

RESEARCH ARTICLE

Proposed Chronology of Burial Activity by Period in the Necropolis of Al-Qusais (Dubai, UAE)

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Abstract

The archaeological site of Al-Qusais (Dubai, UAE) contains an extensive necropolis, including 267 simple graves and three communal graves, excavated at various times from 1974 to the present. 77 intact simple graves have been documented, providing an opportunity for chronological study as they have not been reused. According to the typology of the grave goods found, these graves date between the second and first millennium BC. Thanks to the first studies of absolute dating through bioapatite analysis, it has been possible to develop a proposal for chronological periodization, defining four chronological periods ranging from 1400 BC to 750 BC, among which similarities and differences are described in terms of funerary rites and the objects used in them.

Keywords: Late Bronze Age, Iron Age I, Iron Age II, bioapatite, Al-Qusais.

1. Introduction

The ancient necropolis of Al-Qusais is located within the boundaries of a modern cemetery in the northwest of the Emirate of Dubai (UAE) and is dated to the last third of the second and the beginning of the first millennium BC. This study aims to establish a chronological demarcation for different areas of this necropolis by combining the typology of archaeological objects with the results of bioarcheology and absolute dating, obtained by bioapatite analysis of human bone samples.

Since the second millennium BC, the landscape surrounding Al-Qusais has undergone major changes. One of the most significant changes was the fluctuation of the Gulf's sea level during the first millennium BC, which caused Al-Qusais to move from 700 meters from the coast to almost nine kilometers today. This phenomenon also caused a retreat of mangrove ecosystems from the interior. As a result, the environment of Al-Qusais would change from

being a coastal mangrove ecosystem to a complete desert environment (Figure 1) (Fernández-Sánchez et al., 2025).

The second major change to the landscape of Al-Qusais came with the urban development that Dubai has undergone since the 1970s, mainly in the coastal areas (Nassar, Blackburn & Whyatt, 2014, p.6). As a result, the necropolis of Al-Qusais is currently surrounded by an urban and industrial area.

To date, the site of Al-Qusais has been the subject of several archaeological interventions. Three campaigns led by Munir Taha between 1974 and 1975 and 1979 and 1980 established Al-Qusais as a reference necropolis. Among the results of these three campaigns were the discovery of two communal graves (Grave A-I and B) and a series of simple graves, which he called Area C (Taha, 2009, pp.63-87). In addition, two ancient settlements (Settlement I and II) were identified, as well as a temple called *Mound of Serpents* from the Iron Age II (Taha, 2009, pp.89-95).

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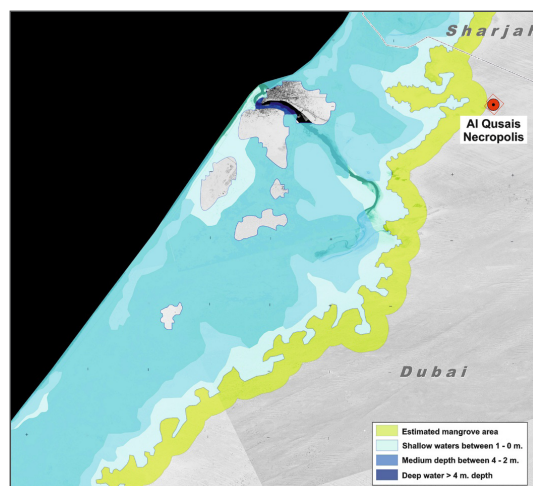


Figure 1. Paleoenvironmental reconstruction during the period of activity in the Al-Qusais necropolis (Dubai, UAE).

During the 1990s, the urbanization of the city of Dubai planned the extension of the modern cemetery to the area where the communal graves of M. Taha were discovered. To confirm the presence of archaeological remains in the area, Dr. Hussein Qandil conducted two campaigns in 1992 and 1993 on behalf of the Government of Dubai. His interventions confirmed the absence of funerary structures, both simple and collective, between the communal graves and Area C, but 34 new graves were discovered in Area C, as well as 67 new simple graves to the west of the communal

graves, halting the construction of the cemetery towards this area (Valente et al, 2023, pp.357-9).

Archaeological work at Al-Qusais resumed in 2019 with a campaign that was suspended due to the Covid-19 pandemic, and in 2024 with another campaign conducted by *Sanisera Archaeology Institute* in collaboration with *Dubai Culture & Arts Authority*.

The necropolis of Al-Qusais is divided into three archaeological areas for ongoing research and excavation, designated as A, B and C (Figure 2).

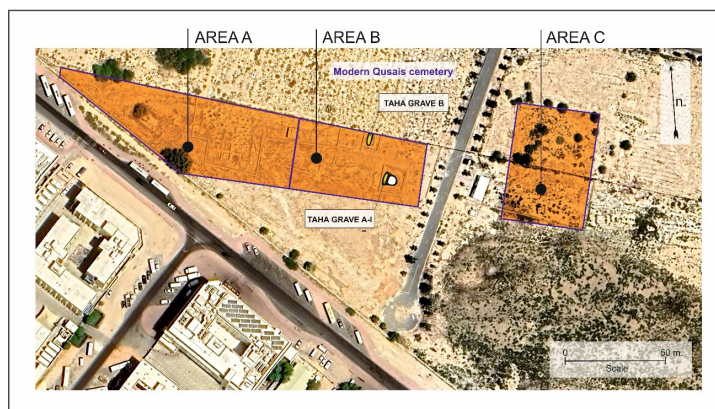


Figure 2. Defined archaeological areas in the Al-Qusais necropolis.

Area A is located on the westernmost side of the current archaeological site of Al-Qusais. It contains numerous simple and individual graves, more or less oval in shape and measuring 1.5 m long, 1 m wide, and up to 0.6 m deep, with a space between them that prevents them from overlapping. These graves are dug by cutting the surface of the *sabkha*, and the body of the individual is placed at the bottom, usually in a flexed position and next to the grave goods. The grave goods consist of both personal and votive objects, dominated by copper objects such as daggers, arrowheads, anklets, bracelets, axes and vessels. There are also softstone and ceramic vessels, mangrove shells and jewelry.

Area B contains the communal graves excavated by M. Taha (Graves A-I and B), both of which were reused (Dopper, 2023, p.48), as well as individual simple burial pits with the same characteristics as those in Area A.

Grave A-I is a rectangular structure, 7.5 m long, 1.5 m wide and 0.7 m deep, excavated in the rock, with three internal chambers to which two smaller individual graves, called Graves A-II and III, are attached. Inside Grave A-I all the skeletons were found scattered together with the grave goods. The grave goods consisted of copper daggers and arrowheads, copper, stone and softstone vessels, and numerous objects of

personal adornment such as pendants, bracelets and rings made of copper and shells, agate, carnelian and shell beads and various stones and minerals, as well as a silver leaf and a gold leaf (Taha, 2009, pp.67-8). Grave A-II and III are two individual graves, about 1.5 m long, one meter wide and about 0.6 m deep. The individual from Grave A-II was buried with two daggers, 35 arrowheads, a carnelian bead, and a thin silver leaf, highlighting the trousseau and personal clothing associated with a single individual compared to the other graves described in the necropolis. One dagger and seven arrowheads were found in Grave A-III (Taha, 2009, p.75).

Grave B is the second communal tomb identified by M. Taha, which has not been fully excavated since his intervention, as it overlaps with current Islamic tombs and its shape is not known. The excavated area corresponds to an apparently rectangular structure measuring 6.7 m long, 2.74 m wide and 1.20 m deep. The skeletal remains found in this tomb were more numerous than in Grave A-I, and were accompanied by very similar grave goods, consisting of arrowheads, stone vessels, jewelry and beads. (Taha, 2009, p.76).

Area C, located at the eastern end of the necropolis, currently consists of 103 simple and individual graves, similar to those described in areas A and B, but smaller and between 0.2 and 0.3 m deep. The materials found together with the individuals are spouted bowls and vessels made of pottery, stone and alabaster, and various copper objects such as two stylized axe heads, arrowheads without inscriptions, bowls and rings. As for personal objects, various types of stone beads, earrings and an iron awl were found (Taha, 2009, p.130-3).

2. Materials and Methods

The burials of the necropolis of Al-Qusais are proposed as an exceptional opportunity for the development of a complete chronological analysis, given the variability of the burial goods and the characteristics of the graves found. Individual simple graves, which have not been reopened in the course of time, act as time capsules, preserving the remains of their interiors unaltered, allowing the results obtained by absolute dating techniques to be correlated with the typology of the objects found in the same grave. Based on the hypothesis that each object can be associated with a specific chronological period, the data obtained from the relationship between the bioapatite dating of five previously selected graves and the typology of their objects could be extrapolated to the rest of the necropolis.

As an initial reference for the chronological study, five graves, designated as Graves 88, 305, 306, 324 and 329, were selected, all located in Area A of the necropolis. These graves were found intact and contained a wide and varied assemblage of artifacts, some of which are repeated in other funerary contexts of Al-Qusais Area A and B.

Five bone samples were selected for bioapatite dating from individuals buried in these five graves (Table 1). These samples were processed at the Center for Applied Isotope Studies at the University of Georgia (UGAMS), USA. Radiocarbon analysis is commonly used to date the remains of living organisms, such as charcoal, fauna, or human bones, and allows for the absolute determination of the time elapsed since the death of these organisms. Normally, collagen is the preferred element for radiocarbon dating of bones. However, in arid and saline environments such as Al-Qusais, bones tend to be in poor state of preservation and this organic matter degrades rapidly (Bouzas and Laborde, 2003). Therefore, radiocarbon analysis of inorganic bone apatite, which is more resistant and durable under adverse conditions, is proving to be a useful and fundamental alternative (Cherkinsky, 2009).

The typology of the pottery objects and vessels found in these and the rest of the graves of Al-Qusais was also studied, establishing a relative chronological framework based on their presence, and also comparing the documented spatial arrangement with other nearby and similar sites, such as Shimal (Ras Al Khaimah) (Voght & Franke-Voght, 1987), Qidfa 1 (Fujairah) (Al Tikriti, 2022) or Jebel Al-Buhais (Sharjah) (Jasim, 2012). For copper arrowheads and daggers, the classification proposed by N. S. Al-Jahwari (2021) was followed. For the classification of softstone vessels, the indications of F. Genchi and G. Tursi (2022) were used. The study of the funerary contexts and archaeological objects of Al-Qusais included the review of the publication of M. Taha (2009) as well as the unpublished documents prepared by Dr. Qandil from his excavations.

3. Results

The five graves selected as the reference and starting point for this chronological study of Al-Qusais were found intact, and it was possible to describe both the original position of the buried individuals and the objects surrounding them, and even to define the relationship between them. These five graves are briefly described below.

Grave 88 unearthed the remains of a child, buried in a flexed position and only within the space of the grave, associated with two copper arrowheads found on his back. This grave had been partially excavated by Dr. Qandil earlier. Grave 305 (Figure 3) was the burial of two individuals, a child and an adult, buried at the

same time, both in a flexed position, lying on their right sides, and associated with an exceptional set of grave goods. This set consisted of a copper vessel, a decorated softstone vessel, six copper arrowheads, a copper dagger, a polished shell button, and carnelian beads.

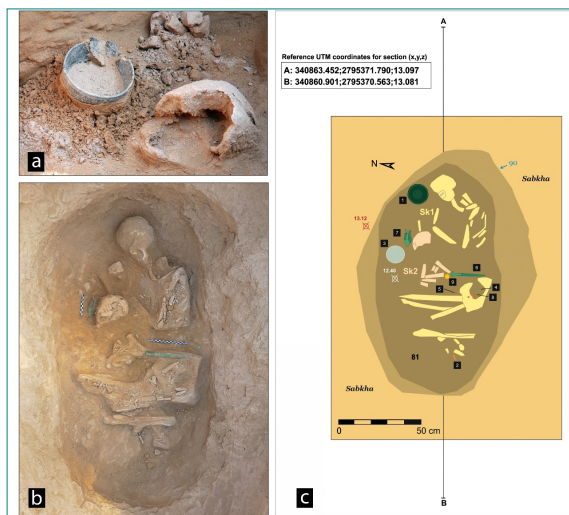


Figure 3. Grave 305: a) softstone vessel placed near of the child's skull (Sk2), b) photo of the grave with the skeletal remains (Sk1 and Sk2) showing the position of the daggers and arrowheads, c) grave 305 map.

Grave 306 also contained two individuals, but in this case adults, along with another extensive set of artifacts. This set consisted of a vessel, a dagger and 18 copper arrowheads, a polished shell button with decoration, four shells, one of which contained pigment, and shell and carnelian beads. Grave 324 (Figure 4) is one of the few triple burials in the Al-Qusais necropolis in which individuals, two adults

and a child, were buried on top of each other but at the same time. The assemblage of artifacts in this grave proved to be the most diverse and unique: a pottery vessel and pendant, a copper nail or awl, a softstone amulet, shell and carnelian beads, pigmented shells, a shell fossil, carnelian raw material, and two small wadi stones of external provenance.

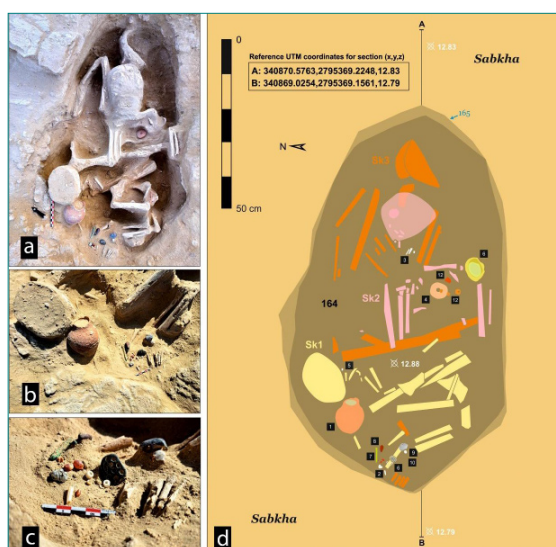


Figure 4. Grave 324: a) photo of the grave with the skeletal remains (Sk1, Sk2 and Sk3), b) detail of the pottery vessel next to the child's skull (Sk1), c) amulet of soft stone and beads, d) grave 324 map.

Finally, Grave 329 was the burial of an adult individual in the same flexed position as the previous ones, who carried a dagger, a copper clip, eight copper arrowheads, and a polished shell button. A copper vessel was also recovered.

The results of the bioapatite dating of these burials (Table 1, Figure 5), as well as the relative chronological study based on the typology of these objects (Table 2), are presented below.

Table 1. Bioapatite chronological dating from human remains of the graves of Al-Qusais (Area A).

Grave	Sample ID	Bone type	Individual	Dating method	Uncalibrated date	Calibrated date (95,4%)
88	AQ. S_ F5_131_22	Right humerus	Infant	Bioapatite	3040 ± 25	1391-1220 cal. BC (2σ)
305	AQ. S_ G4_81_25	Left humerus	Adult (Sk1)	Bioapatite	3040 ± 25	1391-1220 cal. BC (2σ)
306	AQ. S_ F4_87_26	Femur	Adult	Bioapatite	3000 ± 25	1370-1132 cal. BC (2σ)
324	AQ. S_ E4_164_28	Left humerus	Infant (Sk1)	Bioapatite	2770 ± 25	996-837 cal. BC (2p)
329	AQ. S_ E7_150_23	Left femur	Adult	Bioapatite	2980 ± 25	1306-1117 cal. BC (2σ)

Table 2. Relative chronology of the Al-Qusais reference graves with bioapatite dating (Area A) based on the typology of significant objects.

Grave	Artefact	Material	Typology	Cases in Al-Qusais (Grave No.)	Comparable context	Proposed chronology of the funerary activity by period
329	Arrowhead	Copper	Ar1	Area A: 14, 16, 22, 31, 34, 51, 52, 54, 55, 56, 58, 59, 62, 71, 75, 76, 77, 80, 81, 85, 88, 94, 95, 97, 107, 109, 302, 303, 305, 306, 321, 326, 328, 329, 330, 350 Area B: 3, 12, Severe A-I, Severe A-II, Severe A-III, Severe B	Qidfa. Shimal SH102. Jebel Al-Buhais – Bhs27, Bhs78, Bāt 154, 156	Period I (1400-1200 BC)
306	Arrowhead	Copper	Ar2		Jebel Al-Buhais Bhs 3, 8, 16, 17, 23, 26, 27, 30, 60, 64, 66, 77, 78, 85. Shimal SH1, SH102. Al-Ghalilah Gh2, G2. Qidfa.	
88	Arrowhead	Copper	Ar2a			
305	Arrowheads (3)	Copper	Ar2a			
329	Arrowhead (3)	Copper	Ar2a			
88	Arrowhead	Copper	Ar2b			
305	Arrowhead	Copper	Ar2b			
305	Incised arrowhead	Copper	Ar2b			
329	Arrowhead	Copper	Ar2b			
329	Incised arrowhead	Copper	Ar2b			
329	Arrowhead (2)	Copper	Ar3a			
305	Arrowhead	Copper	Ar5a			
306	Arrowhead (17)	Copper				
305	Vessel	Softstone	Iron Age variant 1.a	Area A: 14, 36, 37, 92, 105	Asimah As 100. Dibba 76/1. Shimal SH102. Bithnah Tomb 4. Rumeilah.	
305	Dagger	Copper	D8	Area A: 14, 15, 16, 17, 31, 32, 34, 54, 56, 59, 62, 75, 76, 91, 92, 305, 306, 329 Area B: 3, 12, Severe A-I, Severe A-II, Severe A-III	Qidfa 1. Ibri/Selme.	
306	Dagger	Copper	D8			
329	Dagger	Copper	D8			
306	Decorated button	Shell		Area A: 34, 336	Shimal SH102. Qidfa 1. Bithnah Tomb 1. Al-Buhais – BHS66. Bida Bint Saud – MG439.	
324	Vessel	Pottery		Area A: 300, 324, 349	Tell Abraq, Shimal – Grave SH102, 99. Qidfa 1.	Period III (1000-900 BC)
324	Amulet	Softstone		Area A: 78	Qidfa 1.	

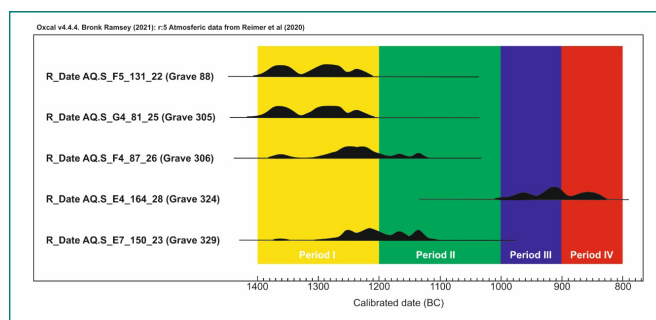


Figure 5. Bioapatite chronological dating of human remains from the Al-Qusais graves (Area A). The proposed chronological periods are indicated: Period I (1400-1200 BC), Period II (1200-1000 BC), Period III (1000-900 BC) and Period IV (900 – 750 BC).

Cross-referencing the results of absolute dating using bioapatite with relative dating based on typological analysis of the objects allows for the temporal differentiation of four distinct periods: Period I, from 1400 to 1200 BC; Period II, from 1200 to 1000 BC; Period III, from 1000 to 900 BC; and the last, more recent, Period IV, which would range from 900 to 750 BC. On this basis, 270 graves from the three archaeological areas of the site were compared and classified with the five reference graves according

to the typology of the objects they contained. From areas A and B, 43 have been classified as graves from the first period, 9 from the second period, 25 from the third period, and 90 as undetermined (Figure 6). The rest of the graves are located in Area C, and although their classification was made exclusively by reviewing the information described by M. Taha and H. Qandil, they would almost certainly all belong to the fourth period.

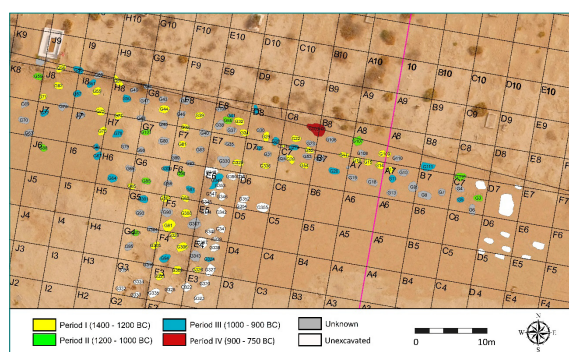


Figure 6. Distribution of graves by period in the necropolis of Al-Qusais (Areas A and B).

4. Discussion

This study presents an ambitious preliminary proposal for the chronological framework of the graves excavated at Al-Qusais from 1974 to the present. The proposed timeline is divided into four distinct periods, based on chronological analysis integrating both absolute and relative dating obtained thus far.

Based on the four established chronological periods,

it is observed that the first three periods would be represented in archaeological areas A and B, while the fourth would be concentrated in Area C, with a single exception in a grave in Area A, Grave 103-104-105. This grave, although simple, functioned as a communal grave and contained numerous grave goods from different periods, including decorated softstone pieces with typical Iron II motifs (Figure 7).

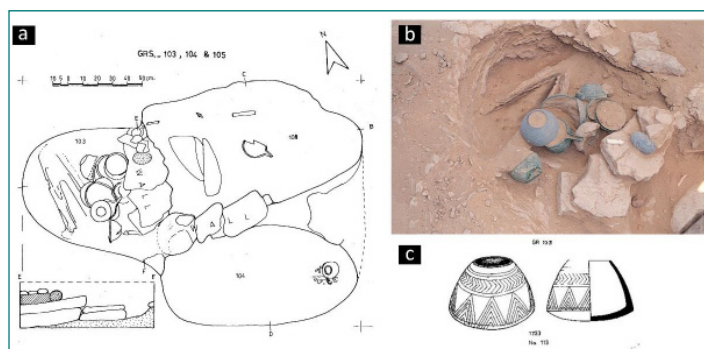


Figure 7. Grave 103-104-105, drawn and photographed by Dr. Qandil: a) plan map, b) field photograph of the artifact set of Grave 103, c) drawing of the Grave 103 soft stone vessel with decoration

In terms of graves, burial practices, and objects used as grave goods, both similarities and differences have been observed throughout these periods.

Starting with the similarities, the constructive architecture of the grave type is constant over time. Simple graves, mostly individual and without side structures, seem to have been the predominant choice of the Al-Qusais community to bury their members, except for the two communal graves excavated by M. Taha (Grave A-I and B) or H. Qandil (Grave 103-104-105). The communal graves excavated by M. Taha seem to be more similar to the tombs of other nearby sites of the same period, such as Shimal (Voght & Franke-Voght, 1987) or Qidfa' 1 (Fujairah) (Al Tikriti, 2022), which have stone structures on the sides. The only individual grave with a structure is the one that was found attached to the communal Grave A-I: Grave A-II (Taha, 2009, p.75). The two communal graves belong to the first period of funerary activity (1400-1200 BC), the oldest in the necropolis of Al-Qusais, and were reused only in this period due to the lack of materials from later periods.

The anatomical position of the individuals buried inside the graves also does not vary from one period to another and seems to be a constant fact even between different chronological phases, as already observed in other Bronze and Iron Age tombs in the region (Potts, 2000; Méry et al., 2004; Uerpmann et al., 2006; Genchi et al., 2022). In Al-Qusais, individuals are commonly buried lying on their sides with their limbs flexed, regardless of orientation and age. As for the age of the individuals, both adults and children have been identified in the burials, usually buried together and simultaneously in the same grave, with a single case of a child buried alone in Grave 88.

The artifacts buried with the individuals form a heterogeneous whole. In almost all the graves of Al-Qusais, regardless of the period, it is common to find unworked shells, a votive or symbolic object whose function we do not know and which in some cases contain pigment. This detail has also been observed at other sites in the region, such as Tell Abraaq (Sharjah/um Al-Quwain) (Thomas & Potts, 1996; Potts, 2000, p.110; Degli Esposti et al., 2025, p.3) or Sharm (Fujairah) (Masia, 2000; Degli Esposti et al., 2025, p.3). On the other hand, it is also common to find elements of jewelry and personal adornment, such as beaded necklaces and bracelets (similar in sites such as Jebel Al-Buhais (Jasim, 2012), Sharm (Barker, 2001), Bithnah (Fujairah) (Corboud, 1993, p.83) or Qidfa' 1 (Al Tikriti, 2022) among others) or copper anklets such as in Jebel Al-Buhais tombs BH23, 27, 30 or 77 (Jasim, 2012, pp.83, 96-7, 102, 218-9) or Qidfa' 1 (Al Tikriti, 2022, pp.62-5, 141-2). The burial of an individual accompanied by a copper vessel is also repeated, as it has been observed in all areas of the Al-Qusais necropolis and is a feature described in other funerary contexts throughout the Iron Age (Al-Jahwari, 2021, p.72). Therefore, this object cannot be considered a distinctive chronological marker.

Over time, the placement of new graves in the necropolis of Al-Qusais has shifted in relation to earlier burials, without following a strict sense of predetermined spatial order. Within this pattern, it has also been observed that newer graves are interspersed among older ones (Figure 8). Despite this, there is no overlap between the graves, suggesting a respect for death and knowledge by the community of the location of the already established graves. It is likely that the graves had some kind of landmark or superficial reference to mark their location.

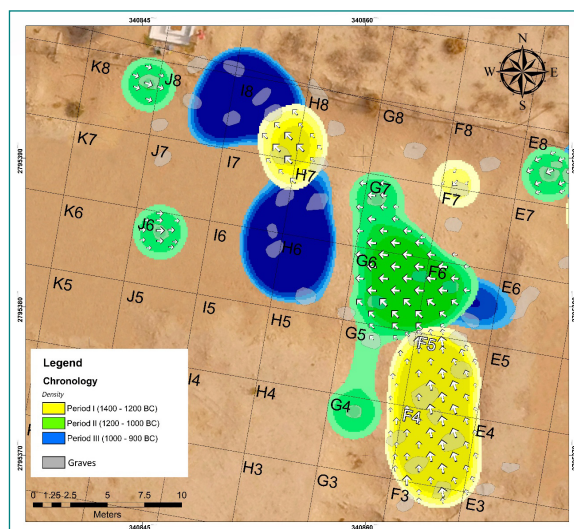


Figure 8. Growth trend by period of the Al-Qusais necropolis, Area A. Map and calculations processed in ArcGIS.

The graves of Period I (1400-1200 BC) are characterized by several distinctive features. One notable element is the frequent presence of buried individuals accompanied by uniquely large daggers, such as the D8 type (Table 2; Figure 9). This type of dagger's morphology is well known from the Early Iron Age. It is very similar to the daggers of the late Bronze Age, and examples have been found in the tomb of Quidfa'1 (Al Tikriti, 2022, pp. 54-5, 133-5) or Ibri/Selme (Oman) (Yule & Weisgerber, 2001, p.43). These daggers are usually found with circular shell buttons that are sometimes decorated with concentric circles (Figure 10). These buttons were part of a belt and have also been found in Shimal SH102 (Vogt & Franke-Vogt, 1987, Figures 18), Qidfa'1 (Al Tikriti, 2022, p. 144), Jebel Al Buhais BH66 (Jasim, 2012,

p.185), Bithnah Tomb 4 (Righetti, 2015, Figure 219), Dadna grave (Benoist & Hassan, 2000, p.95) and Bidaa Bint Saud MG439 (n.d.). Daggers and decorated buttons have always been found together in Al-Qusais graves, indicating that they were part of a single item of personal use. Therefore, the discovery of similar buttons in looted graves suggests that these graves date to the same period. Consequently, we can infer that the absence of daggers in funerary context where buttons were found is due to looting, and that buttons were objects not taken during looting.

Another interesting aspect of daggers is that they usually appear in one of two positions: next to individuals alongside other objects or on their waist with the handle facing the abdominal area and the tip facing backward (Figure 9a, 9b, 9d-f).

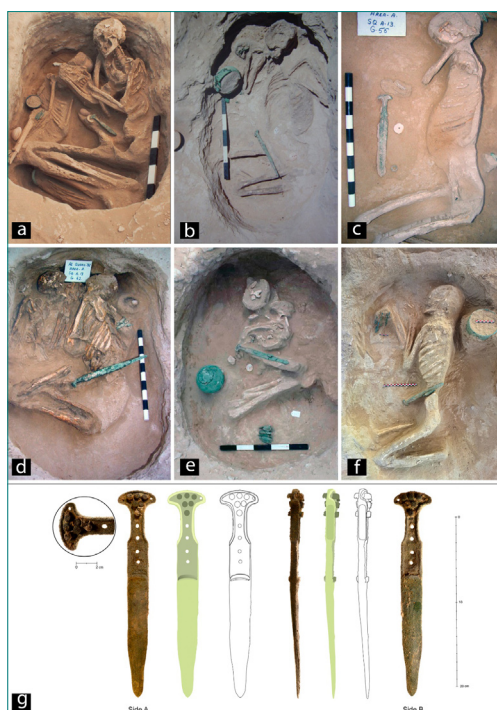


Figure 9. Examples of graves with daggers in Al-Qusais. Photographs by Dr. Qandil: a) Grave 92, b) Grave 34, c) Grave 56, d) Grave 62, e) Grave 15. Recent excavations: f) Grave 329 and g) Dagger of Grave 305.

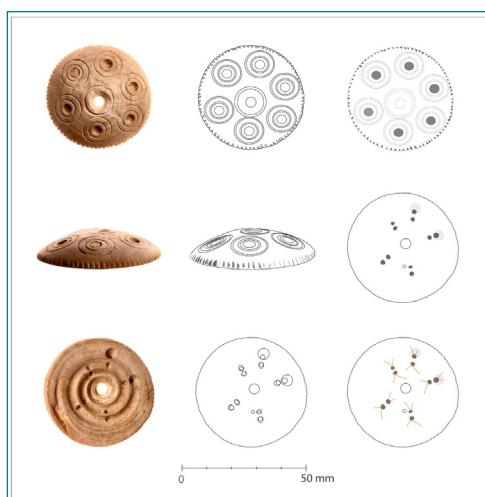


Figure 10. Belt button recovered from Grave 306.

During Period I, softstone vessels with decorations combining concentric circles and rhythmic, constant, and regular zigzags were included, as seen in Grave 305 (Figure 3a).

The absence of pottery vessels, bowls, and jugs among the grave goods in Period I graves that have been excavated thus far could indicate a pattern in funerary practices.

In contrast, arrowheads were consistently present during Period I, often found in abundant bundles or groups near the head or hand of a buried individual in the Al-Qusais graves. Some of these arrowheads are incised, as seen in Shimal SH102 (Vogt & Franke-Vogt, 1987, Figures 19, 20), Ghalilah Tomb (Donaldson, 1984, Figure 26), Dadna grave (Benoist & Hassan, 2000, p.95), Sharm Tomb (Weeks 2000, p. 183), Qidfa 1 (Al Tikriti, 2022, p. 140), Bithnah Tomb 4 (Righetti, 2015, Figure 219) and Fashgha-1 (Phillips 1987, Figure 38). When arrowheads from this period (Table 2) appear sparsely or in isolation in

the graves of Areas A and B, it is usually because the graves were looted.

The number of arrowheads and votive objects in general shows notable inequality in the individual Grave A-II. This is particularly exceptional, as it is the only individual grave with a structure. It contains a large copper dagger, a miniature version, a silver leaf, and an extraordinary set of 35 arrowheads. This votive assemblage suggests that it is a prominent tomb, likely belonging to a prince or leader, reflecting a social hierarchy with an elite, or indicating some form of social differentiation. Its spatial location, attached to the outer side of the communal Grave A-I and only a short distance from its entrance, suggests that it was an important tomb venerated by the community that lived in Al-Qusais.

Finally, copper axes found in graves are exceptionally rare. Only two examples were found in Area A from Period I (Figure 11), and two more of a more modern typology in Area C from Period IV (Taha, 2009, p.120, 287).

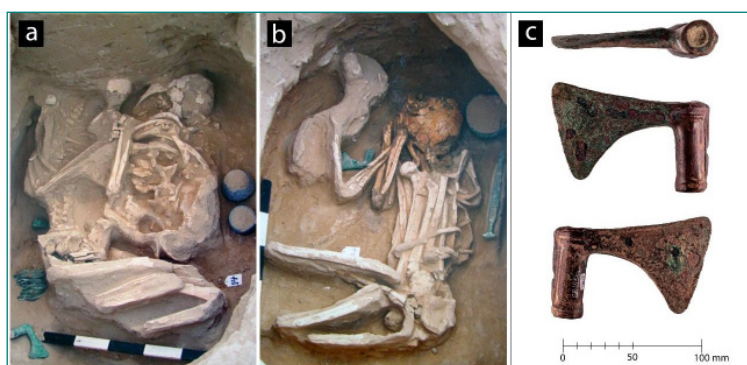


Figure 11. Al-Qusais graves with axes from period I. Photographs by Dr. Qandil: a) Grave 14, b) Grave 17. Recent photograph: c) Axe from Grave 17.

During the second period (1200 – 1000 BC), softstone objects found in Al-Qusais graves featured zigzags and an increased number of linear and geometric designs. Though they gradually decreased in number, decorations with circles were still used. Incised arrowheads continued to appear during this period, though in smaller numbers than in the previous one.

During the third period (1000 – 900 BC), the presence of small, locally produced pottery bowls and jars is confirmed as part of the funerary deposit (Benoist & Hassan, 2000, p.88) (Figure 12). Occasionally, amulets with different motifs made of softstone were incorporated as part of the personal objects.

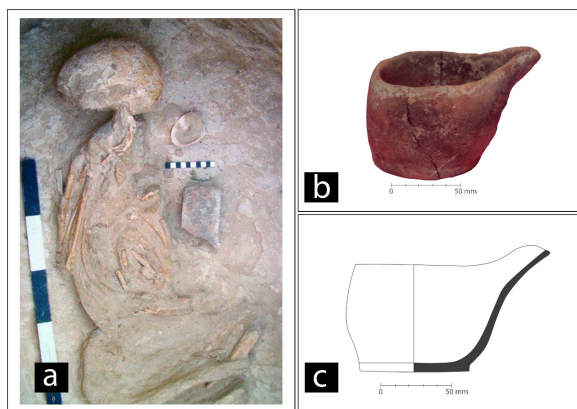


Figure 12. Period III pottery found in the necropolis of Al-Qusais. Photographs and drawings by Dr. Qandil: a) Grave 5 (area A) b) spouted bowl from grave 5, c) drawing of the bowl from grave 5.

During Period III, copper daggers, which are distinctive of the first period and, in some cases, Period II, do not appear. However, small knives with smaller blades have been found in some graves as prestige or symbolic weapons.

Finally, graves from Period III may contain arrowheads, but in significantly smaller quantities compared to those from earlier periods. In most cases, graves from this period either lack arrowheads entirely or do not include them as part of the burial deposit. Notably, the arrowheads from Period III bear no inscriptions and feature more refined, lightweight forms.

Period IV spans from approximately 900 to 750 BC and is represented only in Area C and in Grave 103-104-105 (Area A).

During Period IV, locally produced pottery vessels and bowls were present. These include pieces with pouring spouts and geometric lines and motifs painted in ochre (Figure 13). These types of pieces are characteristic of Iron Age II in this region (Iamoni, 2009, p.225). Regarding metal objects, the arrowheads and copper axes from Period IV (Figure 14a) are lighter and more stylized than those of previous periods, and they lack inscriptions. The presence of alabaster vessels with decorations similar to those on softstone vessels from the same period is also significant (Figure 14b, 15). These decorations are based on geometric patterns devoid of circles and featuring simple, line-based compositions. Exceptionally, these alabaster vessels feature animal motifs (Figure 16).

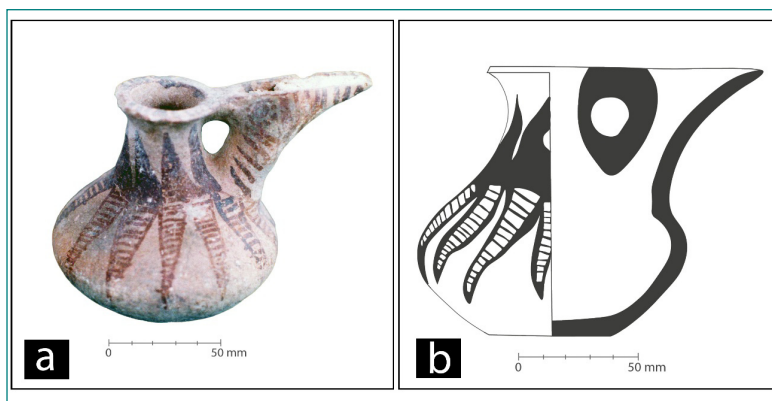


Figure 13. Period IV pottery found in the necropolis of Al-Qusais. Photographs and drawings by Dr. Qandil: a) decorated pottery vessel from grave 18 of period IV, e) drawing of the pottery vessel from grave 18.

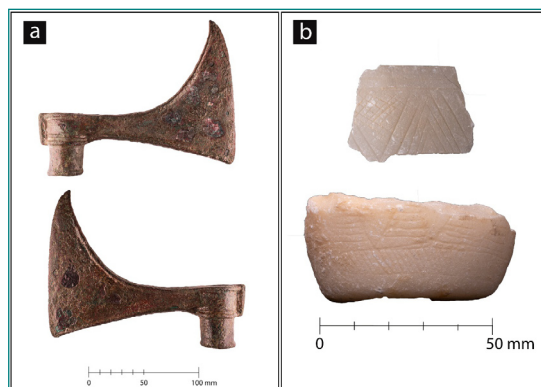


Figure 14. Objects from the funerary context of Grave 24 of Area C, typical of period IV: a) axe and b) alabaster.

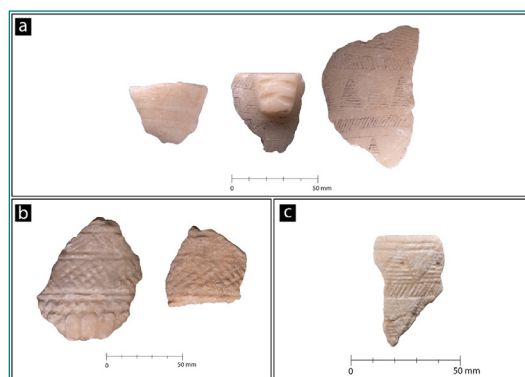


Figure 15. Alabaster pieces from Area C, Period IV: a) Grave 19, b and c) Grave 1.

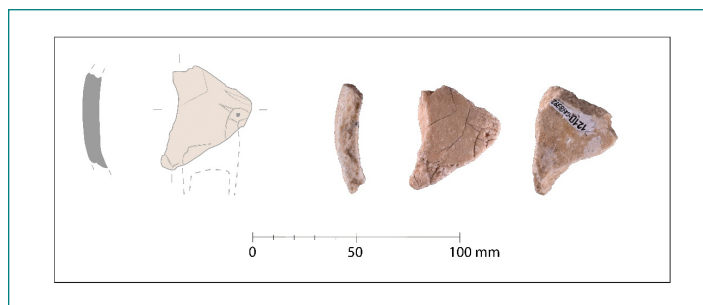


Figure 16. Alabaster piece from Area C, Period IV, with animal motif.

Finally, in the graves of Area C, which are all from Period IV, softstone objects typically appear later and have decorations consisting of linear and zigzag incisions. Circles are always absent. These elements have also been found in similar contexts at Dibba 76/1

and Sharm (Genchi & Tursi, 2022, p. 134).

Figure 17 shows the pattern depicted as decoration on softstone pieces throughout the four periods described.



Figure 17. Patterns of decoration of soft stone objects in the necropolis of Al-Qusais. Photographs and drawings by Dr. Qandil: a) Period I, b) Period II, c) Period III. Photograph of recent studies d) Period IV.

It is important to note the absence of symbology representing snakes in the funerary deposit of the Al-Qusais necropolis. The representation of the serpent as a figurative silhouette in copper, or as a motif on pottery containers or censers has not been identified in any tomb, regardless of the chronological period. However, snake-shaped figures and censers were found near the Al-Qusais necropolis, where M. Taha

excavated a hill he named the temple of *Mound of Serpents* (Figure 18) (Taha, 2009, pp.92-5, 308-9). Although we know that snakes were the cult motif par excellence during Iron II times (Benoist, 2007), we believe that they should not be associated with funerary practices or with aspects related to death or burial rites.

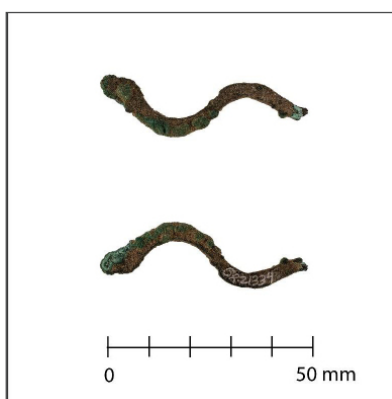


Figure 18. Copper snake found in Mound of Serpents, Al-Qusais.

The results of this chronological analysis help us begin to estimate how many generations could have settled in the vicinity of Al-Qusais between 1400 and 750 BC. Taking an average of 26.9 years per generation (Wang et al., 2023) as a reference, we can estimate that between 16 and 17 generations settled there. However, we will be able to answer this question more precisely as we learn more about paleodemography of Al-Qusais through the excavation of a more representative number of graves in future sessions.

5. Conclusions

A preliminary proposal outlines four chronological periods of funerary activity in the Al-Qusais necropolis, from 1400 to 750 BC. More modern periods have not yet been verified.

This study is based on absolute dating results obtained by analyzing bioapatite samples. These results were supplemented with relative dating methods based on the analysis of objects found in intact graves in the necropolis. These elements were then compared with funerary references from several other necropolises in the southeastern Arabian Peninsula that exhibit great similarity to the contexts observed at the Al-Qusais site.

The oldest initial period (Period I, 1400 – 1200 BC) is highly homogeneous and exhibit an extraordinary funerary deposit, as is typical of its repertoire, including unique daggers. The number of artifacts from this period is higher than from the more recent periods. It should also be noted that the communal graves of Al-Qusais were also built during the earliest period of the necropolis. One notable grave is Grave A-II, which was excavated by M. Taha. It stands out due to its spatial arrangement near the communal Grave A-I. The assemblage found in Grave A-II suggests the path to social and hierarchical inequality of the community buried there.

Similarly, the chronological phase corresponding to Iron II is perceived as the second most active period in terms of funerary practices. This stage was mainly concentrated in Area C of the site during the last period (IV) between 900 and 750 BC. The necropolis of Al-Qusais must have acquired great importance in its later period, as evidenced by the notable presence of alabaster containers, which are uncommon in other UAE necropolises.

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