

# Phoenician contributions to surgery and medicine

## *Aportaciones fenicias a la cirugía y la medicina*

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### ABSTRACT

We present an analysis of the essential elements of Phoenician medicine and surgery, a culture that covered all points of the Mediterranean coasts between 2000 and 200 B.C., so called because of their red fabrics made from crustaceans (from the Egyptian *kena'ani* and Greek *phoinix*). The studies regarding their medicine began in the temples of Sidon based on the medical-God Eshmun (origin of Asclepiades), where they cured and taught medicine that healed, driving away evil spirits, according to the mechanics of health-disease of these people (the struggle between Baal, another medical God, and Mot, God of death). The oldest writing of their medicine was the Ebers papyrus, written by an oculist from Babylos (Phoenicia). In surgery, bone callus repairs from falls and sharp injuries have been documented, as well as scurvy injuries, typical of maritime peoples.

### RESUMEN

Presentamos un análisis de los elementos más importantes de la medicina y cirugía fenicia que fue una cultura que abarcó todos los puntos de las costas mediterráneas entre los años 2000 a 200 a. C., llamados así por su confección de telas rojas a partir de crustáceos (del griego *phoinix*). Los estudios respecto a su medicina iniciaron en los templos de Sidón con base en el Dios-médico Eshmún (origen de Asclepiades) donde se curaba y enseñaba medicina que sanaba, alejando a los malos espíritus, según era la mecánica de salud-enfermedad de este pueblo (la lucha entre Baal, otro dios médico, y Mot dios de la muerte). Al parecer el escrito más antiguo de su medicina fue el papiro de Ebers que fue escrito por un oculista de Babylos (Fenicia). En la cirugía se han documentado reparaciones de callo óseo de caídas y lesiones por arma punzocortante, así como lesiones por escorbuto, propias de los pueblos marítimos.

## INTRODUCTION

The Phoenician culture, from the Egyptian *kena'ani* and the Greek *phoinix* (red or purple), has Neolithic antecedents in Asia Minor since 3500 B.C. from the people of Canaan since they produced a product extracted from crustaceans that gave a purple color to fabrics.<sup>1,2</sup> They spread rapidly from the coast of Sidon, Ugarit, Byblos, and Tyre, arriving around 1000 B.C. to Utica (Gulf of Tunisia) or Cadiz around 1100 B.C. date of the probable foundation of the temple of Melkart.<sup>1</sup> They reached their splendor between the X to VII B.C.,<sup>2</sup>. They worked in prosperity until the Romans conquered them around 300 to 150 A.D.<sup>1</sup>. Long before the Romans, their

power developed in Asia Minor towards the Mediterranean, constituting a people located in the current area of Lebanon, until they managed to extend along the old *Mare Nostrum* of the Romans. One of those points reached was Carthage, founded by sailors from Tyre at the end of the 9th century B.C., in northern Tunisia. C., in the north of Tunisia, naming it Qart Hadash, which extended to the south of Spain.<sup>3</sup>

Interestingly, recent studies regarding genetics can lead us to the development of settlements and their change to different regions of the Mediterranean through gene patterns.<sup>4,5</sup> These great people, who would be the predecessors of the Lebanese people,<sup>6</sup> were governed by a system of authorities appointed

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among themselves. Regarding medicine, we find that, within their culture, there was data in the Library of Ugarit with treatises describing diseases since 1400 B.C.

An interesting aspect is that Phoenician medicine went hand in hand with the maritime and commercial expansion of the Mediterranean. Therefore, the flow of knowledge of our profession was linked to this development, being one of the most relevant in expanding the Phoenician alphabet from the cities of Carthage to Byblos and from there to the Greek cities, contributing to the dissemination of medical and surgical knowledge of the time.<sup>7</sup>

### MEDICAL ASPECTS

The medical tradition began around the 6th century B.C. in Sidon (40 km north of Tyre), where a temple dedicated to Eshmun, the medical god and equivalent to the Greek



**Figure 1:** Sadrafa or Eshmún among the Phoenicians, Asclepius among the Greeks, and Aesculapius for the Romans. Throughout history, the concepts and images of Sadrafa, Eshmún, Asclepius, and Aesculapius are equivalent.



**Figure 2:** These triangles symbolize Sadrafa (Eshmun), serpent, and scorpion. Starcky (1949) "The physician is heir to law, justice, and wisdom".

Asclepius, was found.<sup>7</sup> These studies were carried out by Theodore Makridi Bey (1872-1940), who collected the first elements, probably because he was the son of a Turkish military doctor.<sup>8</sup> According to the ancestral culture, Eshmun was a hunter of Berytos (Beirut) who fell in love with the goddess Astarte, but the young man died mutilated; the goddess used the "vital heat", bringing him back to life with attributes of healer and god, which was documented between 754 to 675 B.C.<sup>9</sup> In the Phoenician tradition, Eshmún carries a scepter (staff) in her right hand, where a snake is entangled, and a scorpion in her left shoulder (Figure 1). The signs of the serpent and the scorpion (Figure 2) are beneficent as they signify the renewal, the other the healing medicine, and both health, fertility, and fecundity. These symbols passed from the Phoenicians to the Greeks and Romans about a century later, when the Phoenicians traveled the Mediterranean and brought their culture to Greece and Rome. Today, the symbols are used in medical schools and medical practice, with the oldest written reference dating back at least 3,300 years.

Hospitals and medical schools in Canaan (Phoenicia) were known as Eshmun temples. Here, doctors attended to and received the sick and could spend the night to be treated. These temples were built next to springs and wooded areas for hygienic purposes, and these hospitals, in turn, were also medical schools.

Within the dynamics of maritime trade of the Phoenicians, there is evidence, now both genetic and anthropological, of their passage in places like ancient Carthage or even the beaches of Portugal; this extensive network of commercial ports along the southern Mediterranean, being the island of Malta a

strategic point since the eighth century B.C. In this vast terrain, medicine was always necessary. The evidence is scarce, but it is known that the same Ebers papyrus was written by an oculist doctor of Babylos in Phoenicia, being very different from the origin of its tradition since the disease was determined by malevolent spirits that impregnate the universe and intervene in the human processes. Therefore, medicine was coupled with religion. Baal was the god of medicine; in an eternal struggle against Mot, the god of death, life is a natural balance between all its forces.<sup>10</sup>

Thanks to elements found in Malta or in the area where Carthage was located, we know that nursing activities were carried out by a male urinal and a kind of bottle with an antiquity dated around 150 B.C.<sup>11</sup>

The first medical writing of this culture is that of Sanken Yaton in 1300 B.C., with references found in Byblos, Carthage, and Palmyra; he was the most outstanding physician of this culture, describing remedies against diseases and animal poisons and surgical means of drainage.<sup>12,13</sup>

### **SURGICAL ASPECTS**

Notably, the aspects of ophthalmology are those reported in other cultures but retained part of their magical-religious traditions, at least until 200 B.C., in which they combined natural reason with Roman cultures.<sup>14</sup> On the other hand, there was a knowledge of the general anatomy since there are plates with drawings of intestines and the liver found in Carthage. This image that represents a human figure with an apparent snake head and some elements of abdominal viscera perhaps represents a ritual offering,<sup>15</sup> but in a very different context to that developed in Babylon where the gods were asked to use a viscera in clay to avoid such evil.<sup>16</sup> Martin-Ruiz<sup>15</sup> in his memory of entities of Ibiza, regarding the era of the Phoenicians, stated that there are significant antecedents of repair of fractures based on the bones, being the suggestive aspect that they were caused by trauma with ages between 20 to 30 years; of course, some with evident mechanism of arrows, it calls the attention the pieces of long bones of the necropolis of Panormo that came to heal, by the strong callosities, describes the

case found by Dr. Di Salvo in 2004 of a long bone of the necropolis of Panormo that came to heal, by the strong callosities, describes the case found by Dr. Di Salvo in 2004 of a bone pierced by an arrow and where the space of this injury remained in the bone.<sup>17,18</sup>

It should be noted that, in the Phoenician villages of Ibiza, many cases have been found of patients between 20 and 30 years of age with loss of teeth, most probably due to scurvy, which was frequent in the villages dedicated to maritime activities, due to the long periods of travel by ship. However, dental prostheses were documented, showing surgical manipulations to preserve the teeth and that they knew the consequences of this loss of teeth.<sup>19</sup>

### **CONCLUSIONS**

Like other ancient peoples, the Phoenicians were before 200 B.C., a people who combined medical and religious concepts. Still, their gods and the origin of diseases were very different from those of the Greeks and Egyptians, although they were combined in various parts of the Mediterranean. Naturally, diseases such as scurvy and falling teeth were part of their entities to be solved by dental surgical means, followed by deficiency diseases and then problems arising from trauma, either by the regions of difficult access or their war activities, by land or sea, which conditioned management of trauma fractures of pelvic and thoracic limbs. A very little appreciated aspect is that thanks to the trading system of the Phoenicians, the different cultures were able to expand from Spain to Egypt, from Sicily in Italy to Crete or Asia Minor. Simply put, the city of Byblos was the center of culture, where this diffusion was done, and, therefore, the medical culture of the time reached the farthest corners of the known earth. We make this compilation to pay tribute to the ancient Phoenicians and the Lebanese people today who take up the medical surgical practice from their ancestors in the Mediterranean.

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