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SEVEN EGYPTIAN MUMMIFIED HEADS FROM THE COLLECTIONS OF THE NÁPRSTEK MUSEUM

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with

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ABSTRACT: The paper presents results of CT and external examination of seven ancient Egyptian mummified isolated human heads from the collections of the National Museum – Náprstek Museum of Asian, African and American Cultures. It is the first preliminary outcome regarding isolated parts of mummies from a multi-disciplinary project that aims to map all ancient Egyptian mummified material in public collections of the Czech Republic. The heads are well preserved and exhibit a variety of mummification techniques and materials.

KEY WORDS: ancient Egypt – Egyptian mummies – mummified heads – CT

Scientific studies on Egyptian mummies in the Czech lands date as far back as mid-19th century (Czermak 1852). However, it was not until the 1970s that an ambitious project by Eugen Strouhal (1931–2016) and Luboš Vyhnánek (1928–1999) systematically mapped all Egyptian mummified material, both human and animal, in the public and private collections of former Czechoslovakia. Since 1979, when the outcome of their research was published (Strouhal – Vyhnánek 1979), no attempt of further research had been conducted. It was only in 2009 that E. Strouhal initiated the launch of a new project that would revisit the findings from the 1970s with the use of computed tomography (CT), an imaging technology that allows for a detailed, yet completely non-invasive examination of the object. For this purpose, cooperation was established with the Diagnostic Centre Mediscan, part of the Euromedic Group, now Affidea Praha (hereafter “Mediscan”).

The cooperation with Mediscan proved to be successful beyond expectations. Their staff actively participated and contributed with their expertise in all stages of the research process beyond their duties. The multi-disciplinary project was originally

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focused on the Egyptian mummified material in the collections of the Náprstek Museum of Asian, African and American Cultures, a part of the National Museum, but was soon extended to multiple other public institutions in the Czech Republic.

The project has so far had numerous outcomes. In 2011, the Náprstek Museum hosted a successful exhibition titled “Egyptské mumie” [“Egyptian Mummies”(Pl. 1)] that presented the preliminary results of the research, accompanied by a catalogue of the same title (Bučil – Oktábcová – Onderka – Pečený – Strouhal 2011). Most recently, the first volume of the final reports on the research *Atlas of Egyptian Mummies in the Czech Collections I: Complete Adult Human Mummies* (Onderka – Jungová *et al.* 2016) was published. So far, the most attention has been focused on complete adult human mummies. Subadult human mummies, isolated parts and animal mummies are yet to be presented in the volumes to come.



Pl. 1 Exhibition “Egyptian Mummies” in the Náprstek Museum.

Within the preparations for the above-mentioned exhibition, Lubica Oktábcová (1959–2016), the (then) head of the Radiology Department at Mediscan, studied and described seven of the isolated mummified heads from the collections of the Náprstek Museum that were included in the display. The heads can be broadly dated to the Third Intermediate Period based on the employed mummification techniques (Ikram – Dodson 1998; cf. Strouhal – Vyhnánek 1979). Each of the studied heads was selected for their characteristic or unique traits that distinguished them from the others present in the collection.

Unfortunately, Lubica Oktábcová’s sudden passing away prevented her from publishing these findings. In addition to her original descriptions, the paper presents preliminary results of sex and age diagnoses, as well as brief external descriptions of the examined heads. Age was assessed by the evaluation of dental development and

eruption (Ubelaker 1989: 63–65) and closure of sphenoccipital synchondrosis (Buikstra – Ubelaker 1994: 43). In adults, the amount of bone mass was also evaluated, as it decreases with age (Waldron 2009: 17; Aufderheide – Rodríguez-Martín 2011: 314–316). Sex estimation was based on scoring of cranial features (Buikstra – Ubelaker 1994: 19–21).

Table 1. Overview of the studied mummified heads.

Cat. No.	Inv. No.	Sex	Age	Origin
1	P 569	male (?)	30–50	original collections of the NpM
2	P 572	male	>40	Heinrich Kautsch collection
3	P 573	male	>40	original collections of the NpM
4	P 577	male	>40	original collections of the NpM
5	P 2463	male	≤35	Mus. of the Kingdom of Bohemia collection
6	P 2888	female (?)	15±36 m	Museum in Jihlava collection
7	P 2903	male	>40	J. Slovák collection

Conclusion

Seven mummified human heads were examined with the use of computed tomography (CT). Besides gaining data for the estimation of sex and age, the results showed a wide variety of mummification techniques used. In one case, the brain was removed via trans-foraminal route. Multiple individuals show well preserved cartilaginous structures, hair and facial hair. In one case, the individual was likely buried in a wig. Degenerative changes, tooth wear and dental caries were amongst the most commonly observed pathologies. The mummified heads were examined as a part of a complex project mapping all ancient Egyptian mummies in public collections of the Czech Republic. The present paper is the first outcome of this project that is aimed at isolated body parts, rather than at complete bodies that have been studied in the past.

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Photographs by Jiří Vaněk



CATALOGUE

Cat. No. 1

Isolated Mummified Head of a Male

Original collections of the Náprstek Museum

Inv. No. P 569

The head is mostly unwrapped, remnants of dark brown bandages can be found on the right side of the face (frontal and temporal bones, zygomaxillary area) and on the mandible. The skin is dark brown with red tones. Slightly wavy reddish hair is preserved on the crown of the head. Soft tissues are superbly preserved including the earlobes, nose and lips. Eye lids are open, and almond-shaped plates of white calcite (Strouhal – Vyhnánek 1979: 80) were inserted in the eye sockets as artificial eyes. Textile filling was packed subcutaneously to the area of the neck.

As revealed by the CT examination, the brain case only contains a small amount of homogenous material, most likely resin, together with some remains of soft tissues. The material has also entered the left maxillary sinus. The cranial cavity was accessed via the trans-nasal route. Eyes were packed with linen and dense plates were placed upon them. The right frontal sinus is markedly smaller than the left one. Oral cavity contains filling with grainy additives, perhaps a mixture of resin and mud.

Dentition is complete including all third molars. Lesions can be found at the root of upper right P3 and between upper left M2 and M3. Notable wear is visible.

Six complete vertebrae and a fragment of C7 have been preserved. They are fully articulated. Minor dural remains can be seen in the vertebral canal.

The nuchal relief is mildly pronounced and the mastoid processes are moderate. The forehead, glabella and the overall external appearance would all correspond to a male. The sex cannot be, however, stated with certainty. The sphenoccipital synchondrosis is fused. Bones of the cranial vault as well as the preserved vertebrae all yield signs of bone thinning. Dentition is abraded, but all teeth are present and no caries were ascertained. The individual most likely died at the age of 30–50.

Literature:

Strouhal – Vyhnánek 1979: 77–80, Cat. No. 33.



Cat. No. 2

Isolated Mummified Head of a Male

Most likely the Heinrich Kautsch collection (originally museum in České Budějovice)
Inv. No. P 572

The head is almost completely unwrapped, only small remains of bandages have been preserved bilaterally around the temporomandibular joints, on the right eye lid and on and around the mouth. Impressions of bandages are also visible. Resin was used to treat the skin, leaving it dark brown with some reddish areas. Soft tissues have not been preserved on some areas of the cranial vault, both temples, zygomatic bones, glabella, left mandibular angle, most of the right side of mandibular corpus, and on the inferior aspect of mandible. There are remains of brown hair and a somewhat lighter beard. Nasal cartilage is almost intact, showing a long and pointed shape of the nose.

The orbits are filled with a mass of dark brown material. According to the CT imaging, it might be composed of textile heavily soaked in resin and remains of desiccated soft tissues (cf. Strouhal – Vyhnánek 1979: 81). The head is very heavy due to a large mass of filling inside the brain case. The material is compact, but not completely homogenous, with porous structure. It may also contain dural and cerebral remains. Distribution of the filling suggests that it was liquid upon its introduction inside the cranium. It later hardened and got loose, now moving freely (cf. individual M13997a in Loynes 2015: 51). One piece (37 x 28 x 15 mm), detached from the mass, can be found in the left posterior area of the cranial cavity. The same material has seeped into the frontal, maxillary and sphenoidal sinuses and mastoid cells. Strong damage of the ethmoid bone implies that the brain has been removed via the trans-nasal route.

Dental caries can be found in the upper left I2 and lower left C, P4 and M2. Upper right P3 and lower left M2 display periapical lesions. Crown of the upper left M1 is broken. Upper right P4 and M1, and upper left M3 are missing entirely; all of them appear to have been lost intravitaly. All teeth show strong wear.

Male sex is clearly indicated by the preserved beard. Other diagnostic traits are stated for the sake of comparison. The supraorbital ridges and glabella are strongly prominent, nuchal relief is notably expressed and the mastoid processes are large. The sphenoccipital synchondrosis is obliterated. State of dentition and thinned bones of cranial vault point to an advanced age; the individual died when he was at least 40 years old.

Literature:

Strouhal – Vyhnánek 1979: 81, Cat. No. 35.



Cat. No. 3

Isolated Mummified Head of a Male

Original collections of the Náprstek Museum

Inv. No. P 573

The mummified head is excellently preserved, including eyelids, ear and nose cartilages, and lips. The mildly open mouth reveals an empty oral cavity with a preserved tongue. Short brown-reddish hair has been preserved, and remains of a moustache and a beard can be assessed, revealing that this individual was a male. The skin is dark brown, visible traces of resin are present above the right orbit, on the right temple, and on other minor locations. The head has been completely rid of all wrappings, with the exception of a small patch (22 x 20 mm) that has been preserved on the left temporal bone reaching to the margin of the orbit. Imprints of bandages can be found on the mandible. Soft tissues under the chin show mild damage, probably caused by insects. The skin is ruptured on the left side of the neck. The stump of the neck is plugged with a wad of fibrous plant material.

The eye sockets are empty, although the shape and position of eyelids suggest that fillings had been used and later lost. CT scanning revealed preserved ocular muscles. Aplasia of left frontal sinus can be observed. The brain has been excised using the trans-nasal route, as shown by the damaged ethmoidal cells and *crista galli*. The bone palate is perforated as well; this may have, however, happened independently from the embalming process. A small amount of filling material, possibly resin with some admixtures, has been introduced into the brain case. It now forms a thin layer on the occiput. The shape of the brain case is mildly asymmetrical, the left occipito-temporal area being more prominent than the right one. It might be a result of a long-term or repeated activity in the childhood, e. g. habitual sleeping with head resting on the right side (Ortner – Putschar 1981: 90).

Dentition is in a very poor state. Most teeth from the maxilla have been intravivally lost, as evidenced by the atrophied bone tissue. One molar has been preserved on the right side; roots of a molar and another tooth, most likely an incisor, can be found on the left. Numerous periapical inflammatory cavities are present. In the mandible, all teeth except for the second and third molars bilaterally have been preserved (cf. Strouhal – Vyhnánek 1979: 83); the alveolar bone has been resorbed. The tooth crowns display multiple caries, and there are periapical lesions with four abscesses present.

The first six cervical vertebrae are present and articulated; C1–C5 are complete, only the arch of C6 has been preserved. The vertebral bodies and joint facets yield degenerative changes. A portion of larynx has been preserved.

The presence of facial hair clearly points to the male sex of this individual. For the sake of comparison, the individual also displays notable nuchal relief, moderately expressed glabella and prominent mandibular angles. Fully obliterated sphenooccipital synchondrosis shows that it was an adult individual. The external appearance, bad state of dentition, and degeneration of vertebrae suggest that the individual was at least 40 years old at the time of death; possibly even more (cf. age estimation of 50–70 in Strouhal – Vyhnánek 1979: 83).

Literature:

Strouhal – Vyhnánek 1979: 81–83, Cat. No. 36.



Cat. No. 4**Isolated Mummified Head of a Male**

Original collections of the Náprstek Museum

Inv. No. P 577

The head is covered with multiple layers of brown bandages (width 30–45 mm), and one large superficial piece of linen that is torn and incomplete. The bandages are damaged in some places, most notably on the occiput. The bandages are of different quality, some are woven finely, some quite coarsely. Traces of resin can be found on the surface. The area of the breakage, where the head has been separated from the rest of the remains, shows an abundance of used textile layers; most of them are dark brown or black due to the extensive use of resin.

As shown by the CT scanning, the brain case contains a large amount of homogenous mummification material, possibly resin, together with some soft tissue remains. Deposits of the same material can be found in both orbits, frontal, maxillary and ethmoidal sinuses. The skewed surface of the filling and its distribution in orbits and sinuses clearly indicate that the head was leaning to the right while resin was being poured inside. Bones of the cranial vault, thinned due to osteoporosis, are penetrated with the same material. The brain has been removed via the trans-nasal route, as evidenced by an access to the anterior cranial fossa. Small particles of highly dense material are visible on the surface of the orbital fillings. They may be grains of sand or metal. Remains of ears are present, pressed firmly to the head. The oral cavity contains a wad of cloth, remains of a desiccated tongue and some resin.

Dentition is in bad condition. Caries have been identified in upper left M2, lower right M2 and P4. Both upper first incisors, lower right P4 and M1 show periapical lesions. Upper right M2 and M3, lower right P3 and lower left P4 and all molars have been intravitaly lost. Crown of the lower right M3 is broken. A diastema of 4 mm between the lower first incisors was a prominent feature during the individual's life.

Four complete vertebrae and a fragment of C5 are present. They show notable decrease in bone density. Three small objects of high density can be found within the bandages in the area of the neck. They may be fragments of beads.

The forehead is arched, supraorbital ridges and mastoid processes are markedly expressed; the nuchal relief is moderately prominent. The individual was in all probability a male. Osteoporotic thinning of the skull bones and vertebrae and the poor state of dentition imply an age of at least 40.

Literature:

Strouhal – Vyhnánek 1979: 86–87, Cat. No. 39.



Cat. No. 5

Isolated Mummified Head of a Male

The Museum of the Kingdom of Bohemia collection

Inv. No. P 2463

The head is partially covered with resin and a thin layer of brown and yellow bandages of various qualities. Hair is preserved in the form of short brown curls covering the scalp except for the occiput, i.e. the area on which the head was in contact with the underlying surface. Cartilaginous structures of the nose and ears are somewhat damaged or deformed, but otherwise well preserved. Eye lids are opened, revealing stuffing in the orbits. Lips are perfectly preserved, the mouth is opened. The oral cavity contains a desiccated tongue and resinous filling.

The CT imaging did not show any foreign filling of the brain case. Except for a very small amount of homogenous material in the occipital area – perhaps remnants of brain tissue – the skull is empty. Damaged turbinates and ethmoidal cells show that the anterior cranial fossa was accessed via the trans-nasal route. Small cylindrical objects (10–12 x 5 mm) were ascertained bilaterally in nasal meatus (one on the right, five on the left), nasopharynx (two) and on the left side of the soft palate (one). The surface of these objects is dense, but the inside appears to be empty. They are perhaps seeds or tampons made of degradable material covered with resin. There are remains of soft tissues, as well as textile fillings, in both orbits.

Dentition has completely erupted in both the maxilla and mandible. Crown of the first right molar is broken off; periapical lesions and notable abrasion of the upper dentition are visible. The teeth of mandible show no inflammatory cavities, only strong wear.

Six cervical vertebrae have been preserved; the last one lacks the spinal process and the inferior terminal facet (cf. Strouhal – Vyhnánek 1979: 87).

Marked prominence of nuchal relief, supraorbital ridges and mastoid processes suggest this individual was a male. Sphenooccipital synchondrosis is fused, but a scar is visible. Dentition shows marked wear and several inflammatory cavities. Bones are dense, no signs of decrease in the mass are apparent. The individual seems to have died at the age of 35 or less.

Literature:

Strouhal – Vyhnánek 1979: 87–90, Cat. No. 40.



Cat. No. 6

Isolated Mummified Head of a Female

Originally museum in Jihlava

Inv. No. P 2888

The head is partially covered with remains of red-brown bandages with fringes. The largest piece (w = 11 cm) runs from the right mandibular ramus diagonally across the face, covering the right ear and orbit but leaving the left orbit and ear bare, then across the left parietal to the basis of the skull. A smaller, irregular piece of linen (ca 6 x 9 cm) covers the right parieto-occipital area. Minor remains of bandages can be found on the nose and left zygo-maxillary area. Facial features including the eye lids, nose, ears and lips are fully preserved. Soft tissues are missing on the right occipital squama, revealing a slightly porotic bone. Some hair strongly soaked in resin is preserved. The scalp is, however, covered with a layer of textile that appears to reach under the hair; it may therefore mean that the individual was buried in a wig (cf. Ikram – Dodson 1998: 127). Soft tissues under the chin are missing, showing the inferior aspect of mandible and wads of linen filling the oral cavity and covering the basis of the skull. These wads have been removed for documentation upon research of the mummified head in the 1970s (see Strouhal – Vyhnánek 1979: 91–92) and then repositioned.

The brain case contains several freely moving pieces of filling. CT imaging showed the filling consists of resin, wads of cloth and remains of soft tissues. Although most of the brain tissue has been removed, all structures in the piriform aperture are completely preserved and there is no direct access to the anterior cranial fossa via the trans-nasal route.

The excerebration has been, therefore, most likely performed via the *foramen magnum* that is plugged with a textile wad. Another piece of linen can be found in the right orbit. It is missing in the left one; there is only a small amount of some material of low density and a denser vertical object, most likely a fragment of bone. A small sutural bone can be found bilaterally in the lambdoid suture. Aplasia of the right frontal sinus can be observed. Multiple small osteomas have formed in the area of frontal sinuses.

Dentition is in a good state of preservation. All teeth are present except for the lower left third molar that has not developed. The remaining third molars have not erupted yet; crowns are developed, roots are in the process of formation. Caries are apparent in the crowns of upper right first and second molars, and upper left second molar. A small fissure, perhaps also an early stage of occlusal caries, can be seen in the lower right second molar. No periapical lesions are visible and the crowns display almost no abrasion.

The head is completely disarticulated from the spine; no vertebrae have been preserved.

Although there are traces of facial hair above the upper lip and on the chin, these are probably fibres from bandages. Nuchal relief, glabella and supraorbital ridges and mastoid processes are all insignificantly expressed. The gracile features suggest that the individual was a woman; it cannot be stated with certainty, however, due to the subadult age of the individual. The sphenoccipital synchondrosis is partially obscured in the CT image. The stage of dental development yields age estimation of 15 ±36 months.

Literature:

Strouhal – Vyhnánek 1979: 91–93, Cat. No. 42.



Cat. No. 7**Isolated Mummified Head of a Male**

Originally museum in Kroměříž (the J. Slovák collection)

Inv. No. P 2903

The head is quite heavy and mostly covered in brown and yellow bandages soaked in resin. The wrappings seem to have been deliberately removed from these areas around the eyes and nasal root and on the left cheek. A bundle of textile is protruding from each nostril. Shape of ear bolts is clearly distinguishable under the bandages. Eye lids are preserved and closed. Head of a recent nail is visible posteriorly on the left side; a symmetrical opening on the right suggests there was another nail that has not been preserved.

CT scanning revealed that the nail is 45 mm long. The brain case contains a deposit of freely moving resin – it may have been loosened when the nails were introduced inside the cranium. Remnants of dura are present. The brain has been in all probability excised via the trans-nasal route. The damage of ethmoidal cells is quite small, so the excerebration was most likely performed by a skilled embalmer. Eye sockets contain spherical fillings, perhaps eye balls packed with linen. The left frontal sinuses are notably underdeveloped. Bones of the cranial vault show notable osteoporotic thinning.

The maxillary dentition is heavily damaged. Only roots of the anterior teeth and the first right premolar have been preserved; no crowns are present. In the mandible, all teeth are present, but a large abscess can be noted at the roots of the first incisors and between the second premolar and first molar on the left.

All seven cervical vertebrae are articulated to the cranium. Larynx is well preserved and clearly visible both in the CT scan and from external examination.

The forehead and glabella are notably pronounced and the nuchal relief is strongly prominent. Mastoid processes are moderately expressed. The individual was most likely a male. Thinning of bone mass that can be associated with osteoporosis as well as the state of dentition suggest that the individual died at the minimum age of 40 years.

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Strouhal – Vyhnanek 1979: 105–107, Cat. No. 52; Onderka 2001: 114–115.

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