third right metatarsal showing alteration in distal epiphysis, compared with the corresponding on the left side.

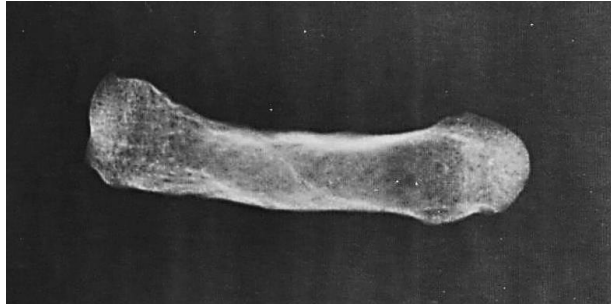


Figure 7.18. Left fifth metacarpal. Oblique fracture.

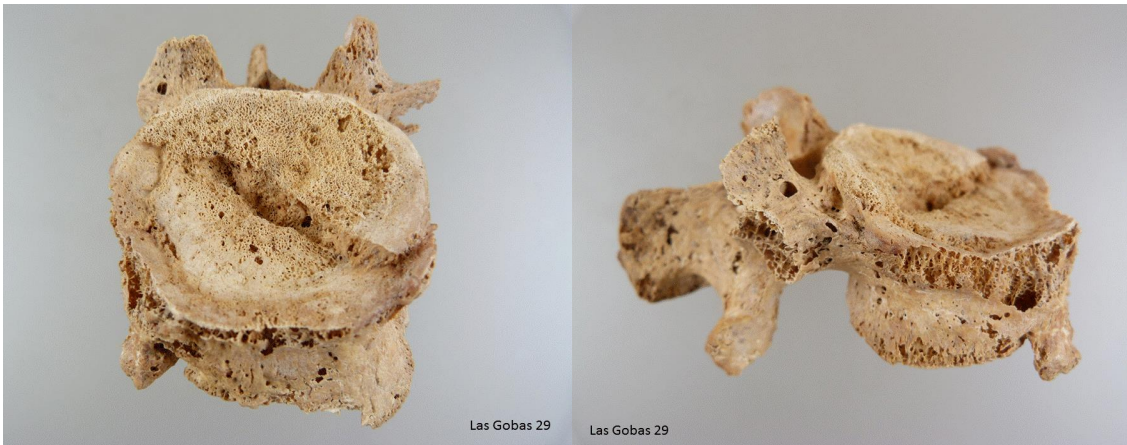


Figure 7.19. Fracture line on the anterior side. Signs of osteophytosis in L3-L4.

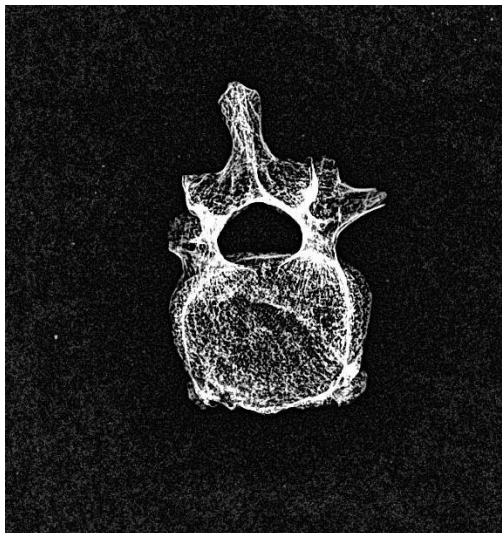


Figure 7.20. Fracture of the vertebral body of L3 due to collapse.



Figure 7.21 (left). Lumbar vertebra L3. Figure 7.22 (right). Distal end of modified right radius compared to left one.



Figure 7.23. Burial 101, disposition of the male individual in the grave.



Figure 7.24. Frontal lesion without bone remodeling.

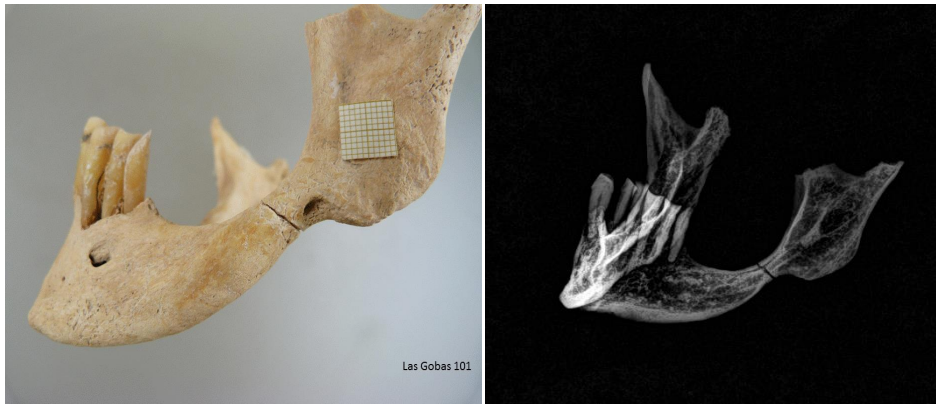


Figure 7.25. Deformation of the left mandibular body.



Figure 7.26. Fracture callus in the ribs on the left side.



Figure. 7.27. Colles fracture in the right radius of the burial 29.



Figure 7.28. Blows inflicted with a sword or ax, with the head protected by helmet or a chainmail.

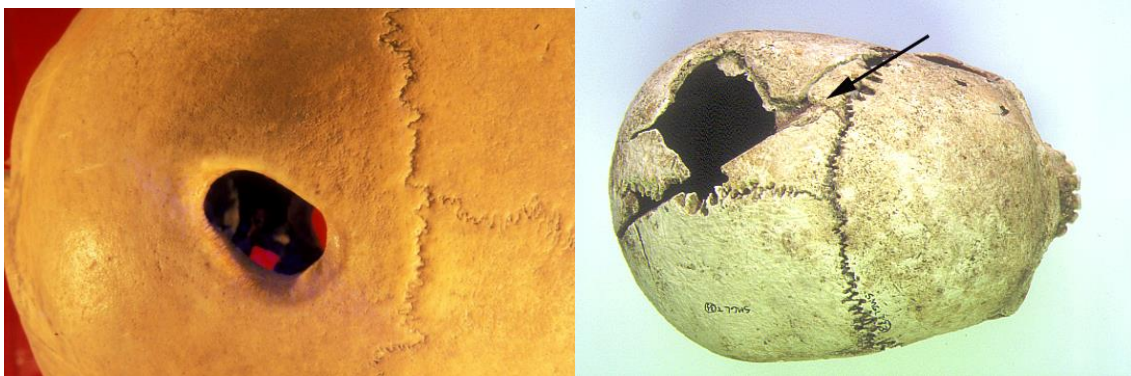


Figure 7.29 (left). Trepanation by drilling with survival, from La Virgen de la Peña (Faido). Figure 7.30 (right). Injury by a sharp-edged weapon that reached the cranial cavity, with no signs of survival, from the necropolis of San Miguel de Molinilla (Álava).