

Precocious Mummification of a Corpse- A Rare Forensic Case from the City of Plovdiv, Republic of Bulgaria

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Abstract

Mummification is a postmortem process consisting in the loss of water from the soft tissues of the body and the body's diminishing in size as a result of drying. The term "precocious mummification" is the process of rapid mummification usually observed in extreme weather conditions, with high temperature and low humidity. We present a case of precociously mummified corpse found in the city of Plovdiv, Bulgaria, sixteen days after the individual's disappearance. The case is interesting because of the atypical precocious mummification that occurred in a very short period of time, in climate conditions that are not typical for the process of mummification-high humidity, medium temperature amplitudes and low ventilation. Such conditions are not typical for Bulgaria, especially in the fall.

Keywords: Precocious mummification; Atypical climate conditions; Death; Rapid mummification

Introduction

Mummification is a postmortem process consisting in the loss of water from the soft tissues of the body and the body's diminishing in size as a result of drying. In this process the skin and soft tissues transform their color into brownish-black, and their consistency becomes solid. The process of mummification is usually observed between 6 and 12 months after death.

Case Report

We present a case of precociously mummified corpse found in the city of Plovdiv, Bulgaria, sixteen days after the individual's disappearance. The corpse is of a 20-year-old man, seen for the last time in the late hours of September 19, 2015 in the city of Plovdiv. The corpse was found by passers-by in the morning of October 4, 2015, in a specific geographic area within the city borders called Dzhendem Tepe Hill. A complete mummification of the corpse had occurred by the time it was found, sixteen days after the man's disappearance. Over that sixteen-day period, the temperature ranged between 14°C and 23°C, with relative humidity of 65% to 90% and wind speed ranging from 3 to 14 km/h. The corpse was brought to the Department of Forensic Medicine at the University Hospital "St. George" in Plovdiv for forensic examination. Forensic and microscopic examinations were performed on the preserved tissues, with straining of microscopic samples with H-E stain. In addition, a toxicological analysis of the tissue sample was conducted. The external examination of the corpse showed that the skin and the soft tissues were dry, and had brownish-black color. The skin was also thinned (Figures 1-3). An internal examination of the corpse showed that the internal organs into the cranial, thoracic and abdominal cavities had decayed into dried, brownish-black masses (Figures 4 and 5). Microscopical examination of preserved skin showed only amorphous debris. The toxicological analysis was negative for the presence of drugs and alcohol in the observed tissue samples from the corpse.

Discussion

We present an interesting case with atypical precocious mummification that occurred in a very short period of time, in climate conditions that are not typical for the process of mummification-high humidity, medium temperature amplitudes and low ventilation. The term "precocious mummification" is the process of rapid mummification



Figure 1: Thin skin of the corpse.



Figure 2: Thin skin of the corpse.



Figure 3: Thin skin of the corpse.

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Figure 4: Internal examination of the corpse.



Figure 5: Internal examination of the corpse.

usually observed in extreme weather conditions, with high temperature and low humidity [1-3]. Such conditions are not typical for Bulgaria, especially in the fall. Rare cases of mummification in cities are reported in the literature [4]. Cases of precocious mummification are also

described by other authors [5,6], and the shortest period for precocious mummification reported in the literature is 8-10 days. Such cases occurred in a closed environment or in an environment with specific microclimatic conditions [1-3].

Conclusion

There are a limited number of cases in the literature of natural, precocious mummification, especially in geographic areas where the typical conditions for this process-high temperature, low humidity and high ventilation-typical for tropical and equatorial areas are not present. This process is also rarely seen in urban areas, especially outside residential areas. Further, this case is of interest to the forensic community because the precocious mummification occurred over a period of only 16 days.

References

1. Jason HB, James LC (2000) *Forensic entomology: The utility of arthropods in legal investigations*. CRC Press, USA.
2. Marcella HS, William D (1997) *Forensic taphonomy: The postmortem fate of human remains*. CRC Press, USA.
3. Christine Q (1998) *Modern mummies: The preservation of the human body in the twentieth century*. McFarland Publisher, USA.
4. Harding BE, Wolf BC (2015) The Phenomenon of the Urban Mummy. *J Forensic Sci* 60: 1654-1657.
5. Kashimura S, Umetsu K, Ikeda N, Hanaya S (1984) On a cadaver mummified within 25 days. *Japanese J Legal Med* 38: 376-380.
6. Marella G, Perfetti E, Manciocchi S, Arcudi G (2013) A case of "precocious" mummification. *J Forensic Leg Med* 20: 122-124.