

Egyptian and Greek Medicine (1)

MISIR VE YUNAN TIBBI

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Summary

The author reviews evidence of the influence of Egyptian medicine on ancient Greek medicine and concludes that such influence was considerable although not crucial. The main elements considered are the concept of *perittoma*, tests related to pregnancy, dissection of the human body, and the use of certain drugs. The differences between the two medicines are also discussed and the assumption that Greek medicine differs fundamentally from Egyptian medicine (because of the presence of supernatural elements in the latter and their absence in the former) is rejected. It is concluded that the difference between the two medicines is not of a fundamental nature; it is also underlined that our perception of Egyptian medicine could be distorted by the paucity of surviving Egyptian medical documents.

Key Words: Greek medicine, Egyptian medicine, Perittoma, Pregnancy tests, Anatomy, Human dissection

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Özet

Bu makalede yazar, Mısır tıbbının Antik Yunan tıbbı üzerindeki etkisini gösteren kanıtları inceleyerek, bu etkinin kesin olmamakla birlikte önemli olduğu sonucuna varır. Ele alınan ana öğeler perittoma kavramı, gebelik ile ilgili testler, insan bedeni diseksiyonu ve bazı drogların kullanımınıdır. Aynı zamanda iki tıp yaklaşımı arasındaki farklılıklar incelenmiş ve Yunan tıbbının temelinde Mısır tıbbından ayrıldığı varsayımı reddedilmiştir. İki tıp arasındaki farklılığın temelinde nitelikten kaynaklanmadığı sonucuna varılır. Aynı zamanda, Mısır tıbbını algılayışımız, günümüze dek gelebilen Mısır tıbbi dökümanlarının azlığı nedeniyle değişebilmektedir.

Anahtar Kelimeler: Yunan tıbbı, Mısır tıbbı, Perittoma, Gebelik testleri, Anatomi, İnsan diseksiyonu

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Part 1(1)

While, in Greece, the Corpus Hippocraticum was being written, in Egypt, on the other side of the Mediterranean, only 400 miles from the Peloponnesus and 250 miles from Crete, medicine was already two thousand years old (1). Time and geography suggest that the older medicine should have influenced the new. However, possibly because of our admiration for Greece and our perception of the ancient Greeks, our intellectual forefathers, as endowed with unsurpassed originality, the concept of a significant influence of Egyptian on Greek medicine has encountered some resistance. Although others hold a contrary opinion, (2) some authors believe that such

influence never existed or was very limited. (3) Yet, there is sufficient evidence to support the conclusion that Egyptian medicine and Egyptian tradition had a noticeable impact first on Hippocratic medicine and later on Alexandrian medicine as well.

Some of the arguments against such an influence rest on the belief that the two medicines were so fundamentally different that any impact of the former on the latter, if it existed, could be only minor and insignificant. Greek medicine, for example, has been described as unique among ancient medicines because, allegedly, it was totally devoid of supernatural elements:

If we compare [Hippocratic medicine]... with other ancient medicines, like the Egyptian, the Indian, and even the Chinese, we

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see that the Hippocratic medicine is more advanced because it does not rely at all on magic methods or exorcisms. (4)

Actually, not only was Greek medicine not devoid of supernatural elements (see below) but, if the distinctiveness of Greek medicine in developing a naturalistic paradigm is implied, we must remember that all major ancient medical systems (Chinese, Hindu, Mesopotamian, Persian) have independently done the same. (5)

Comparing Greek and Egyptian medicine, it has been said that the Egyptian medical documents, especially the Ebers papyrus, “reveal a mixture of magical cures and true medical observations which is foreign to the Greek medical tradition,” (6) and that “even the two papyri containing the best observations - Edwin Smith papyrus (c. 1650 B.C.) and Ebers papyrus (c. 1550 B.C.) - are not devoid of incantations and magical charms” (7)

The point, however, is that there are at least as many references to the supernatural in the Corpus Hippocraticum as in the Smith and Ebers papyri combined. (8) While there are 12 instances of use of magic-religious formulae in the Ebers and one instance (case 9) in the Smith papyrus, (9) in the Hippocratic Corpus we find not only the well-known passage of the *Prognostic* (10) suggesting a relation between diseases and the supernatural, but many others as well. (11) (The subject of supernatural elements in Hippocratic medicine has been recently reviewed. (12))

In addition, in Greece as well as in Egypt, supernaturalistic and naturalistic medicine coexisted: the *swnw*, the priest of *Sekhmet*, and the sorcerer (13) practiced side by side, as did the Hippocratic physician and the priest of Aesculapius. Therefore, the statement that in Egypt all medical practitioners “engaged in practices which Greek physicians would have thought fit, at best, for priests and ‘enchanters’ alone,” (14) appears unjustified.

The assertion has also been made that certain elements of Egyptian medicine were so speculative as to be foreign to the Greek medical tradition. In support, it is mentioned that, for example, in the Ebers papyrus “we... find the wildest speculations

regarding the vessels in the nose and temples which are said to provide respectively mucus and blood, and to be the origin of ophthalmic complaints, while those of the head are said to cause lack of sleep and baldness,” and it is concluded that “from this type of wild guess at explaining the origins of disease the Greek was very remote.” (15) We forget, however, that there are similar “wild guesses” in the Hippocratic corpus concerning the origin of diseases, as, for example, the explanation that the impotence of the Scythians was due to the cutting of the veins behind the ears, (16) and the idea that foamy diarrhea is due to fluxes from the head. (17)

During the Alexandrian era, Herophilus referred to drugs as “hands of the gods” (18) and held that some dreams are inspired by gods. (19) At the same time the cult of Aesculapius became universally recognized (20) when all the major cities of the Greek world built temples to the god of medicine. (21) There is no question, however, that, by Alexandrian times, Egyptian medicine had become the rigid, fossilized corpse of a body that had been vigorous more than a millennium before. *Mutatis mutandis*, Pharaonic medicine appears to have been, at that time, in the same state as Galenic medicine was in the sixteenth century: it had lost its vitality and was immobilized in the past. The passage of Diodorus Siculus referring to the death penalty for physicians who would not treat the sick in the traditional manner (22) underlines this point. The Greek medicine of Alexandria, on the other hand, then represented the dynamic new wave of the future: to continue the simile, it was the Vesalian approach of the time. This, however, did not prevent the old, helped by proximity and lasting reputation, from influencing the new. Although the Greek community of the city was at first quite insulated from the Egyptian population, (23) this insulation declined with time and an interaction developed between the two medicines, as shown by the fact that eventually Egyptian gods of healing (Osiris, Imhotep) were invoked and Egyptian physicians were consulted by members of the Greek community; (24) in addition, Aesculapius came to be identified with Imhotep.

It would appear, therefore, that neither the supernatural elements of Egyptian medicine, nor its “wild guesses” concerning the etiology of diseases, nor, in the case of Alexandrian medicine, the cultural separation of the two communities, can justify the assertion that Egyptian medicine *could not* exert a substantial influence on the development of Greek medicine. The question therefore remains: did Egyptian medicine influence Greek medicine, and if it did, to which extent?

Several elements in Greek medicine are traceable to Egypt. The most important among them are: the concept of *perittoma*, tests related to pregnancy, human dissection, and the use of Egyptian drugs.

Perittoma – As Steuer has shown, the Egyptian concept of *whdw* (*ukhedu*) refers to a basic etiological principle of decay associated with intestinal residue after digestion, that is, with the fecal content of the bowels. (25) This principle of decay, when absorbed from the intestine, produces heat (fever), alteration of pulse rate, localized lesions, and even death. (26) The idea of a toxic substance absorbed from the intestine as cause of disease is also found in Greek medicine, where it is associated with the concept of *perittoma* (or *perissoma*, residue). As *whdw* is the pathogenic derivative of *hesu* (excrement), *perittoma* is the pathogenic derivative of *kopros* (feces). (27)

Although the word *perittoma* does not appear in the Hippocratic Corpus, the concept seems to be expressed in the following passage:

If the food remains in the abdomen for too long and if, in addition, other is ingested, the body becomes full, the veins surcharged, and heat and suffering is produced, faster in Summer, more slowly in Winter. (28)

Other passages could be considered as referring to the same concept if we assume that bile and phlegm were understood by the author to be *perittomata*, as they were by Aristotle (see below):

This [disease]... arises from the following: when bile that has become putrid mixes with the blood in the vessels and joints, and when this stands, swelling comes up and be-

comes established, mainly in the joints, but sometimes also in the rest of the body. This produces sharp pain... (29)

Another... disease: this one arises from putrefied phlegm; the following shows that the phlegm is putrid: the patient's belches have an odor, from the phlegm, like those of a person that has eaten radishes. (30)

However, in the Hippocratic Corpus, the instances in which putrefaction is understood as the primary cause of disease are few in comparison to those in which the humors are believed to be responsible. For this reason, it has been supposed that the *perittoma* paradigm, first transmitted from Egypt to the Cnidian school, (31) was subsequently replaced by the humoral doctrine of Cos. (32)

Even if the concept of *perittoma* plays a secondary role in the *Corpus Hippocraticum*, it is quite prominent in the writings of Aristotle and of the *Anonymus Londinensis*. (33) In fact, the latter attributes the doctrine of *perittoma* as an etiological principle to Hippocrates himself:

For Hippocrates says that diseases are brought about in the following fashion. Either because the quantity of things taken, or through their diversity, or because the things taken happen to be strong and difficult of digestion, residues [*perissomata*] are thereby produced, and when the things that have been taken are too many, the heat that produces digestion is overpowered by the multitude of foods and does not effect digestion. And because digestion is hindered residues are formed... From the residues rise gases, which having arisen bring on diseases. What moved Hippocrates to adopt these views was the following conviction. Breath (*pneuma*), he holds, is the most necessary and the supreme component in us, since health is the result of its free, and disease of its impeded passage... On this theory, when residues occur, they give rise to breaths, which rising as vapor cause diseases. The variation in the breaths, cause the various diseases. If the breaths are violent [many], they produce

disease, as they also do if they are very light [few]. The changes too of breaths give rise to diseases. These changes take place in two directions, towards excessive heat or toward excessive cold. The nature of the change determines the character of the disease. This is Aristotle's view of Hippocrates. (34)

The fact that this theory was attributed by the *Anonymus Londinensis*, that is by Meno, to Hippocrates, suggests that, independently of the legitimacy of such attribution, there was a tradition attributing the etiology of diseases to *perittoma*. In addition, although Meno could have been wrong in attributing such views to Hippocrates, there is no reason to believe that this is the case, as Edelstein has pointed out. (35)

According to Meno, his predecessors had recognized two etiological factors of diseases: *perittomata* and *stoichieia* (the elemental component of the body). He lists Hippocrates among those who thought that diseases come from *perittomata* although the word does not appear in the Corpus. It has been suggested that Meno distorts the material he excerpts to agree with his own ideas. (36) It would appear instead, as proposed by Steuer and Saunders, that the theory of putrefactive residues, that is, of *perittoma*, remained as a secondary one, in the background as it were, and was never entirely displaced by the humoral one. (37) Galen, in fact, in several passages, refers to the doctrine of residues: in *De sanitate tuenda* (38) he writes that the residue from food and drink was called *perittoma* by the ancients; in *De causis morborum*, (39) he mentions residues (*perittomata*) generated by the quality of food; in *De naturalibus facultatibus* (40) he states that the residues (*perittomata*) that are delayed in the body must eventually putrefy; in *De methodo medendi*, (41) he says that whoever attempts to cure fever must prevent putrefaction (*sepsis*).

The concept of a toxic material absorbed from the intestine as a cause of disease was to persist in Western medical thought until modern times in the notions about the etiology of puerperal fever of the prebacteriological era and in the theory of "auto-intoxication" of the 19th and early 20th century. (42)

As mentioned above, the concept of *perittoma* was probably transmitted to the school of Cnidus. The *Anonymus Londinensis*, in fact, tells us that:

Euryphon of Cnidus, for example, thinks that diseases are caused in the following manner. "When the belly does not discharge the nutriment that has been taken, residues are produced, which then rise to the regions about the head and cause diseases. When however the belly is empty and clean, digestion takes place as it should; otherwise what I have already stated occurs." (43)

The *Anonymus* also tells us that the teachings of another Cnidian, Herodicus, were similar to that of Euryphon:

Herodicus of Cnidus, speaking about the cause of diseases, is himself too partly in agreement with Euryphon, but partly in disagreement. In so far as he himself too says that residues (*perissomata*) are the causes of disease he is in agreement. (44)

And so were the teachings of Alcamenes of Abydos (45) and Timotheus of Metapontum. (46) The concept of *perittoma* continued to be held in Egypt, as suggested by the *Anonymus*' report of the teachings of an otherwise unknown Egyptian physician called Ninyas:

Ninyas the Egyptian is peculiar in dividing affections into congenital and acquired, the congenital, he says, being innate in our bodies. He holds that there is another cause, by which diseases are produced in the following way. Whenever nutriment is taken that is not absorbed into the body, but remains in the organs, the warmth in us generates out of this nutriment residues [*perissomata*]. (47)

Aristotle distinguishes various kind of *perittomata*: bile, (48) phlegm, (49) sperm, (50) and milk. (51) In addition, he relates sleep to the concept of "residue." According to the Stagirite the brain tempers the heat and boiling of the heart (52) and also produces sleep, whose mechanism is rather complicated:

Just as moisture is vaporized by the heat of the sun, when it reaches the upper region, is chilled by the coldness of it, and after condensing becomes water again, and is carried down, so in the raising of the hot matter toward the brain, the excrementitious [*peritomatike*] vapor collects into phlegm (which is why catarrhs are observed to arise from the head), while the nutritive and wholesome evaporation is condensed and carried down and chills the hot. (53)

For sleep comes... when the solid part [of the evaporation] is carried upwards by the hot through the veins to the head. But when that which is carried upwards becomes excessive in amount and can no longer ascend, it forces the hot back again and flows downwards. And so when the heat with its raising force is withdrawn, men sink down... and the process produces loss of consciousness... (54)

Although not the word itself, the concept of *perittoma* as cause of disease is also found in the works of Plato. In the *Timaeus* (55) we find that some diseases are caused by phlegm or bile, and, as we have seen above, these substances, in Aristotelian language, are called *perittomata*. (56) Also, in the same dialogue, a passage discussing how illness arises says "*Pollakis d'en to somati diakritheisen sarkos pneuma engenomenon kai adunatoun exo...*," which is translated by Jowett "And oftentimes when the flesh is dissolved in the body, wind, generated within and unable to escape..." (57) although it can also be translated "And often, when the flesh is disintegrated, air which is enclosed in the body and is unable to pass out..." (58) The general sense does not seem to change.

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11. *Regimen IV (Dreams)*, XCIII; *Regimen IV (Dreams)*, LXXXVII; *Regimen IV (Dreams)*, LXXXIX, 110, 120-130; *Regimen IV (Dreams)* LXXXVII; *Regimen I, V; On the Nature of Women*, 1; *The Sacred Disease*, IV; *On Decorum*, VI. To these we can add the reference to Apollo, Aesculapius, Hygieia, and Panacea who are called as witnesses in the *Oath*. In addition, the passages referring to the importance of odd and even days and those related to the so-called "theory of the critical days" reflect ideas which may have been influenced by such magic-religious concepts as numerology.
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17. *Aphorisms*, VII, xxx.
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33. Meno (or Menon), a pupil of Aristotle, wrote a compendium of older Greek medicine - *Iatrike synagoge*. A copy, possibly of an earlier copy, was made for private use (possibly as lecture notes, which would explain the unpolished state and the many repetitions and corrections), probably in the second century A.D. (See: *The Medical Writings of Anonymus Londinensis*, translated and edited by W. H. S. Jones, Cambridge, Cambridge University Press, 1947, pp. 1, 5). Such copy, a papyrus, was found in the British Museum in the nineteenth century and became known as the *Anonymus Londinensis*.
34. *Anonymus Londinensis*, V, VI, in: *The Medical Writings of Anonymus Londinensis*, translated and edited by W. H. S. Jones, Cambridge, Cambridge University Press, 1947, pp. 35, 37, 39. Note that "Aristotle's view" means, in this case, Meno's view. Note the integration of the two concepts of *perittoma* and *pneuma*.
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