

Funerary practices of the Chalcolithic period: The collective secondary cremations at Perdigões Enclosure

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1. Introduction

Perdigões is a large set of ditched enclosures located in Reguengos de Monsaraz, South of Portugal, and dates from Late Neolithic/Chalcolithic. In the middle 3rd millennium the central area of Perdigões ditched enclosures was reused for funerary purposes. Several secondary depositions of cremated human remains were exhumed from this site. The aim of the present work is to present these funerary contexts.

Pit 16 presents a conical deposit with a large concentration of ashes, charcoals, cremated human bones and burned archaeological material (figure 1a).

Pit 40 thick layers of cremated human remains and archaeological material filled the top of this structure. Then, a semi-circular stone cairn containing a small **cist** (figure 1b) was constructed overlapping part of the pit. This stone structure was later covered by deposits also with cremated human remains and archaeological material in a depositional activity that seems to have been done in open area (**Environment 1**) (figure 1c).

2. Material and methods

Sample: Human remains recovered from Pit 16, Environment 1 and Cist.

Methods: Human bone fragments were sorted into skeleton's division by categories (skull, long bones, hand/foot, other bones). Information recorded for the human bones included data related to modifications due to thermal changes caused by fire as colour changes (Shipman *et al.*, 1984; Bellard, 1996) or types of fractures (Herrmann and Bennett, 1999; Curtin, 2008). Minimal number of individuals (MNI) was estimated according to Herrmann *et al.* (1990, adapted by Silva, 1993). Age-at-death of non-adults was estimated according to Smith (1991). Determination of sex was recorded according to Buikstra and Ubelaker (1994) and Silva (1995). Bone representation of adult individuals was checked for possible irregularities using bone weight of the different parts of the skeletons (Silva *et al.*, 2009).

3. Results

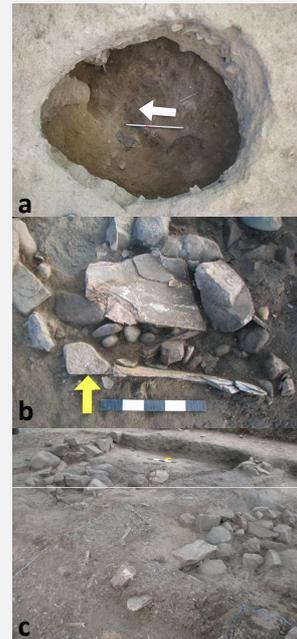


Figure 1. a) Pit 16. b) Cist. c) Environment 1.

PIT 16	ENVIRONMENT 1 (Preliminary results)	CIST (Preliminary results)
<ul style="list-style-type: none"> Number of human bone fragments: 2500 (4845,18gr.) Predominant colour change: white and grey for all skeleton categories Main fracture patterns: thumbnail and longitudinal fractures (long bone fragments) and patina (some cranial bone fragments) Other thermal alterations, such as distortion, in some long bone fragments Evidence of ochre only on human remains MNI: 9 (6 adults and 3 non-adults) No inferences about sex were possible At least one young adult (20-25 years). Evidence of mature adults. Age-at-death distribution of non-adults represented in figure 3. Pathological evidences: signs of periostitis; ante mortem loss tooth; osteoarthritis; healed cranial fracture in occipital bone 	<ul style="list-style-type: none"> Number of human bone fragments: 24086 (36742,64gr.) Predominant color change: white (58,47%) and grey/blue (21,22%) Main fracture patterns: straight transverse fracture (29,94%), delamination (28,13%) and patina (25,72%) Evidence of ochre in 106 fragments of human bone (only adults) MNI: 90 (72 adults and 18 non-adults) Two fragments of iliac bone with male features. A talus belongs to a male and other to a female. At least one young adult and one mature adult. Age-at-death distribution of non-adults represented in figure 3. Pathological evidences: ante mortem loss tooth; dental caries; osteoarthritis; periostitis; enthesopathies; stress indicators; trauma 	<ul style="list-style-type: none"> Number of human bone fragments: 949 (1856,67gr.) The most common colour in the fragments was white (70,02%) Predominant fracture patterns: straight transverse fracture (40,54%) Evidence of ochre in 5 fragments of human bone (only adults) MNI: 8 (5 adults and 3 non-adults) No inferences about sex were possible Age-at-death distribution of non-adults represented in figure 3. Pathological evidences: osteoarthritis and enthesopathies



Figure 2. a) Transverse fractures in a fragment of long bone diaphysis. b) Different colour changes of human skeletal remains.

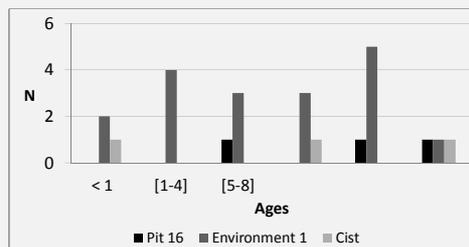


Figure 3. Age-at-death distribution of non-adults individuals recovered from different structures of Perdigões Enclosure.

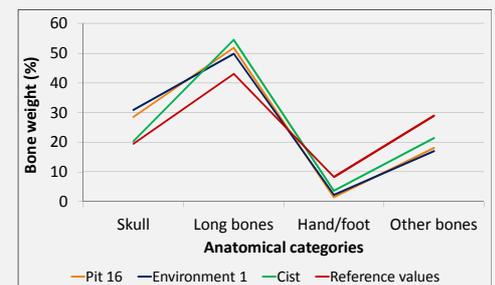


Figure 4. Comparison of the weight percentage of bone fragments recovered from different structures of Perdigões Enclosure with the reference values (Silva *et al.*, 2009).

4. Discussion and conclusion

The total sample was submitted to fire. Variations in colour (figure 2b) suggest that human remains were exposed to different temperatures and for different lengths of time. The predominant colours were grey (incompletely oxidised) and white (> 600^o) confirming the exposition to high temperatures during some time (Shipman *et al.*, 1984). A wide variety of fracture patterns (figure 2a) suggests that the cremation was performed on individuals in different stages of decomposition. The presence of bones of all parts of the skeleton, including small hand and foot bones, and the results of bone weight analysis (figure 4), reveal some care in picking the cremated remains and that probably complete bodies had been burnt, instead of disarticulated body parts, as sometimes suggested for prehistoric deposits of cremated bones (Duffy and MacGregor, 2008). It is unclear why and where these individuals were cremated. There seems to be no doubt that they were intentionally cremated, carefully collected and finally deposited in these structures. These data suggest an increase of the importance of fire during the Chalcolithic period in this enclosure. In the last decade, evidence for a more diversified mortuary and funerary practices for Portuguese Neolithic/Chalcolithic sites have emerged, particularly with new findings from South Portugal. Among them, the collective secondary cremations from Perdigões Enclosure are a unique funerary context in Portuguese Chalcolithic burial practices. It represents a multifaceted burial ritual that included the cremation of apparently complete bodies with ochre, fauna and artefacts, careful collection of all these remains, their transport and dump.

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