

Morphological study of a mummified heart dated back to 1829: preliminary results

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In May 2016, a cylindrical lead container was found in the chapel of the Seminary of Sassari. Based on the archive documents, the cylinder should have contained the heart of Tommaso Arnosio, Archbishop of Torres and Primate of Sardinia and Corsica from 1822 to 1829, who died in 1829 at 54 years, in Turin, his home city.

The Archbishop died *in the midst of the most atrocious sorrows caused by a large purulent pocket near the heart*. After the autopsy and according to his will, the heart was shipped to Sassari, where the heart was buried in the chapel of the Seminary and forgotten for about 186 years. After the discovery, the container was brought for study to our CSAPS laboratory of the Department of Biomedical Sciences.

A multidisciplinary team of experts hypothesized as cause of death a suppurative pleuritis or a para-cardiac lung abscess. To verify this hypothesis the cylinder was opened in a laminar flow hood, avoiding any contamination, and a mummified organ immersed in cotton wadding was found.

The organ, typically heart shaped, appeared 13 x 9 cm sized, with a thickness of 1.5 cm, a weight of 80.5 g, a dark brown colour and a hard consistency. Few fragments of tissue were collected for analysis; then the organ, closed in the lead container, was returned to the chapel of the seminary.

Histological analysis required a rehydration using the Sandison Solution (1); the samples were treated for light microscopy and stained with HE, PAS and Gram's method. The first results have shown a morphology of cardiac and pericardial tissues partially preserved, and the banding and the intercalated disks appeared just in small portions. The Gram's method was negative till now. Further histological, immunohistochemical, ultrastructural and, molecular investigations are in progress.

References

[1] Sandison (1955), *Stain Technology* 30 (6) 277-283.

Keywords

Mummified tissue, heart, histology, microbiology, archive documents