

Natsef-Amun, Keeper of the Bulls A Comparative Study of the Palaeopathology and Archaeology of an Egyptian Mummy

A. Rosalie David

KNH Centre for Biomedical Egyptology - Faculty of Life Sciences - Stopford Building - University of Manchester
Manchester - M13 9PL - England

KEY WORDS: Egyptian mummy; palaeopathology;
multidisciplinary studies

Abstract

The mummy of Natsef-Amun, a priest in the Temple of Amun at Karnak (ca. 1000 BC), was purchased for the Leeds Philosophical Society, England, in 1823. Members of the Society unwrapped the mummy and carried out one of the earliest multi-disciplinary mummy investigations in 1824. In recent years, the Manchester Mummy Project undertook a new scientific study of this mummy. The range of techniques they employed included radiology, paleo-odontology, endoscopy, histology, immunohistochemistry, paleoserology, aDNA identification, and scientific facial reconstruction. This rare opportunity to compare the methodology and results of an early investigation with those of a contemporary study will be considered in this paper which will also demonstrate how scientific studies can add new information to historical and archaeological data about lifestyle, diseases, death and funerary procedures associated with a priest who lived at a tumultuous period of Egyptian history.

Introduction

The mummy and coffins of Natsef-Amun, a priest in the Temple of Amun at Karnak, were purchased by the Leeds Philosophical Society, England, in 1823 (Fig. 1). It is reported (Osburn, 1828; Brears, 1992) that, in 1824, the members of the Society unwrapped the mummy and carried out one of the earliest multidisciplinary investigations. Natsef-Amun lived in the troubled times of the late 20th Dynasty, in the reign of Ramesses XI (1113-1085 BC), when



Fig. 1 - Coffin of Natsef-Amun. Leeds City Museum.

the High-Priest of Amun at Karnak in Thebes, a man named Herihor, had seized unprecedented political power. He eventually established a family dynasty of High-priests who ruled Thebes and the surrounding district although the king, who now lived in the north, retained nominal supremacy over the whole land.

It was a time of intrigue and conflicting loyalties, and Natsef-Amun was probably involved to some degree in the religio-political contests of the dynasty. Outwardly, he must have supported his High-priest, but in the wrappings around his mummy, a leather ornament was discovered which carried the name of the king, Ramesses XI, perhaps implying that Natsef-Amun had a secret allegiance to the ruler.

From the inscriptional evidence, it is known that Natsef-Amun held several posts at the Temple of Karnak - the greatest in Egypt. He recorded all the food offerings made to the gods, he was incense bearer in the temple rituals, and most importantly, he was in charge of recording the food supplies given to the Sacred Cattle that were kept and slaughtered to feed the gods. He was married to the daughter of one of the temple's most important priests, and his own son also eventually became a priest at Karnak.

Natsef-Amun died sometime between his fortieth and fiftieth years, and was buried in one of the cemeteries on the west bank of the Nile, opposite Thebes.

Transfer of the mummy from Egypt to Leeds

After the time of Napoleon, many archaeological expeditions came to work in this area, where they discovered great caches of mummies belonging to the priests and priestesses of this period (Daressy, 1900). The mummy of Natsef-Amun was excavated here by Joseph Passalacqua, an Italian who had originally travelled to Egypt as a horse-dealer but subsequently turned his talents to archaeology. Most of Passalacqua's discoveries were bought by Frederick Wilhelm IV of Prussia for the Egyptian Museum in Berlin, but the mummy of Natsef-Amun was sent to Trieste in northern Italy in 1823 (Passalacqua, 1826). Next, it was transported to Paris, and then to London, where it was purchased by the great showman and dealer in antiquities, William Bullock, from whom John Blayds, a Leeds banker, acquired it for the Leeds Philosophical and Literary Society.

The Leeds investigation

The members of the Leeds Philosophical and Literary Society had already assembled a team of enthusiastic researchers to examine another mummy, and in 1824, the Council of the Society decided to unwrap and investigate the mummy of Natsef-Amun. This continued throughout the next winter, and an introductory account was published in March 1825.

As one of the earliest and most competent investigations of an Egyptian mummy, this represented a considerable contrast to the largely frivolous 'unrollings' of mummies that were taking place elsewhere in England at the time. Led by the Society's Secretary, William Osburn, the team carried out a multidisciplinary autopsy, and their sixty-page account (Osburn, 1828) demonstrates the high standard of early 19th century scholarship.

Subsequently, other partial studies were undertaken on the mummy, and from these early investigations, it was concluded that Natsef-Amun had died when he was middle-aged, that he had suffered from an unspecified disease in adolescence, and that, when alive, he had been 5ft 6ins in height, and had led a privileged life.

The mummy eventually entered the collections of the Leeds City Museum where it remained on display until the 1990s. Fortunately, it sustained only minor damage during an air-raid on March 15th, 1941, when the galleries received a direct hit and the four other mummies in the collection were totally destroyed.

The Manchester investigation

In 1990, the Director of the Leeds City Museum, Peter Brears, invited the Manchester Mummy Team (whose

earlier research is published in David, 1979 and David, 1986), to undertake a new scientific investigation of the mummy of Natsef-Amun. This provided a rare opportunity to compare the methodology and results of an early investigation with those of a contemporary study, and the various investigations carried out by the Manchester team have greatly increased current knowledge of Natsef-Amun's life and times (David, 1992).

Radiology

At the Department of Diagnostic Radiology in the University of Manchester, the mummy was x-rayed by means of both conventional radiography and CT-scanning. This examination showed that Natsef-Amun had suffered from degenerative arthritis in the neck and also possibly in the hip (Isherwood and Hart, 1992).

Endoscopy

The Manchester team has been particularly successful in developing the use of industrial endoscopes to view the internal parts of mummies in a non-destructive way (Fig.2), which enables them to take small samples of tissue for further studies (Tapp and Wildsmith, 1992; Tapp, Stanworth and Wildsmith, 1984).



Fig. 2 - An endoscope is used to remove tissue samples from Natsef-Amun's mouth.

Histology

By using endoscopy, it was possible to remove tissue samples from the groin area of the mummy. When examined microscopically, these samples contained evidence of an infestation of parasitic worms which gave rise to the disease *Filariasis*. In turn, this may have caused *Elephantiasis* (enormous swelling of the legs) although this cannot be proven (Tapp and Wildsmith, 1992).

Evidence of another disease - *atherosclerosis* - was found in the blood vessels from the groin. The arteries in the legs showed signs of atheroma, a degenerative condition which eventually may have caused a heart attack or a stroke.

This condition has been reported in other Egyptian mummies (Sandison, 1962), but it was probably not as widespread in ancient Egypt as it is today. This may be explained by the fact that most Egyptians did not live long enough to experience the worst effects of this disease. Also, their diet did not contain the same levels of cholesterol and saturated fats as modern food. The diet of most people consisted of bread, fish, fruit and vegetables, with little or no meat, but as a priest, Natsef-Amun would have received a portion of the god's own food as his daily payment, after it had been presented to the god's statue. This meal would have contained large quantities of meat obtained from the slaughter of the Sacred Cattle which were under Natsef-Amun's control, and he doubtless frequently indulged in eating meat. Other histological studies of the nerves supplying the eye muscles suggested that peripheral neuritis, a condition which can occur in association with diseases such as diabetes, may have been present (Tapp, 1992; Sandison, 1986).

Cause of death

Scientific examination is usually unable to pinpoint the exact cause of death with any certainty. However, in this case, some speculation is possible (Tapp and Wildsmith, 1992).

A very unusual feature of this mummy is that the mouth is open and the tongue protrudes (Fig. 3) because, at the time of death, it was larger than normal. The enlarged tongue may have been the direct cause of death, and it has been suggested that the swelling possibly occurred because of

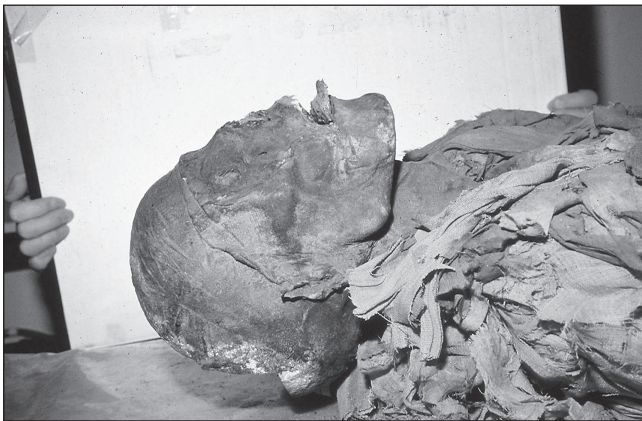


Fig. 3 - Head of the mummy with open mouth and protruding tongue.

disease or inflammation, although histological examination has not confirmed this possibility. Death by strangulation or hanging can result in protrusion of the tongue, but there are no marks on the neck to suggest that the priest was hanged or strangled by ligature. However, manual strangulation is a possibility since it would leave only faint marks on the neck and these would not be evident after mummification. Therefore, the possibility that Natsef-Amun suffered a violent death cannot be entirely discounted.

However, swelling of the tongue can also be caused by an accumulation of fluid, usually as the result of an allergic reaction to either a general or a local cause, such as an insect bite, and this may have precipitated Natsef-Amun's death.

Dental studies

Miller (1992) describes how, since the mouth of the mummy remained open at the time of death and subsequent mummification, it was possible for the Manchester researchers to build up a complete x-ray picture of his dentition. The mummy's teeth and jaws are so well preserved that the radiographs, taken at the University of Manchester Dental School, present a picture of his dentition that is as accurate as the day when he died; they undoubtedly provide a uniquely detailed view of the teeth and dental condition of a mummy of this period. His teeth show unusual and severe wear (Fig. 4): in addition to the customary pattern observed in the dentitions of Egyptian mummies (Leek, 1972), where the biting surfaces of the teeth are all badly worn down as a result of the grit



Fig. 4 - Dentition of Natsef-Amun showing pattern of severe attrition.

and sand present in the bread, in this case there was also wear on the sides of the teeth. This could have been caused either by the consumption of large quantities of acidic fruits or fruit juices, or by over-enthusiastic cleaning of the teeth with small splayed pieces of twig. In addition to the wear, chronic gum disease had caused the loss of several back teeth.

The identity of Natsef-Amun

In addition to studies on disease and lifestyle, several scientific factors have been established that help to identify this mummy. These include DNA identification, and Natsef-Amun's blood-group which serological tests have indicated was 'O' (Haigh and Flaherty, 1992). The fingerprints of the mummy were obtained, using a technique developed some years before by the Greater Manchester Police Force for fingerprinting mummies, which they subsequently applied in their own forensic work. Finally, as a development of their earlier studies (Neave,

1986), the Unit for Art in Medicine at the University of Manchester produced a reconstructed head of Natsef-Amun (Fig.5) which shows him as he would have looked around the time of his death: a shaven-headed middle-aged priest, with a strong face that is full of authority (Neave, 1992).

The creation of this head, produced without any direct access to the skull or a cast of the skull, relied instead upon computer tomography and graphics, and a sophisticated numerically-controlled milling machine which carved the replica from a block of polystyrene, partnered by skilled modelling techniques. This technique has since become an

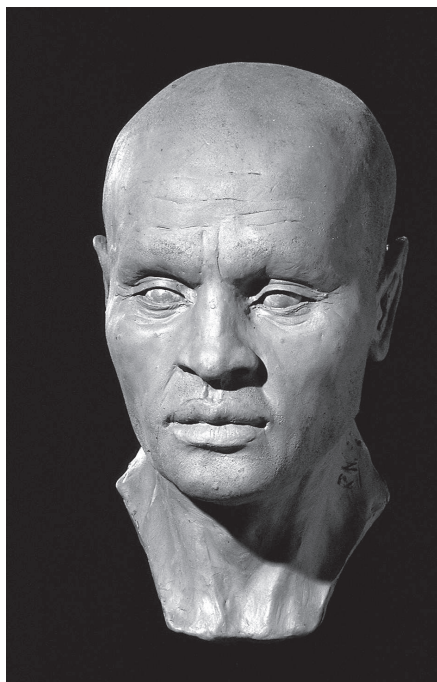


Fig. 5 - Scientific reconstruction of Natsef-Amun's head.

ideal, non-destructive method that can be used on mummified heads where usually a cast of the skull cannot be obtained because of the damage this would cause to the remaining soft tissue.

Conclusion

This study has provided a rare opportunity to compare the scope and achievements of a modern investigation with the pioneering work of the early 19th century. It has been possible to demonstrate how contemporary technology can provide so much more information about the health, diet, lifestyle, and perhaps even the circumstances surrounding the death of one individual priest.

Literature Cited

- Brears PCD. 1992. Mummies in Leeds Museum. In: David AR, Tapp E, editors. *The Mummy's Tale*. London: Michael O'Mara Books. p 80-99.
- Dareassy G. 1900. Les sepultures des pretres d'Ammon a Deir el Bahri. *Annales du Service des Antiquites de l'Egypte* 1: 141-148.
- David AR, editor. 1979. *The Manchester Museum Mummy Project*. Manchester: Manchester Museum.
- David AR, editor. 1986. *Science in Egyptology*. Manchester: Manchester University Press.
- David AR, Tapp E, editors. 1984. *Evidence Embalmed*. Manchester: Manchester University Press.
- David AR, Tapp E, editors. 1992. *The Mummy's Tale: the scientific and medical investigation of Natsef-Amun, Priest in the Temple at Karnak*. London: Michael O'Mara Books.
- Haigh T, Flaherty TA. 1992. Blood Grouping. In: David AR, Tapp E, editors. *The Mummy's Tale*. London: Michael O'Mara Books. p 154-161.
- Isherwood I, Hart CW. 1992. The Radiological Investigation. In: David AR, Tapp E, editors. *The Mummy's Tale*. London: Michael O'Mara Books. p 100-111.
- Leek FF. 1972. Teeth and Bread in Ancient Egypt. *Journal of Egyptian Archaeology* 58: 126-132.
- Miller J, Asher-McDade C. 1992. The Dental Examination of Natsef-Amun. In: David AR, Tapp E, editors. *The Mummy's Tale*. London: Michael O'Mara Books. p 112-120.
- Neave RAH. 1986. The reconstruction of skulls for facial reconstruction using radiographic techniques. In: David AR, editor. *Science in Egyptology*. Manchester: Manchester University Press. p 329-336.
- Neave RAH. 1992. The Facial Reconstruction of Natsef-Amun. In: David AR, Tapp E, editors. *The Mummy's Tale*. London: Michael O'Mara Books. p 162-167.
- Osburn W, editor. 1828. *An Account of an Egyptian Mummy presented to the Museum of the Leeds Philosophical and Literary Society by the late John Blayds, Esq.* Leeds: Leeds Philosophical and Literary Society. Reprinted Leeds 1928.
- Passalacqua J. 1826. *Catalogue raisonne et historique des antiquites decouvertes en Egypte*.
- Sandison AT. 1962. Degenerative vascular disease in the Egyptian mummy. *Medical History* 6: 77-81.
- Sandison AT. 1986. The Egyptian Mummy Eye. In: David AR, editor. *Science in Egyptology*. Manchester: Manchester University Press. p 7-9.
- Tapp E, Wildsmith K. 1992. The Autopsy and Endoscopy of the Leeds Mummy. In: David AR, Tapp E, editors. *The Mummy's Tale*. London: Michael O'Mara Books. p 132-153.
- Tapp E, Stanworth P, and Wildsmith K. 1984. The Endoscope in Mummy Research. In: David AR, Tapp E, editors. *Evidence Embalmed*. Manchester: Manchester University Press. p 65-77.