The Egyptian paradox

The belief in life after the death was associated with the necessity of conserving intact the mortal remains of the deceased. Whereas other people burnt or buried* the corpse of the deceased, the ancient Egyptians arranged things so that they could preserve it.

* cf. French *inhumer* “to bury”, Latin *in humus*, “into the ground”

Experience proved that the success of that operation depended on a *sine qua non*: the removal or the destruction of every putrescible organ, which could otherwise contaminate the whole corpse.

It was therefore necessary to call in some “technicians of the corpse”. These were sacerdotal employees who were skilful, well-disciplined and subservient to the priest. Much later, they would become the anatomists of the Alexandrian school.

The presence of these future anatomists next to the body is a sign of the originality and the paradox of ancient Egypt: the ritual practices of a corpse robber intended to ensure the perpetuity of the same corpse. Instead of being in conflict with religion, the anatomist was at its service!

The embalmers

The embalmers were full professionals. They were organised according to a hierarchy that would survive in the dissection sessions of the Middle Ages: the teacher seated on a chair and reading Galen’s scripts, the indicator pointing out the structures to be demonstrated, and finally, the demonstrator proper.
In Ancient Egypt, the person mentioned most was known as the “surveyor of the mysteries” and he wore an Anubis mask (Figure 1). His assistant was “the wearer of the seal of the god”, a title borne formerly by the priests of Osiris; his role was to read the magical incantations. Finally, there were the “bandage men”, in the broadest sense of the word. They were responsible for evisceration and wrapping.

One of their number was the “paraschist”* – “he who incises the side” – referring to a limited incision of the left side of the abdomen. Working through this incision, he cut the trachea and the oesophagus at the level of the neck. He removed and conserved the small intestine, the spleen, the liver, the stomach and the lungs. He removed and destroyed the brain. Usually, he left in place the heart, the kidneys, the large intestine, the pancreas and the genital and urinary systems.4,6

* παρά para “beside”, and σχιζω schizō “I incise” => paraschistes “paraschist” (Diodorus of Sicily).7

The technique of excerebration by the transethmoid approach

The excerebration process was accomplished along several routes: through the ethmoid, through the orbit or through the occipital bone after decapitation.

![Figure 3](image1)
CT scan of a 3700-year-old Egyptian mummy showing a break in the lamina cribrosa and in the roof of the lateral mass of the ethmoid, through which the brain was extracted.8

![Figure 4](image2)
X-ray showing two explorers, one through each nostril, passing through the fractured cribiform plate of the ethmoid bone into the cranial cavity, head of a mummy from the Macalister Collection in Cambridge.7

![Figure 5](image3)
Internal view of the skull from an Egyptian mummy (Dumoultier collection, number 16) showing the hole into the ethmoid.9
When the ethmoid avenue was chosen, it went through the lamina cribrosa and sometimes the lateral masses (Figures 2-5). Sometimes the nasal septum and the turbinates were removed during the manoeuvre.

When this was done, the concern for preserving the bodily appearance prevailed. The empty orbit received a glass eye, the head was replaced on the neck and the shape of the external nose was maintained by introducing plugs of linen in the nasal fossa, or as in the case of Ramses the Second, by introducing some grains of pepper in the nose and a plug of resin at the entry of the nostril (Figure 6).

Hostility towards the paraschist

The activity of the embalmers was of a ritual order and under the control of the priest. The paraschist was given instructions to confine himself to the strict mission confided to him by the deceased, with the priest as a character witness: “put my head on my neck, assemble my members, and do not cut my heart” (side of a sarcophagus of the Middle Empire). Nevertheless, the paraschist did not escape from simulated corporal punishment after the ritual profanation of the corpse. According to Diodorus of Sicily, he was pursued by the attending people who threw stones at him because “he had hurt the corpse”. This sort of psychodrama cleared the people’s conscience. It expressed the ambiguity of the necessary attack against the body, accepted because of the necessity, though morally refused.

Conclusion

As a result of the concern for the conservation of the body and for religious reasons, the first anatomical exercises began in Egypt about 5000 years ago. At this time, the ethmoid bone had the honour of being one of the first structures targeted by the paraschist.

The transethmoidal approach, an avenue to the brain, provided evidence in favour of the remarkable knowledge that these body professionals had in topographical anatomy.

References

3. L’embaumement et les momies. Available at: http://www.anteque.mrugula.net/#!/Embaumement/Embaumement.htm