The Social Position of Children in Southern Peru During the Late Intermediate Period. Study of Mummies from San Francisco Site, Yauca Valley

Dagmara Socha

Abstract
The aim of the current paper is to investigate of the role of the children in prehispanic society from the perspective of human remains from the site of San Francisco (Yauca Valley) on the southern Peru coast dating to the Late Intermediate Period (900-1476 AC). The bioarchaeological analysis of the quality of bundle textiles, health condition, body position, the artificial head modification, and mummification techniques were used to establish if the subadults received a different treatment related to their social origins or age. A radiographic and anthropological examination was conducted to investigate 22 wrapped mummies. The result show three different types of artificial cranial modification, as well as trace of artificial mummification practices. The children (including infants) participated in the same funerary treatment as adults. The results suggest an identification with the group started at the moment of birth. The diversity of the youngest children showed a complex social structure in which social status was inherited from the parents.

Resumen:
LA POSICIÓN SOCIAL DE LOS NIÑOS EN EL SUR DE PERÚ DURANTE EL PERÍODO INTERMÉDIO TARDÍO. ESTUDIO DE MOMIAS DEL SITIO SAN FRANCISCO, VALLE DE YAUCA.
El objetivo del presente artículo es investigar el papel de los niños en la sociedad prehispánica desde la perspectiva de los restos humanos del sitio de San Francisco (Valle de Yauca) en la costa sur del Perú que datan del Período Intermedio Tardío (900-1476 AD). Se utilizó el análisis bioarqueológico de la calidad de los textiles del fardo, el estado de salud, la posición del cuerpo, la modificación craneal artificial y las técnicas de momificación para establecer si los subadultos recibieron un tratamiento diferente relacionado con su origen social o edad. Se realizó un examen radiográfico y antropológico para investigar 22 momias envueltas. El resultado muestra tres tipos diferentes de modificación craneal artificial, así como rastros de prácticas de momificación artificial. Los niños (incluidos los bebés) participaron en el mismo tratamiento funerario que los adultos. Los resultados sugieren una identificación con el grupo iniciada en el momento del nacimiento. La diferenciación entre los niños más pequeños mostró una estructura social compleja donde el estatus social se heredaba de los padres.

Keywords: mummies, Yauca Valley, artificial cranial modification, archaeology of childhood

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Introduction

Pre-Columbian Andean cultures share a complicate social system, based on kinship and lineage bounding, organized within a community. In the Inca Empire, it was called *ayllu* (McEwan 2006: 97) and is defined as relationships between people based on a common kinship, shared work and land (quechua; *minka*). Their foundation was faith in a common mythical ancestor. Rituals around deceased ancestors were aimed at protecting the community and helping with the manufacture of social bonds (Isbell 1997). However, the origins of the *ayllu* system probably date back to the Late Intermediate Period when the fall of the Wari and Tiwanaku empires was followed by a period of dominance by small-scale polities. The pre-Inca origin of *ayllu* seems to be confirmed by the new genetic analysis (Ringbauer et al. 2020).

The position of children inside social group in pre-Hispanic Andes and their burial patterns are important to investigate as a vital part of the past societies. The investigation of juvenile remains can provide us with important information about past populations e.g. social organisation, health conditions and activities in which young individuals could have participated (Baxter 2008; Halcrow and Tayles 2008; Prout 2016). The most important factors are ways of earning social status and the possibility of inheriting social position from the parents.

The aim of this article is to present a look at the Pre-Hispanic coastal society from the perspective of the children’s and adults’ burial patterns from the site of San Francisco (Yauca Valley) on the southern Peru coast during the Late Intermediate Period (LIP; 1000-1476 CE). The main research questions are related to the social diversity among children as well as differences between juveniles and adults. The analysis of the quality of bundles, health condition, body position, the artificial head modification, and mumification techniques were used to establish if the subadults received a different treatment related to their social origins or age. The comparison between burials of adults and juveniles was used to investigate if the children became identified as equal community members in afterlife beliefs.

History of the research

The Yauca valley is a northern part of the Atacama Desert. Settlements exist there only in the valleys of rivers. The arid climate and alkaline soil are favourable for the preservation of human bodies as well as other organic materials (Silverman & Proulx 2002; Orefici 2011).

Settlements at the Yauca Valley developed on the periphery of the coastal cultures of the Paracas, Nazca (Silverman & Proulx 2002; Lasaponara et al. 2017; Gayto 1961), and later under the influence of the Wari and Incas from the highlands (Menzel, 1959). However, the first permanent settlements in this region started in Early Horizon (900-200 BCE; Silverman & Prolux 2002). According to researchers, direct occupations of the areas settled by the Nazca culture reached as far as the Acari Valley (Silverman & Proulx 2002), which is situated around 12 km north of
the Yauca Valley. During the occupation of the coastal area by the Wari culture from the highlands, the former was incorporated into the socio-political networks of the Wari state. The Middle Horizon (600–1000 CE) was characterized by a decrease in population of these regions, high infant mortality, and a change of the settlement patterns (Isla & Reindel 1998). The LIP brought the changes of the local tradition and ethnic identity. The manufacturing of textiles and architectural activity were in decline, and the region became the periphery of the Ica and Chincha cultures (Menzel 1959).

The region of the Yauca Valley was never subjected to a sufficient archaeological excavation. This area was the object of archaeological surveys led by Francis Riddel and Dorothy Menzel in 1954 (Menzel 1959). The Californian Institute of
Pre-Columbian Studies (CIPS) developed the project in the valleys of Acari and Yauca at the 1980s (Belan & Kent 1989; Riddell 1986). Surveys with the mapping of archaeological sites of the region of these two valleys were conducted. Also, an organized excavation took place in the Acari Valley. The chronology of the local development of the material culture was based on findings from the sites in the Acari Valley, especially from Tambo Viejo (Kent & Kowata 1994). All the ceramic material from sites in Yauca Valley was discovered during the surveys and there is no information from the regular fieldwork (Menzel 1959; Walsh 1996). Since there is a lack of data from excavations at the Yauca Valley, the local chronology was established based on the studies of Acari Valley.

The cemetery of San Francisco is located on the southern side of the Yauca river, around 6 km from the Pacific Ocean's shore (Figure 1). Extensive looting led to rescue excavations of the burial ground. The archaeological mission, led by Francisco Riddel and Augusto Belan Franco, researched this region in 1987-1988 (Walsh 1996). It was the only archaeological fieldwork in the Yauca Valley to this date. During the exploration, around 120 mummy bundles were found. Between the grave goods, archaeologists found pottery chronologically related to the late Acari Period, referred to the LIP.

During the excavation of San Francisco cemetery, two trenches were explored in the season of 1987: one 4x4 metres and second of unknown size, separated by a modern road. The southern trench was extended on the western side for eight more units (2x2 metres each) in 1988. The limited area of the excavations and the information from later studies (Walsh 1996) led to the conclusion that the mummies of adults and children were buried together and probably shared the same grave goods. Unfortunately, the relation between the particular individuals’ burials is unknown. The previous looting makes it impossible to verify whether or not the cemetery was used for a long or a short time, or if there were some differences between the excavated sectors. The burials had probably collective graves goods, including remains of food (maize), two llamas, gourds, and ceramic pots (Walsh 1996). The lack of a recorded archaeological context of the finds prevents the possibility of connecting grave goods with particular mummies.

Around 60 mummies from the Yauca Valley were preserved and stored in Museo de Arqueología de la Universidad Católica de Santa María in Arequipa. The fardos (mummy bundles) were studied several times in the past (Augusto Belan, personal communication in 2017). However, the compositions of fardos enable only the observation of the external textile layers without the risk of destroying of the mummies. The only published research made by Michael Walsh in 1996 had been focused on textiles analysis of 46 mummy bundles.

22 mummies from Yauca were the object of the first anthropological examinations conducted by the author of this paper in 2017 and 2018. Later five of investigated individuals were subject of toxicological analysis (Socha et al. 2022).
Figure 2. Mummy B1 I, with sling.

Figure 3. Mummy C19 with sling, and colourful textiles.

Figure 4. Radiography of mummy C2A, showing cleft palate.

Figure 5. Mummy C2 in foetal position with hands crossed on chest and mummy B1 II in foetal position with arms holding knees.

Figure 6. Momia 2/2: Rest of cotton pieces, fingers tied by string, dark substance cover knee.
Mortuary behaviour in the southern Peru’s coast

The area of the Yauca Valley was under the influence of Paracas, Nazca, Ica, and Chincha cultures from the north (Gaytö 1961; Silverman & Proulx 2002; Lasaponara et al. 2017), and of Wari and Incas from the highlands (Menzel 1959). Some influences from the Costa Extremo Sur were also possible. Despite many years of research, one of the most discussed issue in the anthropology and archaeology of this region is the body treatment and mummification of the dead (Guillén 2004).

Bodies of regular deceased of Nasca culture mummified in the natural way (Orefici 2011; Lasaponara et al. 2017). However, there is multiple examples of artificial mummification of the trophy heads from the Nazca area (Orefici 2011). In some cases, like south coast Chiribaya culture, dated to the LIP, only a small percentage of the deceased were artificially mummified (Guillén 2004). Other bodies were preserved thanks to the favourable natural conditions. During the Inca times, mummification was restricted only for the most prominent members of the society (Guillén 2004; Isbell 1997). The mummies of ancestors were called *mallqui* and they were worshiped by the living. Many mummies were destroyed during the Spanish conquest. They were seen as objects of religious worship, but also for the plundering of the valuables that accompanied them.

In the case of the deceased from the cemetery of San Francisco, the pattern of mortuary behaviour is hard to establish because of the lack of an archaeological context (Walsh, 1996). However, the presence of infant, children, and adult burials in the same area is common on the coast. In the highlands, the children were buried mostly separated from the adults (Andrushko 2007). They were often inhumed in storage pots under floors of houses. According to Spanish chroniclers, Incas gain their social position after ritual of passage into adolescent at the age of 15-years-old. The ritual was related with change of the name but also in case of males receiving the earplugs *orejeras* confirming their high social status. At the sites of Nazca area dated for the LIP, children were buried in the same cemetery as adults, however, also in storage pots (Strong 1957:35). This different way of treating children could have been determined by the role which they performed in the local social system and afterlife believes. Probably children on the coast gained their social identity as a group member directly after birth, and because of that, shared a common burial pattern with adults.

Materials and Methods

During the anthropological investigations, 22 individuals were researched. All of them were discovered during the aforementioned rescue excavation conducted in San Francisco in the Yauca Valley in 1987 and 1988. A large number of the investigated *fardos* were damaged. Most of the bundles (even if the external textiles were preserved in a good condition) were heavily disturbed inside. It is likely that the damage to textiles and the access of the oxygen into the *fardos* caused the skel-
etonization of the bodies. Some of the bundles still had chuspas (bags with coca leaves).

To investigate 18 wrapped mummies without the risk of their destruction, radiography was used. Although the image obtained by conventional X-ray has its limitations (f.e. lack of organic materials and internal organs visualisation), the cost of testing are lower and availability of equipment are higher compared to computed tomography (Beckett 2014; Chhem and Brothwell 2009; Licata et al. 2019). A mobile unit was also used during the research so that the mummies could be X-rayed in the museum. In other four cases, the degradation of textiles allowed for a direct observation of the skin surface and bones. Numbers of textile layers, the sitting position, and state of preservation of the mummies made the observations of bones in some cases difficult.

The textiles wrapping of the bundles and three unwrapped mummies with preserved skin were also investigated in the UV and infrared light. These methods have been successfully used to study tattoos and other residues (Agurto and Cabello 2013; Oliver and Leone 2012).

The bioarchaeological analyses of the individual were focused on establishing the age at the time of death (Gaither, 2004; Schaefer et al., 2009), sex (Loth and Henneberg 2001; Schutkowski 1993), the presence of pathological conditions, trauma, and activity patterns (Verano 1997; Waldron, 2009). An analysis of the population from a pre-Columbian cemetery showed that the infants and children had slower postcranial skeleton development compared to contemporary populations (Drusini et al. 2001; Vega Dulanto 2009). This could be related to the minor impact of external factors on tooth growth, which makes them a better age marker. Age at the moment of death was determined by tooth eruption in subadults (Gaither, 2004; Schaefer et al., 2009) and by tooth wear in adults (AlQahtani et al. 2010). Nevertheless, for adults, tooth wear patterns can vary depending on food preparation and eating habits. Unfortunately, due to the limitations of the images that can be obtained using conventional radiography, it was not possible to observe other indicators of age. The body position made also impossible to analyse the pelvis. It excluded the possibility of establishing the age based on the morphology of the surface of pubis and auricular joint areas.

Sex was possible to be determined only in one case of a child mummy with partially mumified genitals (Momia 2/2). In the case of adults, the sitting position excluded the possibility of establishing their sex based on the morphology of the pelvis. The secondary method used in physical anthropology is the examination of the features of the skull and the mandible (Acsadi & Nemerskeri 1970). The method of establishing sex based on skulls’ features offers only 65% accuracy (Meindl et al. 1985: 84). Because of this, the sex of the adult individuals was only hypothesized based on cranial features and supported by information on individual grave goods (such as slings). Slings were a typical male attribute of warriors and deities such as Illapa (god of thunder) in Inca times (Betanzos 2010; Cobo 1990).
From three mummies of adults buried with infants noted during the previous examination, a mummy of probably female C2F was analysed again (Walsh 1996:87). The presence of the infants was revealed in previous studies thanks to small bones that dropped out from the bottom of the adult bundle. However, during the further examination by the author of this paper, no such remains were observed and the state of decomposition of the bundle excluded the possibility of radiography.

In the Pre-Columbian Andean area, artificial cranial modification was divided into two main types due to the place where the pressure was applied: tabular and annular with several subtypes (Antón 1989; Allison et al. 1981). During the proceeding of tabular deformation, selected bones were flattened by tying hard objects across them. For this purpose, slats, stones or woodblocks were used. They were divided into two types of deformations; elongated or widened skulls (Allison et al. 1981). The annular deformation required wrapping of the head with bandages, straps or strings, thus forcing the skull to rise upward. The process of the artificial cranial modification was initiated just after the birth and lasted for around one to two years.

Results

The radiography led to establishing some burial patterns, like body position (Figure 5), artificial head deformation (Figure 7), and detecting some pathological lesions and trauma (Figures 4, 7, and 8).

Mummification practice at the San Francisco Cemetery

The deceased from San Francisco were buried without clothes or jewellery. The face of the dead was sometimes painted with a red pigment. The bodies were wrapped in a few rectangular layers of textiles, sewn together and tied with rope. The number of layers was varying between one to three, which was connected with the state of preservation. Some of the fardos had damaged external layers which was an effect of looting activities.

Among the textiles used to make the fardos, single-coloured materials as well as those decorated with geometric patterns were used (Figures 2 and 3). They were made from cotton and wool. Some mummies also had additional headdresses, slings, belts, and cords. The bundle of adult WN2 was also decorated with the guinea pig (Cavia porcellus) fur. Three of the children aged one, two, and 12 years old (C2 B, WN 1, C2 O) also had chuspas bags fill with coca leaves.

The quality of textiles used to create the bundles and the quantity of personal grave goods strongly vary between adults as well as between children. The deceased (both adults and children) were wrapped in probably no more than three layers of textiles. The first one (counting from the interior) was covering the entire body. It was made of cotton in natural white or cream colour. The second layer was composed of two textiles, one on the head and second that covered the rest of the
body. The head textiles were tied by a rope or a sling in the neck region. The second layer was of the highest quality. There is also a big variety among individuals from simple brown wool textiles to colourful decorative ones (Figures 2 and 3). The colours of the fabric include white, cream, orange, red brown, dark brown, and black. The last layer was a mantle with decorative elements (belts, slings, a headdress, and colourful ropes), which covered the body, in some cases including the head.

In four cases (mummies: B1 I, C3 J, and WN 1, momia 2/2), traces of insect activity were found. All the pupae belong to the same kind of insect. Unfortunately, the preservation of only the cocoon excluded the possibility of a more adequate identification of the species. Also, cocoons of insects were found on textiles of the mummies B1 I and WN 1. In the case of C3J and momia 2/2, the *fardos* were destroyed and the pupae of insects were located directly on the skin surfaces.

The likely example of artificial body mummification was possible to detect only in one case of an unwrapped child mummy (mомia 2/2). Other mummies could have gone through a similar body treatment; however, to verify this, the computed tomography and biochemical analysis of microsamples are required. The momia 2/2 belongs to a female individual around three years old. The sex was established based on preserved genitals. The body was unwrapped from textiles and the head, right leg, and arm were disarticulated most probably post-mortem. The abdominal part of the mummy was partially skeletonized. The remains of cotton pieces were preserved on the head (Figure 6). The individual was buried in a foetal position with hands between the knees and chest. Toes and fingers were tied with strings, most likely used to stop decomposition and prevent changing of body position after death (Figure 6). A clump of hair mixed with camelids wool was found
with the mummy. The quantity of hair suggested that it belonged to another (probably older) individual. It could have been used to refill the abdominal cavity. However, the state of preservation of the mummy does not allow for a clear conclusion, for this purpose CT scans of other better-preserved mummies are necessary. The skin was covered with the remains of a black substance of possible embalming material (Figure 6). The substance was found at the scapulars, on the ribs, knees, and forearms. Originally, it may have covered the larger surface of the skin. Traces of a similar substance were also found inside a partially open fardo of adult individual (CV III).

**Anthropological analysis**

Of the 16 examined mummies belonging to children, most of them (14) died before reaching the age of three years (Tab. 1). Only two individuals were older and died at the age of six years old (B11) and 12 years old (C2O). In the case of mummy B11, a skull injury was observed thanks to the radiographic analysis (Figure 7). The fracture of the left parietal bone occurred peri-mortem. The fracture is surrounded by white patches that are remnants of bleeding. The blunt trauma could suggest intentional death. However, a lack of the archaeological context excluded the possibility of analysing of the burial pattern. The textiles used to create the B11 mummy bundle are of low quality (not dyed and without any decoration). Mummy C2O preserved in a very bad condition. The textiles were torn, which led to partial skeletonization and complete disruption of the anatomical position. They were excluded from radiographic studies.

Based on tooth wearing, the age of the six adult individuals was estimated as three young adults (17-21), two at the age of 25-35, and one at the age of 35-45 years old.

The sex was possible to be determined only in one case of child mummy (momia 2/2) thanks to the mummified genitals. The sex of adult individuals was hypothesized based on skull features in five cases as probably one female and four males (Table 1). In the cases of three children and two adult mummies, slings were used to tie the textiles around the head. They belonged to the burials bundles of children aged six months old (C19, Figure 3), six years old (B11, Figure 2), 12 years old (C2 O), and probably two males (WN2 and C37). It is possible that originally the slings were also part of the equipment of other fardos and were lost as a result of looting.

In the studied group two positions of the body were distinguished, foetal with arms between the thighs and the chest and foetal with hands holding the knees (Figure 5). Due to the state of preservation of the mummies, it was impossible to determine whether the position in which the hands were laid was intentionally related to the sex of the individuals (Table 1).
**Pathologies**

The observed pathologies were probably caused by unbalanced diet, high stress, or diseases. In four cases, it was possible to observe the Harris’ lines (B1II, WN1, C2B, C2). The Harris lines have been used as a stress indicator, showing periods of growth distribution (Goodman et al., 1984). They can be the result of a period of malnutrition or disease, but cultural factors can also influence bone growth. Subsequent remodelling of the bone may lead to compensation in bone density and disappearance of the lines after the stress factors have subsided. However, some studies show a lack of correlation between the presence of Harris lines and the stress indicator (Alfonso-Durruty 2011). The lines may be associated with a growth rate that is not linear, as previously thought. The later studies have also shown a lack of correlation between Harris lines and enamel hypoplasia, suggesting a different aetiology for these two (Pilar et al. 2005). In three cases, traces of *cribra orbitalia* and porotic hyperostosis of occipital bones were identified (C2L, C2B, WN1). These lesions are related to improper nutrition, disease, or stress factors (Walker et al. 2009). The porotic hyperostosis along the sutures could also be a result of artificial cranial modification (Boston 2012).

Only in two cases (C2A and C2), genetic or congenital lesion were observed. Radiography of a mummy C2A, belonging to an approximately 1-year-old individual, showed a cleft palate probably also associated with lip cleavage (Figure 4) (Dixon et al., 2017). Another malformation was visible on the radiography of mummy C2. The 1-year-old individual had a kyphosis which could be a result of improper delivery or also some genetic disorders (McMaster and Singh 1999; Rivera and Mirazón Lahr 2017).

Many of the investigated mummies had broken bones. However, only in the case of B1 I individual it was possible to establish that the injury occurred *peri-mortem* (Figure 7). Damage and fractures of the bones of other mummies were most likely the results of post-deposition processes and looting activity. The mummy of the adult individual CV III had ear canal plugged with cotton. It could be related to an ear inflammation, which often occurred in coastal populations as a result of diving in cold water of the Pacific Ocean (Standen et al. 1997). Unfortunately, the radiography image of this region was unclear.

**Artificial cranial modification (ACM)**

In the case of children from Yauca, three different types of artificial cranial modification were observed, annular (two cases) and ten tabular with two subtypes (erect and oblique; Tab 1, Figure 7). In two cases, the heads of the individuals were not modified and in two other cases, it was impossible to determine the type due to the lack of skull or its significant damage. Only in three cases of adult individuals could the shapes of the skulls be observed. The WN 2 and MA 07 individuals had flatness of occipital bone and C5 III showed no trace of ACM.
Discussion

In the Yauca Valley, the children shared the similar funeral pattern with adults. This suggests strong relationships with the kin and an identification as a group member regardless of age. Most children (14) in the investigated sample died before reaching the age of five years. The average age in the sample is like those observed in other prehispanic cemeteries on the coast of Peru (Drusini et al. 2001; Vega Dulanto 2009). The first five years of life were the most dangerous period during which most children died (Drusini et al. 2001). After crossing this threshold, the chances of reaching adulthood grew rapidly. According to ethnographic sources, the age of five was also the moment when the children were involved in domestic activities (such as nursery of younger children, cooking, and pastoral task; Dean 1995:119-121; Punch 2000:49; Sillar 1994).

The sex was possible to be attentively established only in six cases. However, three of subadult individuals were buried with slings. Originally, the slings were typically a male attribute used during war and hunting. They were also associated with the worship of the Inca god of thunder Illapa (Cobo 1990 [1653]: 32). Also, there are mentions in chronicles about men wearing slings on their heads (Arriaga 1968 [1621]: 35; Cobo 1990 [1653]: 151), and as gifts offered to local caciques by Incas (Betanzos 2010 [1551-1557]).

Numerous lesions associated with environmental stress have been observed (porotic hyperostosis of the occipital bone, and cribra orbitalia). They could be a result of multiple factors including malnutrition, anaemia, fluoride ingestion, diseases, but they can also be caused by cultural stress. The new studies shows also that cribra orbitalia formation can be related to level of maternal vitamin B12 and unsanitary living condition (Walker et al. 2019). In the case of groups living on the coast, the important factor in diet could played marine resources. As shown by the studies of coprolites from the archaeological coast sites in northern Chile, the improper food processing led to extensive parasite infections in coastal populations (Santoro et al. 2003), which in the case of children could have led to a premature death. The porotic hyperostosis could be related to artificial cranial modification. ACM could lead to the appearance of Wormian bones mostly along the coronal suture, and to porosity along the sutures (O’Loughlin 2004). The porosity was a result of compensation of the unnatural length of the bone by their density. Such changes were observed in one case (C2L).

There is no clear correlation between the quality of the textiles used to create the fardos and porotic hyperostosis, and cribra orbitalia. This could suggest that the quality and type of the food intended for children as well as nursing were more probably depending on cultural patterns and the social status of parents had a minor impact.

The results of the analysis of the Momia 2/2 remains allowed to hypothesize that in the case of the culture of the Yauca Valley during the LIP, the dead were receiving some additional treatment that supported natural body mumification. It
is unknown what was the extent of this procedure and whether or not it included a significant portion of the society. In the Chiribaya culture, located south of the Yauca Valley, only some of the dead were subjected to the intentional mummification (Guillén 2004:149-151). The evidence of possible mummification of infants suggest that the social status was probably ascribed.

The presence of the pupae inside and outside the fardos suggests that the bundles could have been exposed to environmental factors for some time before burying. The cocoons were made by insects probably soon after death or during funeral ceremonies, since after the burial, the insect did not have access to corpses and there is a lack of their contemporary activity. A similar case of insect activity was found in a mass grave in northern Peru at the site of Castillo de Huarmey (Więckowski 2014:212). The elite tomb contained bodies of 64 women with the remains of insect pupae. This suggests that the chamber was open for a long time or the dead took part in some ceremonies. The participation of deceased in a ritual feast was common in the Pre-Columbian Andes. In Cusco, the mummies of the most important persons were deposited in an easily accessible place (Szemiński and Ziółkowski 2006). The exposure of Yauca mummies to external factors such as insect activity could also be related to the time needed for the preparation of fardos as well as funerary ceremonies.

Despite the small area of the excavations and the fact that only 22 mummies were subjected to the analysis, there was a considerable social differentiation in the studied sample. The sample group can be divided by the quality of textiles used to create the fardos (Walsh 1966), and the forms of artificial cranial modifications. Based on the conducted analysis, it seems that the quality of textiles was not related to sex. The fardo belonging to the 6-year-old alleged boy (B1 I) was characterized by its simplest structure (Figure 2). Other burials belonging to infants without slings were wrapped in richly decorated textiles (Figure 3). A similar variety of textiles quality was observed in the case of adults. Some of the infant mummies were equipped with chuspas with coca leaves that are perceived as prestigious wares. The further examination of their hair reveal that children did not chew the coca leaves (Socha et al. 2022).

The presence of three different forms of artificial cranial modification, as well as differences in the quality of the textiles and the goods accompanying individual burials, suggest the complexity of the Yauca society. It is possible that the original number of textiles used to create the bundles was similar and differences were related to their quality, not quantity. Despite the common burial place, there are differences in the way the dead were treated. It could suggest that the society of Yauca fishermen shared an elaborate system of social stratification.
Conclusion
The study of juveniles from San Francisco and Yauca Valley suggests that during the LIP, the children from the southern Peruvian coast gain an equal position to adults in afterlife beliefs. They participated in the same funerary treatment including common burial area, possible artificial body mummification, and diversity of the quality of bundle fabrics (including personal grave goods such as slings, headdresses, and chuspas bag). According to the previous studies, the only exception in this pattern were infants buried with their mothers that probably died during labour (Walsh, 1996:87). The observed differences in body treatment were not related to age or sex of individuals, but to their social status. Differentiation among the youngest children suggests an identification with kin like an adults that started at the moment of birth.

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Table 1: The list of investigated mummies of children from San Francisco cemetery

<table>
<thead>
<tr>
<th>NUM-BER OF IND.</th>
<th>SEX</th>
<th>AGE</th>
<th>BODY POSITION</th>
<th>PATHOLOGY AND TRAUMA</th>
<th>ARTIFICIAL CRANIAL MODIFICATION</th>
<th>TYPE OF TEXTILES</th>
<th>ADDITIONAL GRAVE GOODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1 I</td>
<td>unknown</td>
<td>6 ± 2 years</td>
<td>Crossed on chest</td>
<td>Head injury</td>
<td>tabular oblique</td>
<td>2 textiles, simple brown on head and brown mantle</td>
<td>slang</td>
</tr>
<tr>
<td>B1 II</td>
<td>unknown</td>
<td>3 years old ± 11 months</td>
<td>Holding the knees</td>
<td>Harris' lines</td>
<td>tabular oblique</td>
<td>2 textiles, on head decorated in red and white stripes, red mantle decorated with black/white stripes</td>
<td>guinea pig sin</td>
</tr>
<tr>
<td>C1 9</td>
<td>unknown</td>
<td>6 ± 2 months</td>
<td></td>
<td></td>
<td>annular</td>
<td>3 textiles, on the head cream decorated in brown stripes, cream-orange mantle, second cream textile covering the body decorated in orange, white and brown stripes</td>
<td>slang</td>
</tr>
<tr>
<td>C1 13</td>
<td>unknown</td>
<td>1 year old ± 4 months</td>
<td>Crossed on chest</td>
<td></td>
<td>tabular erect</td>
<td>1 textile, simple brown mantle</td>
<td>lack</td>
</tr>
<tr>
<td>C2 O</td>
<td>unknown</td>
<td>12 years old ± 21 months</td>
<td></td>
<td></td>
<td></td>
<td>3 textiles, on head decorated in white and dark brown stripes, two mantle light and dark brown with no decoration</td>
<td>slang, <em>chuspa</em>, pins, white ropes</td>
</tr>
<tr>
<td>C2 A</td>
<td>unknown</td>
<td>1 year old ± 4 months</td>
<td></td>
<td>cleft palate</td>
<td>tabular erect</td>
<td>2 textiles, on head simple white, brown mantle border by cream stripes</td>
<td>lack</td>
</tr>
<tr>
<td>C2 L</td>
<td>unknown</td>
<td>1 year old ± 4 months</td>
<td><em>cribra orbitalia</em>, porotic hyperostosis</td>
<td></td>
<td>tabular erect</td>
<td>1 simple brown textile</td>
<td>remains of red pigment</td>
</tr>
<tr>
<td>C2 B</td>
<td>unknown</td>
<td>1 year old ± 4 months</td>
<td>Harris' lines, porotic hyperostosis</td>
<td>lack of ACD</td>
<td>3 textiles, on head decorated in brown and cream strips, similar mantle, and dark brown second layer</td>
<td><em>chuspa</em></td>
<td></td>
</tr>
<tr>
<td>C4 2</td>
<td>unknown</td>
<td>6 ± 2 months</td>
<td>Holding the knees</td>
<td>annular</td>
<td>1 textiles brown decorated with dark brown stripe</td>
<td>lack</td>
<td></td>
</tr>
<tr>
<td>C5 C</td>
<td>unknown</td>
<td>6 ± 2 months</td>
<td></td>
<td></td>
<td>1 brown textile</td>
<td>lack</td>
<td></td>
</tr>
<tr>
<td>C5 V</td>
<td>unknown</td>
<td>6 ± 2 months</td>
<td></td>
<td>lack of ACD</td>
<td>2 textiles, light brown mantle, and dark brown second layer</td>
<td>small bunch of wool</td>
<td></td>
</tr>
<tr>
<td>MOMIA 2/2</td>
<td>female</td>
<td>3 years old ± 11 months</td>
<td>Probable head injury</td>
<td>tabular erect</td>
<td></td>
<td>Rest of cotton bandage on the head</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>unknown</td>
<td>1 year old ± 4 months</td>
<td>Crossed on chest</td>
<td>Harris' lines, hump</td>
<td>tabular oblique</td>
<td>2 brown textiles</td>
<td>lack</td>
</tr>
<tr>
<td>WN 1</td>
<td>unknown</td>
<td>2 years old ± 6 months</td>
<td>Harris' lines, <em>cribra orbitalia</em></td>
<td>tabular oblique</td>
<td>2 textiles, on head decorated in brown/white strips, cream mantle rimmed by white, red, and green strips</td>
<td><em>chuspa</em></td>
<td></td>
</tr>
<tr>
<td>C3F</td>
<td>unknown</td>
<td>2 years old ± 6 months</td>
<td></td>
<td>tabular oblique</td>
<td>1 brown textile decorated in orange and cream stripes</td>
<td>cactus needle pin</td>
<td></td>
</tr>
<tr>
<td>C3 pequeño</td>
<td>unknown</td>
<td>2 years old ± 6 months</td>
<td></td>
<td>tabular erect</td>
<td>2 textiles sewn together with white thread, on head white and brown/dark brown mantle</td>
<td>lack</td>
<td></td>
</tr>
<tr>
<td>C3 J</td>
<td>unknown</td>
<td>17-19</td>
<td></td>
<td></td>
<td>1 brown textile</td>
<td>sling, belt</td>
<td></td>
</tr>
<tr>
<td>CV III</td>
<td>Probable male</td>
<td>17-21</td>
<td>Crossed on chest</td>
<td>Probable ear inflammation</td>
<td>Lack of ACD</td>
<td>3 textiles, on head cream and second layer decorated in brown stripes, brown mantle</td>
<td>lack</td>
</tr>
<tr>
<td>ID</td>
<td>Sex</td>
<td>Age Range</td>
<td>Position</td>
<td>Burial Position</td>
<td>Clothing and Accessories</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
<td>-----------</td>
<td>----------</td>
<td>--------------------------</td>
<td>----------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WN2</td>
<td>Probable male</td>
<td>35-45</td>
<td>Holding the knees</td>
<td>Flatness of occipital bone</td>
<td>2 textiles, on head decorated in brown and cream stripes, light brown mantle</td>
<td>Sling, guinea pig skin</td>
<td></td>
</tr>
<tr>
<td>MA07</td>
<td>Probable male</td>
<td>25-35</td>
<td>Holding the knees</td>
<td>Flatness of occipital bone</td>
<td>2 textiles, on head decorated in brown and cream stripes, dark brown mantle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2 F</td>
<td>Probable female</td>
<td>Young adult</td>
<td>Buried with an infant</td>
<td>2 cream textiles with no decoration</td>
<td>five cactus needle pins, rope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C37</td>
<td>Probable male</td>
<td>25-35</td>
<td>Holding the knees</td>
<td>2 textiles, on head decorated in brown, dark brown and cream stripes, dark brown mantle</td>
<td>Colorful ropes, sling, belt</td>
<td></td>
<td></td>
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</tbody>
</table>
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