JBUON 2015; 20(2): 650-652
ISSN: 1107-0625, online ISSN: 2241-6293 • www.jbuon.com
E-mail: editorial_office@jbuon.com

HISTORY OF ONCOLOGY

Ophthalmic malignancies in antiquity as depicted in two terracotta figurines

K. Laios[1], M. Karamanou[1], G. Tsoucalas[1,2], M. Sgantzos[2,3], G. Androutsos[1]

[1]*Department of History of Medicine, Medical School, University of Athens, Athens;* [2]*Department of History of Medicine, Faculty of Medicine, University of Thessaly, Larissa;* [3]*Department of Anatomy, Faculty of Medicine, University of Thessaly, Larissa, Greece*

Summary

Ocular and orbital wall cancers were recognized by the physicians of the antiquity as incurable, lethal, and non-operable malignant entities. Paul of Aegina (7th c AD) was the first to refer to this type of cancer and proposed only some palliative measures, while the same approach was also preserved by Theophanes Nonnus (10th c AD). However, two terracotta figurines of the Hellenistic period (323-30 BC) which depicted tumorous malformations in the eye area, raise a scientific debate on the matter. Hellenic art, once more contributed in a didactic way to preserve medical knowledge of the past, and served as an auxiliary tool in order to facilitate medical study.

Key words: *ancient Greece, art, Byzantium, ophthalmic cancer, terracotta figurines*

Introduction

Although physicians in antiquity recognized orbital tumors [1], few passages are preserved, probably because of their rarity or their incurable nature. The Byzantine physician Paul of Aegina (625-690 AD), described first an ocular cancer in the seventh book of his masterpiece *Epitomae medicae* [2], while Theophanis Nonnus (c. 10th century AD), dealt with ophthalmic cancer in his treatise *On ophthalmic diseases* [3].

During antiquity, the usage of terracotta figurines for teaching purposes was common. It is almost certain, that art manufacturers and tilers should have molded terracotta figurines, presenting depictions of lethal and rare diseases [4,5]. Furthermore it was in vogue the custom of dedicating votive offerings in ancient shrines. This ceremony began in ancient Greece during the 3rd millennium BC in the island of Crete, at the south of the Aegean Sea, and spread all over the Hellenic dominion. During the excavations in Kos island, several dedications of votive offerings around the Aslepieion were found. The majority of these relics were manufactured as a normal display of a human member, or organ, while only a small number of them had the characteristics of a specific disease or malformation presenting in detail. In 19th century, the medical historian and ophthalmologist Theodor Meyer-Steineg (1873-1936) succeeded, with controversial procedures, to obtain a small collection of clay statuettes depicting various diseases, including ocular ones [6].

Two terracotta figurines depicting huge tumors in the eye area had been preserved: one from the Meyer-Steineg collection and another found in the collection of the National Archaeological Museum of Taranto, Italy, raising a debate on the nature of malformation.

Paul of Aegina and Theophanes Nonnus on ophthalmic cancer

Paul of Aegina practised medicine in Alexandria during 7th century AD. He was a skilful and famous physician, surgeon, and oculist [7,8]. Among the innovative surgical procedures that he was performing, he was able to operate cataract

Correspondence to: Marianna Karamanou, MD, PhD. 4 Themidos street, Kifissia, 14564, Athens, Greece. Tel: +30 6973606804, E-mail: mkaramanou@med.uoa.gr

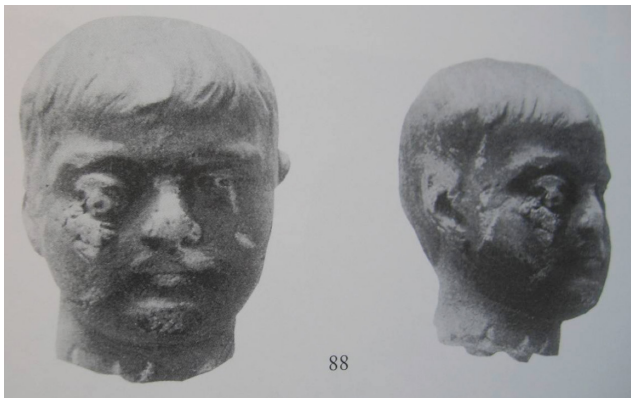

Figure 1. Clay figurine of the Hellenistic era representing a cancerous mass.

and ectropion [8,9]. Paul of Aegina recognized ocular cancer and proposed some treatment, mainly palliative. According to him, ocular cancer affected the cornea and provoked extreme pain, distension and redness of the tunics. He realized that ocular neoplasm was incurable but could have been alleviated by milk and farinaceous diet combined with local application of soothing herbal based collyria [2]. The gravity of the cancer was also well recognized, and in most cases the operation concerned mainly removal of superficial tumors. Ocular cancer was considered inoperable [10].

Theophanes Nonnus was the physician of the Byzantine Emperor Constantine VII Porphyrogennetos (905–959 AD). He wrote an encyclopaedia of medical knowledge by collecting all scientific discourses from the work of Oribasius (320-403), Aetius of Amida (c. mid 5th - c. mid 6th century AD), Paul of Aegina and Alexander of Tralles (525- 605 AD). Among his other works stands his masterpiece *On ophthalmic diseases* [9,11], in which he proposed a palliative remedy for ocular cancer containing a poultice of flour, egg yolks, honey, milk, olive leaves and mint. He also believed that it was an incurable lethal disease even after a local cauterization, and described it as a malignant and corrosive abscess [3].

Ocular and orbital wall cancer in Hellenistic art

The head of the first clay figurine of the Hellenistic era (Figure 1), now unfortunately lost, depicts a bearded man with a huge bulge in the right eye in the region of the eyebrows. Although some researchers believe that this tumor represents a benign cyst [12], its macroscopic morphology coincides most probably with an orbital wall cancerous mass [13].

The second clay figurine of the post Hellenistic period (Figure 2), which is also lost [14], depicts a child's head, whose right eyeball is protuberant, remarkably outside the orbit, identified by the researchers as orbital sarcoma [6,15]. This terracotta statuette is surrounded by a mysterious history. In 1910, Theodor Meyer-Steineg visited the island of Kos, where a few years before the famous Asclepieion was discovered and illegally bought a series of figurines depicting various diseases. The authenticity of the second figurine was challenged by many, as its hairdo is of a modern style, while at the same time many others supported its ancient origin, as there have been existed similar styles in antiquity [6,13,15]. We believe that this statuette is false, as its imagery data follows the modern era's morphology of the dolls from the early 20th century [16]. Nevertheless, it is believed that illustrates the more certain case of neoplasm [17].

Figure 2. Clay figurine of the post Hellenistic period depicting an orbital sarcoma.

Discussion

Although many scholars and physicians of the antiquity have dealt with ophthalmology in depth, like the Arab physician Hunayn ibn Ishaq (809-873 AD), who gathered all available knowledge on the subject through the translation of Greek manuscripts [9], and Cleopatra Metrodora (c. 7th century AD), who performed aesthetic face reconstruction, none mentioned a surgical operation for ocular cancer [18]. Even Paul of Aegina, the most skilful Byzantine surgeon, with skills ahead of his time, proposed only a palliative

approach [2]. The operation of ocular cancer remained during antiquity "terra incognita".

Some researchers wrongly suggested that there were not any references for ophthalmic cancer in ancient Greek and Byzantine medical texts, and suggested that those statuettes were ex-votos, offered to healing gods [19].

However, Hellenic art, once more, contributed in a way to preserve the knowledge of the past, and served as an auxiliary tool in order to facilitate medical study. Despite the technological advances in medical education, medicine is strongly connected with medical artistic depictions [18].

Conclusion

Medical tradition in Ancient Greece and Byzantium, presented an integrated scientific perspective in almost all modern pathologies. Through treatises, art, poems, statuettes, gravures, sculptures, paintings, ex-votos, the majority of nosologic entities were depicted for demonstration and didactic purposes. Ophthalmic cancer was depicted in terracotta figurines and presented inside medical texts as a knowledge from the past for the physicians of the near and distant future.

References

1. Grmek MD. Diseases in the Ancient Greek World. Baltimore, MD: Johns Hopkins University Press, 1989, p 376.
2. Paul of Aegina. Epitomae medicae libri septem, ed. J.L. Heiberg, Paulus Aegineta, 2 vols In: Corpus medicorum Graecorum, vols. 9.1 & 9.2. Leipzig, Teubner, 1921, 9.1:3-388; 9.2:5-411 (Cod: 206,400: Med).
3. Noni. Medici Clarissimi De Omnium Part I, Cularium Morborum Curatio. Argentorati, Strasbourg, 1567, pp 83-93.
4. Regnault F. Les terres cuites grecques de Smyrne au Louvre. Revue Encyclopédique Larousse, 1898, pp 589 -590.
5. Stevenson WE. The pathological grotesque representation in Greek and Roman art. Ph.D Dissertation. Pennsylvania, University of Pennsylvania, 1975.
6. Pournaropoulos GK. The Teaching of Medicine in Greece. Asclepius 1930;10: 1082-1083.
7. Laios K. Diseases and their iconography during antiquity. PhD Thesis. Faculty of Philosophy, Department of History and Archaeology. National and Kapodistrian University of Athens, Athens, 2009, pp 101-102 (in Greek).
8. Tsoukalas I. History of Paediatrics from antiquity until today. Athens, Science Press, 2004, p 778 (in Greek).
9. Lascaratos J, Tsirou M, Fronimopoulos J. Ophthalmology according to Aetius Amidenus. History Ophthalmol 1990;3:37-48.
10. Ismail A, Khan AB. Surgery in the Medieval Muslim World. Indian J History Sci 1964;19:64-70.
11. Kostakis AI. Modern surgery: diagnostic and treatment. Athens, Pashalides, 2005. (in Greek).
12. Charamis J. The evolution of Surgery in Ophthalmology. Med Arch 1933; 6:13-21 (ın Greek).
13. Grmek M, Gourevitch D. Les maladies dans l'art antique. Paris, Fayard, 1998.
14. Meyer-Steineg T, Sudhoff K. Geschichte der Medizin im Überblick. Gustav Fischer, Jena, 1950.
15. Künzl E, Zimmermann S. Die Antiken der Sammlung Meyer-Steineg in Jena II. Instrumente verschiedener Fundorte, Kästchen, Statuetten und Votive. Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz 1994;41:179-198.
16. Van Straten FT. Gifts for the gods In: Versnel HS (Ed): Faith, Hope and Worship: aspects of religious mentality in the ancient world. Leiden, Brill, 1981, pp 65-151.
17. Bourbou C. A Survey of Neoplastic Diseases in Ancient and Medieval Greek Populations. Eulimeni 2003;4:181-188.
18. Tsoucalas G, Karamanou M, Androutsos G. Metrodora, an innovative gynecologist, midwife, and surgeon. Surg Innov 2013;20:648-649.
19. Laios K, Tsoucalas G, Karamanou M, Androutsos G. Anatomy and art. Ital J Anat Embryol 2013;3:263-266.
20. Munier F, Pescia G, Balmer A, Berard C, Bucher P. Historical notes on retinoblastoma: apropos of 2 ancient terracotta figures. Rev Med Suisse Romande 1987;107:591-597 (In French).