

SPECIAL ARTICLE

Eclectics and breast cancer

I.N. Tsoulogiannis, D.A. Spandidos

Medical School, University of Crete, Heraklion, Crete, Greece

Summary

The medical faculties of antiquity, with the first one being the Hippocratic faculty, dealt thoroughly with the treatment of cancer. The Eclectic medical faculty was founded by Agathinos who was born in Sparta but taught and practised

medicine in Rome during the period 60–100 A.D. The influences of his faculty were observed in the medical world until the 18th century.

Key words: Agathinos, breast cancer, eclectics

Historical background

The father of History Herodotos (484-426 B.C.) possibly made a reference to breast cancer when he mentioned a disease from which Atossa, the mother of Persian king Dareios, suffered and which was cured by the Greek doctor Demokides [1]. However, the complete healing that was effected without mutilation of the breast by the physician leads scholars to suppose that Atossa's disease was a mastitis, not a malignant tumor [2].

Hippocrates (460-377 B.C.), the foremost Greek doctor of his time, was the first to use in written texts the term "cancer" or "carcinoma". He considered that it was best not to give treatment to a "hidden" cancer. This meant that only ulcerating cancers could be treated with an operation, most likely a treatment to alleviate symptoms.

Characteristically, Hippocrates wrote about cancer: "it is preferable that no treatment is applied. And this because, if a patient receives treatment he will die sooner, whereas if he is left without treatment he might live for a longer time" [3].

Asclepius sanctuaries

At the same time efforts for breast cancer treatment also took place at Asclepius Sanctuaries. Offerings portraying breasts were found in the Asklepieia of Epidaurus, Kos, Trikki, Corinthos, Sparta and many other locations [4] showing that breast diseases constituted one of the most frequent illnesses, for which people asked for help. Some of them portray breast tumors.

Eclectics

Based on historical information, we can consider that after Hippocrates the faculty of the Eclectics founded by Agathinos gave a new dimension in the effort of fighting and treating breast cancer.

The roots of the Eclectics can be detected in the faculty of Pneumatics. According to Galen, the founder of the Eclectic faculty was the Spartan doctor Klaudius Agathinos [5]. He was born in Sparta but resided in Rome during the period 60-100 A.D., where he studied, taught and practised medicine. He owed the name Klaudius to Nero who gave it to him as a reward either for his scientific efforts or because he belonged to an affluent aristocratic family in Sparta. Stoic Kornoutos was his teacher in Philosophy, whereas in medicine it was Atheneos Attaleus, founder of the Pneumatic school of medicine which was directly connected with the teachings of Stoicism. Generally speaking, medicine during the classic, Hellenistic and Roman years

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Author and address for correspondence:

Demetrios A. Spandidos, PhD, DSc
Medical School
University of Crete
Heraklion, Crete
Greece
E-mail: spandidos@spandidos.gr

was inseparably connected with philosophy [6].

During the period in which Agathinos was active, the trend in medicine and philosophy was the eclectic compromise. The Agathinos' Eclectic faculty followed this precise course, which was the borrowing and selecting of theories and treatment methods of other medical faculties, such as Methodics, Practics and Pneumatics. It is obvious that they considered that confrontation of the diseases could achieve more in general. The faculty of Agathinos made a great and long-lasting impression on the medical doctors of his time. Some of the greatest medical practitioners belonged to the Eclectic faculty such as Archigenes from Apameia and Herodotos and Leonidis from Alexandria, who were Agathinos' students, and many others who loyally followed the eclectic doctrine, such as Markellinus from Sidi (2nd century A.D.), Satyros from Pergamos, the teacher of Galen (Pergamos, 2nd century A.D.), Aretaios Kappadokis and Filoumenos (Rome, 3rd century A.D.) and of course Galen (Pergamos and Rome, 128-200 A.D.), the greatest doctor of the Greek world after Hippocrates [7].

The most important sources which mention the treatment of cancer are Aetios Amidinos (6th century, Constantinoupolis), the christian chief doctor of the court of the Byzantine empire during the reign of Justinianus, Oreibasios, personal doctor of the emperor Julianus (Pergamos, 325-403 A.D.) and Paulus Aiginitis (Aigina, 625 A.D. - Alexandria, 690 A.D.).

Representatives of Eclectics

The founder of the medical faculty of Eclectics, Agathinos, did not leave any evidence of his involvement with cancer, however being a doctor, according to Galen, it is unlikely that he did not deal with this disease.

According to Caelius Aurelianus, doctor of the 5th century A.D., Agathinos wrote about *Elleboros* and its uses [8]. *Elleboros* is a plant with many medical uses. However, the belief that *Elleboros* occupied Agathinos based on its properties is a mere speculation.

However, Archigenes and Leonidis, Agathinos' students and participants of the Eclectic faculty, were thoroughly involved with the treatment of cancer, dealing with it by surgery.

Leonidis Alexandreus (1st/2nd century A.D.): He was the most distinguished surgeon of antiquity and Agathinos' student. Age-wise he must have been older of Agathinos' two other students Archigenes and Herodotos. Although none of his writings have been saved, it is said that he, along with many other sur-

geons, wrote the *Chirurgumena* [9]. Archigenes and Leonidis were mainly involved with the treatment of breast cancer and were possibly influenced by Philoxenos.

As mentioned by Aetios from Amida, Leonidis Alexandreus distinguishes two types of malignant diseases in the breast: skiro and cancer. He is the first to describe the characteristic clinical sign of the ulcer of the nipple as carcinoma of the breast develops. Contrary to Hippocrates' advice (which was followed by doctors for several centuries) according to which the treatment of "hidden" cancers should be avoided, Leonidis operated.

Aetios from Amida describes in his writings "Over uterine diseases" the operation of breast cancer, according to Leonidis, as a method of tumor extraction and continuous cauterizations, so as to obstruct the bleeding. He also reports that in certain cases he excised the tumors without cauterization when he wanted to study the development of the cancer [10,11].

Then the patient was transferred to a warm place (as the cold appeared to inhibit recovery) and plasters made of various herbs such as arnoglosson, polygonon or sisamon, were placed on the wound. The composition of the plaster, which was externally covered with vine leaves, changed while the wound healed. Generally the post-Hippocrates doctors used turpentine, incense, opium, rose water, egg yolk, kadmeia soil, honey and also women's milk in the prescriptions.

Archigenes Apameus (died 115 A.D.; Figure 1): He was a famous doctor of his time, systematically dealing with breast cancer, as reported in the texts of Oreibasios, Aetios and Paulus Aiginitis in which Archigenes' opinions on the pathology of the illness and on its therapy are reported. In the treatment of "hidden" cancers Archigenes followed Hippocrates' view that it is preferable that no therapy be applied [3,11]. As Aetios writes so much about Archigenes and his opinion on the nature of breast cancer and cancer of the uterus and as his opinion coincides to a great extent with those of Leonidis, many historians have concluded that Leonidis was Archigenes' source. As far as the operation of cancers is concerned, according to Oreibasios, Archigenes in his writings entitled "On parts which should be excised" refers to the excision of tumors. He first mentions the reasons for amputation and then the procedure itself. However, Paulus Aiginitis writes that, according to Archigenes, cancer is exacerbated by touch and therapy [12]. Among the known Archigenes' therapies are many of his own poultices or those borrowed from other doctors, which are associated with the treatment of breast cancer and cancer in general.



Figure 1. Archigenes from Apameia (died 115 A.D.). An imaginary portrait. Student of Agathinos who was the founder of the Eclectic medical faculty. Codex Bononiensis 3632 (15th century A.D.), p19. Bologna. From: Mavroudis AD (Ed). Archigenes Philippou Apameus [9].

Specifically Aetios writes that Archigenes uses palliatives for cancer that have been bequeathed to him, while Paulus Aeginetis mentions a prescription of Archigenes' poultice regarding cancerous and metastatic ulcers.

Galen: Galen's medical practice and his deep knowledge of previous methods and testimonies classified him among the partisans of the eclectic faculty according to many scholars.

Galen from Pergamos (131-198 A.D.) studied in Pergamos and Alexandria and worked in Rome. He was considered the second best doctor after Hippocrates.

He wrote that the treatment of breast cancer can be conservative or surgical: in the first stages the conservative treatment has greater success, but when the tumor has developed into a large mass only surgical intervention can offer any hopes for cure. Galen himself describes mastectomy and the process of breast

cancer operation. Turpentine, incense, opium, rosewater, egg yolk, kadmeia soil, honey and also woman's milk enriched with ash from crabs shells and sea shells, constituted Galen's prescription base for treating cancer in general [13].

In the Galen's work there was a classification of cancers and their symptoms, and an effort to detect their causes. Thus, the doctor from Pergamos uses the terms "fagedaina" (gangrene) in order to describe an ulceration which devours the bone, "erpita" when the ulceration expands like a crawling animal and "poly-poda" when the tumor seems to have many legs. Galen attributed diet and climatic conditions to the appearance of cancer. In his work it is pointed out that cancers are infrequent in the North and non-existent among the Skythians who drink milk. The consumption of snails, salted meat and oat by the Alexandrians was, according to Galen, the cause for frequent cancer cases. For the

treatment of visible cancers Galen recommends applying the juice of a plant called strychnos, a name applied to more than one species of plants. Apart from the shell dust, his prescriptions, which survived unaltered up to the Middle Ages, included metals, mine products such as oxide of zinc, copper, lead and kadmeia soil.

Eclectics' influence on the therapeutic practice of breast cancer

Byzantium: In the Byzantine period, Aetios Amidenos (6th century A.D.) attempted a complete description of mastectomy, based on the writings of Archigenes, Leonidis and Galen.

Paulus Aiginitis (625-690 A.D.) also recommended mastectomy, giving detailed reports on Archigenes' and Leonidis' method. This method was copied by the Arabs and then passed on to the West. It was the first mention of an operation of breast cancer without extracting the tumor. Following a small incision the tumor was cauterized, bearing similarities to the contemporary method of radiation, but being much more conservative [14].

Arabs: Abulasis (936-1013 A.D.), an Arab doctor, dealt with breast diseases and was inspired by Paulus Aiginitis [15].

Another Arab doctor, Abicennas (10th-11th century A.D.), agreed with Hippocrates and Galen and did not recommend mastectomy.

Renaissance: During the Renaissance, Ambroise Pare (1509-1590 A.D.) initially a barber by profession, later studied Medicine in the Medical School of Paris and afterwards became a military doctor. He followed the principles of Archigenes and Leonidis on breast operation. He believed that superficial tumors should be removed, but he could not tolerate the horror of breast amputation and tried to cure it by applying lead plates but with meager results. He described the infiltration of the skin and of the lymph nodes in cases of advanced breast cancer [16].

Felopio (1523-1563 A.D.) from Modena, the greatest anatomist of his time, operated on ulcerated breast tumors as Leonidis did. The clinical description of the infected breast is more detailed than that of Pare. Although it had obviously become understood that breast cancer could be accompanied by edemas in the armpit, emphasis had not been given to the phenomenon of metastasis [17].

Conclusion

The treatment of breast cancer made an essential contribution to medical history. Breast symbolizes fertility and it nurtures mankind. This means that the treatment of breast cancer always was a unique and special medical topic both for medical and moral (supernatural) reasons.

Undeniably the impact of Leonidis' surgical methods and the medical practice of the Eclectics, mainly Galen, did not stop at the aforementioned surgeons; on the contrary they expanded to other medical disciplines until the 18th century.

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