The influence of ancient Greek history and Greek mythology on medicine with an emphasis in radiology

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Learning objectives

To describe medical terms, signs, syndromes and diseases whose names originated from Ancient Greek History and Greek Mythology as well as to correlate medical elements with historical and mythological data.

Background

Ancient Greek History and Greek Mythology have greatly influenced many classical and modern sciences, including medicine. The art of healing has its roots in the Pantheon of Greek Mythology, as Asclepius, the god of medicine and healing, was recognized as the first doctor in this period of time.

ASCLEPIUS

Asclepius was originally a mortal and later became the god of medicine and healing, according to the ancient Greeks. The myth of Asclepius is connected to the origins of medical science and the healing arts. (1)

He was the son of Apollo and Coronis. His mother was killed for being unfaithful to Apollo and was laid out on a funeral pyre to be consumed, but the unborn child was rescued from her womb. From this he received the name Asclepius "to cut open". Apollo carried the baby to the centaur Chiron who raised Asclepius and instructed him in the art of medicine. (2)

Asclepius is the god of medicine and healing in ancient Greek religion (picture 1). Asclepius represents the healing aspect of the medical arts; his daughters are Hygieia ("Health"), Iaso ("Medicine"), Aceso ("Healing"), Aglaea ("Healthy Glow"), and Panacea ("Universal Remedy"). The rod of Asclepius, a snake-entwined staff, remains a symbol of medicine today, although sometimes the caduceus, or staff with two snakes, is mistakenly used instead. He was one of Apollo's servants. (2)

His cult was particularly popular all over Greece and people from all Mediterranean countries used to come to his temples, named "Asclepieion", to be cured. Remains these temples can be seen till today. His story is pretty interesting and is actually a story of punishment. (1)
HIPPOCRATES OF COS

In contrast to the god Asclepius, Hippocrates, a real human, was the father of Medicine. Hippocrates of Cos or Hippocrates of Kos (ca. 460 BC - ca. 370 BC) - Greek: Ηπποκράτης; Hippokrát#s was an ancient Greek physician of the Age of Pericles, and was considered one of the most outstanding figures in the history of medicine. He is referred to as the Western father of medicine in recognition of his lasting contributions to the field as the founder of the Hippocratic School of medicine. This intellectual school revolutionized medicine in ancient Greece, establishing it as a discipline distinct from other fields that it had traditionally been associated with (notably theurgy and philosophy), thus making medicine a profession. (4)

His oath, well known as Hippocratic Oath, still remains the medical ethical code for doctors all around the world (picture 2).

Images for this section:

Picture 1: Statue of Asclepius, exhibited in the Museum of Epidaurus Theatre, in the city of Epidaurus (Greece)
Fig. 1: picture 1: Statue of Asclepius, exhibited in the Museum of Epidaurus Theatre, in the city of Epidaurus (Greece)

Fig. 2: picture 2: Hippocratic Oath
By using literature data, an effort has been made to gather all medical terms, signs, syndromes and diseases whose meaning and origin were inspired by Ancient Greek History and Greek Mythology.

**ACHILLES TENDON**

The anatomic part of the foot bears the name of Achilles, Trojan War hero and semigod-son of the mortal King Peleus and sea nymph Thetis. (5)

The *Achilles tendon* (or occasionally *Achilles’ tendon*), also known as the *calcaneal tendon* or the *tendo calcaneus*, is the tendonous extension of three muscles in the lower leg: gastrocnemius, soleus, and plantaris. In humans, the tendon passes behind the ankle. It is the thickest and strongest tendon in the body.

The oldest-known written record of the tendon being named for Aclilles is in 1693 by the Flemish/Dutch anatomist Philip Verheyen. In his widely used text Corporis Humani Anatomia, Chapter XV, page 328, he described the tendon’s location and said that it was commonly called "the cord of Achilles" ("quae vulgo dicitur chorda Achillis"). (6)

The name Aclilles' heel comes from Greek mythology. Achilles' mother, the goddess Thetis, received a prophecy of her son's death. Hearing this, she dipped him into the River Styx to protect his body from harm. However, she kept hold of his heel, meaning that the water did not touch this part of his body and it was therefore vulnerable. During the Trojan War, Achilles was struck on his unprotected heel by a poisoned arrow, which killed him (picture 3). In the same war, Achilles is also said to have cut behind Hector's Achilles tendons, having killed him, and threaded leather thongs through the incisions in order to drag him behind a chariot. (6)

Because eponyms have no relationship to the subject matter anatomical eponyms are being replaced by descriptive terms. The current terminology for Achilles tendon is calcaneal tendon. However, recently the medical community has decided to revert to the old eponyms and this tendon is, once again, known as the Achilles. (6)

**ARACHNOIDEA MATER - A COBWEB IN THE CENTRAL NERVOUS SYSTEM**

The middle element of the meninges is the arachnoid mater of the CNS, so named because of its spider web-like appearance (Greek; arachnoid, "spider-like"). The discovery of the arachnoid membrane is a relatively recent advance. Ancient anatomists noted the presence of the dura mater and pia mater, but the intervening arachnoid membrane was left undescribed. It was not until the 17th century that anatomists
discovered a layer separating the pia mater from the dura mater and named this cobweb-like layer the "arachnoid." Arachnoid means "spider-like" and has an interesting etymology that can be traced to the ancient Greek myth of Arachne. (7) Arachnoid mater owns its name to Arachne. This woman was a great mortal weaver who boasted that her skill was greater than that of Athena, the goddess of crafts, challenging her to a contest (picture 4). With her flawless tapestry the mortal weaver won; angry and jealous of her arrogance and skill, Athena destroyed her masterpiece. Arachne then committed suicide; the goddess pitying Arachne, turn her into a spider. (8)

**ATLAS** The first cervical vertebra, "holding" the head, is named after Atlas. Atlas was one of the second-generation Titans. He personified the quality of endurance (*atlaô*). In one tradition, Atlas led the Titanes in a rebellion against Zeus and was condemned to bear the heavens upon his shoulders (picture 5). In another, he was said to have been appointed guardian of the pillars which held earth and sky asunder. He was also the god who instructed mankind in the art of astronomy, a tool which was used by sailors in navigation and farmers in measuring the seasons. These roles were often combined and Atlas becomes the god who turns the heaven on their axis, causing the stars to revolve. Herakles encountered the Titan during his quest for the Golden Apples of the Hesperides. He agreed to take the heavens upon his shoulders while Atlas fetched the apples. The hero also slew the Hesperian Drakon, which in vase painting appears as the Titan's tormentor, and built two great pillars at the ends of the earth, perhaps to relieve the Titan of his labour. In a late myth, Atlas was transformed into the stony Atlas mountain by Perseus using the Gorgon's head. The Titan was also the constellation Kneeler. (9)

**AMAZON**

The name *AMAZON* is a polite way to characterize women after mastectomy. The Amazons (Greek: #µ######, Amazónes, singular #µ####, Amaz#n) are a nation of all-female warriors in Classical and Greek mythology, Herodotus placed them in a region bordering Scythia in Sarmatia (modern territory of Ukraine). Other historiographers place them in Asia Minor or Libya.

Notable queens of the Amazons are Penthesilea, who participated in the Trojan War, and her sister Hippolyta, whose magical girdle was the object of one of the labours of Hercules.

Amazonian raiders were often depicted in battle with Greek warriors in amazonmachies in classical art.

The Amazons become associated with various historical peoples throughout the Roman Empire period and Late Antiquity. In Roman historiography, there are various accounts of Amazon raids in Asia Minor. From the Early Modern period, their name has become a term for womans warriors in general.
Among Classical Greeks, *amazon* was given a popular etymology as from *a-mazos*, "without breast" connected with an etiological tradition that Amazons had their right breast cut off or burnt out, so they would be able to use a bow more freely and throw spears without the physical limitation and obstruction; there is no indication of such a practice in works of art (picture 6), in which the Amazons are always represented with both breasts, although the right is frequently covered. (10)

**RENAI CALYX - CALYX**

Renal calyx is the first unit in the system of ducts in the kidney carrying urine from the renal pyramid of the medulla to the renal pelvis for excretion through the ureters. There are two divisions: the minor renal calyx, with several others, drains into a larger major renal calyx, which in turn joins other major calyces to form the renal pelvis.

Calyx is a form of ancient Greek krater. A *krater* (in Greek: #######, *krat#r*, from the verb #######µ#, *keránnymi*, “to mix”) was a large vase used to mix wine and water in Ancient Greece. Calyx probably invented by Exekias in about 525 BC. This form of krater resembles the calyx of flowers, with low handles protruding from the base of the bowl (picture 7). (11)

**CYCLOPIA - CYCLOPS SYNDROME-CYCLOPES**

According to the ancient Greeks, Mother Earth first gave birth to a semihuman race, which included the Cyclopes (Greek, ring-eyed). This race of master-smith giants owed their name to the fact that they possessed only one eye centered above the nose. The congenital presence of one eye is thus referred to as cyclopia and is associated with a multitude of midline cranial defects. One of these Cyclopes, Polyphemus (picture 8), was the keeper of an island on which Odysseus and his companions landed on their way back to Ithaca after sacking Troy. Polyphemus decided to make dinner out of Odysseus's party. Odysseus offered wine to the giant who soon fell into a drunken stupor. He then sharpened a branch from an olive tree, drove it into the Cyclops's only eye, and escaped with his men. The race of the Cyclopes was eventually exterminated by Apollo, and their souls were cast into the volcanic depths of Aetna. (12)

Loss of full extension after anterior cruciate ligament (ACL) reconstruction, with development of an audible and palpable "clunk" with terminal extension was first described by Jackson and Schaefer as "cyclops syndrome." This syndrome, which is the result of a fibrous nodule (termed a cyclops nodule), has recently been described in patients who have sustained ACL injury but have not undergone reconstructive surgery. At arthroscopy, the loss of extension was seen to be caused by a soft-tissue nodule abutting the anterior notch. The authors termed this constellation of findings cyclops syndrome to emphasize that arthroscopy revealed a soft-tissue mass with surface vessels reminiscent of the eye of the cyclops of Greek mythology (13).
Arthrofibrosis is one of the recognized complications following traditional anterior cruciate ligament (ACL) reconstruction. With the advent of arthroscopic assisted ACL reconstructions, the extent of potential arthrofibrosis appeared to be less. In addition to postoperative loss of full extension, there was an audible and palpable clunk with terminal extension. These patients had similar arthroscopic findings of a nodule that formed anterolateral to the tibial tunnel placement of the graft. The arthroscopic appearance of the soft tissue mass with its surface vessels was reminiscent of a "cyclops." After arthroscopy with debridement and manipulation of the knee, extension was improved in all cases. (14)

**CAPUT MEDUSAE - MEDUSA**

Caput medusae is the appearance of distended and engorged paraumbilical veins, which are seen radiating from the umbilicus across the abdomen to join systemic veins. The name caput medusae (Latin for "head of Medusa") originates from the apparent similarity to Medusa's hair once Minerva had turned it into snakes. (15)

The veins that comprise a venous angioma usually form a little cluster ("star burst" or "caput Medusae" - looks like a "head of snakes"), and these veins generally drain into a larger "collector" vein (picture 9).

In Greek mythology, Medusa (Greek: Μέδουσα, "guardian, protectress") was a gorgon, a chthonic female monster, and a daughter of Phorcys and Ceto; gazing directly upon her would turn onlookers to stone. (16)

According to the legend, Medusa, a beautiful woman, is bedded with Poseidon, the god of the sea, in one of Athena's temples. Poseidon desecrated Athena's temple by lying in it with Medusa, to spite his fellow deity with whom he maintained a long rivalry. Medusa, on the other hand, was a mere mortal and left vulnerable to Athena's rage. The angered goddess promptly turned Medusa's golden wavy hair into living snakes. (12)

She was beheaded by the hero Perseus, who thereafter used her head as a weapon until giving it to the goddess Athena to place on her shield. In classical antiquity the image of the head of Medusa appeared in the evil-averting device known as the Gorgoneion. She also has two gorgon sisters. (16)

**ECHOGRAPHY - ECHO**

The etymology of the name of this sonographic imaging technique goes back to Echo, a beautiful, musical, and very talkative nymph. (5)
There are various stories of the Greek nymph Echo. In one story, Hera was angry at Echo for conspiring with other nymphs who, unlike Echo, wanted to be with Hera’s husband Zeus. As punishment, Hera made Echo no longer able to say words of her own, but only to echo those spoken by others. Another story is that she fell in love with the beautiful youth Narcissus who spurned her and caused her to shrivel up into nothing more than an echo. In other versions of the Narcissus story, Echo was alive and mourned the death of Narcissus. (17)

In ancient Greek vase painting Echo was depicted as a winged nymph with her face shrouded in a veil (picture 10).

THE GORDIAN KNOT SIGN

Most (93%) transmesenteric hernias, a type of internal hernias, in the adult postoperative population occur more than 1 month after surgery (mean, 235 days), and the most common cause of obstruction during the first postoperative month is adhesions. On physical examination, the "Gordian knot of herniated intestine" has been described, representing a tender abdominal mass. (18)

The Gordian Knot is a legend associated with Alexander the Great (picture 11). It is often used as a metaphor for an intractable problem, solved by a bold stroke ("cutting the Gordian knot"). (19)

At one time the Phrygians were without a legitimate king. An oracle at Telmissus (the ancient capital of Phrygia) decreed that the next man to enter the city driving an ox-cart should become their king. This man was a poor peasant, Gordias, who drove into town on his ox-cart. He was declared king by the priests. This had been predicted in a second way by a sign of the gods, when an eagle had landed on that ox-cart. In gratitude, his son Midas dedicated the ox-cart to the Phrygian god Sabazios (whom the Greeks identified with Zeus) and either tied it to a post or tied its shaft with an intricate knot of cornel (Cornus mas) bark. The ox-cart still stood in the palace of the former kings of Phrygia at Gordium in the fourth century BC when Alexander arrived, at which point Phrygia had been reduced to a satrapy, or province, of the Persian Empire. (18)

In 333 BC, while wintering at Gordium, Alexander the Great attempted to untie the knot. When he could find no end to the knot, to unbind it, he sliced it in half with a stroke of his sword, producing the required ends (the so-called "Alexandrian solution"). Once Alexander had sliced the knot with a sword-stroke, his biographers claimed in retrospect that an oracle further prophesied that the one to untie the knot would become the king of Asia. (19)
Alexander was a figure of the most outstanding celebrity, and the episode of the Gordian Knot was known to every literate person-and doubtless to many as well who were not-from the third century BC to the end of Antiquity and beyond.

HIPPOCAMPUS-A SEA-HORSE IN THE BRAIN

Hippocampi (Greek; hippos, horse; campia, wormlike\(^8\) or Greek hippos, horse; and kampos, sea monster\(^21\)) were the sea-horses that drawn the sea-chariot of Poseidon. Instead of hind legs they had tails, the spiral appearance of which gave the name to the well-known sea horses and to the hippocampus of the brain (picture 12).\(^8\)

Homer described Poseidon, who was god of horses (Poseidon Hippios) as well as of the sea, drawn by "brazen-hoofed" horses over the sea's surface, and Apollonius of Rhodes, being consciously archaic in Argonautica (iv.1353ff), describes the horse of Poseidon emerging from the sea and galloping away across the Libyan sands. In Hellenistic and Roman imagery, however, Poseidon (or Roman Neptune) often drives a sea-chariot drawn by hippocampi. Thus hippocamps sport with this god in both ancient depictions and much more modern ones, such as in the waters of the eighteenth-century Trevi Fountain in Rome surveyed by Neptune from his niche above.\(^22\)

LABYRINTH - LOST IN THE LABYRINTH WITH THE MINOTAUR

In Greek mythology, the Labyrinth was an elaborate structure (like the cochlea of the ear which has a mazelike form on cross-sectional images) designed and built by the legendary master engineer Daedalus for King Minos of Crete at Knossos (picture 13). Its function was to hold the Minotaur, a half man and half bull creature, eventually killed by the Athenian hero Theseus.\(^8\) Daedalus had made the Labyrinth so cunningly that he himself could barely escape it after he built it. Theseus was aided by Ariadne, who provided him with a skein of thread, literally the "clew", or "clue", so he could find his way out again.\(^23\)

OMPHALOCELE

In Greek mythology, Omphale was a daughter of Iardanus, either a king of Lydia, or a river-god. Omphale was queen of the kingdom of Lydia in Asia Minor; according to BibliothèqueBibliothèke she was the wife of Tmolus, the oak-clad mountain king of Lydia; after he was gored to death by a bull, she continued to reign on her own. Diodorus Sicilus provides the first appearance of the Omphale theme in literature, though Aeschylus was aware of the episode. The Greeks did not recognize her as a goddess.
In one of many Greek variations on the theme of penalty for "inadvertent" murder, for his murder of Iphitus, the great hero Heracles, whom the Romans identified as Hercules, was, by the Oracle's command, remanded as a slave to Omphale for the period of a year, the compensation to be paid to Eurytus, who refused it. The theme, inherently a comic inversion of gender roles, was not illustrated in Classical Greece. Plutarch, in his vita of Pericles, 24, mentions lost comedies of Kratinos and Eupolis, which alluded to the contemporary capacity of Aspasia in the household of Pericles and to Sophocles in *The Trachiniae* it was shameful for Heracles to serve an Oriental woman in this fashion, but there are many late Hellenistic and Roman references in texts and art to Heracles being forced to do women's work and even wear women's clothing and hold a basket of wool while Omphale and her maidens did their spinning, as Ovid tells: Omphale even wore the skin of the Nemean Lion and carried Heracles' olive-wood club (picture 14). Unfortunately no full early account survives, to supplement the later vase-paintings.

But it was also during his stay in Lydia that Heracles captured the city of the Itones and enslaved them, killed Syleus who forced passersby to hoe his vineyard, and captured the Cercopes. He buried the body of Icarus and took part in the Calydonian Boar Hunt and the Argonautica.

After some time, Omphale freed Heracles and took him as her husband.

Omphale's name, connected with *omphalos*, a Greek word meaning *navel* (or *axis*), may represent a significant Lydian earth goddess. Heracles's servitude, a mystical marriage, thus may represent the servitude of the sun to the axis of the celestial sphere, the spinners being Lydian versions of the Moirae. Most earth goddess religions contained a priesthood which wore women's clothing, was effeminate, or involved eunuchs. The priest of Heracles, curiously, also wore female clothing, and this myth may represent an attempt to explain the fact. (24)

**A PHRYGIAN CUP IN THE ANATOMIC BED OF GALLBLADER**

A baggy, folded gallbladder on sonography or CT is thus referred to as a phrygian cap, (picture 15) which can occasionally be confused with a septated gallbladder or gallstones. (12)

In Antiquity, the Phrygian cap had two connotations: for the Greeks as showing a distinctive Eastern influence of non-Greek "barbarism" (in the classical sense) and among the Romans as a badge of liberty. The Phrygian cap identifies Trojans such as Paris in vase-paintings and sculpture, and it is worn by the syncretic Hellenistic and Roman saviour god Mithras and by the Anatolian god Attis. The twins Castor and Pollux wear a superficially similar round cap called the *pileus*. 
In Byzantium, Anatolian Phrygia lay to the east of Constantinople, and thus in this late 6th-century mosaic from Sant’Apollinare Nuovo, Ravenna (which was part of the Eastern Empire), the three Magi wear Phrygian caps, identifying them as generic "easterners". (26)

According to the legend, Midas, King of Phrygia, found himself a witness to a musical competition between Apollo, god of music, and Pan, god of goat-herds and shepherds, as they were playing the lyre and pipes, respectively. Apollo was declared the winner, but Midas unwise expressed his disagreement with the outcome. An enraged Apollo transformed Midas' ears into those of an ass, as punishment. Humbled, Midas spent the rest of his life wearing a long, baggy cap, called a phrygian cap to hide his hideous ears. (12)

The Phrygian cap that was worn by King Midas to hide the donkey ears, was first referred to in Aristophanes' Ploutos (388BC) but illustrated in vase-paintings a generation earlier. Greeks were already picturing the people of Midas wearing the tall peaked caps before the earliest surviving literary sources: a mid-sixth century Laconian cup depicts the capture of Silenus at a fountain house, by armed men in Eastern costume and pointed caps. (26)

Marsyas, a satyr from Phrygia, also lost a musical contest to Apollo. Apollo was not in a merciful mood this time, and after winning the contest, he flayed Marsyas alive. (12)

**PROTEUS SYNDROME - PROTEUS**

Proteus syndrome is a rare condition that can be loosely categorized as a hamartomatous disorder. It is a complex disorder with multisystem involvement and great clinical variability. Once thought to have neurofibromatosis, Joseph Merrick (also known as "the elephant man" and studied by Treves in the 1800s) is now, in retrospect, thought by clinical experts to actually have had Proteus syndrome. (26)

This condition is characterized by various cutaneous and subcutaneous lesions, including vascular malformations, lipomas, hyperpigmentation, and several types of nevi. Partial gigantism with limb or digital overgrowth is pathognomonic, with an unusual body habitus and, often, cerebriform thickening of the soles of the feet. Because cutaneous lesions tend to appear over time, the diagnosis may be delayed until late infancy, childhood, or even adulthood. Orthopedic complications often pose the most challenging medical problems, although vascular complications also contribute to overall morbidity. Severe disfigurement and social stigmatization are additional challenges that must be addressed. (26)

Proteus syndrome is highly variable, and is named after the Greek sea-god Proteus, (picture 16) who could change his shape. (27)

In Greek mythology, Proteus (#####) is an early sea-god, one of several deities whom Homer calls the "Old Man of the Sea", whose name suggests the "first", as protagonos
is the "primordial" or the "firstborn". He became the son of Poseidon in the Olympian theogony ( Odyssey iv. 432), or of Nereus and Doris, or of Oceanus and a Naiad, and was made the herdsman of Poseidon's seals, the great bull seal at the center of the harem. He can foretell the future, but, in a mytheme familiar from several cultures, will change his shape to avoid having to; he will answer only to someone who is capable of capturing him. From this feature of Proteus comes the adjective protean, with the general meaning of "versatile", "mutable", "capable of assuming many forms". "Protean" has positive connotations of flexibility, versatility and adaptability. (28)

According to Homer ( Odyssey iv:412), the sandy island of Pharos situated off the coast of the Nile Delta was the home of Proteus, the oracular Old Man of the Sea and herdsman of the sea-beasts. In the Odyssey, Menelaus relates to Telemachus that he had been becalmed here on his journey home from the Trojan War. He learned from Proteus' daughter, Eidothea ("the very image of the Goddess"), that if he could capture her father he could force him to reveal which of the gods he had offended, and how he could propitiate them and return home. Proteus emerged from the sea to sleep among his colony of seals, but Menelaus was successful in holding him, though Proteus took the forms of a lion, a serpent, a leopard, a pig, even of water or a tree. Proteus then answered truthfully, further informing Menelaus that his brother Agamemnon had been murdered on his return home, that Ajax the Lesser had been shipwrecked and killed, and that Odysseus was stranded on Calypso's Isle Ogygia. (28)

SIRENOMELIA - SIRENS

The Greek suffix -melia refers to limbs and sirenomelia to the mermaidlike congenital fusion of the lower extremities. (12)

In Greek mythology, the Sirens ( picture 17) (Greek singular: Seir#n; Greek plural: Seir#nes) were three dangerous bird-women, portrayed as seductresses. Roman poets placed them on an island called Sirenum scopuli. In some later, rationalized traditions the literal geography of the “flowery” island of Anthemoessa, or Anthemusa, is fixed: sometimes on Cape Pelorum and at others in the Sirenusian islands near Paestum or in Capreae. All such locations were surrounded by cliffs and rocks. Sailors who sailed near were compelled by the Sirens’ enchanting music and voices to shipwreck on the rocky coast. When the Sirens were given a parentage they were considered the daughters of the river god Achelous, fathered upon Terpsichore, Melpomene, Sterope, or Chthon, the Earth, in Euripides’ Helen 167, where Helen in her anguish calls upon "Winged maidens, daughters of the Earth". Although they lured mariners, for the Greeks the sirens in their “meadow starred with flowers” were not sea deities. Roman writers linked the Sirens more closely to the sea, as daughters of Phorcys. (29)

Odysseus was curious as to what the Sirens sounded like, so, on Circe’s advice, he had all his sailors plug their ears with beeswax and tie him to the mast. He ordered his
men to leave him tied to the mast, no matter how much he would beg. When he heard their beautiful song, he ordered the sailors to untie him but they bound him tighter. When they had passed out of earshot, Odysseus demonstrated with his frowns to be released (Odyssey XII, 39). (29)

In Argonautica, (4.891-919) Jason had been warned by Chiron that Orpheus would be necessary in his journey. When Orpheus heard their voices, he drew out his lyre and played his music more beautifully than they, drowning out their voices. One of the crew, however, the sharp-eared hero Butes, heard the song and leapt into the sea, but he was caught up and carried safely away by the goddess Aphrodite. (29)

SYRINGOMYELIA -SYRINX

Syringomyelia is a composite from the Greek words syrinx and myelos, the latter referring to the spinal cord. (12)

One of the famous myths of Pan involves the origin of his pan flute, fashioned from lengths of hollow reed. Syrinx was a lovely water-nymph of Arcadia, daughter of Landon, the river-god. As she was returning from the hunt one day, Pan met her (picture 18). To escape from his importunities, the fair nymph ran away and didn't stop to hear his compliments. He pursued from Mount Lycaeum until she came to her sisters who immediately changed her into a reed. When the air blew through the reeds, it produced a plaintive melody. The god, still infatuated, took some of the reeds, because he could not identify which reed she became, and cut seven pieces (or according to some versions, nine), joined them side by side in gradually decreasing lengths, and formed the musical instrument bearing the name of his beloved Syrinx. (30)

The word syringe was derived from this word (31)

TALUS BONE - TALOS (Latin TALUS): THE FIRST "ROBOT"

The talus bone or astragalus is a bone in the tarsus of the foot that forms the lower part of the ankle joint through its articulations with the lateral and medial malleoli of the two bones of the lower leg, the tibia and fibula. Within the tarsus, it articulates with the calcaneus below and navicular in front. Through these articulations, it transmits the entire weight of the body to the foot.

The second largest of the tarsal bones, it is also one of the bones in the human body with the highest percentage of its surface area covered by articular cartilage. Additionally, it is also unique in that it has a retrograde blood supply, i.e. arterial blood enters the bone at the distal end.
In the Cretan tales incorporated into Greek mythology, Tálos (Greek #; Latin Talus) or Tálon (Greek #) was a giant man of bronze (picture 19) who protected Europa in Crete, from pirates and invaders by circling the island's shores three times daily while guarding it. (32)

In the Cretan dialect, talôs was the equivalent of the Greek hêlios, the sun: the lexicon of Hesychius of Alexandria notes simply "Talos is the sun". In Crete Zeus was worshipped as Zeus Tallaios, "Solar Zeus", absorbing the earlier god as an epithet in the familiar sequence. The god was identified with the Tallaia, a spur of the Ida range in Crete. On the coin from Phaistos (illustration) he is winged; in Greek vase-paintings and Etruscan bronze mirrors he is not. The ideas of Talos vary widely, with one consistent detail: in Greek imagery outside Crete, Talos is always being vanquished: he seems to have been an enigmatic figure to the Greeks themselves.

Talos is described by Greeks as either a gift from Hephaestus to Minos, forged with the aid of the Cyclopes in the form of a bull or a gift from Zeus to Europa. Or he may have been the son of Kres, the personification of Crete;[10] In Argonautica Talos threw rocks at any approaching ship. In the Byzantine encyclopia The Suda, Talos is said, when the Sardinians did not wish to release him to Minos, to have heated himself red-hot by jumping into a fire and to have clasped them in his embrace. (32)

Talos had one vein, which went from his neck to his ankle, bound shut by only one bronze nail. The Argo, transporting Jason and the Argonauts, approached Crete after obtaining the Golden Fleece. As guardian of the island, Talos kept the Argo at bay by hurling great boulders at it. According to Apollodorus, Talos was slain either when Medea the sorceress drove him mad with drugs, or deceived him into believing that she would make him immortal by removing the nail. In Argonautica, Medea hypnotized him from the Argo, driving him mad with the keres she raised, so that he dislodged the nail, and "the ichor ran out of him like molten lead", exsanguinating and killing him. The story is somewhat reminiscent of the story regarding the heel of Achilles. (32)

BLOOD VESSELS -VESSELS

In a general sense, a vessel is defined as a hollow utensil for carrying something: a cup, a bucket, a tube. Blood vessels, are hollow utensils for carrying blood. Located throughout the body, blood vessels are hollow tubes that circulate your blood.

In ancient Greece, vessels (picture 20) were made in great quantities and in diverse materials, including terracotta, glass, ivory, stone, wood, leather, bronze, silver, and gold. (33)

Thanks to its relative durability, pottery is a large part of the lovely archaeological record of Ancient Greece, and because there is so much of it (some 100,000 vases are recorded in the Corpus vasorum antiquorum) it has exerted a disproportionately large influence...
on our understanding of Greek society. Little survives, for example, of ancient Greek painting except for what is found on the earthenware in everyday use, so we must trace the development of Greek art through its vestiges on a derivative art form. Nevertheless the shards of pots discarded or buried in the first millennium BC are still the best guide we have to the customary life and mind of the ancient Greeks. The pottery also has wonderful designs, such as the key symbol. Some were beautifully handcrafted, while others were unique and their patterns could not be described. (34)

Most other surviving pottery, however, had a practical purpose which determined its shape. The names we use for Greek vase shapes are often a matter of convention rather than historical fact, a few do illustrate their own use or are labeled with their original names, others are the result of early archaeologists attempt to reconcile the physical object with a known name from Greek literature - not always successfully. To understand the relationship between form and function Greek pottery may be divided in four broad categories: storage and transport vessels, mixing vessels, jugs and cups, vases for oils, perfumes and cosmetics. (34)

The vases of precious metals have largely vanished because they were melted down and reused, but ancient literature and inscriptions testify to their existence. (33)

The images depicted on the ancient earthenware vessels provide us with information on the educational system, the theatre, religion and celebrations, man's every day life in general. They constitute an essential source of information about the private and public life of the ancient Greeks. (35)

EOSINOPHILIC GRANULOMA - EOSINOPHILIC PNEUMONIA -EOS

Eosinophilic granuloma is a term reserved for the most often and benign form of disorder known as Langerhans cells histiocytosis. It is a disease of children and adolescents that very rarely affects adults, representing the localized form of a pathological proliferation of histiocytes in bones, like skull and long bones. (36)

The term "eosinophilic granuloma" was coined by Lichtenstein and Jaffe in 1940 when they reported two cases of solitary lytic bone lesions consisting microscopically of clusters of phagocytic cells and significative collections of eosinophils (36,37). Named after Eos, eosinophil granulocytes appear brick-red when stained with eosin. (8)

Eosinophilic pneumonia (also called pulmonary infiltrates with eosinophilia syndrome) comprises a group of lung diseases in which eosinophils (a type of white blood cell) appear in increased numbers in the lungs and usually in the bloodstream. Certain drugs, chemicals, fungi, and parasites may cause eosinophils to accumulate in the lungs. Eosinophils participate in the immune response of the lung. The number of eosinophils increases during many inflammatory and allergic reactions, including asthma,
which frequently accompanies certain types of eosinophilic pneumonia. Eosinophilic pneumonia differs from typical pneumonias in that there is no suggestion that the tiny air sacs of the lungs (alveoli) are infected by bacteria, viruses, or fungi. However, the alveoli and often the airways do fill with eosinophils. Even the blood vessel walls may be invaded by eosinophils, and the narrowed airways may become plugged with an accumulation of secretions (mucus) if asthma develops. (38)

**Eos** (Greek ###, or ### "dawn") is, in Greek mythology, the Titanic goddess of the dawn, who rose from her home at the edge of Oceanus (picture 21), the Ocean that surrounds the world, to herald her brother Helios, the sun.

Eos is the daughter of Hyperion and Theia (or Pallas and Styx) and sister of Helios the sun and Selene the moon, "who shine upon all that are on earth and upon the deathless Gods who live in the wide heaven" Hesiod told in *Theogony* (371-374). The generation of Titans preceded all the familiar deities of Olympus, who supplanted them.

As the dawn goddess, Eos with "rosy fingers" opened the gates of heaven so that Apollo could ride his chariot across the sky every day. In Homer,[3] her saffron-colored robe is embroidered or woven with flowers;[4] rosy-fingered and with golden arms, she is pictured on Attic vases as a supernaturally beautiful woman, crowned with a tiara or diadem and with the large white-feathered wings of a bird. (39)

**PRIAPOS-PRIAPISM**

In Greek mythology, **Priapos** (Ancient Greek ######), Latinized as **Priapus**, was a minor rustic fertility god, protector of livestock, fruit plants, gardens and male genitalia. His Roman equivalent was **Mutunus Tutunus**. He was best noted for his huge, permanent erection, (picture 22) which gave rise to the medical term priapism. He was described as the son of Aphrodite by Dionysus, perhaps as father or son of Hermes, son of Zeus or Pan, depending on the source. According to legend, Hera cursed him with impotence, ugliness and foul-mindedness while he was still in Aphrodite's womb, in revenge for the hero Paris having the temerity to judge Aphrodite more beautiful than Hera. The other gods refused to allow him to live on Mount Olympus and threw him down to Earth, leaving him on a hillside. He was eventually found by shepherds and was brought up by them. Priapus joined Pan and the satyrs as a spirit of fertility and growth, though he was perennially frustrated by his impotence. (40)
Fig. 1: Picture 3: "The Dying Achilles" marble statue [1884], by the German sculptor Ernst Gustav Herter, in Achilleion Palace, Palace of Empress Elisabeth of Austria, Corfu Greece
Arachnoidea Mater –
A cobweb in the central nervous system

Picture 4: The weaving contest of Athena and Arachne, which resulted in the metamorphosis of Arachne as the first spider, from a Corinthian aryballos, around 600 BC. Corinth Museum, Greece

Fig. 2: Picture 4: The weaving contest of Athena and Arachne, which resulted in the metamorphosis of Arachne as the first spider, from a Corinthian aryballos, around 600 BC. Corinth Museum, Greece
Fig. 3: Picture 5: The Farnese Atlas: is a 2nd-century Roman marble copy of a Hellenistic sculpture of Atlas, Naples Archaeological Museum
The original of this statue won first prize in a competition at Ephesos in which Polykleitos, Pheidias, Kresilas, Kydon and Phradmon took part. Pliny tell us of the events that took place. The Ephesians wanted a statue of an Amazon for their temple of Artemis. The most famous sculptors of Greece at the time came to Ephesos to compete with their work. They were asked by the officials to be themselves the judges and give their appraisal. They all of course voted their work as first best but Polykleitos took the most votes for second prize and he was declared the winner. Pheidias came second, Kresilas third, Kydon fourth and Phradmon fifth.
**Fig. 5:** Picture 7: Dionysos, Ariadne, satyrs and maenads. Side A of an Attic red-figure calyx-krater, ca. 400-375 BC. From Thebes.
Fig. 6: Picture 8: Marble head of the Cyclops Polyphemos, found on the Greek island of Thasos. Either from 2nd Century B.C. (if Greek original) or a later Roman.
Fig. 7: Picture 9: Medusa, by Caravaggio (1592:1600)
**Fig. 8:** Picture 10: Nymph Echo, Attic Red Figure, Hydria, Attributed to Kerch, ca 400 - 300 BC: Late Classical, British Museum, London, UK
Fig. 9: Picture 11: "Alexander and the Gordian Knot," bronze, Nathaniel Kaz
**Fig. 10:** Picture 12: Chariot of Poseidon drawn by Hippocamps, Roman mosaic C3rd A.D., Sousse Museum
Fig. 11: Picture 13A: Coin of Knossos with the Labyrinth, 470-430 BC
Picture 13B: Theseus killing Minotaur, 540-530 BC, Attic Amphora, Louvre
Fig. 12: Picture 14: Hercules and Omphale detail. Roman 3rd C mosaic from Llíria (Valencia, Spain), showing Hercules in women's clothing holding a ball of wool and Omphale wearing the lion skin and carrying the club. Limestone. National Archaeological Museum
**A PHRYGIAN CUP IN THE ANATOMIC BED OF GALLBLADER**

*Fig. 13:* Picture 15: Bust of Attis wearing a Phrygian cap (Parian marble, 2nd century AD).
**Fig. 14:** Picture16: Proteus - woodcut by Jörg Breu
Fig. 15: Picture 17: Odysseus and the Sirens, Eponymous vase of the Siren Painter, ca. 480-470 BC, (British Museum)
Fig. 16: Picture 18: Pan and Syrinx 1617-19 Peter Paul Rubens
**Picture 19**: The Giant Talos armed with a stone. Silver didrachm from Phaistos, Crete (ca. 300/280-270 BC)

**Fig. 17**: Picture 19: The Giant Talos armed with a stone. Silver didrachm from Phaistos, Crete (ca. 300/280-270 BC)
Fig. 18: Picture 20: Different types of ancient Greek ceramics vessels
**Fig. 19:** Picture 21: Eos in her chariot flying over the sea, red-figure krater from South Italy, 430–420 BC, State Collections of Antiques in the Kunstareal of Munich
Fig. 20: Priapus appeared in the entryway. On top of the doorways of the lupanar (brothels) in Pompeii were frescoes of the first century A.D. women to be found inside plying their trade on the stone couches.
Conclusion

The origin of the nomenclature used in Radiology is rarely researched. Medical etymology instilled from Ancient Greek History and Greek Mythology can be found in all specialties, such as Radiology. It would be of great interest to illuminate all of these names together with their historical or mythological derivation.

Knowing the etymology of Medical terms, the source assigned to Ancient Greek historical and mythological figures, gives a deeper understanding of their importance and clearly make us proud as Greek doctors and radiologists, of our scientific heritage.

Personal Information

References

12. Georgiades CS. Etymology of selected medical terms used in radiology: the mythologic connection. AJR 2002;178:1101 -1107
Absence of Prior Anterior Ligament Reconstruction\textsuperscript{1} Radiographics November 2007 27:e26; Published online August 21, 2007, doi:10.1148/rg.e26


17. http://ancienthistory.about.com/od/egodsandgoddesses/g/Echo.htm

18. Lucie C. Martin\textsuperscript{1}, Elmar M. Merkle\textsuperscript{1} and William M. Thompson\textsuperscript{1}. Review of Internal Hernias: Radiographic and Clinical Findings AJR 2006; 186:703-717


20. Arrian, Anabasis Alexandri (########### ##########), Book ii.3): "### ### #µ#### ### ###### ## ## #### ######### ########## ## ### ## ####### ### ### ##### ##µ##." which means "...and he offered his father's cart as a gift to king Zeus as gratitude for sending the eagle".


