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Human remains in archaeology. Excavation, recording and analysis of data: the funerary context of San Severo in Classe

Funerary archaeology reveals burial practices and the ways in which such mortuary practices can express social identities. The integration of archaeological and anthropological evidence can offer significant data regarding burials. The study of the cemeteries of San Severo at Classe (Ravernna) is being carried out using this integrated approach. All phases of the site of San Severo are characterised by burials and this funerary practice changed and developed, reflecting the life of the basilica and the monastery. All information regarding the characteristics of the layers, the phases and activities of members is entered in the GIS platform, so composite plans can be automatically generated.

The research in funerary archaeology reveals practices and attitudes about burials, and the way in which mortuary practices can express social identities.

Burials represent the "most formal and carefully prepared deposits that archaeologist encounter"[1] but do not necessary directly reflect the nature of a society. Potentially they contain more information than other features, both because they lie as they were placed in the ground and because they refer directly to a human being[2]. The integration between archaeological and anthropological evidence can offer many data about burials. In this way it is necessary to integrate a variety of information, recording archeological, topographical, osteological and anthropological data.

Besides the funerary archeology could be integrated with research and interpretation like the analysis of "gender". This approach, looking critically and examining the correlation between grave goods, biological sex, age, gender and social status, evidences the interaction between the living and the dead.

Burial rites are not static, but vary widely over the country and over the time[3]. Significant changes could be investigated looking for variation over time; in the same way it will also need investigation if burial rites seem static. The funerary practices can be used to emphasize or subvert a dominant ideology and order[4].

These approaches had different applications in some medieval cemeteries in Britain and Germany area[5].The study of the cemeteries zone of San Severo at Classe is already being carried out according to this perspective. The site of San Severo can be used to explain the potential of archaeological evidence

1 Parker Pearson 1999,5

2 Carver 2009, 132

3 Lucy 1998, 2

4 Lucy 1998, 1

5 Halsall 1995; Lucy 2000; Gilchrist 1994 e 1995; Effros B. 2002; 2003; 2004; Barbiera 2005.

for understanding funerary practices between the Roman Age, through Late Antiquity to the Middle Ages, since funerary practice in continuous along the complex life of the ecclesiastical building.

Placing bodies at San Severo, from villa to monastery

The church of San Severo, built above a Roman villa, near the mausoleum of a 4th century Bishop of the city of Ravenna, was the last great act of monumental character constructed within the urban space of the enlarged capital of the late antique Western Empire.

Between the late ninth and tenth century a Benedictine monastery was built, entirely made of reused bricks recovered from the Roman villa beneath it.

During the last few years some rooms of this complex have been investigated: the chapter house, the refectory, the kitchens, the cloister and some areas assigned to productive activities.

The entire life of the site of San Severo is characterised by burials and this funerary practice changed

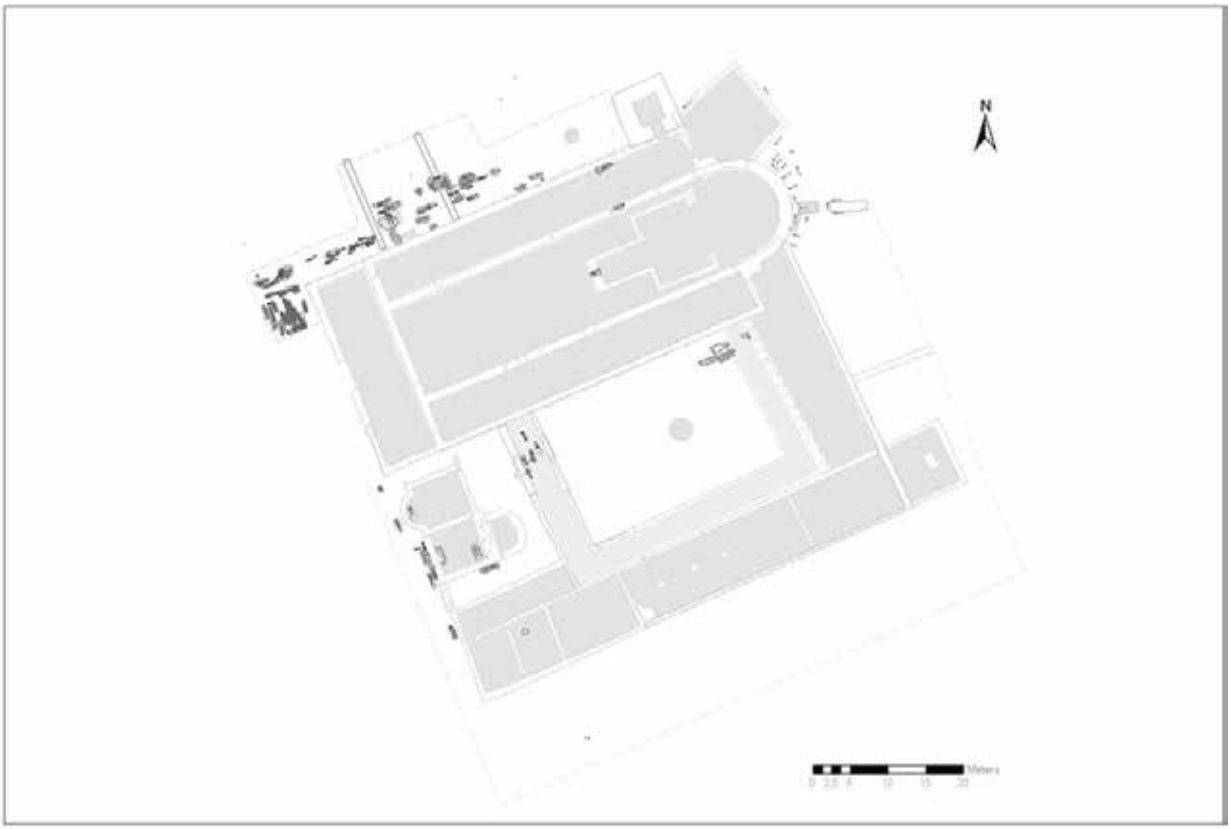

Fig.1 The complex of San Severo

and developed according to the life of the basilica and the monastery (Fig.1). Different areas were reserved for different categories of people, according to the importance attributed to each sector of the cemetery, in relation with the church and the vicinity to the relics of the saint, according space hierarchy within Christian cemeteries. These areas have different chronological periods, funerary practices and destinations[6] (Fig.2).

The oldest burials are situated inside the mausoleum and the basilica wheras, later ones are loca-

6 Ferreri 2010

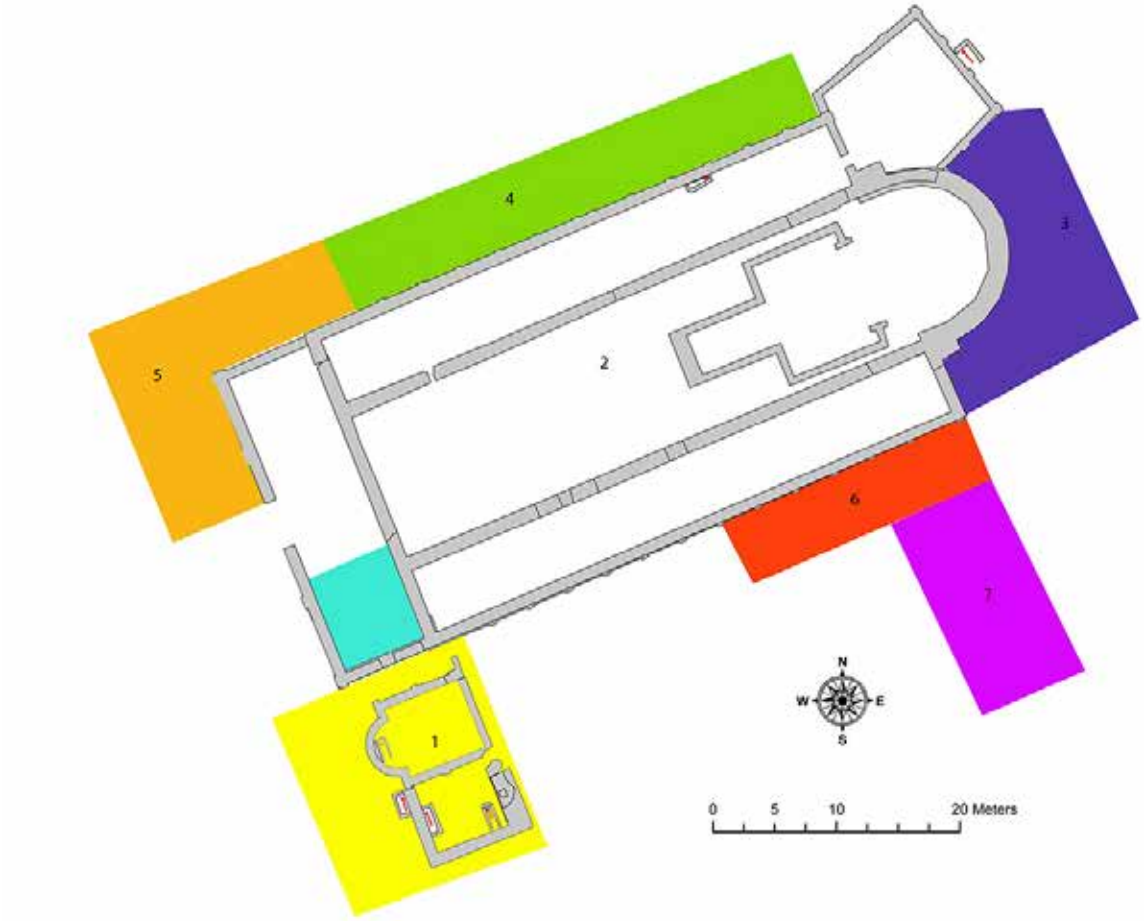

Fig. 2 Cemeteries areas at San Severo

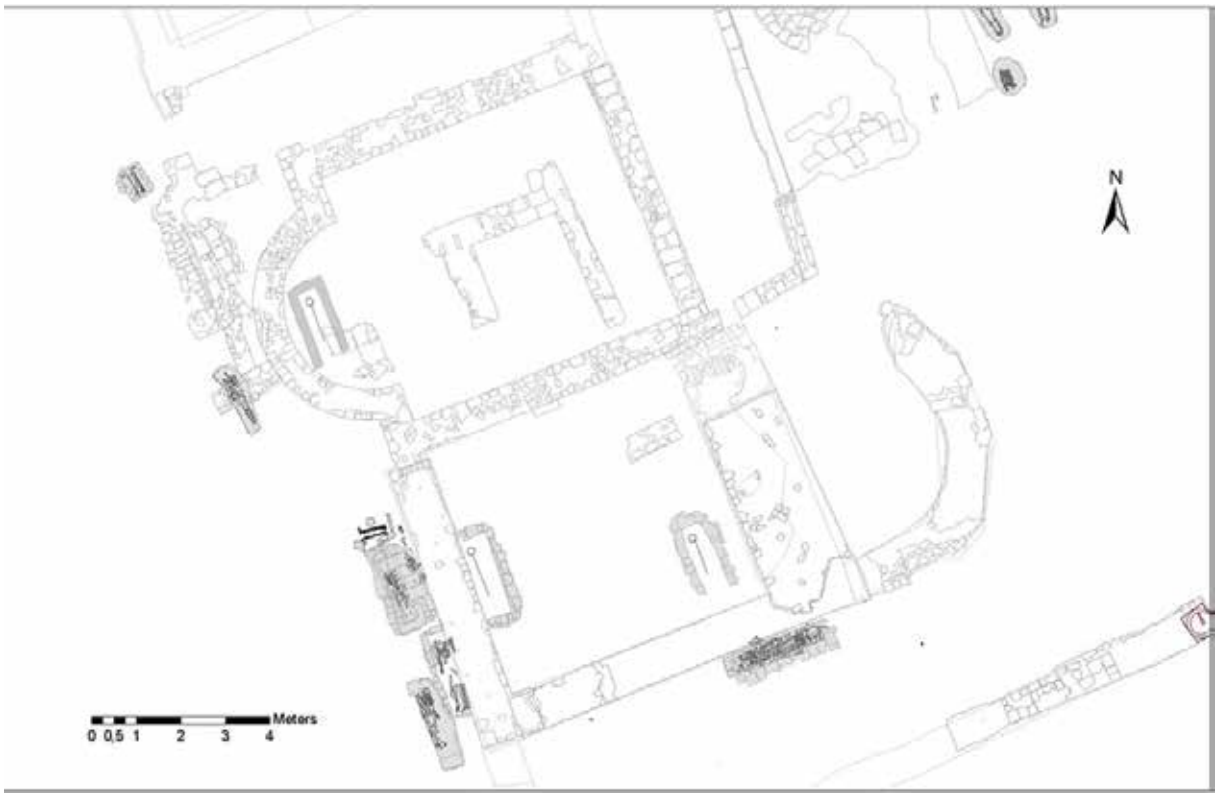

Fig. 3 The mausoleum. Some graves inside and outer the building

ted along external areas, until the Middle Ages; in this period burials "invade" the available spaces, but also overlap and cut into one other (Fig.3). The burial areas so far identified are: the mausoleum, the interior of basilica, the outer area of apses, the area outside the northern perimeter of the church ,inside the funerary enclosure; the area outside the northern perimeter and in front of the narthex (area outside the funerary enclosure);the outer area at the southern perimeter of the basilica; the cloister of the monastery; in the narthex and the area of chapter house (Fig.4).

Fig.4 Inside the nartex the villa's structure are used like graves.

In the medieval period dead offers a context where burials, graves and rituals can promote commemoration, social identity and memory. The funerary sphere was also a key of social, religious and political context.

Digging graves and excavating human remains

The basilica of San Severo had been interested by a series of excavations. During the 1960s part of the mausoleum and the basilica were brought to light; later, in the '80s many graves were found, all around the church.

New systematic excavations started in 2006, initially with an international European project between Università di Bologna, Leicester University, CEU of Budapest and Universitat de Barcelona[7]. During this excavation some graves were found along the northern wall and later covered, inside the basilica, in the northern nave and one in the choir[8]. The church was a pole of attraction for burials, according to the symbolic hierarchy of space in Christian cemeteries. The following excavations showed how burials characterised the entire life of the site of San Severo and that funerary practice changed and developed according to the life of the basilica and the monastic complex. In this way the burial practice is characterized by intercutting graves and deeply stratified, a typical feature of Medieval cemeteries[9].

The complexities of burial practice evidenced some methodological problems that necessitate a reflexive understanding of archaeology. Excavation and recording data are not separated from interpretation.

7 Following excavation continued under the direction of Andrea Augenti, the coordination of Enrico Cirelli and support of Ravennantica.

8 Barbiera, Ferreri 2006.

9 Gilchrist 2005.

Excavation of human remains involved experts who are familiar with the study and interpretations of those remains. It is useful to have a great deal of data in spite of the potential of cemetery.

During the excavation is important to identify skeletal elements in situ and spatial relationship to other elements. This activities are based on taphonomic processes which alter the original characteristics of the funerary deposit in order to determine the original burial context. The anthropologie de terrain[10] requires detailed during the excavation to reconstruct mortuary practices and eventually manipulation of the body after the death, during or after the process of decomposition. The interpretation of the funeral practices and rites start with digging up bones (Fig.5).

Fig. 5 Digging up bones

The analysis of the bones connections carried on his approach allows to understand if the deposit was a primary or secondary burial and if the bodies were deposited simultaneously or in sequence, in case of multiple interments. It is possible to understand where the body was wrapped: in a shroud, placed in a coffin, under the cover, even if we don't find this evidence. Is necessary to see variations, sometimes not clearly visible, in layers inside the grave, anomalies in the soil (Fig.6).

Fig. 6 Excavating multiple internment grave made of brick

These analysis have been particularly useful because of the high density of burials and the long use of the same cemetery areas. In some case the continuative use of the same ground does allow visibility of grave cuts. Soil full with disarticulated bones may represent the remains a variety of different formation process from accidental disturbance of formal burials to culturally manipulated material reflective of ritual activity, data that is important for recording the minimum numbers of individuals, age and sex• or the presence of pathological lesions.

According to this practice most graves contained several skeletons (Fig.7). Inside and around the mausoleum, the area more significant and symbolic of the ecclesiastic complex, we found some large graves, made of horizontally placed bricks, or made of bigger tiles placed vertically (Fig.8). According to the anthropological and taphonomic analyses, the skeletons were buried in different phases. The grave was open to put a new corpse inside, then closed with tiles and mortar. In some cases they moved the last body inside to make room for the new depositions. The practice of removing the remains was carfeul: the skulls on one side, legs and arms on the other side.

10 Approach pioneered by Duday 1990; 2006.

Fig. 7 Several skeleton inside a grave

Fig. 8 View of the mausoleum

Fig. 9 Familiar graves near mausoleum

Fig. 10 Area in front of nartex during the Medieval phase with intercutting graves

It was possible calculate the number of times some graves were used and anthropological studies have shown some possible familiarity between some individual inside the same grave (Fig.9).

Different typology of graves were recorded: simple pit dug into the soil, case of bricks, rarely amphores were used like container and shroud. It was no possible to find evidence of even small part of the shroud but the position of the body, in particular the compression between the shoulders, allowed to identify this practice.

It was possible to identified graves in cases of bricks, also when it was no possible to find some part of bricks because of grave disturbances.

Sampling of soil may be undertaken in a number of areas of skeleton for a variety of purpose.

At San Severo, during excavation of cemetery, we decided to sample soil of some preserved graves, not disturbed by post-burial activities, in order to obtain information about some rites and about landscape

around the cemetery, by the analysis of plant residues.

Studies are currently underway, but some first results were obtained regarding the area outside to the narthex of the basilica.

Between the 8th and 12th century burials were characterized by some bricks, materials recovered from the villa, placed behind the head of skeletons. In some cases the bricks were also placed at the foot. This practice was useful to indicate the grave to any visitors but especially to buriers. In this waythe cemetery space was ordered and tidy. The brick in fact was standing out of the ground, and was clearly visible. The ground was covered with grass and there is evidence that some fruit tree were present in the area. When this practice ended, the cemetery took on the characteristics of many medieval cemeteries: crowded and intercutting graves[11] (Fig.10).

Recording data

Usually archaeologist and anthropologist have different and separate sheet, but at San Severo we established a "Grave Recording Sheet" that integrates both archaeological and anthropological information. In this way the burials are perfectly integrated within the structural sequence.

The Grave Sheet records general information (site, year, trench, number grave, number plane and number photograph), archeological data, like stratigraphic information, but also information about grave typology, orientation, position of the burial in the site, type of deposition, associated grave goods (type and location respect to the body), and anthropological data.

This part is structured with some multiple choice boxes, so that it is more likely to be completed properly.

As well as standard information, like the skeletons numbers, age, sex, pathologies, body position, there are data about anatomic connections and taphonomy.

In the sheet it is possible to record which bones are present, how the skeleton is articulated (in the right anatomical alignment), in which position the body is placed (prone, on the front, on either side) as well as the position of the arms and legs (flex or bent; semi-flexed; arms crossed over the chest or pelvis; or extended straight beside the body).

Fig. 11 Use of total station

Following uncovering of the skeleton, the bones are drawn, planning a scale of 1:10, remembering that the skeleton is three-dimensional.

We usually have photo of single skeletons, group of graves, in the same phase chronology, and particular details about bones positions, good graves. Each context plant is carried out by a total station (Topcon GPT-2006), points directly transferable to CAD environment, through a calculation software celerimetric and processing measures (Meridiana) (Fig.11).

Once printed at 1:20 scale on sheets of polyester (structures), or on transparent paper (surface layer, the surfaces themselves), the drawing constitute the basis for the design of the user profile of each la-

11 Carra, Ferreri 2014.

yer. In some cases it is also easier to use the manual system of trilateration, anchoring the plans by superimposing on the cornerstones of the trace. The characterization of the structures of walls is performed with a combined system of metrically correct photo plans and through two distinct software straightening: Ortophoto and MSR. Once printed, the plans are superimposed to a manual drawing, for a better characterization and detailed documentation at1:10 scale (Fig.12). This way, it was possible to avoid the system of indirect survey, run on the remote computer with respect to the items to be drawn, a system that often involves interpretation errors. The same thing happened on the graves, for which the indirect system, the most widely used on the archaeological excavations, involves a substantial deviation of confidence. The alignments and the correct position of the structures collected and anthropological remains are also positioned, once again, through the use of the total station. All documentation is handled at the same time as collection of computer files related to a single database in Microsoft Office Access that flows into a single system of spatial analysis through the creation of a platform ArcGIS (ESRI version 9.3) (Fig.13).

Fig. 12 Manual drawing of a skeleton

Graphic documentation of each context also flows in a CAD environment with direct link to the GIS platform, managed directly on the excavation, for all spatial analysis allowed by the tool and for the real-time comparison of the stratigraphic relationships identified during the excavation.

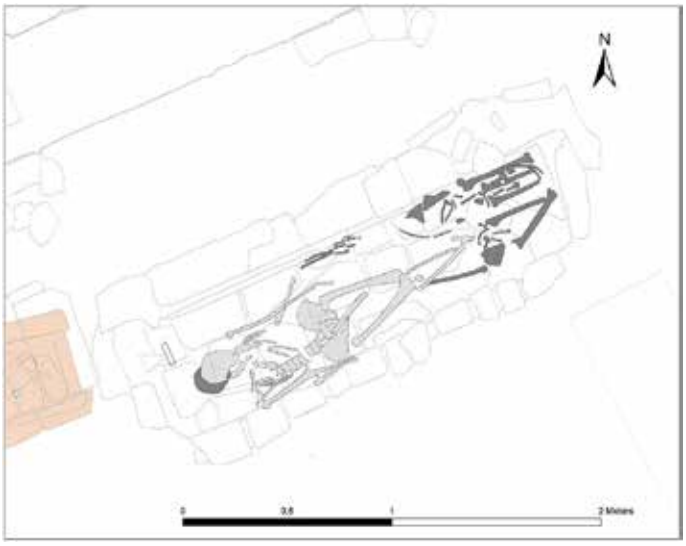

Fig. 13 Grave made of bricks with one skeleton in primary position and one in secondary position

Even for photographic images are provided for the inclusion in the database: each photo is given a card in addition to allow the inclusion of any textual information of various types and link them to other tabs, allowing to view the image. The photos are not physically present in the database but only connected and displayed by inserting in a field set, the direct link to the location where the images are stored. The photos are connected to the cards via context a many-to-many relationship that allows to cross reference record in one table to records in another: each context can be associated with many photos, and also any picture can represent different context. In addition to this Access link, the images are also linked to the spatial information contained in the GIS platform, using the Hyperlink function of ArcGIS.

All the information regarding the characteristics of the layers, the phases and activities of membership is entered in the GIS platform, so one can automatically generate various composite plans. Quantities

and varieties of all classes of materials and bone finds are also shown, designed as spatial entities that are identical to all other units identified on site. In this way they can be characterized and localized on the platform in a fast and combined manner depending on the needs of the research.

Direct use on excavation and construction of the platform at the same time of the activities of the excavation is, therefore, fundamental. The system will then be implemented even in the post-excavation period, allowing to obtain more detailed and targeted spatial analysis, that will allow more meaningful correlation between social identity (gender, sex, age, status), funerary practices (body arrangement, graves typology, cemetery organization) demography (mortality, disease, pathology, demography). The recording system can be developed and integrated with future research in field and laboratory.

Death and Landscape

Cemeteries do not exist independently of the landscape and settlement in which they are situated. The medieval burial actively represented relations between the living and the dead, and framed the context of the individual. The interpretation and data analysis needs to expand information on the spatial and chronological scale. The analysis of site of San Severo cannot be taken into account without the evidences of other cemeteries of Ravenna and Classe, comparing funerary activities and rites, in order to obtain better understanding of funerary practice, cemetery organization and management. The landscape of Classe is characterized in Roman times by the presence of suburban villas and by the occupation of the territory for a funerary use. Cemeteries were located along the main road and along the coastline, creating well defined and distinct zones. In Late Antiquity, the burial areas expanded, and news cemeteries were born. Different burials were found in the port area, excavated by University

Fig. 14 The port area: warehouses, houses and burial (in red)

of Bologna between 2001 and 2005. From the seventh century this area of the city was interested by some structural and topographic transformations that changed the concept of space, allowing the coming of the burials in living contexts, dynamics similar to many other cities in Italy and Europe. The burials were found in warehouses, in correspondence of the walls of these building. Some cemetery areas are intend to infant burials. We noticed a difference between this cemetery and San Severo, where we didn't found many infant burial. The graves situated in the port have a relation with a new group of houses found in this area (Fig.14). Another group of burials is located in another warehouses. The anthropological analysis shown that here were buried men, women and children. Some goods graves were found near the skeletons. The objects, as a knife with bone decorated handle, closings, coins and above all combs. At San Severo the practice to depose some objects with skeleton wasn't identified at the moment. During the 7th century, in conclusion, within the city of Classe there are at least two different urban cemetery: the funerary memory space around the basilica of San Severo and the port area, nearer the living space. This difference reflect a different funeral practices, with a different concept of space, burials type, distribution according with gender and age at the death of individual.

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