



THE ART OF MUMIATION AND SURGICAL PRACTICE IN ANCIENT EGYPT

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Abstract: *This article provides a detailed analysis of the origins, stages, and surgical procedures used in the mummification process in Ancient Egypt. For the ancient Egyptians, mummification was not only a religious ritual but also a complex medical-practical process aimed at preserving the human body. During the procedure, the brain was removed through the nose using special instruments, and the internal organs were removed through incisions and stored in hemp containers. The body was dried with natron salt and then wrapped in resin and linen fabrics. These practices testify to the significant development of anatomical and surgical knowledge in ancient Egypt. The article also highlights the religious significance of mummification and its connection to the belief in Osiris.*

Keywords: *Ancient Egypt, mummification process, surgical procedures, anatomy, hemp vessels, sodium salt, pharaohs, Osiris religion, ancient medicine, life after death.*

The ancient Egyptian civilization is considered one of the oldest and most developed cultural centers in the world. The ancient Egyptians treated life and death separately, and they firmly believed in life after death. For this reason, the process of mummification was formed as an important tradition closely linked to their religious beliefs and medical knowledge. By studying the history of ancient Egypt, we gain a better understanding not only of the life of ancient society but also of the early stages of the development of medicine and science.

Furthermore, since the Egyptians considered death to be a continuation of life, certain activities and belief systems were considered necessary for the deceased to continue their journey. Mummification became the most basic and orderly practice,

ensuring that the body and soul of the deceased reached the world of the dead peacefully and happily: "the purpose of mummification was to keep the body as close to life as possible" (Garland 2020:2), so that the deceased could continue to enjoy their physical body in the afterlife.

Ancient Egyptian mummification lasted from 2600 BC until the Roman period, when the Egyptians refined the burial from simple drying in sand to a 70-day ritual led by embalmer priests. Internal organs were removed, the body was filled with natron (salt), then wrapped in resin-soaked linen cloth and sealed in coffins in the presence of Osiris, where spells were written to reunite the *ka* and *bani* (parts of the soul). Price determined quality, yet kings, common people, and even sacred animals were mummified. Findings such as the golden mask of Tutankhamun and the canopic vessels (vessels for storing internal organs) demonstrate great skill. Classical writers and tombstones record the process; modern scanners expose diets and illnesses. Stories of "mummy curses" reflect the Egyptians' reverence for preserving the body to ensure eternal life.

A mummy is an artificially preserved form of a human or animal body, which is the most important expression of death in Ancient Egypt. Mummies were produced in Ancient Egypt, probably from the end of the Naqada II period until the Christian era, and their purpose was to preserve the earthly body for use by the spiritual elements of *ka* and *ba*.

In Egyptian, the mummy was called "sah"; the modern word "mummy" is derived from the Persian and Arabic words "muum" and "mumia," meaning wax and bitumen. When the Arabs first encountered Egyptian mummies, they mistakenly thought they were black because they were coated with bitumen. Bitumen is a black, resinous natural substance found in Persia and around the Dead Sea and Red Sea. It was occasionally used in the process of mummifying some individuals, starting from the late New Kingdom period. Although the Egyptians placed mummies in their graves for eternal preservation, the fickleness of fate often prevented this. Tombs

and mummies have always been the primary targets for grave robbers. These thieves sometimes entered the grave very shortly after the funeral, or were even the individuals themselves who participated in the burial process. Indeed, in some cases, mummies were looted even while they were in the hands of embalmers who were embalming them. Papyrus inscriptions dating back to the 20th Dynasty document the trials of various tomb robbers who desecrated royal tombs. Among these documents, the most important are the Ambras, Leopold II-Amherst, Harris A, and Mayer A and B papyri. The penalty for desecration of such sacred sites was death, and in cases of looting of royal tombs, the perpetrator was punished by execution by impalement, and his name was completely erased, condemning him to eternal oblivion. Traditionally, Egyptologists believed that the idea of mummification emerged after the Predynastic period. At that time, the dead were buried in simple, shallow, deep graves in desert sand. Desert sand naturally dehydrates corpses, turning them into shells that keep them relatively intact.

Such naturally preserved corpses may have been accidentally exposed later by animals—such as dogs or jackals—or as a result of wind erosion. This situation gave the ancient Egyptians the idea of artificially preserving their dead, that is, forming the idea of preserving the body for use in the afterlife.

The main purpose of mummification was to dry (remove moisture) and preserve the body. Herodotus' book II of "History" provides detailed information about this process used in his time. Together with Diodorus's writings, this information served as the primary source for studying mummification techniques for a long time. Herodotus's description of mummification, although dating from a later period, describes three types of embalming depending on economic conditions: "When the body is brought to the embalmers, they show model models made of wood, divided into degrees according to their quality... They ask which of the three types they need, and when the family of the deceased agrees on the price, they leave the balsamists to their work."

In the most sophisticated method, they insert iron hooks through their nostrils and pull out part of the brain, while the rest is dissolved using medicinal substances. Then the side of the abdomen is cut with a sharp stone knife and all internal organs in the abdominal cavity are removed. The abdominal cavity is thoroughly cleaned and washed first with palm wine, then with an infusion of crushed spices. After this, the inside of the body is filled with aromatic substances and stitched again. Then the corpse is placed in natron (a mixture of natural salts) and completely covered; this process lasts for seventy days, no more. Upon the expiration of the specified period, the body is washed and wrapped from head to foot in pieces of linen cloth; the linen is rubbed with gum, which the Egyptians used instead of glue. In this case, the body is returned to the family members, who make a wooden coffin in the shape of a human and place the body inside.

If a secondary method is chosen for cost reasons, the process is different: the body is not cut and internal organs are not removed. Instead, cedar oil is injected into the body through the anus using a special syringe, which is then sealed to prevent fluid from escaping. Then the body is kept inside the natron for a specified period. On the last day, the fat is removed. This fat is so strong that when it leaves the body, it liquefies the internal organs; while natron dissolves the meat, leaving only skin and bones. After that, the body is handed over to other untreated family members.

The third method, used for the poor, was the simplest: the intestines were cleaned and the body was kept in natron for seventy days.

Many materials used in embalming were found in special places where embalming waste was stored. These sites, found in cemeteries across Egypt, contain remnants of the mummification process. Since all items related to this activity were considered sacred, they could not be discarded like ordinary waste. Therefore, they were buried in the sacred area, that is, in the necropolis. The three methods of mummification described by Herodotus can be seen reflected in various Egyptian

funerary objects. These methods were widespread in his time—in the 5th century BC. However, it must be remembered that mummification did not remain constant throughout Egyptian history, but evolved over time. It was also possible to use several mummification technologies simultaneously. This could depend on the preferred style of the embalmers or the economic level of the deceased.

The embalming priests were associated with the god Anubis, some of whom assumed the form of Anubis and wore masks as part of the mummification ritual. All of these priests had some knowledge of anatomy and mummification processes. According to Herodotus, embalmers were a special group of people belonging to various workshops, and this profession was passed down from generation to generation. Documents from the 3rd century BC contain information about various guilds of embalmers, as well as how much they received for materials and services.

According to Diodorus Siculus, embalmers were held in high esteem because they were responsible for preparing a person for eternal life and their final appearance on earth. However, not all members of this guild were treated equally well.

Egyptian funerals were large, elaborate events, with funeral processions and feasts of primary importance. The coffin was placed on a sleigh, pulled by a pair of oxen, and milk was poured in front of it to ensure the sleigh moved smoothly. During the mummification process, various body parts could sometimes be lost. They could have fallen off due to excessive drying or been damaged by dogs and rodents. In such cases, balsamists replaced the missing parts with palm fibers, bones of other animals, or molded clay.

Bodies with visible symptoms of illness, such as a woman with bedsores, are made "healthy" for the afterlife. The restoration of damaged mummies was also considered an act of piety, as the people who restored the tomb believed that the spirits of the deceased would help them from the afterlife. For this reason, royal

mummies were also carefully restored and reburied. Even some non-royal mummies benefited from such pious acts.

As mentioned above, there is no ancient text that describes in detail the process of removing internal organs during mummification, and many questions related to this process still remain unanswered. For example, it is unknown in what order the organs were removed or why the kidneys were left in some mummies and removed in others.

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