



## THE BEGINNINGS OF DENTAL CARIES AND ITS TREATMENTS

### *Os primórdios da cárie dentária e seus tratamentos*

**Judit Forrai**

CSc, DDS, Semmelweis University, Department of History of Medicine at the Institute of Public Health, Budapest - Hungary,  
e-mail: forjud@net.sote.hu

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There is a long history of dental caries. The rate of caries remained low through the Bronze and Iron ages. The increase of caries during the Neolithic period may be attributed to the increase of plant foods containing carbohydrates. The beginning of rice cultivation in South Asia also believed to have caused an increase in caries. A Sumerian text from 5000 BC describes a “tooth worm” as the cause of caries:

*After Anu had created heaven,  
Heaven had created the earth,  
The earth had created the rivers,  
The rivers had created the marsh,  
And the marsh had created the worm—  
The worm went, weeping before Shamash,  
His tears flowing before Ea:  
“What will you give me for food?  
What will you give me to suck on?”  
“I will give you the ripe fig and the apricot.”  
“What good are the ripe fig and the apricot?  
Lift me up, and assign me to the teeth and the gums!  
I will suck the blood of the tooth,  
and I will gnaw its roots at the gum!”  
Because you have said this, O worm,  
May Ea strike you with the might of his hand!*

Tooth worms were considered to be the cause. In ancient times, there was no scientific explanation for tooth ailments or the unsightly appearance that tooth decay left in its wake. Nor were there dental offices, dental schools or the standard oral hygiene practices that we have today. So without any way to rationalize how these “holes” were created in teeth, the legend of the tooth worm was born.

Many believed that the tooth worm bore a hole through the tooth, stubbornly hiding beneath the surface. It caused a toothache by wriggling around, and the pain subsided once the worm rested. Although no one could tell you exactly what the creature looked like, it had taken on many forms over the years. The tooth worm has an incredibly long history, and wasn't ruled out as the cause of tooth pain until approximately the 18th century (Figure 1)

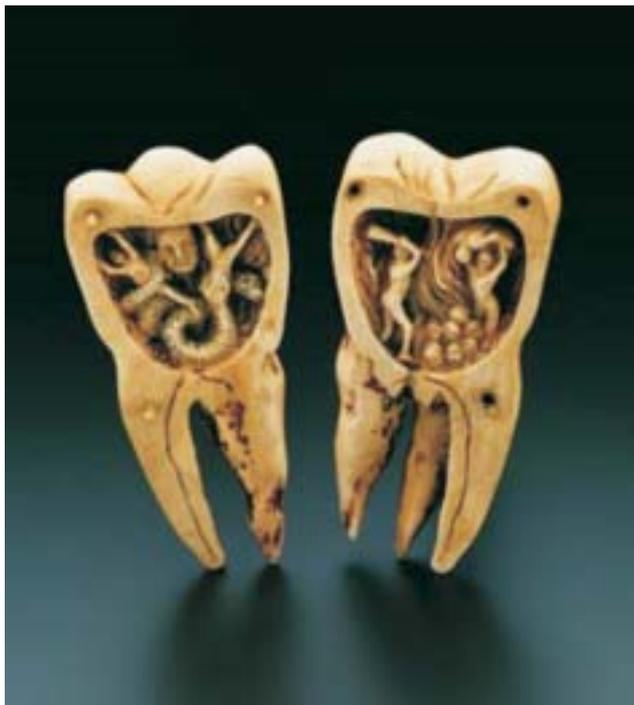


FIGURE 1 - The tooth worm as Hell's demon: a battle with the "tooth worm"

There is historical evidence that the Chinese used acupuncture around 2700 BC to treat pain associated with tooth decay. Among the papyri of ancient Egypt is the *Ebers*, which throws light on medical practices. It was written between 1700 and 1500 BC and contains material dating back as far as 3700 BC.

The Papyrus Ebers contains references to diseases of the teeth, as well as prescriptions for substances such as olive oil, dates, onions, beans, and green lead, to be mixed and applied "against the throbbing of the bennut blisters in the teeth." As early as 1550 B.C., the ancient Egyptians documented their interest in dentistry in the *Ebers*

*Papyrus*, a document discovered in 1872. The *Papyrus* listed various remedies for toothache, including such familiar ingredients as dough, honey, onions, incense, and fennel seeds. Dentists were known to have existed in Egypt since the Old Kingdom. The first reference to the title "dentist" was given to the physician and scribe *Hesy-Ra* c.2650 BC. Herodotus mentions the names of fifty physicians who bore the title "dentist".

Within dentistry there were two classes, the lower being *iryw-ibew* meaning *dentist*, whilst the elite were referred to as the *ir-iryw-ibew* meaning either *great of those who are concerned with teeth* or *great of dentist*. Dental specialists practiced their art within the confines of the royal court, whilst the ordinary common man had to rely on the *swnw*" (the basic "doctor of the people") for their dental treatment.

In ancient Egypt, it is quite possible that any practice of dentistry may have been limited to the use of the prescriptions in the medical papyri. The Ancient Egyptian dentists were researchers rather than therapists, who wrote down their observations in great detail. To these, they could then conceive a treatment, usually based on a trial and error system. The dentist's main aim was to prevent, rather than cure an ailment. The Ebers Medical Papyrus suggests ten remedies for *keeping a tooth in good condition*. One such remedy thought to describe a filling, although not corroborated, prescribes:

*Resin of terebinth: "1; Nubian Clay: 1; green eye lotion: crush together and (or apply) to the tooth"*

Due to the widespread nature of dental disease, halitosis (bad breath) must have been a common complaint. As such, a recipe has been discovered to combat this condition:

*Breath Sweetener: Take frankincense, myrrh, cinnamon, bark and other fragrant plants, boil with honey and shape into pellet.*

One of the most powerful tools in the dentist's armoury was magic. If his treatments were deemed not to be working, the dentist could call upon magic formulae for destroying *the enemy*

*which is in the tooth.* The teeth were associated with the creator god *Ptah*. Situated inside the god's mouth which brought existence into being, the teeth took part in the act of creation, and as such were regarded as an important element to the pronouncement of words.

The Egyptians also turned to superstition for help preventing tooth pain. The mouse, which was considered to be protected by the Sun and capable of fending off death, was often used by individuals with a toothache. A common remedy involved applying half of the body of a dead mouse to the aching tooth while the body was still warm.

An Egyptian lower jaw, dated by experts from 2900 to 2750 BC, demonstrates two holes drilled through the bone, presumably to drain an abscessed tooth. It has been asserted that various clinical procedures were carried out in Ancient Egypt. Such claims have included: fillings, bridgework, root-fillings, extractions and the draining of abscesses through bone, but clear evidence of operative dental intervention is lacking. The Ancient Kemetic dentists also were known to have used gold wire as a means to bind a loose tooth to a neighbouring tooth that was sound, another thing that the Ancient Kemetic dentists would be to fill them. Sometimes the patient would have their jaw bone drilled in order to drain an abscessed tooth or teeth. Teeth were filled using a type of mineral cement, and gum disease were also treated by using myrrh and other antiseptic herbs.

Loosening teeth may be removed with the fingers. The Ebers papyrus deals sensibly with the treatment of a dislocated mandible, whilst recommending that a compound fracture of the mandible should not be treated (perhaps because death was likely to follow after septicaemia).

What is certain, however, is that the Ancient Egyptians suffered from extensive, severe and painful dental disease which the available treatments of the time can have done relatively little to alleviate (Figures 2-10)

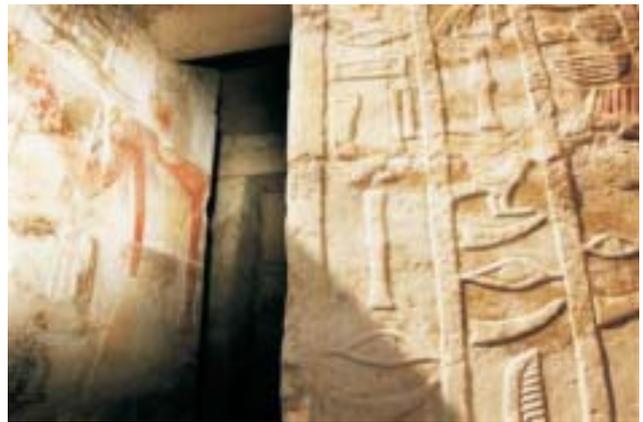


FIGURE 2 - Hieroglyphic details, including eye and tusk symbols representing the dentistry profession, are chiseled on the entrance to tombs honouring three dentists who served the nobility of ancient Egypt. The chief dentist – *Iy Mry* – is pictured on the wall at le



FIGURE 3 - Egyptian dentists' tomb, at Saqqara, near the Step Pyramid - the oldest one in Egypt



FIGURE 4 - The physician and scribe Hesy-Re



FIGURE 5 - Teeth wired together

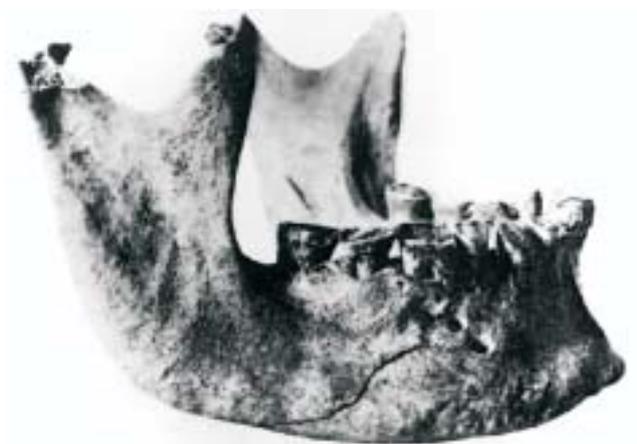


FIGURE 6 - Ancient Egyptian drilled jaw

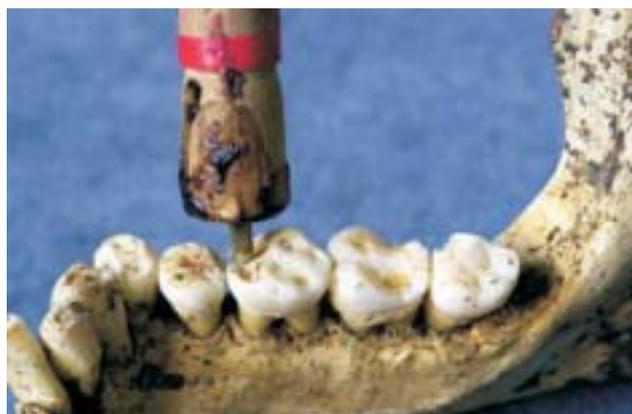


FIGURE 7 - The dental drill dates back 9,000 years ago



FIGURE 8 - The Ancient Egyptians also used *Aloe vera*

One recipe to treat toothache requires beans to be ground up with another substance. The word is missing but it is possible that it could be “willow” from which aspirin was originally obtained. Other mixtures seem likely to have hardened after preparation and might have been used to splint loosening teeth. Honey, which is included in several recipes, has been shown to have an antibacterial effect. But much conjecture must remain. The terms used may make translation uncertain, the identification of herbs and substances may be inaccurate.



FIGURE 9 - Com Ombo temple

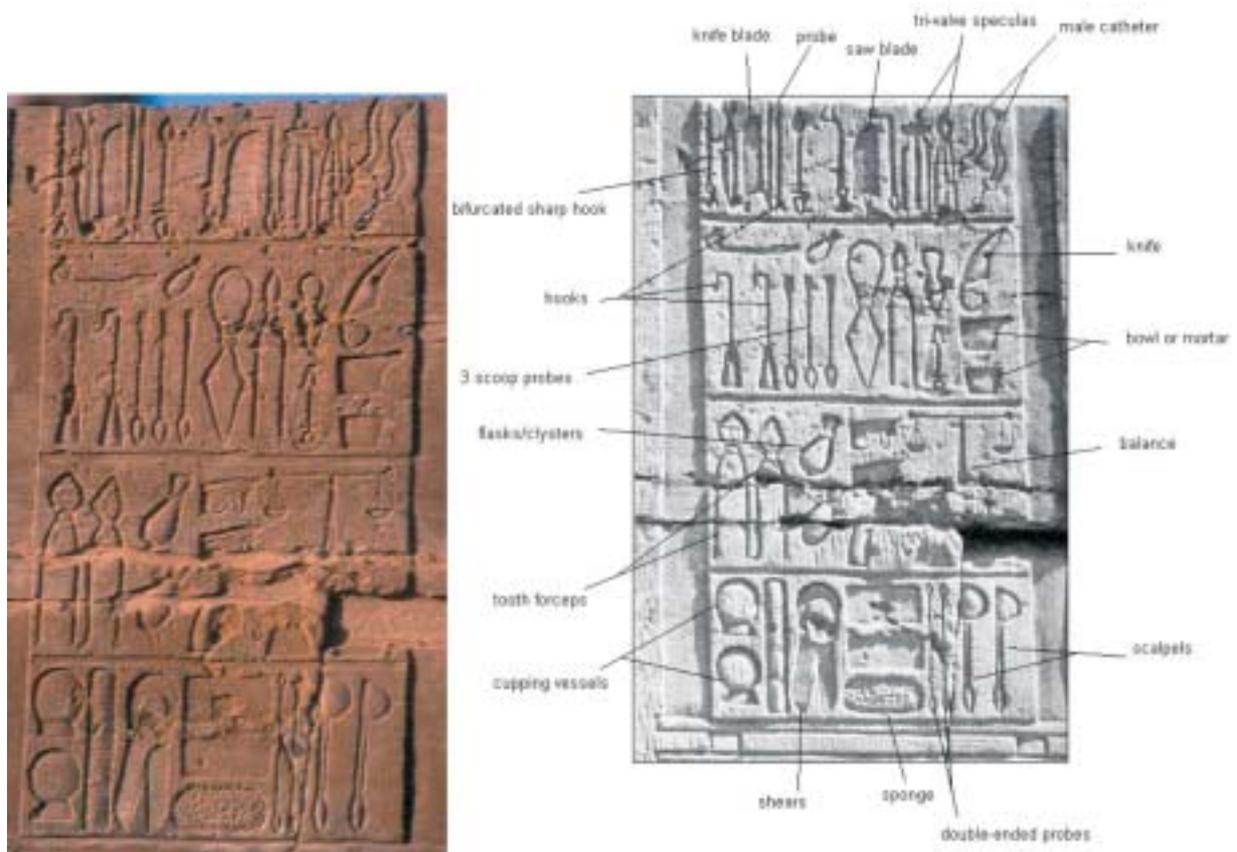


FIGURE 10 - Com Ombo: Inscription detailing ancient Egyptian medical instruments, including bone saws, suction cups, knives and scalpels, retractors, scales, lances, chisels and dental tools

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