The Use of an Improved Technique in the Rabbit Gastrointestinal Tract Mummification

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Abstract

The mummification of bodies is a technique known since antiquity. Over time it has spread to Europe, becoming an essential practice for preserving bodies. The mummification technique was associated with the existence of life after death. The discipline of Comparative Anatomy in veterinary medical education uses animal bodies as educational models for teaching purposes. The study was conducted in the laboratory of Anatomy of the University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca. We used: rabbit cadavers, dissection instruments, staining substances and 5% formalin solution. The staining substance was injected through aorta, then; fixation in 5% formaldehyde solution for five days was performed. The gastrointestinal mass was isolated and the content was evacuated and then, fixed to the support and left to dry until mummification occurred. The gastrointestinal mass was properly preserved and the dye has uniformly highlighted the vascularization of all segments. The fixing method allowed the maintenance of injected stains.

The results indicate that the technique applied in this study is appropriate for preservation of the gastrointestinal tract in rabbits.

Keywords: *Gastrointestinal tract, mummification, rabbit*

INTRODUCTION

The mummification technique was associated with the existence of life after death (Johnson *et al.*, 2012). The discipline of Comparative Anatomy in veterinary medical education uses animal bodies as educational models for teaching purposes.

The history of embalming or preserving human bodies goes back to 4000 B.C. (McDonald, 1989). Embalming practice started as a simple treatment of the body with herbs and developed into a complex procedure using chemical solutions. In the nineteenth century, techniques were developed for infusion of embalming fluid into the vascular system. Formaldehyde has been used as a preserving and embalming agent, since its tissue-hardening properties were discovered in 1893 (Bjorkman *et al.*, 1986). During the

course of their work, embalmers were exposed to formaldehyde and its polymers. Exposure to formaldehyde has three types of health effects like irritation, immunologically mediated sensitivity and carcinogenicity (Moore and Ogrodnik, 1986; Hathaway *et al.*, 1991; OSHA, 1994). The acute and chronic respiratory function effects of formaldehyde are unclear at this time. Liquid formaldehyde may irritate the skin, causing a rash or burning feeling on contact. It can also cause severe burns, leading to permanent damage. Because of its chemical reactivity and high water solubility, formaldehyde exposure irritates the nose, mouth and throat.

Exposure to high concentrations of formaldehyde in air can cause a build-up of fluid in the lungs or spasms of the windpipe, and edema of

the larynx. It has been shown to cause cancer of the nasal passages in animals. Allergic reactions and superficial coagulative necrosis have been associated with formaldehyde exposures (ACGIH, 1992).

AIMS AND OBJECTIVES

The research aim of present paper is to improve the classical (standard) method of mummification by means of staining substances and to observe the technique efficiency in case of the rabbit viscera.

MATERIALS AND METHODS

The study was conducted in the laboratory of Anatomy of the University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca. Materials used were: three rabbit cadavers, dissection instruments, catheters, syringes, needles, acrylic staining and 5% formalin solution. After dissection, staining substance was injected through the aorta, and then the fixation in 5% formaldehyde solution for five days was performed. The gastrointestinal mass was isolated and the content was evacuated and then fixed to the support and left to dry until mummification occurred.

RESULTS AND DISCUSSION

The present study has applied the mummification technique, focusing on preservation level of the anatomical characteristics and reducing the work time and costs. The gastrointestinal mass was properly preserved and the dye has uniformly highlighted vascularization of all segments. The fixing method allowed the maintenance of the injected stain.

CONCLUSION

Corroborating the results of the mummification technique applied in this study, we have formulated the following conclusions:

The technique applied is appropriate for preservation of the gastrointestinal tract in rabbits.

The obtained material can be used for students during teaching.

The staining agent underlined the vascularization on all segments of the gastro-intestinal tract.

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