Bioarchaeological approach to the study of the medieval population of Santa Severa (Rome, 7th–15th centuries)

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\section*{A R T I C L E  I N F O}

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- Medieval era
- Osteobiography
- Paleodemography
- Italy
- Limat
- Musculoskeletal stress markers
- Dentoalveolar features

\textbf{A B S T R A C T}

The present research utilizes archaeology and physical anthropology to reconstruct the demography, occupational stress markers and health conditions of individuals that lived during the medieval era in Santa Severa (Rome, Italy). The cemetery recovered during the restoration of the Castle of Santa Severa dates back to $1232 \pm 40$ BP (680–890 cal. B.C.$-$1004 $\pm$ 30 BP (970–1060 cal. B.C.), as regards Casa del Nostromo, and to $883 \pm 40$ BP (1040–1220 cal. B.C.$-$531 $\pm$ 35 BP (1380–1450 cal. B.C.) for Piazza della Rocca, according to $^{14}$C analyses on four bone samples corresponding to the most superior and inferior stratigraphic levels.

This range of dates ascribes the burials to the transition period between the Early and Late medieval era. The goal of the present research was to analyze one of the largest Italian medieval communities using a morphological approach to reconstruct its osteobiography.

The complex comprised a total of 455 individuals: 118 juveniles and 256 adults (M:F = 1.4). All age classes were represented, meaning that, even if the area were not completely excavated, the analyzed series could be considered representative of the population from which it comes.

The sample exhibited a high degree of biomechanical stress related to daily tasks, mainly affecting the upper limbs and involving both the shoulder and the pelvic girdle. Several pathologies were detected; the most common appeared to be degenerative and infectious diseases, though some cases of congenital disorders could also be observed. Regarding the dental pathology, low frequencies of caries, abscesses and antemortem tooth loss were detected in spite of a high prevalence of dental calculus. These results seem to suggest that subsistence was based on both agriculture and farming.

1. Introduction

The present research aims to investigate the osteobiography of the medieval population of Santa Severa (Rome, Italy), a small town 50 km north of Rome (Fig. 1). The Castle of Santa Severa was built during the medieval era on the site of the ancient settlement of Pyrgi, a well-known harbour that handled a Mediterranean-wide trade for the Etruscan city of Caere, currently Cerveteri. The archaeological excavation, directed by Dr. Flavio Enei and the Soprintendenza per i Beni Archeologici dell’Etruria Meridionale (“Archaeological Authority of Southern Etruria”), took place between May 2003 and December 2009, on occasion of the restoration and reclamation of works conducted by

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tected from winds and currents, as well as a considerable availability of
environmental traits (i.e. the presence of a natural landing place pro-
furred from the ditches still present in the area) that has
made it suitable, since prehistoric times, for a landfill as well as for
human communities. The medieval settlement lies on the remains of
Roman infrastructures, with the subsequent change of name of the
village itself from etruscan Pyrgi to Santa Severa in honor of the saint's
martyrdom around 297–298 BCE (her brothers, Calendino and Marco,
were also martyred). As reported in “Annali Ecclesiastici” by Cesare
Baronio, published between 1588 and 1607, Pyrgi was the site of her
flagellation and burial; early Christians began venerating her and their
worship gave rise to a Church ad corpus (Enei, 2013). During the ex-
cavation campaign, in fact, the early Christian Church was recovered. It
represents, along with its baptistery, one of the first Christian testi-
monies on the coast north of Rome and Etruria.
On the ruins of the Roman buildings, a large cemetery in use during
the transition between the Early and Late medieval era was discovered.
To confirm and sustain the assumed chronological window, two 13C ca-
librating dating devices from the sample recovered in the Casa del
Nostromo cemetery area and two from Piazza della Rocca, corresponding
for both cemetery areas to the most superior and inferior stratigraphic
levels, were performed at the Center for Diagnostic and Dating (CEDAD)
of the University of Salento. The samples were dated 1232 ± 40 BP
(680–890 cal.) (LTL4138A)-1004 ± 30 BP (970–1060 cal.) (LTL4140A)
and 883 ± 40 BP (1040–1220 cal.) (LTL4137A)-531 ± 35 BP
(1380–1450 cal.) (LTL4136A) respectively for Casa del Nostromo and
Piazza della Rocca (Enei, 2013), confirming that the cemetery area was in
use from the 7th to 15th centuries CE. Even if the excavation brought to
light two close cemetery areas, there has been no archaeological evidence
indicating a clear distinction between the two. Accordingly, the in-
dividuals were considered collectively as a sample.
The burials overlap each other; most simply involved earthen graves
but, in some cases, sarcophagi built with tuff stones, culled from the
demolition of existing Etruscan and Roman buildings, were found. The
bodies were buried with their heads facing east, sometimes protected by
small tuff or brick stones (Enei, 2013). Evidence of grave goods was
found only in some non-adult burials; nothing was found for the adults.
Many burial sites were reused and some were disturbed by different
construction and restoration works over the centuries. The only ex-
ception is the individual buried in a sarcophagus “US 321”, whose
atypical burial has been the subject of much speculation. The burial
itself appears different from the others, represented by simple earthen
graves that may be delimited by some re-used materials. Moreover, in
the sarcophagus it is possible to see a cross and a cushion made of stone
(Fig. 2). Despite these features, the individual was found face-down-
ward with extended lower extremities and crossed feet. Although prone
burials were considered a means of ensuring that undesirable members
of society didn’t disturb the living (Hirst, 1985), the present case con-
trasts with the features of the burial itself. It is plausible that the
anomalous position of the body is a consequence of a theft, and that this
individual was initially buried in a standing position (Enei, 2013).

The aim of the present research was to reconstruct the paleode-
mographic dynamics to provide information about the mortality pat-
terns and life conditions of this medieval population but also to in-
vestigate musculoskeletal stress markers and perform paleopathological
and odontological evaluations.

2. Materials and methods

The analyzed series consists of 455 individuals, both adults and non-
adults, recovered between May 2003 and December 2009 in two
cemetery areas within the property of the Castle of Santa Severa (Rome,
Italy). Some field reports, as well as photos, were provided by the ar-
chaeologists during excavation.

First of all, the skeletal remains were cleaned and—when possi-
ble—fragments were conjoined. When fragile bones such as the cra-
nium, os coxae, and ribs were absent or fragmented, the preservation
index was calculated following the method proposed by Walker et al.
(1988). For each individual some bone fragments were preserved for
biomolecular analyses.

Age at death was estimated on the whole sample available. The
estimation for adult individuals (from ca. 18 years old) followed
methods based on morphological changes in the auricular surface of the
ileum (Lovejoy et al., 1985), in pubic symphysis (Todd, 1920a, 1920b;
Brooks and Suchey, 1990), and in the sternal end of the fourth ribs
(İşcan et al., 1984, 1985). Moreover dental wear (Brothwell, 1981;
Lovejoy, 1985) and the obliteration of the cranial sutures (Meindl and
Lovejoy, 1985) were observed.
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