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## The "Screaming Woman" Mummy CIT8- A Living Anatomical Fossil?

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### ABSTRACT

Human body preservation provides an invaluable resource for three-dimensional anatomical study. This has not always been the case; before the 1870s, students were forced to dissect available bodies quickly before body decomposition began. Evidence of mummified human remains from Egypt encouraged a search for the preservation of human bodies for anatomy studies. Among the thousands of mummies that were discovered, mummy-CIT8 (the screaming woman) continues to attract scientists and enthusiasts because of her horrific facial expression, which was uncommon. The particular reason for her appearance continues to elude researchers; however, speculations or hypotheses continue to mount. Some suggested natural processes like *rigor mortis* and muscle spasm, and others speculated poor ethical procedures from the embalmers. This present exploratory perspective projected a new look at the mummy CIT8 and does not think that muscle spasm or *rigor mortis*, neither jaw-dropping nor resulting from decomposition, was responsible for the "screaming woman's" facial expression. Our exploratory analysis suggested that her frozen expression was obligatory and man-made.

**Keywords:** Embalment; mummification; unnatural-expression

### INTRODUCTION

Our anatomical understanding of embalming was greatly influenced by the distinctive techniques used by the ancient Egyptians to preserve the dead<sup>1</sup>. The intricate process of mummification began around 4000 BC<sup>1,2</sup>. The teaching of human anatomy has been enriched over many centuries by practices of body embalming and preservation<sup>3</sup>. The preservation of cadavers enables experts and students to learn about the three-dimensional

relationships within structures that would not easily be unravelled otherwise<sup>1,3</sup>. Generations of anatomists and scholars have been inspired by the ancient Egyptians' sophisticated methods of preserving the deceased, which include evisceration, desiccation, and wrapping, as evidenced by well-preserved mummies that date back to over 3,000 years<sup>1,3</sup>. The 19th century saw the beginning of the modern period of embalming, which is largely due to the groundbreaking work of Dutch anatomist Fredrik Ruysch. The invention of formaldehyde-based preservation procedures was

made possible by his inventive use of chemical preservatives; however, his precise processes are still unknown<sup>4, 5</sup>. Then in 1867, formaldehyde was discovered, and it transformed the science of embalming and made it possible to preserve cadavers for use in medical research and teaching<sup>6</sup>. Today, the importance of body preservation in anatomical education remains unchanged. However, anatomy is catching up with technology. With virtual reality dissection and virtual dissection tables. However, traditional cadaveric dissection remains the decidable choice when available<sup>7, 8</sup>. Embalming and body preservation were perhaps inherited from ancient Egypt, demonstrated by thousands of famous mummies so well preserved. There have been several mummies in the revered corridors of ancient Egyptian history that have stood the test of time, fascinating scholars and aficionados in equal measure. While the anatomist is fascinated with the body preservation technique of the ancient Egyptians, it is impossible to resist commenting on the "screaming woman" (Figure 1), with her face twisted in a perpetual scream of agony, a horrific enigma that may never reveal its secrets. The objective of the article is to express our perspective in the phase of many hypotheses regarding her facial profile.

### MATERIALS AND METHODS

Google Scholar search was used to generate a list of studies and articles related to Egyptian mummies, with a specific focus on screaming mummies. We employed the following keywords: Egyptian mummies, famous Egyptian mummies, unusual Egyptian mummies, screaming mummies, and CIT8 mummy. Our inclusion criteria included peer-reviewed articles, academic books, and reputable sources. The exclusion criteria included non-academic sources and articles from non-reputable sources (i.e., non-index journals). Key articles were carefully examined to extract information on the unusual facial appearance of screaming mummies, with a particular emphasis on the Screaming Woman Mummy CIT8. This systematic search and review of existing literature aimed to provide a comprehensive understanding of the Screaming Woman Mummy CIT8 and its significance in the context of Egyptian mummies.

### RESULTS

We found four famous mummies with the "screaming facial profile". This included Prince Pentawere, the son of King Ramses III, the Unknown Man E, Unknown Woman A, and the screaming woman (CIT8)<sup>9 - 11</sup>. Some famous Egyptian royal mummies include the mysterious Tutankhamun, whose tomb's unsealing a hundred years ago sent the world into a frenzy<sup>12</sup>. Ramses II, a mighty Pharaoh, gazes from his wonderfully preserved face, evidence of the Egyptians' skill in practicing embalming. Hatshepsut, a visionary queen, broke tradition, and her legacy is documented in the annals of history. Thutmose III, a warlike pharaoh, expanded Egypt's borders, his military triumphs echoing through the ages<sup>12, 13</sup>. The enigmatic pair of Akhenaten and Nefertiti, innovators of singular divine worship, persist in captivating the imagination, their mysterious expressions suggesting concealed truths that lie beyond comprehension<sup>14</sup>. These sacred beings, perpetually wrapped in linen bandages, carry with them secrets of a distant past. It has been suggested that the mummification practices thus reflect social and political order<sup>15</sup>. Each of these mummies acts as a powerful testament to the lasting influence of ancient Egypt on the broader narrative of human history and the practice of body preservation. Then the "screaming woman" (Figure 1), coded CIT8 by the Cairo Egyptian Museum<sup>10, 16</sup>, a horrific enigma that may never reveal its secrets. Several studies raised possible speculations as to how she remained frozen in agony even in death. The objective of this present explorative study is to point to the possibility of a ceremonial or ritualistic customization of the remains of CIT8.

### Explorative analysis of CIT8

The "Screaming Woman" stands as an intriguing anomaly in the archaeological record of Ptolemaic Egypt. Her unusual preservation, with intact internal organs and an uncorrected contorted facial expression, challenges traditional understandings of mummification practices and funerary beliefs during that era. While the exact cause of her death and the intention behind her burial remain elusive, like that of the "Unknown Woman A"<sup>10, 11</sup>. Hence,

exploring alternative interpretations may offer valuable insights into a potential new hypothesis.

### **The Unusual Burial Practices**

Egyptian mummification practices, renowned for their elaborate techniques and intricate rituals, aimed to preserve the body for the afterlife. The removal of internal organs, followed by their separate preservation and placement in canopic jars, was a fundamental element of the process. The preservation of the "Mummy CIT8" internal organs, defying this established tradition, suggests a departure from the standard funerary rituals<sup>17</sup>. Additionally, the lack of any attempt to correct her facial expression, a common practice to present the deceased with a peaceful and serene visage, adds to the unusual nature of her burial. Her visage was deliberate, whether ignored or crafted by the embalmers because evidence of weight and splendor adorned her remains<sup>10</sup>.

### **A Glimpse into Ritualistic Practices**

While mummification was primarily focused on preserving the body for the afterlife, other ritualistic practices existed in ancient Egypt. These practices, often centered around offering, sacrifice, and punishment, aimed to influence the fate of the deceased or to appease the gods<sup>17</sup>.

#### ***A Ritual***

The unusual preservation of the "Screaming Woman" could point towards a ritualistic context,

potentially linked to a sacrifice or a punishment. The preservation of her organs, a departure from standard mummification, could symbolize an offering to the gods<sup>17, 18</sup>. This suggests a deliberate act, where the "scream" might represent a final cry of anguish or a plea for mercy<sup>11</sup>.

#### ***A Punishment***

The "Screaming Woman" may have been a victim of a punishment that involved a painful death, resulting in her contorted facial expression. The lack of any attempt to correct her appearance could reflect a deliberate choice to portray her suffering as a warning to others. This could have been influenced by the Greek concept of "*damnatio memoriae*," where the memory of those deemed criminals was deliberately erased<sup>19</sup>, suggesting a similar practice for this woman. However, recent reports do not support this hypothesis<sup>15, 17</sup>. A criminal could not have been so gracefully decorated as in the case of CIT8<sup>10</sup>, or could it be? Report documents that the face of Prince Pentawere, the son of King Ramses III, also had the screaming profile<sup>20</sup>; he was forced to hang himself as punishment for his role in the murder of his father. As an additional punishment, his corpse was not mummified and was wrapped with sheepskin<sup>20</sup>, contrary to CIT8. However, regarding CIT8, the possibility of a ceremonial or ritualistic context cannot be dismissed. This is due to the presence of elaborate ornamentation, as well as evidence of deliberate customization of the vaginal and anal orifices (Figure 1C) <sup>10</sup>, suggestive of potential ritualistic or ceremonial practices.

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Figure source: Saleem and El-Merghani<sup>10</sup>. CC BY 4.0

**Figure 1.** Selected pictures of the screaming woman mummy CIT8. In the thoracic cage delineated with the rectangle, note the ribs (\*) and intercostal spaces (+). Note the excellent preservation of the anterior abdominal muscles (white arrows) and aponeurosis (ap). The preservation techniques are truly remarkable for a woman who lived over 3000 years ago. The anterior and lateral view of the facial profile (Fig 1B), suggests that death was not sudden or perhaps the required facial profile in her particular case was crafted by the embalmers. Note (Fig 1A) that the upper limbs were pronated and abducted across her pelvic region by the embalmers. This serene arrangement was a drastic contrast to the facial profile (Fig 1B), which suggested that the “opened mouth” was the desired presentation. Note the remain of tissues around the maxilla, mandible, and cheek (Fig 1B) and the 3D CT image (Fig 1C) of the perineal region showing dilated vagina (big arrow) and dilated anus (small arrow). The plugged-opened vaginal and anal canal (Fig 1C) suggested the customization of CIT8. Note the customized wig decorated with precious ornaments on mummy CIT8 (Fig 1D), which suggests affluence adornment. All seem intended and not haphazard.

## DISCUSSION

A recent paper by Saleem and Merghani<sup>10</sup> was perhaps one of the most sophisticated anatomically oriented studies, employing state-of-the-art imagery tools and techniques in the study of CIT8. The study affirmed that we may never know the precise reason behind the expression of CIT8 but speculated that *rigor mortis*, cadaveric spasms, tissue decomposition, burial techniques, and postmortem alterations may contribute to a mummy's screaming appearance. However, their study revealed details that prompted certain questions from "lay scientists" (non-paleopathologists) like us. They reported an anomaly in the appearance of the perineal region; a considerably dilated vaginal and anal orifice presumably stuffed with plugs. We opined that it is also plausible that the opened mouth of CIT8 may have been plugged, and that the plug was currently non-available or traceable like the case in the vagina and anus<sup>10</sup>. Furthermore, expensive imported materials like juniper resin, frankincense and a wig coated with crystalline material were identified on the remains of CIT8, which debunked the traditional belief that the viscera of CIT8 still present *in situ* suggested poor mummification<sup>15, 11</sup>. It was also speculated that the death spasm may have induced her unusual facial expression<sup>10</sup>. However, current anatomical pathology knowledge indicates that *rigor mortis* normally develops after 2-4 hours of death, with onset times varying according to temperature and age<sup>20</sup>. The stiffness and rigidity of the muscles peak between 12 and 24 hours after death, making it a helpful indicator for calculating the post-mortem interval<sup>21, 22</sup>. However, *rigor mortis* is a transient condition that usually fades within 24-48 hours of death when the muscular proteins begin to degrade<sup>21, 22</sup>, hence we opine that muscle spasm is not likely to be the reason behind such facial expression; we prefer to think of the plugging as evidence from her vaginal and anal dilations<sup>10</sup>, adding to this is the knowledge that embalmers, ancient or modern, strive to present the dead with the most serene appearance. Any deviation from this practice could be most likely intentional. Studies also suggested that her wide-opened mouth might be a natural occurrence of jaw-dropping in the decomposed<sup>10, 11</sup>; however, pictorial evidence showed remnants of tissues around the maxilla, mandible, and cheek;

consequently, the natural occurrence of mandibular dropping is not likely in the case of CIT8, because it is only possible following completed soft tissue decomposition.

## Conclusion

While the exact reason behind the "Screaming Woman's" unusual burial remains elusive, the available evidence and the cultural context may provide possible interpretations. It is our conviction that her final posture was intended or crafted by her embalmers, and not the result of anatomical or pathological events. Further research and analysis, including a deeper examination of the artefacts found with her body and a comparative study of other burial practices during that era, are needed to understand the true significance of "the screaming" and its implications for understanding ancient Egyptian culture. Our curiosity would not let CIT8 rest in peace.

**Conflict of interest:** None

## Author contributions

OCA: Conception, design, data acquisition, interpretation, drafting and revising the manuscript

FDA: Design, data acquisition, interpretation, drafting and revising the manuscript

OGS: Design, data acquisition, interpretation, drafting and revising the manuscript

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