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I

ARCHAEOLOGY, CURRENT METHODS AND FIELD WORK

Analysis of Human Skeletal and Mummified Remains Found in the Secondary Burial AT-28-A of the Tomb of the Vizier Amenhotep Huy (North Asasif, Luxor, West Bank)

THE WORK presented herein is framed within the research performed at the AT-28- tomb, which belonged to Vizier Amenhotep Huy, and has been carried out by the Institute of Ancient Egyptian studies (IEAE) since 2009, under the direction of Dr. Francisco Martín-Valentín and Mrs Teresa Bedman.

AT-28- belonged to Amenhotep Huy, who held the status of Southern Vizier during the reigns of pharaohs Amenhotep III and Amenhotep IV, and has been dated between 1358 to 1353 BC.¹ Located within the Luxor necropolis currently known as Asasif, its structure consists of a long descendent corridor that opens up into a 419.879m² outdoor courtyard. This leads into a 372.758m² colonnaded chapel.² The tomb has been identified as the largest one referenced to this period in the Theban necropolis.³

Although the tomb remains unfinished, it was certainly never abandoned. This can be concluded from the discovery of eleven secondary burials excavated inside the tomb courtyard itself, evidencing funerary practices being performed from the New Kingdom through Greco-Roman period.⁴

This work comprises the anthropological analysis of the human skeletal and mummified remains found in AT-28-A, one of these secondary burials whose remains have been spotted in the northern wall of the tomb courtyard.

Discovered in 2010, it consists of a small yard embedded inside the main courtyard that limits with the wall of tomb to the east and with a 15-m-long mudbrick wall to the west. It leads to a small hypogeum whose entrance is 2.84m high. As it was initially designed as a multiple burial place, this space breaks down into three smaller chambers: the First Chamber consists of a 15m² hall, which opens up to a small 2.7 × 2.2m chamber (namely Second Chamber) through its northeast corner. A 4.5-m-depth shaft connects the Second Chamber with the Third (funerary) Chamber, which is 6.8m².

1. MARTÍN-VALENTÍN, BEDMAN 2011.

2. BEDMAN, MARTÍN-VALENTÍN 2017.

3. MARTÍN-VALENTÍN, BEDMAN 2012.

4. BEDMAN, MARTÍN-VALENTÍN 2017.

The excavation work was initiated and entirely concluded in 2017, shedding light on a fair number of archeological remains associated to the tomb, despite the visible consequences of uninterrupted plunder.

The aim of this study is to perform a full anthropological analysis of AT-28-A, including parameters such as the minimum number of individuals (MNI), sexual polymorphism and age and height estimation of human mummified and skeletal remains, as well as mummification characteristics.

Lastly, an overall comparison against additional material found in the burial will be performed so as to draw conclusions over the chronological characterization of the tomb and human individuals buried therein, which had not been described before.

1. MATERIALS AND METHODS

The skeletal remains have been treated individually, considering, within the limitations, the indications on the excavation of skeletal remains and taphonomic considerations provided by Henri Duda.⁵ Sex determination has been based on discriminating skull and coxal characteristics.⁶ Age estimation has taken into account the closure of the cranial sutures,⁷ the degree of dental wear,⁸ the degree of fusion of the sacral vertebrae,⁹ the atrophy of the parietal bones and the fusion of the hyoid bone.¹⁰ For the study of the age of non-adult individuals have been analyzed the process of dental eruption and development,¹¹ the appearance of the main ossification nuclei, and the length of the long bones.¹²

Regarding the stature estimation, a recent study performed on Ancient Egyptian mummies utilizing the estimates of black American population¹³ has made it possible to reduce the error and approximate the estimated stature of these remains more accurately.¹⁴

For mummified remains, we have sought to establish conclusions through the inherent characteristics of mummification and burial practices. Firstly, foreign chronicles of the period have been preserved until present date¹⁵ which, despite their dubious rigorousness, is widely representative and match recent archaeological and anthropological studies about mummification.

Scientific descriptions of mummification in real individuals have been taken from Smith and Dawson (1991), Smith (1912, ed. 2000), and Janot (2009). The different techniques involved in this process and their evolution throughout history have been contrasted in Leca (1980), Budge (1987; 1989), Ikram and Dodson (1998), and Dunand and Lichtenberg (2006). Besides, some

5. MELVIDO PEREIRA, TIESLER 1997.

6. BUIKSTRA, UBELAKER 1994.

7. MEINDL, LOVEJOY 1985.

8. LOVEJOY 1985.

9. BELCASTRO, RASTELLI, MARIOTTI 2008.

10. REVERTE COMA 1991 (ed. 1999).

11. UBELAKER 1989.

12. SCHEUER, BLACK 2000.

13. TROTTER, GLEESER 1977.

14. RAXTER et al. 2008.

15. Herodotus, *Los Egipcios*; Diodorus Siculus, *Biblioteca Histórica, Libros I-III*.

recent studies in Egyptian Bioarchaeology¹⁶ and the research output reported by the Department of Physical Anthropology of the Vizier Amenhotep Huy Project¹⁷ have been taken as references in the present study. Based on all this, individuals were visually evaluated, depicting a thorough description of the characteristic elements in their mummification and putting it all together with the context in which they have been found.

2. RESULTS

A total of 532 skeletal remains has been studied, either complete or fragmented, and the results have been evaluated together with more than one hundred remains of individuals who presented mummification, also in a fragmentary state.

For the estimation of the MNI, skeletal remains were discriminated on the basis of estimated ages of the sample. In the case of adult individuals, the most abundant (and hence more representative) bone in the sample was the right tibia, which came in contrast with the left tibia as observed for non-adult individuals. Regarding mummified remains, only bones that were visibly spotted on the bulk mummified unit were taken into consideration, due to the impossibility of perform radiological evaluation or other tests of other kinds in this preliminary field of study.

The estimated MNI of the sample is 32 individuals, whose sex and age are detailed below (tables 1–6).

Age range
Infans I (age fetus/1 year)
Infans II (age 1-12 years)
Juveniles (age 12-21 years)
Young adults (age 21-35 years)
Mature adults (age 30-50 years)
Old (age >50 years)
Undetermined adult
Undetermined non-adult
Not determinable

Table 1. Age range used for the study of the overall sample.

Sex	Number	Percentage
Male	7	50.00%
Female	3	21.43%
Undetermined	4	28.57%

Table 2. Sex estimation of adult individuals in the overall sample.

16. IKRAM, KAISER, WALKER (eds.) 2015.

17. ABELLO, SERRANO 2017; ABELLO 2018.

Age range	Number	Percentage
Infans I	2	6.25%
Infans II	10	31.25%
Juveniles	2	6.25%
Undetermined non-adult	4	12.50%
Undetermined adult	14	43.75%
Total	32	100%

Table 3. Age estimation of the overall sample.

Age range	Number	Percentage
6 months-1 year old	1	8.33%
>1 year old	1	8.33%
1-1.5 years old	2	16.67%
1.5-2 years old	1	8.33%
2-2.5 years old	1	8.33%
2-3 years old	3	25.01%
4-4.5 years old	2	16.67%
4.5-5 years old	1	8.33%

Table 4. Age range of non-adult individuals in the overall sample.

As for the estimated stature of the individuals, it has only been possible to calculate it for seven of them, due to the aforementioned state of preservation of the remains.

Individual no. 1	171.89 $\pm$ 3.731 cm
Individual no. 2	167.46 $\pm$ 3.731 cm
Individual no. 3	164.82 $\pm$ 3.731 cm
Individual no. 4	162.45 $\pm$ 3.731 cm

Table 5. Estimated stature of adult males found at AT-28-A.

Individual no. 1	156.44 $\pm$ 4.057 cm
Individual no. 2	153.68 $\pm$ 4.057 cm
Individual no. 3	152.43 $\pm$ 4.057 cm

Table 6. Estimated stature of adult females found at AT-28-A.

3. DISCUSSION

3.1. ANALYSIS OF THE OVERALL SAMPLE

Due to the indiscriminate and repeated plundering of this area from ancient times until the first half of the 20th century, the remains are all fragmented and in a very poor state of preservation. The amount of rubble and debris accumulated in the chambers (in Chamber 1 it reached 1.4m, in contrast to 1.9m height of the chamber itself) evinces that the tomb's entrance had remained open for an indeterminate period of time. In addition, human activity has hindered the description of a clear and accurate context. The obvious alteration of this tomb also results in human remains being found outside their original location, often without mummification wrappings and, in most cases, deteriorated such that only the bones were found.

The human remains from burial AT-28-A have been studied individually, distinguishing the simple skeletal remains from fragments displaying mummification. For skeletal remains, a database has been created so as to settle criteria for the decontextualization panorama found in each of the chambers. Furthermore, the MNI present in this tomb was evaluated, which helped reach accurate, general conclusions about the sample. The mummified remains have also been studied individually and following the criteria previously mentioned, taking into account the difficulties inherent to the field of study and the technological limitations that this implies.

3.2. CHARACTERISTICS OF TOMB AT-28-A

As is apparent from the results obtained, this is a multiple burial undoubtedly intended to host the remains of one or more families over several generations. The Theban Mountain has numerous examples of this kind of tomb, either by building brand-new ones or reusing others that had been looted previously.¹⁸ Both the exterior and the interior chambers do not exhibit signs of inscription or decoration, and the final appearance is rough and irregular throughout.

The chronology of this study remained unknown since no excavation had taken place at this site before. Several factors have been taken into account in order to draw a conclusion, including the mummification characteristics of the individuals found inside.

3.3. MUMMIFICATION CHARACTERISTICS OBSERVED IN THE INDIVIDUALS IN THE SAMPLE

Mummified remains could be visibly evaluated due to bandages and coverings being removed as a common practice used by looters from the mummy in order to extract valuable belongings.¹⁹

The entire sample shows a supine mummification position, with the arms stretched longitudinally across the body. All the individuals in which an evaluation was possible due to preservation conditions displayed signs of excerebration.

18. CHAUVEAU 2000.

19. SMITH, DAWSON 1991.

Regarding evisceration wound, the entire sample shows the traditional incision on the left side of the abdomen, oblong and vertical in shape and located between the last rib and the suprailiac area (fig. 1). Although this kind is usually identified to be used before Thutmose III (1479–1425 BC), its morphology is identical to that of some mummies from the Roman period found in the area of the Valley of the Queens.²⁰

Despite high mummification quality, the presence of large concretions of resins and bitumen has been observed. The filling consists of linen impregnated with these substances and has been found stuffing the thoracic abdominal region as well as the oral, orbital, and nasal areas.

Another factor in estimating the chronology of the remains is the use of gold leaf. Several examples were found connected to the use of this practice. A fragmented abdomen structure discovered in Chamber 1, as well as individual 162-M (figs. 2 and 3) was discovered beside the adobe wall in the courtyard.²¹ Despite its location and height, it is likely that these remains belonged to the original burial place. Using gold leaf on the face, hands, and feet was common practice to make the deceased resemble gods, and has been connected exclusively to the Roman period (30 BC–395 AD).

As for other elements related to mummification, it is important to highlight the finding of polychrome linen bandage with blue stripes and borders, which has also been dated back to the Roman Period.

Finally, Individual 247-M (fig. 4) found in Chamber 1 of the tomb consists of a bundle of linen bandage wrapped in a simple form around the remains of an individual of Infant II of undetermined sex, with a fragment of bandaged wood that could possibly correspond to a prosthesis deliberately placed by the embalmers to replace a part of the body. This is also a known practice in this period.

3.4. OTHER IMPORTANT FINDS IN TOMB AT-28-A

In the easternmost area of the courtyard, specifically in grid B6 and at a height of 3.32m, a bronze coin with the effigy of the Roman emperor Vespasian (RN 10550-17), dated between 69 and 79 BC, was found during the 2017 excavation campaign. The height of the place where the coin was found was just 48cm above the doorway entrance level.

In addition, in grid C-8, an iron key (NR 9584-14) of laconic typology was found in grid C-8, in front of the entrance door of this burial, dated to the Roman period and at a height of 3.30m.

All these factors allow to contrast and support the chronology proposed in the study of the human remains found at this site.

CONCLUSION

Based on the studies carried out in the secondary burial AT-28- A in the tomb of the Vizier Amenhotep Huy, it is possible to draw accurate conclusions. We have taken into account the mummification characteristics, the funerary elements and burial goods, the typology of the tomb and the discoveries inside it. Furthermore, despite the obvious decontextualization of the site, the

20. JANOT 2009.

21. ABELLO, SERRANO 2017; ABELLO 2018.

discoveries made in the levels immediately below and above the entrance, as well as the height of the entrance itself concerning the rest of the burials and discoveries found in the courtyard serve to reinforce the hypotheses about its chronology.

It is concluded that Tomb AT-28-A was conceived as a small hypogeum intended to host the individuals of one or more Theban families of a high social stratum. Its construction must have taken place around the 1st century BC, which would have extended its use until late Roman times.

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Fig. 1. Evisceration wound found in the tomb AT-28-A.

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Fig. 2. Individual 262-M found in the tomb AT-28-.

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Fig. 3. Individual 262-M found in the tomb AT-28-.

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Fig. 4. Individual 247-M found in the tomb AT-28- A presenting a wooden prosthesis.