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Upheaval or business as usual in the Early Roman period at Knossos: a contextualised mortuary archaeology approach

ABSTRACT

This paper considers the impact of the Roman invasion, establishment of a colony, the changing urban character, and differential mobility and connectivity on the everyday lives of the Knossian people. Studies in the past have considered whether these events caused substantial social and cultural change or brought significant numbers of incoming people. These studies have considered epigraphy, linguistics, onomastics, pottery, architecture, and other aspects of the archaeological and historical records. The study of human bones can add to this knowledge, particularly for understanding the impacts on the health and diet of people. The burial sphere in general and skeletal remains in particular have remained underutilised resources. The integration of all these different lines of evidence can enable a social history to be written for Knossos.

This study of the mortuary evidence, combined with the other archaeological and historical evidence from Knossos, enables a study of the changes to daily life at Knossos in connection with the broad scale socio-political upheavals affecting Crete and the wider Roman Empire at this time and an assessment of the scale of disruption to life. The contextualised study of the human skeletal remains demonstrates subtle changes to the health, diet and lifeways of people, as well as increased social inequality in the early Roman period. Although certain key 'Roman' burial features, cremation in particular, are missing from Knossos (and Crete more broadly), there were noticeable changes to funerary customs, though these were not detectable until the first century AD. The study concludes that change was gradual and selective as a result of widespread connectivity with many regions of the Empire.

KEYWORDS: health, diet, human remains, mortuary, burial, osteology, bioarchaeology, social history, Roman, Hellenistic Knossos, colony, connectivity, lifeways

INTRODUCTION

When the thematic axes of the 13th International Congress of Cretan Studies were announced as dealing firstly with 'Upheavals, Ruptures, Discontinuities, Risings', and secondly with 'Health and Illness in Human Communities', this offered an excellent opportunity to explore how human health can be affected by upheavals in society. Crete in the early Roman period offers an ideal moment at which to explore such an event, following the invasion of the island by Roman forces

in 69-67 BCE. This paper asks how the contextualised study of the mortuary environment, including osteoarchaeological analysis of human skeletal remains, can lead to a better understanding of the human impact of societal upheaval. It demonstrates how an integrated mortuary archaeology approach can be used to investigate the degree of disruption to the society on Crete caused by the Roman invasion of Crete, its integration into the Roman Empire, and the establishment of a colony at Knossos.

Studies in the past have considered whether the Roman invasion, establishment of a colony, and subsequent increased connectivity within Mediterranean networks caused substantial social and cultural change or brought significant numbers of incoming people. These studies have considered epigraphy, linguistics, onomastics, (Baldwin Bowsky 1995; 1997; 2002; 2004), pottery (Eiring 2000; 2004; Forster 2001; 2009; Baldwin Bowsky 2011), baths (Kelly 2013) and other aspects of the archaeological and historical records (Paton 1994; 2004; Sweetman 2007; 2010). Sweetman has also discussed the changes that occurred in the Late Antique period and Christianisation (Sweetman 2004; 2005), but the study of human bones can add to this knowledge. The burial sphere in general and skeletal remains in particular have remained underutilised resources. The integration of all these different lines of evidence can enable a social history to be written for Knossos.

Knossos is an ideal site at which to explore these questions, not only because of its position as an important and well-connected centre in both the Hellenistic and Roman periods, but also because of its rich excavation history. In addition to the aforementioned studies of a range of materials and sources, there have been large numbers of graves and tombs belonging to these periods excavated over the past century (Hood and Smyth 1981). Many of these excavated materials remain largely unstudied, while some have been partially published, but as they have been kept in storage and archival records have also been preserved, it has been possible to revisit and publish old excavations using this legacy data (e.g. Sweetman and Becker 2005; Sweetman and Grigoropoulos 2010; Moles 2023a). Human skeletal remains were studied for the author's PhD, and an investigation of health and diet in the Hellenistic, Roman and Late Antique periods has been published (Moles et al. 2022; Moles 2023a; 2023b).

APPROACH

The study of health and diet from human skeletal remains enables insight into the physiological wellbeing and lifeways of individuals. A comparative approach enables change over time in these proxies to be tracked. In order to gain the greatest insights from the evidence available, it is essential to take a contextualised integrated approach. The primary focus of this research is on the osteoarchaeology and mortuary sphere. However, I place my study of human bones within the context of the archaeological (material culture, context, spatial, environmental), historical and epigraphical evidence in order to recreate a social history. A social history approach seeks to understand social structures, the interactions of different groups in society and the impacts of social differentiation and social change on those different groups and on individual lifeways.

THE ROMANS AND CRETE

In this section I will discuss some of the changes that occurred on Crete in this period, by way of contextualising the mortuary and osteological analyses. Both the invasion of Crete and earlier Roman arbitration between warring poleis within Crete are historically documented (Cassius Dio 36.18–19; Diodorus Siculus xl 1; Livy xxxvii 60; xli 30 2; Plut. Lucullus 2-3; Polybius xxii 15 3; xxiv 3; *IC* III.4.9), as is discussed more extensively by de Souza (1998). However, it still remains unclear what changes occurred for those living in Crete in the decades following the invasion. Becoming a part of the Roman Empire put an end to the constant wars between the poleis of Crete. It has been observed by surveys across the island that there were greater numbers of sites in the Roman than in the Hellenistic period (Sanders 1982, 30; Hayden 2005, 333; Sofianou et al. 2019). It was likely as a result of this new peace that it became easier to move away from the security of the big cities.

The Roman period is a time of intensified connectivity for Crete. There is evidence for increased exports of wine and herbs (Sanders 1982) and likely of increased productivity with greater evidence for wine production (Marangou-Lerat 1995; Marangou 1999), fish tanks (Davaras 1974; 1975; Mourtzas 2012), and beekeeping (Francis 2006; 2016). Preferences in ceramic fine wares appear to undergo changes during the Roman period. Imported fine wares first appeared at Knossos in the 1st century BCE in the form of eastern sigillata A, and alongside eastern sigillata B and Cypriot sigillata (all coming from the Eastern Mediterranean) they dominated tablewares throughout the Augustan period (Eiring 2004, 71; Baldwin Bowsky 2011, 117; Sweetman 2013, 28-29). The change towards a preference for Italian sigillata in the 1st century CE was a gradual one, with no Augustan sigillata stamps known from Knossos. Furthermore, it was a short-lived fashion with a prevailing preference for imported eastern sigillatae (Eiring 2004, 71; Poblome 2004, 18, 22). The conspicuous consumption of art also appears to have increased in the form of greater numbers of mosaics and portrait sculpture, which were little known prior to the Roman period (Sweetman 2013; Karanastasi 2016). The popularity of such art works grew very gradually on Crete, with few portrait sculptures until after the Augustan period (Karanastasi 2016, 102) and a late 2nd century boom in mosaic production (Sweetman 2013, 84).

A degree of Roman acculturation has been observed in the onomastics of the island as seen in inscriptions from this period, with the adoption of Roman names (though often breaking the prescribed formula) and Latin endings to Cretan names, but also a widespread persistence of Cretan names (even for those Cretans in Athens, Rome and Roman Italy) and use of the Greek language (Baldwin Bowsky 1995; 1999; 2004). Regarding language, Latin inscriptions do appear, but are mainly in the official sphere and not as numerous as would be expected at a colony, with private inscriptions continuing largely in Greek (Baldwin Bowsky 2004).

Building projects represent one of the most dramatic changes across the island in this period, with the ruins of Roman structures such as theatres, baths, aqueducts, and cisterns still visible on the surface to the present day. Kelly (2013) suggests that certain architectural types would have been mandatory for the fulfilment of Roman-style daily rituals, which is why public baths were among the first buildings constructed at many colonies and other conquered settlements. However, like many of the developments and changes on Crete, many new architectural constructions were not built until the 1st, 2nd and even 3rd centuries CE.

ROMAN KNOSSOS

Knossos was the only Roman colony on Crete, the *Colonia Iulia Nobilis Cnosus*, despite (or perhaps because of) its resistance to the Roman invasion (Sanders 1982, 14; Paton 1994, 142). It was likely established in 27 BCE, but did not undergo as significant changes as some other Roman colonies in Greece, which may in part have been due to the Roman admiration for the Knossian legendary past (Paton 1994, 144; Dijkstra and Moles 2024). Augustus gave land around Knossos to Capuan citizens in compensation for land at Capua in Campania, which he had in turn given to his veterans. Despite this connection between Campania and Knossos, the question of whether there were significant numbers of newcomers either at this time or after the establishment of the colony remains (Cassius Dio xlix.14.5; Rigsby 1976; Paton 1994). Like many of the major centres on Crete, Knossos was the focus of many new public and private buildings, as well as investment in infrastructure such as roads, bridges and aqueducts (Hood and Smyth 1981; Sackett et al. 1992; Paton 1994; 1998; Trainor 2019; Kelly and O'Neill 2023). The paucity of structural evidence for the Classical and Hellenistic city has led to the assumption that the centre lay below the Roman centre, whereas the Roman remains survived to be observed and commented on by many early travel writers, including Buondelmonti in the 15th century, Onorio Belli in the 16th century, Cornaro and Pococke in the 18th century and Pashley and Spratt in the 19th century (Paton 1994, 144-45).

BURIAL PRACTICES

In the Hellenistic period on Crete, people were buried in simple grave types (pit, tile and less commonly cist graves), and this trend continued through to the middle of the 1st century CE. At Knossos, the only burial types that have been excavated are pit and tile graves. These were largely to accommodate only a single burial, but sometimes there were double interments or very occasionally the graves contained more individuals (Moles 2023a, 48). This is also the general picture for wider Crete, though there were a few exceptions to this rule, such as the hypogea at Chania, which are proposed to have Alexandrian connections (Moles forthcoming; Markoulaki and Niniou-Kindeli 1982; 2009; Andreadaki-Vlaziaki 2009). Added to these are some of the rock-cut tombs which would become commonplace in the Roman period, such as those at Polyrhena and Falangari near Phaistos (Savignoni 1901, 337-42; Hatz-Vallianou 1987, 538-42; 1989, 429-31; 1995, 1007-19; Markoulaki 1987, 563; 1988, 285-87), as well as some others from across the island of uncertain date (Moles forthcoming).

It is clear from skeletal analysis used to reconstruct the demographic composition of the excavated burials that some of the mortuary record is missing from Knossos. The death assemblage does not represent a normal distribution of age groups, as infants and children are underrepresented in the excavated Hellenistic graves from the North cemetery (Moles 2023a, 49). They are not extremely uncommon, but in the cases where they are found, they are always buried with an adult.

From the mid-1st and throughout the 2nd century, there is a pronounced increase in larger, more monumental tombs designed for multiple burials and multi-generational use. Although pit and tile graves likely continued to be used in most places, there is less evidence for them and a

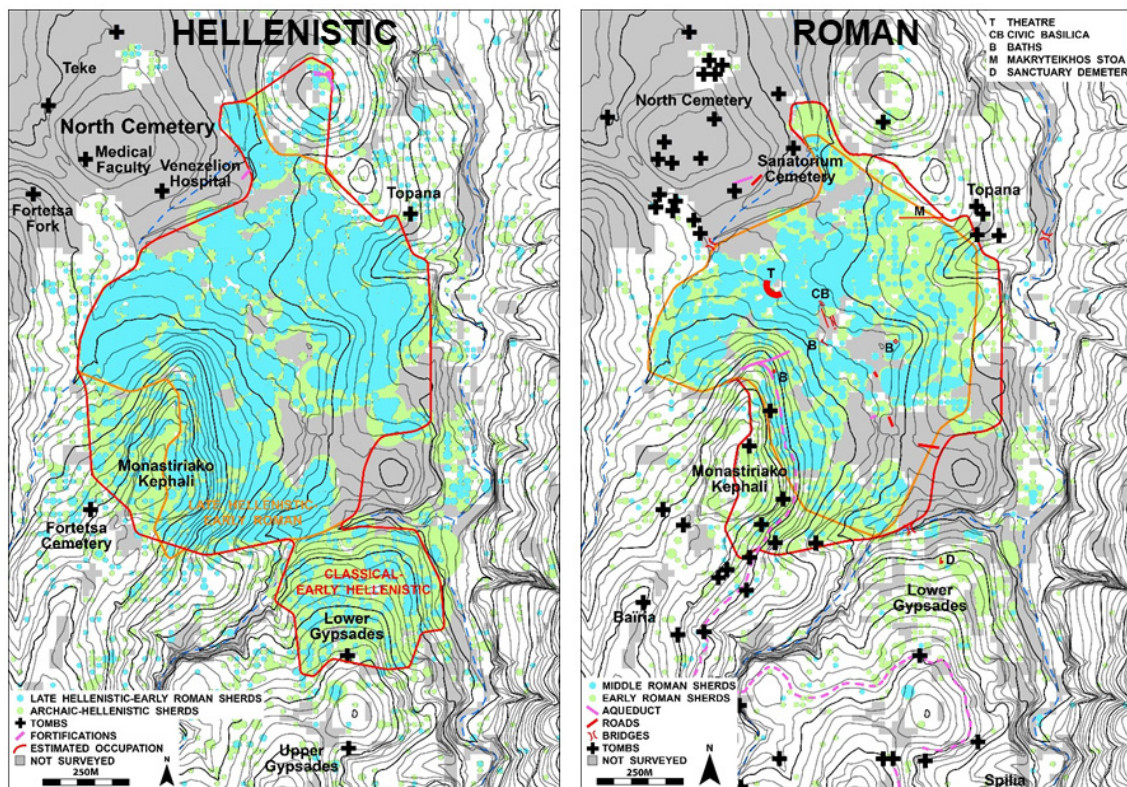


Fig. 1. Surface sherd distribution maps showing the extent of Hellenistic and Roman Knossos, with black crosses marking the known graves and cemeteries. Maps: Todd Whitelaw/Knossos Urban Landscape Project.

marked shift towards larger, more monumental tombs. These include built tombs of varying size, style and materials, rock-cut chamber tombs with arcosolia, niches, and stone-carved benches (Moles forthcoming; Carington Smith 1982; Grammatikaki 2004; Vasilakis 2004; Guyon 2008). Stone sarcophagi are extremely rare before the 2nd century, when they become more popular as a burial vessel. Large built cist graves become more popular in the later Roman and Late Antique phases.

At Knossos, there is some change in the spatial use of cemeteries (Fig. 1). In the Hellenistic period, most known burials are in the North Cemetery, and the small numbers of burials that have been identified in other regions of the Knossos valley are small groups of tombs that do not appear to have been substantial cemeteries. In the Roman period, burials continue in the North Cemetery but there are many more areas being used, with cemeteries at Monastiriako Kephali, Baïria, Gypsades, Spilia, and Topana as well as sporadic burials known from other locations (Hood and Smyth 1981; Moles 2023a). It is also important to point out that the Hellenistic skeletal material comes exclusively from the North Cemetery, while we have human remains from most of the other cemeteries around the settlement for the Roman period (Moles 2023a, 22-26).

The question remains as to how much burial practices would have changed alongside this change in tomb type. There certainly seems to be a greater emphasis on the family or kinship grouping and association with ancestors or others being buried in the same tombs, rather than

the more individual focus of the Hellenistic burials. There is also greater investment in burial and a desire for impressive structures and visible displays of wealth, power, or social standing. Notably, however, there have been no cremations identified at Knossos or anywhere on Crete in either the Hellenistic or Roman periods. This is very different to the picture seen at other Roman colonies, such as Patras, Corinth and Dion, where for several generations a distinct increase in cremations along with cinerary urns and columbaria was seen (Walbank 2005; Slane 2012; Hoskins Walbank 2014; Dijkstra 2015; 2019).

HEALTH AND HUMAN REMAINS

Evidence from the human skeletal remains provides information about age-at-death as a proxy for life expectancy and health. It is difficult to compare full age-at-death profiles due to the lack of evidence for subadult burials in the Hellenistic period (Moles 2023a, 58). A comparison of the adult age-at-death profiles for the two time periods shows no statistically significant differences. However, there is a slightly larger proportion of young adult deaths in the Hellenistic period, and there are more people living into old adulthood in the Roman period (Table 1). In specific age categories, age-at-death can be affected by immigrants; however, long-term population estimates based on the data from the Knossos Urban Landscape Project indicate population decline throughout the Roman period (Fig. 2).

TABLE 1: NUMBERS AND PERCENTAGES OF INDIVIDUALS
IN EACH ADULT AGE CATEGORY FOR THE HELLENISTIC AND ROMAN PERIODS

	Hellenistic (<i>n</i>)	% all adults	Roman (<i>n</i>)	% all adults
Young Adult	36	49.3	54.0	36.0
Middle Adult	17	23.3	32.0	21.3
Old Adult	3	4.1	10.0	6.7
Adult 18+	17	23.3	54	36.0
Total Adults:	73		150	

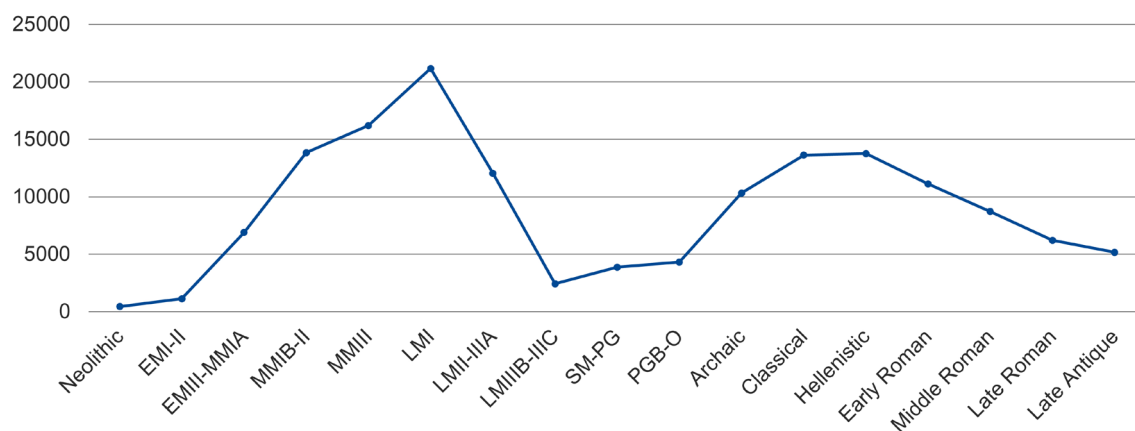


Fig. 2. Mean estimated population at Knossos based on the estimates of the Knossos Urban Landscape Project (Whitelaw et al. 2019, fig. 19).

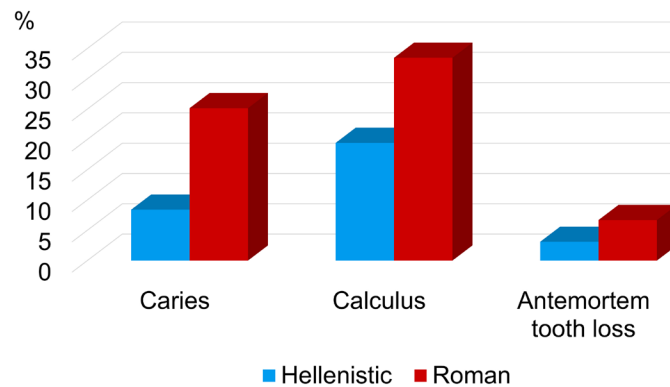


Fig. 3. Prevalence of dental caries, calculus and antemortem tooth loss for the Hellenistic and Roman periods.

As well as looking at age-at-death, a whole range of pathological conditions were recorded as indicators of disease, lifestyle, wellbeing and diet in order to understand change over time across the Hellenistic to Roman transition. These findings are more fully published elsewhere (Moles et al. 2022; Moles 2023a; 2023b), but a selection of relevant comparisons are presented here as a contribution to understanding the degree of disruption caused by the Roman period transition at Knossos.

Regarding the prevalence of various dental conditions (caries, calculus and antemortem tooth loss) in Hellenistic and Roman teeth, in each case we see higher prevalences for the Roman period (Fig. 3). This implies a higher carbohydrate diet, which may have taken the form of either starches or sugars. Considering that the population size appears to be decreasing, the suggestion that Roman diets were based largely on a basic and unvaried diet of something such as wheat possibly due to population pressures on food resources is unlikely. It seems more likely that this increase, particularly in caries and antemortem tooth loss, is due to an increase in the availability of sugars from honey, fruit, and sweetened wine, due to increased productivity and connectivity in trade networks. Additionally, there appears to be a more visible elite group in the Roman period, as indicated by the new tomb types. This group may have created greater demand for and had greater access to these foodstuffs.

Alongside dental diseases, stable carbon and nitrogen isotope analysis is very useful for looking at different aspects of diet. It facilitates the comparison of diets based on C3 and C4 plants (the latter have higher $\delta^{13}\text{C}$ values), the difference between a plant-based diet and a diet containing animal products (with $\delta^{15}\text{N}$ increasing as it ascends the food chain), and the difference between terrestrial and marine foods. The Knossos values (Fig. 4) all suggest a C3 omnivorous diet with a possible small marine component in some diets (those most elevated in both $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$). There is generally a slight elevation of the carbon isotope values from the Roman individuals in comparison with the Hellenistic individuals, without a corresponding elevation of nitrogen. This may indicate that there is some contribution of a small amount of a C4 plant, such as millet, being used as a secondary crop (Moles et al. 2022).

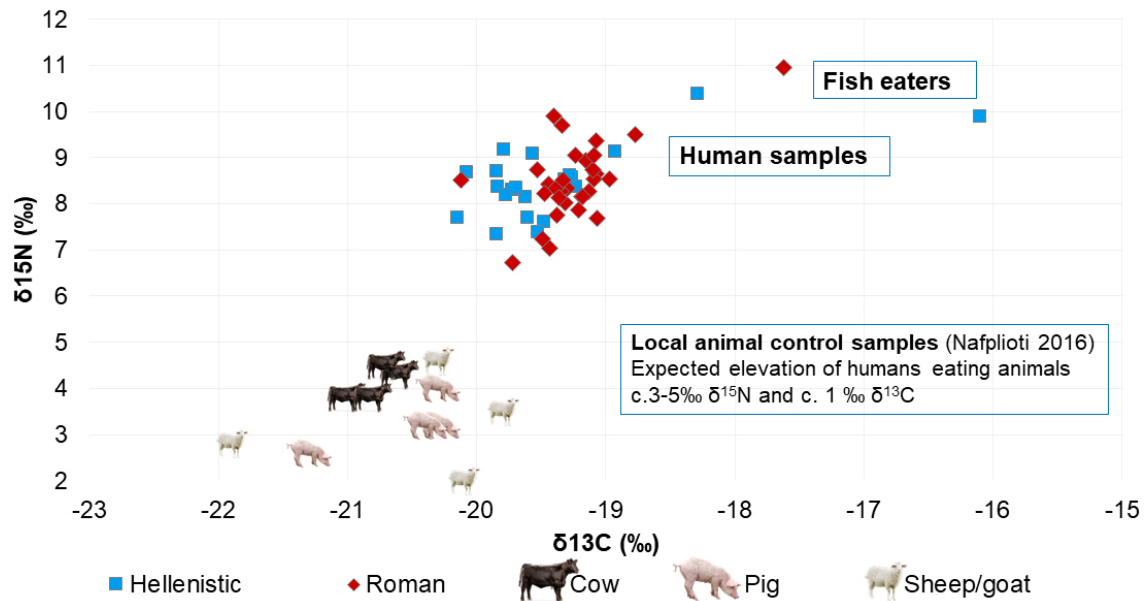


Fig. 4. Scattergraph plotting the stable isotope ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) results for the Hellenistic and Roman periods at Knossos.

To understand changes in physical activity, joint diseases and enthesal changes at muscle attachment sites were recorded. These results showed significantly less osteoarthritis in the Roman period and also a decline in the levels of intervertebral disc disease and enthesal changes (Fig. 5). It is important to be cautious with the interpretation of this data, as these conditions can be caused by a wide range of movements and activities and can also be impacted by age, sex,

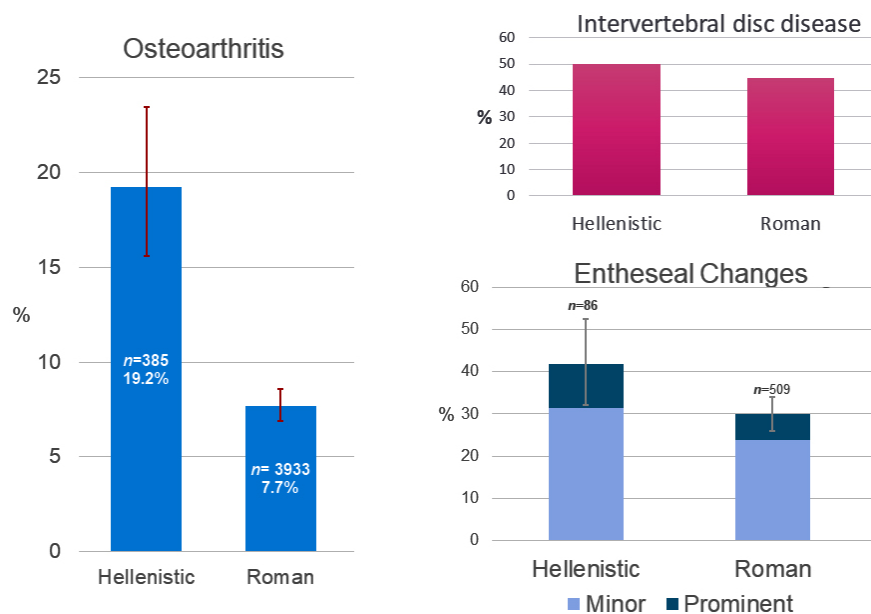


Fig. 5. Prevalence of osteoarthritis, intervertebral disc disease and enthesal changes for the Hellenistic and Roman periods.

genetics, and disease. However, the results produce a picture of a less physically active group of people in the Roman period. This again indicates that those who are represented in the Roman skeletal assemblage may have been part of a less-manual labouring elite group of society.

CONCLUSION

Written accounts provide information on the interactions between Rome and Crete and the invasion of the island. They demonstrate that Knossos was the centre of greatest and longest resistance. The epigraphic record shows that despite this resistance, Knossos became the only colony on Crete, while the more cooperative centre at Gortyn became the island capital. The archaeological evidence indicates a period of intensified trade and production. Gradual or delayed changes occurred in the urban fabric of the city at Knossos and other centres across the island. Selective changes occurred in burial practices, but these changes did not take the form of a direct Roman, Campanian, or Italian influence (Moles 2023a, 14). The tombs show features common in Eastern Mediterranean burial architecture; the move towards communal burial suggest a change in focus and priorities for the burying community (Moles forthcoming).

Subtle changes can be detected in the health, diet, and lifestyle of the population at Knossos. However, this does not appear to show any significant upheaval or disruption to the wellbeing or way of life. Additionally, it remains uncertain how representative the burial assemblage is of a complete cross-section of society when comparing the simple tombs of the Hellenistic period with the more elaborate ones of the Roman period. However, simple graves appear almost exclusively to be the burial type of the Hellenistic period, indicating that this was not a means for expressing social differentiation.

There are also other limitations with interpreting this evidence, which further analysis in the future could help to overcome. There are no tombs dated specifically to the years immediately following the invasion or establishment of the colony. C14 dating of some tombs could assist with the dating resolution, but it may also be the case that tombs of this date are missing from the excavated archaeological record. When it comes to identifying newcomers, rather than just the results of increased connectivity, a biodistance study of non-metric traits and strontium isotopic analyses could be employed. My ongoing work is also looking to apply these methods to other skeletal assemblages on Crete to see the more widespread picture across the island.

Alongside the survey evidence for a depleted number of inhabitants and the lack of any specifically Roman burial practices, the epigraphic evidence for both the names of individuals and the prevalence of the Greek language indicate that the colony at Knossos received a limited number of incomers. However, changes across the centuries (rather than decades) following the Roman invasion of Crete are evident in the urban fabric of the city, in burial practices, in productivity and trade, and in diet. These do not appear to suggest a major upheaval caused by the Roman invasion or the establishment of a colony, but rather seem to show that societies are not static; particularly due to the increased connectivity of Crete within the Roman Empire, changes occurred in a gradual and selective manner.

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