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Church Burials from the Ancient Byzantine Settlement in Khirbet es-Samrā in Jordan

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Abstract

This report presents the results of the osteological analysis that were carried out on human remains excavated in two tombs that were dug in side-rooms of differing churches in Khirbet es Samrā site, north of Jordan, and dated to the 7th century. The first, Room-94 tomb, contained the remains of six males, five adults and a child, while in the second, Chrch-79 tomb, a senile female was buried, and not the archaeologically anticipated male church functionary. Besides documenting some less common, if not rare, anatomic variants, the report presents a number of observed pathological features, including two very probable brucella cases. Despite the absence of a conclusive evidence and mainly based on the observed biological features (aided with archaeological evidence), it was suggested that six successively buried in the first tomb were possibly members of a prosperous family that was somehow associated, i.e. not clerical, with the adjacent church, where they were allowed to be buried and not in the proper cemetery just outside the ancient town. It was also hinted upon a possible relatedness between all those buried in both tombs.

Keywords: Byzantine; Church burials; Jordan; Osteology; *Brucella*

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Introduction

This is a summary of the osteological analyses that were carried out on the human skeletal remains from two excavated tombs, dated to the 7th century AD, in two churches within the ancient Byzantine settlement in Khirbet es Samrā. The reader had to notice that only the most relevant sources are cited for some significant points and those not previously mentioned in the detailed publication and literature [1].

Literature Review

In 1986 a tomb was excavated in Room-94, adjacent to the outer southern wall of Chrurch-95, the largest in the site. It was a large shaft tomb with a limestone-built burial cyst (2 × 1 × 8 m). Inside, the skeletal remains of six individuals, numbered I to VI, were found. They were buried in a stretched W-E position by and above each other. The bones were strongly perfumed and mostly impregnated with a reddish-brown colour. Some bones revealed small areas of cloth imprints, particularly on the frontal cranial surfaces. The skeletal remains were largely available and varied from about 60% of the skeleton of Individual VI (Laboratory number: KS-1045) to the almost complete of Individual II (KS-1042). Many bones were broken and few damaged beyond recognition, especially from the lower tomb layer. The size of Room-94 tomb indicated that it was meant for multiple burials. These were obviously carried out successively over a period of more than 50 years. The deceased were wrapped in cloth shrouds and generously anointed with perfumed liquids that were obviously poured on the skeletal remains of previous burials, whilst the reddish-brown colour, and then laid in the tomb. Probably, Individual V or VI was the first while Individual II the last to be buried, as indicated by the extent of preservation, colour, and position of the skeletal remains. Church-79 tomb, located in a side room near its northern entrance, was excavated in 1993. It was a shaft tomb with a single burial similar to tombs in the nearby cemetery. The skeletal remains were nearly complete but very fragile and lightly “perfumed”.

Analysis of the skeletal remains were based on macroscopic observations and depended on the available bone parts. Standard methods based on marked cranial, dental and pelvic features were applied to estimate age at death and determine sex of the deceased, substantiated when necessary by other available features. Room-94 burials were of five adult males and a nearly five year old boy. Individual V (KS-1041) was the oldest of them with an estimated age at death of 55-65 years, while KS-1045 was the youngest adult who died at an estimated age of 40-45 years. The burial of Church-79 tomb (KS-1006) was that of a senile female who probably lived beyond the age of 60 years. The

obtained osteometric measurements of the adult material were consistent with the obtained values from the cemetery material. While KS-1006 had a *mesocephalic* (middle rounded) skull, those of the five adult skulls of Room-94 tomb were dolichocephalic (elongated). All adults revealed gracile long bones as well as near homogeneity in the measured long bones proportions. These were reflected in the estimated medium-short statures that varied from 163 cm in KS-1042 to 177 cm (both ± 3.7 cm) of Individual I (KS-1040). Sexual dimorphism among the local population was obviously reflected the female KS-1006 in the lower values of her long bones and a stature of less than 160 cm.

The pathological features observed on KS-1006 were consistent with both her advanced age and sex. Her extremely light bones, porosity of the occipital bone, and straggly bone architecture at the skull base and both ischia were compatible with osteoporosis. The outer surfaces of four male adult skulls showed shallow porosity, particularly on the frontal and both parietal bones that probably resulted from a local infection of the overlying soft tissue caused by head lice [2]. Healed Cribra orbitalia, porosity on the orbital floor, was unilaterally restricted to two adults. Oral pathology was extreme in all adults with strong dental abrasion, calculus, paradontitis and paradontosis, multiple dental abscesses, and pre-mortem tooth loss in all six adults but KS-1042. Pre-mortal tooth loss (20) was extreme in KS-1006 leaving healed sockets, and mostly atrophic jaws. KS-1042 and Individual IV (KS-1044) revealed singular mild carious lesions.

The observed degenerative alterations (DA) on the vertebral columns of the six adults were medium on average and consistent with the estimated age at death. Schmorl's nodes were observed in all adults but in KS-1041 they were exceptionally deep and probably the cause of the compression fracture in Th11 and Th12. Compression fractures were found in two other individuals: L1 of KS-1044, probably due to *osteoporosis*, and Th12 of KS-1040, probably traumatic. Furthermore, KS-1040 revealed an interarticular spondylolysis, without -listhesis, i.e. ventral displacement of the vertebral body. On the larger joints, DA were generally medium to mild, except for KS-1040 and KS-1044. Both revealed bilaterally strong DA in the sterno- and acromio-clavicular joints. As for KS-1006, the observed DA was only mild on all other available joints. The hand and feet bones showed no or only mild DA, except for KS-1040, who had strong DA between the carpals of his hands, possibly related to occupational stress, and Heberden's arthritis in his distal inter-phalangeal joints. Stronger DA was also observed in his tarso-metatarsal joint IV and V, probably due to his brachymetatarsal IV. His left foot bones revealed scooped-out defects that are consistent with gout, which could also be related to the perforation of the left inferior process of the cervical C6 vertebra [3].

Osteochondrosis dissecans was common. It was at the elbows of KS-1040, the left knee of KS-1041, the right fovea costalis transversus of Th8 of KS-1042, the left upper articular process of C4 and C5 and the right knee of KS-1045, and probably the right elbow of KS-1044, as well as on the base of the left foot's 1st proximal phalanx of KS-1006. *Enthesopathies* were variably manifested on the main articulation points, e.g. shoulder, hip, patella, and insertion of Achilles' tendon of all adults but KS-1045.

There were lytic lesions that extended 2-10 mm ventrally on the ground plate of the cervical vertebra C6 and dorsally on the upper plate of the sacrum of KS-1042. They reached the spongy bone of the vertebral body and were surrounded by sclerotic new bone formation. These were very similar to various vertebral cases identified and diagnosed on dry bones as *brucellar lesions* [4,5]. These lesions were more typical on the ventral side of C4 and C5 upper plates of KS-1045. In the Mediterranean region, the infection has a long history in animal breeding communities and is mainly transmitted through goat milk.

Four of the six adults revealed minor traumatic injuries. Beside the above mentioned compression fracture of Th12 vertebrae, KS-1040 had a perforation of the left foots distal 1st phalanx and signs of a cartilage damage at the right ankle. KS-1044 had a healed fracture on the right hand and three on small feet bones, while the right ulnar styloid of KS-1042 was injury deformed. KS-1045 had a healed fracture of the right patella. There were small healed impression fractures on the skulls of KS-1042 and KS-1045; the latter was probably caused by a solid, spherical object, e.g. stone. Furthermore, KS-1041 revealed a benign bone tumour (*osteochondroma*) on the medial side of his right fibula and about 5 cm from the distal epiphysis. The corresponding side on the tibia revealed a slight depression and a light sclerosis of the compact bone that exactly fitted with the tumour on the fibula.

None of the above documented pathologic features can be associated with the mortality of any of the six adults from the two tombs. As for the child, KS-1043, it appeared that he had suffered from an infection that was indicated by trabecular bone beside a fine porosity and deposition of woven bone on different parts of the cranial inner surface, lower jaw, the ribs and vertebrae as well as his long bones. The source of the infection was probably the mouth and nose area. It spread locally to the skull base, where the basal meningitis triggered an increased cerebral pressure and caused the impressions digitate of the lamina interna. The infectious signs at the post-cranial bones reflect a generalized infection, i.e. sepsis. Both, meningitis and sepsis could have been lethal.

A number of cranial and post-cranial normal anatomic (epigenetic) features were documented. Room-94 burials were observed to share many of these, while others were individual specific, e.g. bilateral fusion of the three articulation surfaces on the talus and calcaneus in KS-1040. Some of the documented traits are known to have a low or even rare incidence among different populations. Amongst Room-95 burials, there were three cases (KS-1042, KS-1044 and KS-1045) of absence of the parietal foramen, en block division of the transverse foramen (FT) of C5 to C7 cervical vertebrae (KS-1040, KS-1042 and KS-1044), and bilateral stieda's process (KS-1041, KS-1042, and KS-1045), as well as two incidents of ponticulus atlantis on C1 (KS-1041 and KS-1044), peroneal process of the calcaneus (KS-1043 and KS-1041), and synostosis in the 5th toe (KS-1040 and KS-1044) [6]. The female Church-79 burial was found not only to share with Room-94 burials the presence of divided FT on C5 to C7 vertebrae and bilateral Stieda's process, but also the incidence of the relatively rare sutura Medosa with KS-1044 as well as *occipito-mastoide* ossicle with KS-1041.

One has to consider the small population size at ancient Khirbet es Samrā of less than 500 individuals probably affiliated to a number of interrelated families, i.e. endogamic, which was and still is the social organization in rural and agricultural communities in this region [7]. The distribution of the six "low-incidence" epigenetic traits among those buried in Room-94 tomb was less likely random. These and, to a lesser extent, the osteometric data tend to suggest biological relatedness between the six individuals, who possibly represented different generations of one large family. The fact that the female KS-1006 also shared some specific traits with them might also implicate relatedness between those buried in the two tombs. Though this is not a clear evidence of relatedness, it remains the most likely probability given the available information. Verification by means of more sophisticated methods, i.e. ancient DNA analyses, appeared to be difficult after a failed attempt on KS-1006 material due to bad bone preservation. But, why were these individuals buried within the premises of Churches and not in the nearby cemetery outside the town?

A mosaic inscription "For the rest of Pholeos, son of Adion, this mosaic was done thanks to his gift" in the middle of Church-95's nave is a clear indicator of the involvement of local prosperous persons or families in the construction and preservation of churches in Khirbet es Samrā, as suggested in other sites like nearby Rihab. Hence, those buried in Room-94 could have been members of a local patrilineal family that was associated with Church-95. Their prosperity is indicated by the use of expensive perfumed anointing substances and type of cloth they were wrapped in. Biologically, the case of gout, caries and absence of dental enamel hypoplasia might also indicate diverse rich diet that could be related to their better socio-economic stand, despite the observed hygienic deficiencies that at that time were widespread. This did not prevent them from having physically active life style or profession as indicated by the observed degenerative alterations, *enthesopathies*, as well as the multiple small hand and feet bones fractures. The suggested *brucella* cases could associate at least two of the buried in animal (sheep/goat) husbandry if not the consumption of dairy products. The social status and possible attachment to the Church-95 enabled the burial of these six male individuals in an associated side room. Church-79 tomb was thought to be that of a male church functionary, whose name was mentioned on the church's mosaic floor [8]. Yet, finding instead a female burial rejected this supposition. Neither biology nor archaeology could explain the presence of Church-79 burial in that place.

Conclusion

The conclusion of the osteological analyses that were carried out on the human skeletal remains from two excavated tombs, dated to the 7th century AD, in two churches within the ancient Byzantine settlement in Khirbet es Samrā. The reader had to notice that only the most relevant sources are cited for some significant points and those not previously mentioned in the detailed publication and literature.

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