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Research Paper

Study of tombs with grave goods containers in the Late Roman necropolis 04 of the Port of Sanitja, Menorca (5th – 7th century AD)

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ABSTRACT : *The Late Roman necropolis 04 of the Port of Sanitja (Menorca) comprises 78 tombs associated with a basilica for funerary cult. Constructed at the end of the fifth century AD or the beginning of the sixth century AD, it was utilized continuously until the end of the seventh century AD. Only five of the tombs excavated up to 2024 contained grave goods containers, including ceramic jars and a glass bottle, which were part of the burial rite. A residue analysis was conducted indicating the presence of oil at the time of the deposition. The tombs are oriented from east to west, a disposition that aligns with the prevailing burial practices of the Christian tradition. Most of the tombs are cists containing multiple individuals, with a high frequency of reuse over short periods of time.*
The human skeletal remains of these five tombs are studied to determine whether their individual characteristics are related to the inclusion of containers in the grave goods as part of the funerary rite. The observed funerary practice is also contextualized by comparison with similar practices from contemporaneous sites in the Balearic Islands and nearby regions.

KEYWORDS: *Late Roman necropolis, ceramic jar, glass bottle, funerary rite, physical anthropology, Late Antiquity*

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I. INTRODUCTION

The Port of Sanitja is located in a natural bay in the north of the island of Menorca, at the following coordinates 40º4'10.909"N and 4º5'15.248"E. This bay is protected by a depression formed by the Cap de Cavalleria and the Illa des Porros, providing a natural barrier against north and northwest winds [1:205].

Sanitja is a natural harbor occupied following the Roman conquest by General Metellus, who established a small military camp between 123 BC and 121 BC. This occupation lasted until approximately 45 BC [1:205]. Although Sanisera is mentioned only in the classical source of Pliny the Elder [2:46], recent research suggests that the Port of Sanitja functioned as a small harbor during the High Imperial period. Its exact size and classification remain unknown. Later, however, it developed into a unique and prominent enclave associated with the introduction of Christian worship. This site evolved into a complex and well-organized settlement, reaching its peak in the sixth century AD.

Several places of worship have been identified to date, including two basilicas and an oratory. In addition, there are spaces for permanent residence in Sanitja, as well as specific areas dedicated to artisanal and foundry work [3]. The Christian character of the port is accentuated by its seven necropolises that are scattered along the coast of the bay. One of these sets of tombs was designated as necropolis 04. Necropolis 04 is associated with a funerary basilica from the late fifth or early sixth century, with was in use until the end of the seventh century AD. Necropolis 04 contains 78 identified tombs, and grave goods containers were found buried in five of them. These tombs were numbered 417, 429, 464, 475, and 476.

Tombs 417, 429 and 464 are located outside the main apse of the basilica, and tombs 475 and 476 in its central nave (Figure 1).

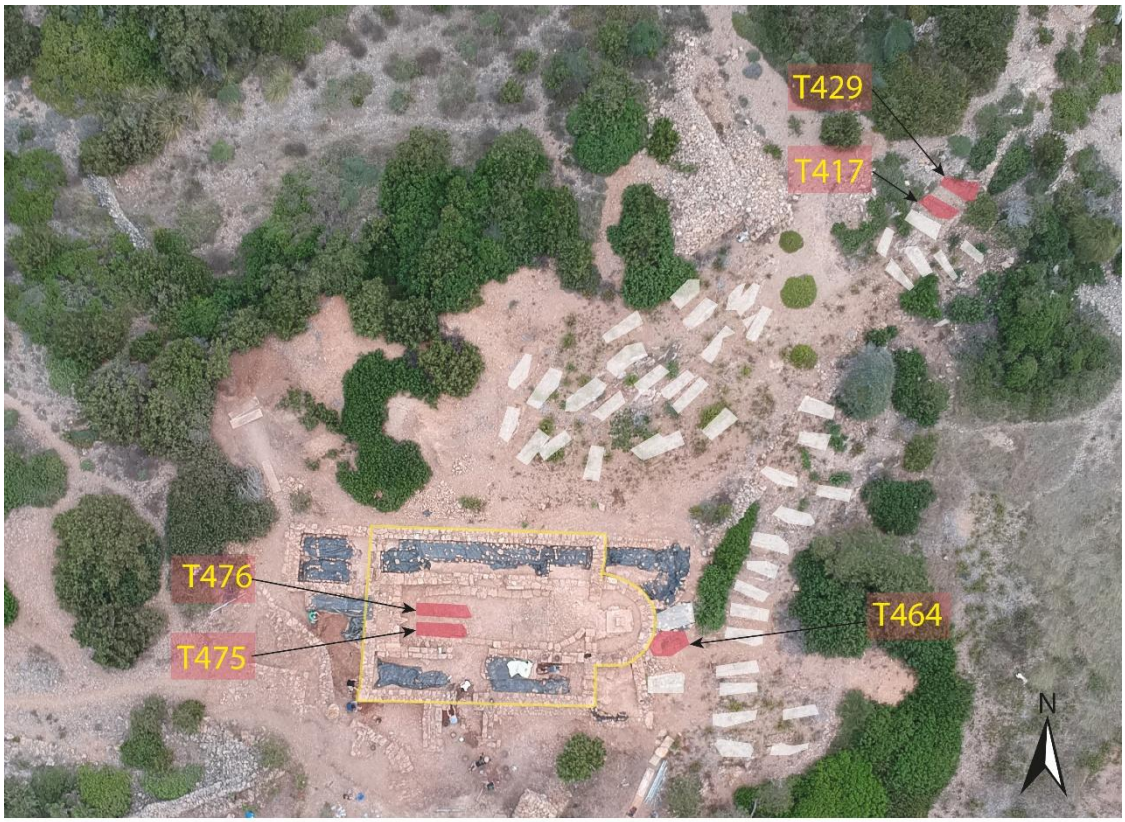

Figure 1: General map of necropolis 04 in the Port of Sanitja, showing the body of the basilica and the tombs with grave goods containers located: T417, T429, T464, T475 and T476.

The tombs of necropolis 04 are primarily cist tombs containing multiple individuals and both primary and secondary deposits, showing a high rate of reuse of the tombs in short periods of time. The tombs appear to lack a premeditated arrangement based on the characteristics of the individuals interred, and the number of individuals buried in each varies significantly. All the tombs have an east-west orientation, with the skulls of the individuals placed in the west and the feet facing east.

The objective of this study is to analyze the relationship between burials and the physical characteristics of individuals buried in tombs 417, 429, 464, 475 and 476, as well as the presence of containers as grave goods, to understand how this funerary rite could be articulated. Similarly, this study aims to associate each container with the individual it may have accompanied in the corresponding tomb through the analysis of the burial sequence, which is not always evident given the high rate of reuse of the tombs previously mentioned. Finally, the residues from the contents of two ceramic jars are analyzed to determine what purpose these containers may have fulfilled.

II. MATERIAL AND METHODS

The skeletal remains and materials mentioned below have been excavated, studied and catalogued by the *Sanisera Archaeology Institute* association and are preserved in the facilities of the Museum of Menorca (Mahón).

Skeletal remains. The study of human skeletal remains focuses on determining the minimum number of individuals in each tomb, anthropological characterization – including age-at-death estimation, sex determination, and height estimation - and the identification of both pathological and non-pathological features. At the same time, the results of radiocarbon and stable isotope analyses are included. Both analyses were conducted by Beta Analytic Inc. (Miami, USA.), using the IntCal20 calibration curve. The samples analyzed

consisted of teeth and fragments of long bones recovered from the burials, with between 1 and 4 grams selected per sample.

The macroscopic bone preservation of the skeletal remains analyzed is generally good, although it varies, being less in those tombs located outside the basilica.

The estimation of the Minimum Number of Individuals (MNI) has been made based on the most repeated bone for each anatomical unit -skull, shoulder girdle, axial region, pelvic girdle and upper and lower limbs-, and considering age indicators. The methods of physical characterization of individuals depend on whether the skeletal remains recovered correspond to adults or children. The age-at-death of non-adult individuals is estimated primarily by the method of dental eruption and calcification [4] when dental remains are preserved and is approximated by evaluation of the fusion of epiphyses [5]. The age-at-death of adult individuals is approximated by analysis of dental wear [6], provided that this wear is uniform, and evaluation of the auricular surface [7]. Sex is not determined in non-adult individuals due to the absence of complete development of secondary sexual characteristics. In adult individuals, sex is determined using the DSP method [8] whenever possible. For height estimation, methods are distinguished for individuals younger than one year [9], individuals between one and nine years [10], individuals between nine and fifteen years [11], and adult individuals [12-15]. The paleopathological study focuses on the study of macroscopically observable characters that may or may not later be considered pathological. These characteristics are described in terms of different lesions called "elementary" [16].

Residue analysis. The residue analysis of the two jars unearthed in tomb 476 was conducted by the Department of Prehistory at the *Institut de Ciència i Tecnología Ambientals* of the Universitat Autònoma de Barcelona (Barcelona, Spain). Sediment samples were collected from the base, neck and exterior of the jars, and the preserved molecules were analyzed to determine the material contained inside them [17].

III. RESULTS

This study focuses on burials that contained a ceramic jar or glass bottle as grave goods (tombs 417, 429, 464, 475 and 476). The archaeological characteristics of the tombs, as well as the characteristics of the individuals and the containers found, are shown below.

The five tombs are rectangular cist structures. Sandstone and limestone slabs define the funerary space at the base and on the sides. The homogeneous, non-compact interior sediment filling the tombs is composed mainly of clays, fine sand grains, and inclusions of other materials, such as ceramics, lime, and remains of *opus signinum/caementicium.*

Four of these five tombs (417, 429, 475 and 476) are multiple, coinciding with the recurrent practice of reusing the funerary space observed throughout the necropolis. Individuals in the primary and articulated deposits were found in an extended supine position.

The decomposition of the individuals occurred in empty space, followed by the entry of sediment due to various natural or anthropogenic events, such as the plundering that occurred in ancient times, without specifying its exact timeframe, as in the case of tomb 464.

The individuals located correspond to a wide age range, from perinatal to adult.

Tomb 417. Tomb 417 (Figure 2a) is located in the northernmost part of the necropolis farthest from the basilica and is aligned with Tomb 429. It consists of a cover made of a pile of rubble, a structure of slabs forming the walls of the cist that enclose the pit excavated in the natural rock, and a base also covered by slabs, which creates a flat but rough and irregular surface. The interior funerary space, measuring 1.93m long and 0.83m wide, was found to be filled by a clayey sediment of uneven compaction and about 0.25m deep. Within this sediment were found the human skeletal remains, a ceramic jar, fragments of *opus caementicium*, and other pottery shards.

The ceramic jar (Figure 2b), classified as typology 3A according to the funerary jar classification established for El Ruedo [18:146, lam.27, no.3A] was found intact in the eastern half of the structure, next to the south wall, near the skull of one of the individuals whose original burial position could be determined. It is a wheel-made jug made of common pottery, measuring 14.6cm in length and featuring a single handle.

Figure 2: Tomb 417 during excavation (a) and ceramic jar found (b).

The estimated MNI of individuals in this tomb is five, based on the presence of right and left ulnae, right humeri and ischia. Only three individuals were found in their original anatomical positions. The skeletal remains of the earliest individuals buried were found disarticulated and scattered throughout the tomb (UF3197). Another individual (UF3196) was buried after them but was later pushed toward the north wall of the cist to make space for two more individuals, who were laid in a supine position, one on top of the other (UF3194 over UF3195), with UF3194 representing the most recent burial. The individual characteristics of the individuals buried in Tomb 417 are detailed in Table 1.

Table 1- Tomb 417: number of individuals and individual characteristics.

Individual	ID	Age-at-death	Sex	Height (cm)
1	UF3194	Young adult (21-30 years)	Male	162,7
2	UF3195	Adult (>30 years)	Female	159,3
3	UF3196	Infant (5 ± 1.5 years)	Undetermined	80.8 (F) / 87.4 (M)
4	UF3197 (secondary deposit)	Adult	Not determinable	161,1
5		Adult	Not determinable	158,6

No pathological characteristics have been observed in the child. Several pathological alterations were observed in the spines of adult individuals, such as osteophytic ridges on the vertebral bodies, which indicate abnormal bone growth and tend to exhibit vertebral fusion or ankylosis. Regarding the limbs, a forearm fracture, specifically of the left radius, was documented in one of the individuals. The oral pathology was notable for significant and widespread dental wear in adults, along with the presence of dental calculus and *antemortem* tooth loss. Finally, one of the individuals exhibited obliteration or near-complete closure of the cranial sutures.

Radiocarbon dating of a second upper molar of the second most modern individual (UF3195) places the age of it remains between 436 and 608 AD, with a 95.4% probability (2σ). The values of stable isotopes of

carbon and nitrogen (δ13C -18.2‰; δ15N +12.8‰), suggest a mixed diet with regular consumption of meat or fish.

Tomb 429. Tomb 429 is located adjacent to Tomb 417. The structure is a cist, with walls composed of eight stone slabs, covering the walls of a pit that was excavated directly into the natural rock. The base of the tomb is also covered by stone slabs. The tomb's interior dimensions are 2.20 meters in length by 0.63 meters in width. It is filled with a sediment composed of clay and various natural inclusions, including ceramic materials, skeletal remains, and fragments of *opus caementicium*. The tomb was covered by a lid of irregularly shaped rocks.

The tomb contained a common ceramic jar of unknown typology, attached to the southern wall of the cist at the eastern end and with a broken neck (Figure 3). The jar was not associated with any individual.

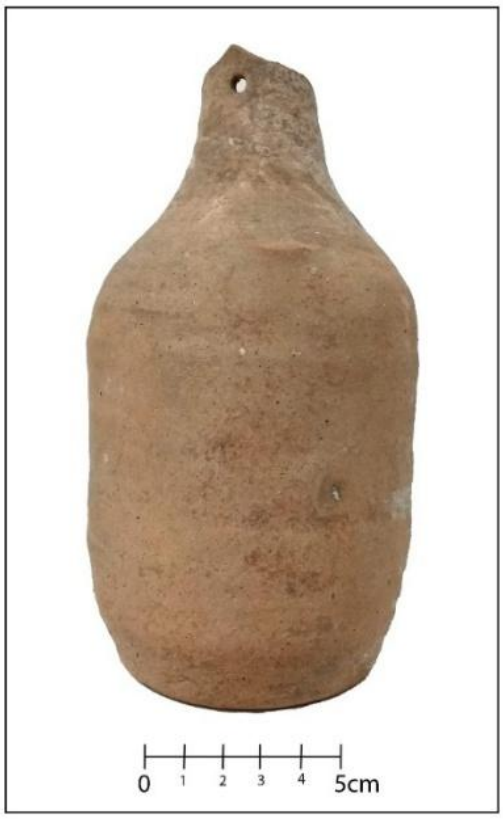

Figure 3: Ceramic jar found in Tomb 429

The estimated MNI of this tomb is eight, based on the count of right clavicles that are not anatomically compatible with one another. Depending on other skeletal elements, it is possible to identify up to seven individuals per right ischium and right ulna, although this is not consistent due to their state of alteration. The number of individuals identified per mandible and left jaw is six. The position and arrangement of the individuals inside the tomb could not be determined. The remains were found disarticulated and dispersed throughout the entire grave. The individual characteristics of the individuals buried in Tomb 429 are detailed in Table 2.

No pathological characteristics have been observed in perinatal individuals. In the skull of the infant individual with an estimated age-at-death of 11±2.5 years, isolated porosity marks have been observed in the upper inner part of both orbits, compatible with *cribra orbitalia* (Figure 4). Dental crowding in the left maxilla, affecting the canine, is also observed. Slight deformities were observed in the bones of the young adult, specifically in the right arm (radius) and right foot (fifth metatarsal), which may be the result of healed minor fractures.

Table 2 – Tomb 429: number of individuals and individual characteristics.

Individual	ID	Age-at-death	Sex	Height (cm)
1	UF 3280	Perinatal (24-30 weeks gestation)	Undetermined	34(F)/37(M)
2	UF 3281	Perinatal (26-30 weeks gestation)	Undetermined	37(F)/40(M)
3	-	Perinatal (3 months)	Undetermined	61.2(F)/63.4(M)
4	UF3498	Infant (6 ± 2 years)	Undetermined	115.5(F)/115.1(M)
5	UF3497	Infant (11± 2.5 years)	Undetermined	135.3(F)/137.3 (M)
6	UF3499	Infant (12 – 15 years)	Undetermined	Not Estimable
7	-	Youth (15 – 21 years)	Not determinable	Not Estimable
8	SK3256	Young Adult (<22 years)	Probable male	Not Estimable

Figure 4: Isolated porosity in the upper inner orbits on the skull of the infant individual UF3497.

Radiocarbon dating of a second molar emerged and articulated in a small fragment of the maxilla of the single adult individual (SK3256) places the age of it remains between 432 and 598 AD, with a 95.4% probability (2σ). The values of stable isotopes of carbon and nitrogen (δ13C -18.9‰; δ15N +12.4‰) suggest a mixed diet with regular consumption of meat or fish, as in the previous case.

Tomb 464. Tomb 464 (Figure 5a) is located next to the apse of the basilica. It is also a cist tomb, but the lid is not completely intact. The walls of the structure cover the pit excavated in the natural rock, which is exposed at the base of the tomb. The loss of part of the lid together with stratigraphic evidence discussed below and the high fragmentation and displacement of the interior elements, suggests that this tomb was opened or plundered in the past.

The interior space of the tomb, 1.98m long by 0.53m wide, was filled with sediment containing human remains, pottery fragments from a jar, animal bones and the remains of the *opus caementicium* layer that would seal the tomb on the outside. After plundering, clearer and more compact sediment flowed in. A completely fragmented, common ceramic jar of unknown typology (Figure 5b) was found with its pieces scattered around the western end of the tomb.

The recovered skeletal remains can be associated with one individual (UF3512), which is characterized by a poor state of preservation. Due to the displacement and degree of fragmentation of the skeleton, the position of the individual within the funerary structure could not be determined.

The individual is an adult over the age of 30, but the sex cannot be determined due to the poor condition of the pelvis. Similarly, none of the long bones of the skeleton allow for an estimation of height. As for the traits of interest, a perforation was observed in the distal part of both humeri –olecranon perforation – which is a characteristic of normal human variability and is sometimes related to greater flexibility or range of motion.

Radiocarbon dating of one of the disarticulated incisors from the individual buried in Tomb 464 indicates that the tomb is between 559 and 646 AD, with a 95.4% probability (2σ). The values of the stable isotopes of carbon and nitrogen (δ13C -18.3‰; δ15N +9.4‰), suggest a mixed diet that included meat or fish, although the latter was consumed to a lesser extent than in the previous cases.

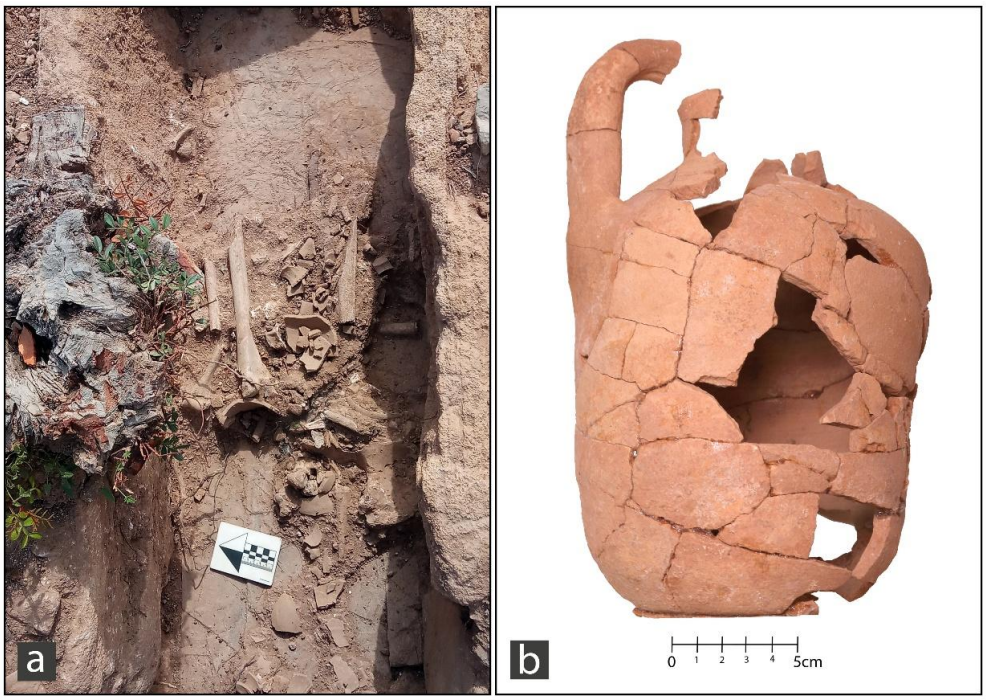

Figure 5: Tomb 464 during excavation (a) and ceramic jar found (b).

Tomb 475. Tomb 475 (Figure 6) is located in the central nave of the basilica, next to its southwest corner. It is an east-west oriented cist tomb. The pit in which the cist is located was excavated in the natural rock and is covered by vertical slabs except on its east side. This is then covered by a layer of opus signinum mortar. The tomb's base is leveled with flat, regular stone slabs. The cist was found covered by irregularly shaped rocks that would form the tomb's lid.

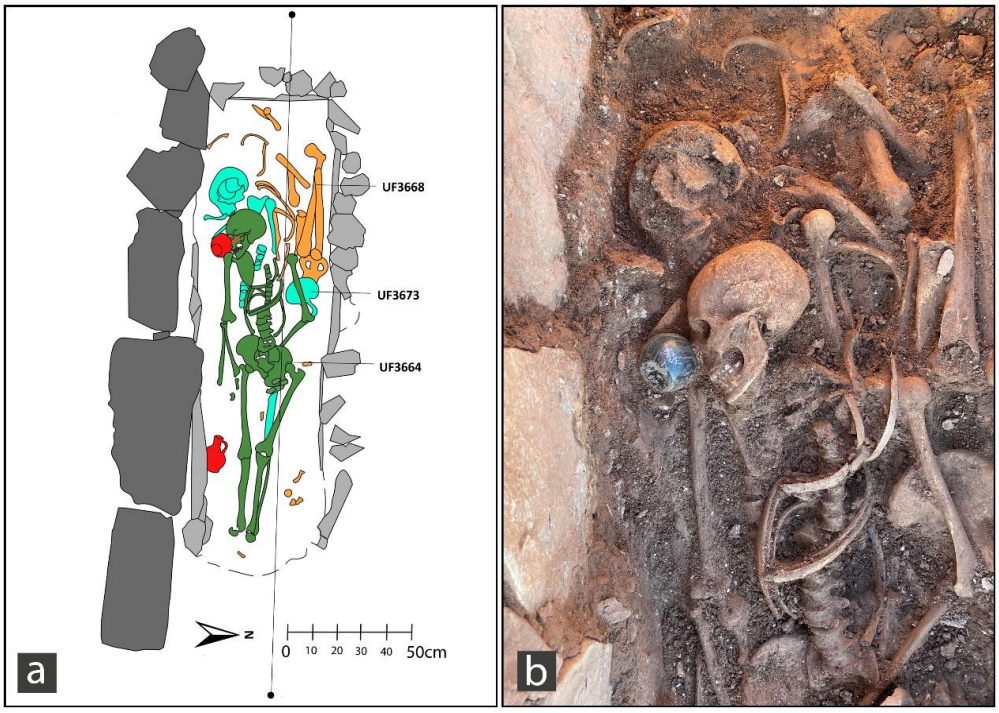

Figure 6. Map of Tomb 475 (a) and detail photograph of the placement of the glass vessel in its original position (b).

The interior of the tomb, 2.25m long by 0.85m wide, was found filled by two strata of different composition and origin. The one closest to the surface, a clayey sediment and homogeneous composition 0.2m deep, was of natural origin. The second, greater compaction and 0.25m deep, contained the skeletal remains of the buried individuals and two complete grave goods containers.

The containers found inside Tomb 475 were made of various materials (Figure 7). One was made of glass (Figure 7a) and was positioned next to the skull of the most recently buried individual in the western half of the tomb. Another was made of pottery (Figure 7b) and was positioned between the individual´s right leg and the southern wall of the cist in the eastern half. The glass container is a complete Isings 104b bottle [19: 38, fig. 6, no.104b], measuring 13.5 cm in height. It has a re-entrant lip, a long neck that opens gradually towards the mouth in the shape of a funnel, and a globular body, with a slightly concave bottom. It is made of light green glass and has two fine lines carved on the shoulder. The ceramic vessel is a common Type 2 jar, according to the classification of funerary jars from El Ruedo [18:146, lam.27, no.2]. It is 14.2cm high and made of wheel-made pottery with an ochre paste and no decoration.

Figure 7: Globular glass bottle (a) and ceramic jar (b) found in Tomb 475.

The MNI of the individuals buried in this tomb is four adults, as evidenced by the repetition of different elements, such as both humeri, ribs, femurs, fibulas, and tibias, among others. Two individuals were found in a primary deposit, articulated in their original burial position. The other two were found in a secondary deposit, disarticulated and moved towards the western end. The decomposition of the buried bodies occurred in an empty space. The two primary individuals (UF3664 and UF3673) were placed in a supine position with the limbs extended, one on top of the other, with UF3664 being the most modern individual. The remains of the two oldest individuals, which were found in a secondary deposit (UF3668), were found accumulated in the northwestern corner of the cist around the other two bodies (Figure 6).

The individual characteristics of the individuals buried in tomb 475 are detailed in Table 3.

The characteristics of pathological interest that were observed include *antemortem* tooth loss and generalized tooth wear, with a single cavity found in a molar. Pathological characteristics in the bones of the spine are also common, including a groove in the body of a thoracic vertebra that opens to the medullary canal, a sign compatible with the presence of a herniated disc. Finally, one of the individuals' skulls stands out due to

the presence of additional small bones called *wormians* (Figure 8). These bones are an uncommon anatomical variation that could indicate kinship relationships if they were found in other individuals.

Table 3: Tomb 475: number of individuals and individual characteristics.

Individual	ID	Age-at-death	Sex	Height (cm)
1	UF 3664	Adult (20-30 years)	Male	170,3
2	UF 3673	Adult (20-30 years)	Not determinable	175,8
3	UF3668 (secondary tank)	Adult (>30 years)	Male	167-177,2
4		Adult (>30 years)	Not determinable	

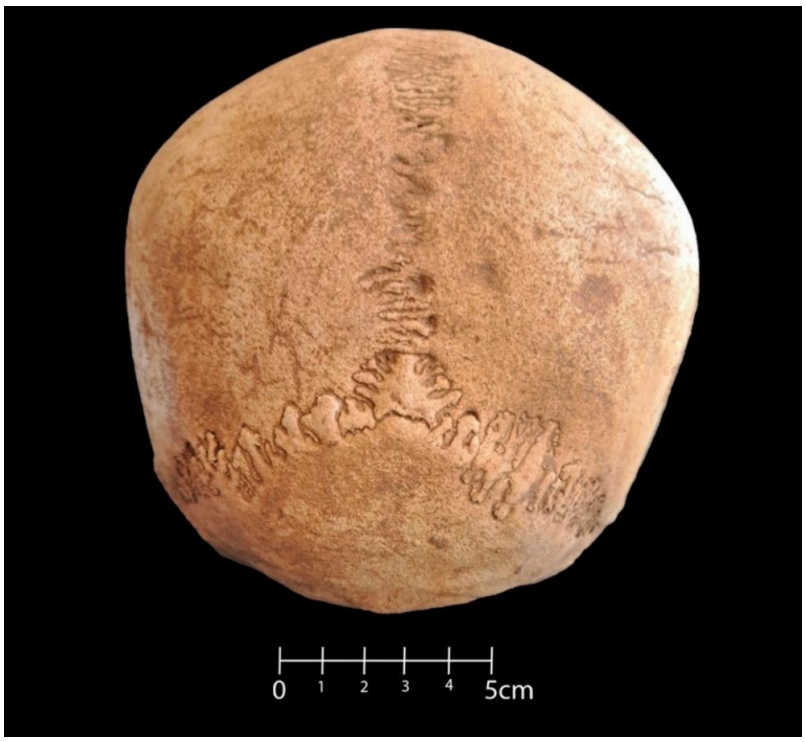

Figure 8: Wormian bones in the skull of the adult individual UF3664

Tomb 476. Tomb 476 is also located in the central nave of the basilica, directly north of Tomb 475. Its structure is also an east-west-facing cist, covered by lids made up of large, flat slabs. The sides of the cist line the pit excavated in the natural rock along its perimeter. There is no base structure. The interior burial space, measuring 2.16m in length and 0.7m in width, is filled by 0.5m of clayey, homogeneous sediment containing human skeletal remains, two ceramic jars and a shell fragment.

Since the individuals decomposed in empty space, the sediment had to enter the grave naturally and progressively over time. The two jars were found next to each other, leaning over the right shoulder of the last person buried in the grave (UF3665) (Figure 9a). This individual was placed on two other adult individuals (UF3674 and UF3675), who were also in anatomical connection. However, some parts of this individual, mainly from the lower limbs, were found in the secondary deposit. The secondary deposit (UF3667) accumulated over all the individuals and throughout the tomb, primarily at the western end.

According to the classification of the funerary jars of El Ruedo [18: 146, lam.27, no.1 & 4], both jars, one of type 1 (Figure 9b) and the other of type 4 (Figure 9c), had similar characteristics: they were approximately 20cm high, had a single handle, and were made on a wheel of ochre paste and were devoid of decoration. Analysis of sediment residues found in the two jars indicates the presence of a large amount of lipids. The high concentration of lipids at the base of the jars suggests that they were full when they were placed in the tomb. The abundant presence of oleic acid suggests that the lipids come from a vegetable-based liquid, with olive oil being the main candidate, though not the only possibility. However, the contents of the two jars are not identical. One contains a higher concentration of cutin and suberin traces, which are associated with

fruits and plant roots. The other shows the presence of castor oil. These results may suggest deliberate preparation or enrichment of the oils by combining them with other plant elements, possibly to adapt them for ritual use [17].

Figure 9: Position (a) and ceramic jars (b, c) found in Tomb 476.

The estimated MNI for this burial is seven, of which four are adults, two are children and one perinatal, due to the repetition of different elements of both the lower and upper limbs, as well as incompatibility of maturation states. The individual characteristics of the individuals buried in Tomb 476 are detailed in Table 4 below.

Table 4: Tomb 476: number of individuals and individual characteristics.

Individual	ID	Age-at-death	Sex	Height (cm)
1	UF 3665	Adult (>30 years)	Male	177,5
2	UF 3667 (secondary deposit)	Adult (>30 years)	Male	162-182,9
3	UF3674	Adult (>30 years)	Male	172,6
4	UF3675	Adult (>30 years)	Male	173,8
5	UF3666 (secondary deposit)	40 weeks gestation	Undetermined	49.6-56.5 (M) / 49.8-56.2 (F)
6		1.5 years	Undetermined	52.1-58.7 (M) / 50.1-56.2 (F)
7	UF3669	40 weeks gestation	Undetermined	52.7 (M) / 52.1 (F)

No pathologies have been observed in infants or perinatal individuals. Among adults, healed fractures in the limbs and deformities in tendon insertion sites are notable pathological characteristics. Oral pathologies include pronounced and widespread wear, *antemortem* tooth loss, and the presence of calculus. Finally, the retention of the metopic suture (Figure 10) in the frontal region of one individual stands out because it has been observed to possibly be related to hereditary factors.

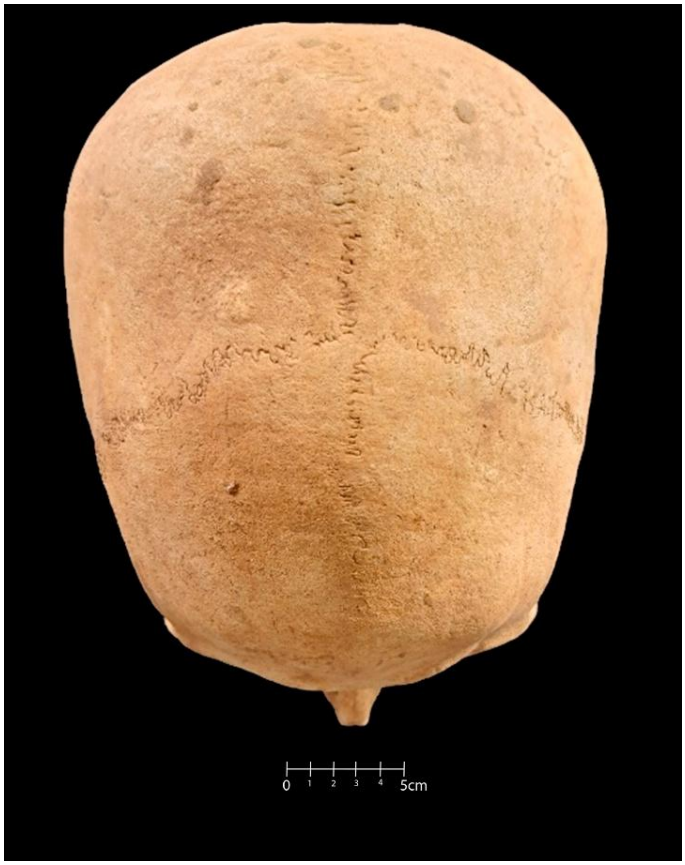

Figure 10: Metopic suture retention in the skull of adult individual UF3665.

IV. DISCUSSION

Only five of the 78 tombs excavated in Necropolis 04 at Sanitja contained ceramic jars as grave goods, and one of these also included a glass bottle. If these types of items are associated with funerary rituals, it inevitably raises the question of why they appear in only these five tombs and not in the others.

The typology of the ceramic jars found in the tombs of the Late Antique necropolis of the Port of Sanitja is similar: they are common wheel-thrown pottery made from ochre-colored clay and lack any decoration. They have pyriform or globular shapes and may feature a handle or none. However, their origin cannot be precisely determined. The described typologies can be compared to those of ceramic jars recovered from other Late Antique necropolises, such as El Ruedo (Cordoba, Spain) [18], Vega del Mar (Malaga, Spain) [20], the Northern Necropolis of Corduba (Cordoba, Spain) [21], Munigua (Seville, Spain) [22], El Corralón [23] and the eastern necropolis of Cartagena (Cartagena, Spain) [24], the necropolis of El Castillón (Granada, Spain) [25], the necropolis of the Orden-Seminario (Huelva) [26], Tossal de les Basses (Alicante, Spain) [27], the necropolis of Peñarrubia (Málaga) [28] or the necropolis of the basilica of Son Peretó (Mallorca, Spain) [29].

The glass bottle has been described as Isigns 104b [19:689, fig. 199, no. 22], globular in appearance, with a long, narrow neck and green vitreous paste, and was found in a funerary context. Similar parallels have been found in the area of eastern Tarragona, in examples of necropolises such as Munigua and Picola – *Portus Ilicitanus* (Santa Pola, Spain), where ceramic and glassy vessels also appear in the same burial [22:156; 30:180, fig.83), or Cartagena [24:449, fig.9, no. CA4-11173-603-1]. Similarities can also be observed with the containers of Mas Mallol-Mas Rimbau, Roques de Vilavella and other funerary contexts framed in the sixth – seventh centuries AD, such as the amphitheater of Tarragona or Can Simón [19:659, fig, 177, no. 4-7].

These types of vitreous bottles have been frequently documented as a container for wine or other liquids used for table service. It appears from the fourth century AD and is common in contexts dating to the fourth and fifth centuries AD. At Sanitja, its use appears to continue into the following centuries, likely until the early or mid-seventh century AD. The bottle in question, found in a funerary context, may be associated with the anointing rite, possibly used to hold an oily liquid that could have been applied to the body of the deceased or administered earlier, during a previous stage of the dying process. The aim of the ritual was to sanctify the Christian and try to save him. The rarity of this type of container at Sanitja suggests the high economic value of both the precious liquid and the container itself. Its association with an individual buried in a tomb located in the central nave of the basilica supports the idea that the deceased was a prominent member, someone of higher status or singularity, who held a superior social rank compared to the rest of the population that was buried in necropolis 04.

The radiocarbon results obtained (Table 5; Figure 11), the typology of grave goods, the characteristics of the rite or the funerary architecture place the tombs analyzed in necropolis 04 of Sanitja in a chronological period between the sixth and seventh centuries AD. These results, which are consistent with others obtained from the same necropolis, suggest that the period of greatest intensity and mortuary activity may have occurred between 550 and 600 AD.

Table 5: Compilation of the results of radiocarbon analyses carried out on tombs 417, 429 and 464.

Tomb	ID	UF	BP	calBP (2p)	calAD (2σ)
417	STE-002-A	3195	1520±30	1514 - 1312	436 - 638
429	STE-003-A	SK3256	1540±30	1518 - 1352	432 - 598
464	STE-001-A	3512	1470±30	1391 - 1304	559 - 646

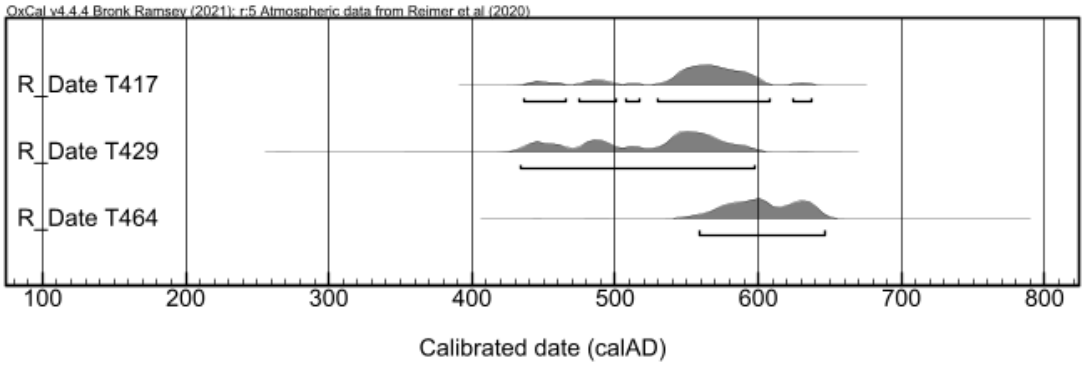

Figure 11: Comparison of radiocarbon results obtained for three of the jarred tombs from necropolis 04 in Sanitja.

The archaeological study of these five tombs, including anthropological analyses, and the re-evaluation of the containers as a ritual component, allow us to analyze the relationships between this element of grave goods and the dynamics associated with the burial of individuals. Next, similarities and differences are presented between the five tombs described and other Late Antique funerary contexts in which jars, bottles or containers were also located as objects of grave goods inside the tombs.

In necropolis 04 of Sanitja, the tombs with containers are located both inside and outside the basilica, as in other necropolises such as Vega del Mar [20]. On the outside, two tombs are separated, to the north of the basilica body, while another is located directly outside the apse. The other two are located inside the basilica, in the central nave. In this necropolis the tombs do not overlap and are arranged in rows implying an established prior planning, maintaining a separation between the tombs of between 0.4 and 0.5m. The tombs are grouped in different areas [1:205]. Although no definitive conclusions have yet been reached regarding the reasons for this spatial zoning, the most plausible explanation is that the groupings may reflect a chronological order, with the tombs located inside likely being the oldest. Once this space was filled, new burial areas appear to have been planned outside, beginning near the apse, considered the most sacred area, and eventually extending toward the section of the necropolis closest to the coast.

As for the general organization of Late Antique necropolises, this trend of distribution of tombs in streets or rows, associated with basilicas or centers of worship is observed [18:164; 26:106]. Late Antique necropolises have also been found with grave goods that include ceramic jars, associated with houses [22:150; 31:124] or on the outskirts of cities [23]. In conclusion, the placement of the jars in the tombs does not appear to depend on whether they are located inside or outside the basilica or associated with a temple, suggesting that other factors may be influencing their deposit.

The orientation of the individuals buried, with the head to the west and the feet to the east, is a symbolic concept frequently related to the Christian tradition. In general, there seems to be a notable change in the orientation of the tombs, oriented from north-south [21, 25:126, 26:106] to east-west [21, 22:154, 26:105] from the fourth century [18, 22, 31:125]. From this point onward, the deviation of the tombs from the typical east-west orientation has been linked to changes in solar declination, as could be the case of tombs 417 and 429, chronology [32:186], regional practices [22:154] and the influence of the cult building [18:166].

In this sense, one of the areas of necropolis 04, located to the north of the body of the basilica, contains tombs with a north-south orientation. The reasons for this are probably linked to the fact that the general concept of east-west burial would become secondary and the orientation of the tombs would be determined by a motive of greater interest, such as the connection with the mortuary temple or with important figures buried inside.

In conclusion, the orientation of the tombs is general, like other necropolises of the same chronology, and does not seem to be linked to the deposit of the jar inside the burials.

In Late Antiquity, the most common types of funerary architecture were simple graves and cist graves. The prevailing funerary practice was inhumation in pits dug directly into the natural rock, generally rectangular in shape, and leaving cremation behind [18, 20, 21, 26, 27, 32:189-90]. These burial pits were often lined with limestone, sandstone or brick slabs [18, 20, 22:141, 23, 25:126, 26, 31:122, 32:190-1], as is the case of the tombs of necropolis 04. The lids are also made from large slabs of this type of rock [20, 21, 22:51, 32:191-3].

In necropolis 04, the number of individuals buried in each tomb varies considerably, with both single and multiple burials present, though multiple burials are by far the most common. However, in other Late Antique necropolises, it has been indicated that individual burials are the most frequent [18:173, 20, 22:155, 23, 32:193-4]. In multiple burials, the bodies can be superimposed or placed in an orderly manner. Secondary deposits, i.e. removed skeletal remains, are usually found at the head of the tomb, as in Sanitja or Munigua [22:155], although in other necropolises they have been documented more frequently at the foot [20:30, 25:129, 26:108, 32:194-5].

A possible relationship between the presence of more than one jar and multiple burials has been suggested [22:155-6]. In necropolis 04, however, there is no clear relationship between the number of individuals buried and the presence of jars, as this number varies from tomb to tomb. Four of the five cases are multiple burials, and only in two of them, tombs 475 and 476, have two funerary containers been found. Even so, this hypothesis cannot be ruled out. In Sanitja there is also a high rate of reuse of the funerary space, as in other late antique necropolises such as El Ruedo [32:187], the basilica of Vega del Mar [20], Son Peretó [29:25] or Tossal de les Basses [27:151]. This process involves the frequent reopening of tombs and the addition of new individuals, which leads to the displacement of ancient skeletal remains, the entry of sediments, and the general disorganization of the original context. This dynamic often makes it difficult to interpret the exact position of the jars in relation to individuals.

In necropolis 04 of Sanitja, all primary individuals had an extended supine position, as in all the Late Antique necropolises already mentioned.

The location of the bottles or jars inside the tombs presents a certain coherence, although variations were also observed according to the archaeological context and the characteristics of the individuals buried. In relation to the anatomical position, in the necropolis of Sanitja the jars usually appear on the right side of the individual's skull. In a single case, the ceramic jar was found next to the legs of the individual, on the outside, similar to the case of the necropolis of the Orden-Seminario [26:113], or also being able to establish parallels with cases of the necropolises of Vega del Mar [20:22], El Corralón [23:331] or Picola – *Portus Ilicitanus* [30:180]. The pattern of placing the jar next to the individual's head has also been documented in El Ruedo [18], Vega del Mar [20:22], Corduba [21], Munigua [22:156], Cartagena [24:439], Son Peretó [29:24] or El Castillón [25:126], becoming a frequent distinctive.

In terms of age, in some necropolises such as Vega del Mar [20:22], it has been documented that this type of ceramic or glass grave goods appear in single or double burials but associated with infants or young individuals [24:439], although others contradict this hypothesis [26:114-6]. In contrast, in necropolis 04 of Sanitja these objects have been found both in tombs with and without infant individuals, as is the case of tomb 475.

Regarding the sex of the individual, some studies have proposed a possible association between the side of the body where the container is placed and the sex of the deceased, linking jars placed on the right side with male individuals, and those on the left side with female individuals [26:109-18, 32:196], the frequent lack of reliable anthropological studies highlights the absence of a solid foundation for this hypothesis [18]. In Sanitja, all the individuals who presented a jar or container showed it on the right side, being determined to be male or without the possibility of determining the state of preservation of their remains.

Regarding other physical characteristics, pathological conditions, or dietary differences, no significant correlations have been documented with the placement of grave goods. However, although no direct association has been established between pathological conditions and the inclusion of funerary jars, it is worth noting that the peak period of necropolis use coincides with the maritime spread of the Justinianic Plague across the Mediterranean in several outbreaks beginning in 541 AD [33]. Both chronological studies and the observation of frequent grave reuse over short periods provide starting points for future research analyzing the relationship between the increased use of tombs and the epidemic. Another hypothesis is that Sanisera could be included as a stopover on pilgrimage routes by sea across the Mediterranean, as a stopping point for pilgrims going to or coming from the Holy Land. This traffic would involve the arrival of foreigners in a situation of illness that could lead to their death on the route or in the port of Sanitja [34:257].

In summary, in necropolis 04 of Sanitja the placement of the jar or bottle tends to be on the right side of the body, often near the skull, which has frequently been associated with young or male individuals. However, the variability of contexts and the lack of precise osteological data prevent a definitive interpretation at a general level.

As for the contents of the jars, some authors have suggested that they could have contained holy water [24:454-5]. However, residue analysis of two of the jars found so far in Sanitja has revealed that they contained different types of oils [17], as in other necropolises of the same chronology [24:155]. The liquids were contained inside the jars rather than poured over the corpse [17] suggesting a primarily symbolic function. Finally, it should be noted that this pattern may not apply to other burials where ceramic jars or ritual vessels have been found.

V. CONCLUSIONS

Grave goods containers, such as ceramic jars or glass bottles included in Late Antique necropolis tombs, usually on one side of the deceased's head, are ritual or symbolic elements. Their placement, the preservation of liquids inside and the absence of other grave goods, except personal objects, support the hypothesis that these jars and bottles could have been used as ritual containers. The recovered ceramic jars and a glass bottle can be compared with other examples found in Late Antique necropolises, both in places of worship and domestic contexts.

The type of burial, its orientation, or the number of individuals buried in a grave do not seem to be related to the inclusion of a container as part of the grave goods. Similarity, individual characteristics such as the estimated age-at-death of the skeletal remains analysed, as well as physical conditions such as size or pathologies, do not seem to influence the inclusion of these materials either.

Regarding the sex, some authors have suggested that it may not be related to the inclusion of the container itself, but rather to its placement. According to this hypothesis, the container was placed on the right side, between the head and shoulder, in the case of male individuals, and on the left side for female individuals. Studies conducted in the tombs of Sanitja seem to support this interpretation.

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