CT FINDINGS OF HEN CAZENOVIA LIBRARY’S ANCIENT EGYPTIAN MUMMY

1A. This is a low detail x-ray of the mummy’s entire body taken by the CT scanner as the mummy passed through the gantry opening.

1B. Samples of x-ray. Carbon dating showed the wrapping to be made from flax. Based on the appearance of the hips and teeth, the estimated age of the mummy at death was 20 years.

2. Surface of wrapping. Carbon dating showed the wrapping to be made from flax. Based on the appearance of the hips and teeth, the estimated age of the mummy at death was 20 years (± 40 years) in 2006 corresponding to 104 BC. Chemical analysis showed the wrapping to be made from flax. Based on the appearance of the hips and teeth, the estimated age of the mummy

3A: Photograph of the cartonage (mask) and upper torso. The diagonal wrapping in cartonage is characteristic of the Greco-Roman Period 332 BC to 30 BC.

3B: Skull shows elongated head (sphenocephaly) and Class 2 jaw (prognathic deformity). A string (yellow arrow) was used to keep the head and pelvis as well as images of the mummy’s entire body taken by the CT scanner as the mummy passed through the gantry opening and 0.5 mm thick overlapping cross-sectional (axial) scans were taken. These were used to create 3-D images of the head and pelvis as well as images of the body in the frontal and axial planes. Post-processing software enabled soft tissue reconstruction that displayed the facial features and made genitals visible.

4A: Coronal scan through a calcified mass just below the knee shows the presence of a scar (yellow arrow) placed in the wrapping near the mass. The scar, also known as a “malignant,” was used mystically to help heal abnormalities in preparation for the mummy’s afterlife.

4B: Axial CT image shows a plaque-like calcified mass (red arrow) which is suggestive of a bone tumor.

4C: Sagittal CT image shows that the isolated reconstructed statue resembles either the falcon or jackal headed form of the God Horus. A 3D printing showed identical findings.

4D: Sagittal CT image shows bright material within the statue’s folds possibly representing either glaze or sand.

4E: Axial scans of the mummy’s abdomen. The organs (lungs, liver, stomach, and intestines) were removed and separately mummified. They were then reinserted into the body cavity, typically in four separate conceptual bags. Often one to four variations of the statues of the God Horus were included. One such statue (yellow arrow) is seen in the mummy’s abdomen on the right side. In earlier times, the organs were placed into canopic jars and mummified separately and then placed either within or alongside of the mummy.

4F: Axial CT image shows the statue made of building the construction material creating overlapping layers and then shaping the head and feet.

5A: Coronal scan through a calcified mass just below the knee shows the presence of a scar (yellow arrow) placed in the wrapping near the mass. The scar, also known as a “malignant,” was used mystically to help heal abnormalities in preparation for the mummy’s afterlife.

5B: Oblique CT scan shows a plaque-like calcified mass (red arrow) which is suggestive of a bone tumor.

5C: Color photo of an Egyptian statue.

5D: Axial scans at the level of the mass shows his proximity to the underlying bone.

5E: Axial scans of the mummy’s abdomen. The organs (lungs, liver, stomach, and intestines) were removed and separately mummified. They were then reinserted into the body cavity, typically in four separate conceptual bags. Often one to four variations of the statues of the God Horus were included. One such statue (yellow arrow) is seen in the mummy’s abdomen on the right side. In earlier times, the organs were placed into canopic jars and mummified separately and then placed either within or alongside of the mummy.

6A: A sagittal scan of the foot shows a white spot (red arrow) in the calcaneus (heel) bone. This represents a bone tumor abnormally called an “island” that is commonly seen in clinical medicine today. The mummy had 4 bone tumors.

6B: In this computer generated frontal view of the abdomen and pelvis, a similar bone “island” (red arrow) is seen in the right femoral neck. The growth plate (yellow arrow) in the upper arm corresponds to that of a 20-year-old male.

6C: This surface rendered image is sufficient in detail to recognize the male gender.

7A: This sagittally reconstructed image shows an abnormally high arched foot with mannerism deformity which was present bilaterally. These findings indicate Charcot-Marie-Tooth disorder which caused him to walk with an abnormal gait. We see this disorder today in clinical medicine.

7B: This axial scan through the lower level of the chin shows an abnormally calcified inclusion (arrow) at the base of the neck. This likely represents a scar from previous lung infection (possibly TB).

7C: Scar from previous lung infection (possibly TB).

7D: The arch of the foot shows an abnormality (arrow) at the level of the chest which was present bilaterally.

8A: In this computer generated frontal view of the abdomen and pelvis, a similar bone “island” (red arrow) is seen in the right femoral neck. The growth plate (yellow arrow) in the upper arm corresponds to that of a 20-year-old male.

8B: This axial scan through the lower level of the chin shows an abnormally calcified inclusion (arrow) at the base of the neck. This likely represents a scar from previous lung infection (possibly TB).

8C: This surface rendered image is sufficient in detail to recognize the male gender.

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