

Neurological Eponyms Derived from Literature and Visual Art

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Key Words

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Abstract

Eponyms are common in medicine, and neurology is not an exception. Most neurological eponyms originate from the names of those who first described a disease or pathological condition, as well as from the names of characters from the literature and mythical or biblical heroes. The article describes en block both widespread and nowadays seldom used or even forgotten neurological eponyms derived from literature and visual art.

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Introduction

By definition, the word eponym derives from Greek *eponymos* (*epi* – upon and *onyma* – name) and means one for whom or which something is or is believed to be named. Eponyms are common in medicine, and neurology is not an exception. Most neurological eponyms are derived from the names of those who first described a disease or pathological condition, and their main function is to immortalize the greats of the profession. Along with eponyms derived from names of eminent neurologists, we can find the names of literature characters, mythical or biblical heroes. Some eponyms came from paintings.

One could discuss the usefulness of medical eponyms in today's medicine. Usually eponyms are not descriptive, confusion may also arise when two or more conditions are described by an individual, as for example Charcot, Duchenne. Other postulated negative aspects are absence of agreement upon definitions, improperly conferred eponyms, modifications due to accumulated knowledge bearing little resemblance to the original [1–3].

Along these negative aspects, eponyms create interest in medical history, add color to medical communication, deepen our knowledge and enrich our scientifically dry, literal-minded medical language. Possibly the most gripping eponyms are those derived from literature and visual art. They extend our knowledge beyond pure medicine, put disease in the broader context of human culture and help to conceptualize disease using nontechnological language [1].

Of course, one could be an excellent practitioner or scientist without even having heard the old name for epilepsy or oromandibular dystonia. Yet remembrance of literary eponyms, even those not in practical use today or forgotten somewhere in the medical history, humanizes neurology and allows us to interlink science and art – the two main parts of medicine.

Let us try to find out how many neurological eponyms derived from the literature or visual art we know. Two? Five? More? This article is intended to refresh our memory by touching a nearly forgotten, however challenging corner of neurology.



Fig. 1. *Apollo Kills Achilles.* Franz Stassen, 1869 (with permission from AKG images).

Eponyms

Achilles

Probably the best-known and most widespread neurological eponym is Achilles reflex or ankle jerk. Responsible muscle and nerve are m. triceps surae and n. tibialis, respectively. The reflex name comes from Achilles' tendon (tendo calcaneus – the gastrocnemius muscle tendon inserting into the posterior surface of the calcaneus bone of the heel), so-named in association with Achilles' heel.

Achilles (Greek *Achilleus*) – the son of Peleus, King of Thessaly, and sea goddess Thetis – was the greatest warrior among the Greeks in the Trojan War and the slayer of Hector [4]. Achilles was vulnerable only in the heel. Thetis wanted to make her son immortal and dipped him into the river Styx holding him by the heel. Thus, only one place was left untouched by the water on Achilles' body making him vulnerable. Achilles was killed by a poisoned arrow targeted by Apollo and shot by Paris at the hero's heel (fig. 1).

Ammon

Ammon's horn (cornu Ammonis) – name for hippocampus (also eponym), a structure in the floor of each lateral ventricle of the brain (part of the limbic system of the brain).



Fig. 2. Ammon on the Aufidius altar (Crip-ta di Balbo, Roma). www.livius.org.



Fig. 3. Sea horse (Hippocampus).

Ammon – the Greek name of an Egyptian oracle god Amun, whose main sanctuary was at Siwa in the Libyan Desert. Ammon (Amun) – the king of Egyptian gods, was the deity of fecundity, later as Ammon Ra – the God of Sun, the patron of Egyptian pharaohs. The cult of Ammon spread to the Greek world (Zeus-Ammon), Macedonia (Alexander the Great claimed to be his son) and ancient Rome (Jupiter-Ammon) [5, 6].

Ammon was considered capable of assuming the form of a ram and is often depicted with a ram's head and large curved horns (fig. 2). The basis for the association is the curved nature of the hippocampus.

Hippocampus

The term hippocampus (from Greek *hippokampos* – sea horse, from *hippos* horse + *kampos* sea monster) is derived from the shape of a mythical half-horse and half-fish sea monster (fig. 3), and the hippocampus resembles this structure. Also gyrus parahippocampalis; sulcus hippocampi.

Atlas

Atlas (Latin from Greek *Atlant*, *Atlas*) is the first cervical vertebra, carrying the weight of the head by articulating with the occipital bone at the base of the skull.

Named by Vesalius [7] for the mythological Titan Atlas (son of Titan and Oceanid), who, according to one story, was forced by Zeus to support the heaven on his shoulders as a punishment for taking part in the Titans' revolt against the gods. According to another story, Perseus (son

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Fig. 4. Statue of Atlas. About 100 BC.

Fig. 5. Statue of Minerva (Athena). About 400 BC.

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of Zeus and Danae) changed Atlas into a tremendous stone – the Atlas mountain – on which the heaven rests, as does the skull on the vertebral column (fig. 4).

Minerva

There is no direct neurological eponym with the name Minerva, except minerva jacked, a special cast used for high cervical instability and whiplash injuries [1]. Nevertheless, this name relates to neurology, as Minerva (Greek Athena), the goddess of wisdom sprang fully grown and in full armor from the head of Jupiter (Zeus), which was struck by Vulcan (Hephaestus) (fig. 5).

Arachne

Arachnoidea (from Greek *arachne* – spider, spider's web) – thin middle layer of the three meninges, which cover the brain and spinal cord.

Arachne – a mythological woman from Lydia was very skillful in weaving. She claimed that her weaving skill was greater than Athena's, who, on hearing this boast, challenged her to a contest. Athena took offence and transformed Arachne into a spider because Arachne's glamor-

ous weaving was not only comparable to hers, but also depicted love affairs of gods (fig. 6).

Syrinx

Syrinx (from Greek *syrinx* – tube, pipe) – abnormal fluid-containing cavity in the spinal cord in the setting of syringomyelia. The term syrxinx was applied by Ollivier d'Angers in 1824 [7].

Syrinx – the mythological Arcadian nymph. She was pursued by satyr Pan and in an attempt to escape from him called for help and was transformed into a reed (fig. 7). As he was unable to distinguish her from other reeds, Pan cut a tuft of them and made a pipe – panpipe – a musical instrument.

Hercules

Herculean disease (Hercules morbus) – the ancient name for epilepsy.

Hercules (from Greek *Herakles*) – the mythical Greek hero (son of Zeus and Alcmene) renowned for his exceptional strength (fig. 8). On the paroxysm of madness (sent by Hera), Hercules killed his wife and three sons. To ex-



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Fig. 6. *Weavers.* Diego Velázquez, 1657(?). Detail. Prado, Madrid. In the background of the painting, we can see a depiction of Arachne's and Athena's contest.

Fig. 7. *Faun Winding Syrx on the Sea.* Franz von Stuck, 1914. Detail. Villa Stuck, München.



Fig. 8. Hercules fighting the Nemean Lion. Greek vase painting. About 500 BC. Detail.

piate this horrible sin, he was forced to perform 12 labors imposed on him by his cousin, King Eurystheus [4].

The name Herculean disease is derived from the belief that vigorous strength and violence (madness, cloudiness of the mind) of Hercules springs up during the epileptic fits [1]. Another version denies that Hercules suffered from epilepsy and believes that the name of the hero was meant to indicate the greatness of the disease [8].

Ondine's Curse

Ondine's curse – an eponym for the congenital central hypoventilation (central apnea), traditionally defined as the failure of automatic control of breathing [9, 10]. The eponym is also used for sleep apnea.

The name was coined with reference to Giraudoux's play *Ondine* (1939). Ondine, a water nymph, punished her unfaithful husband knight Hans by depriving him of the ability to breathe.

A similarly old myth tells that Ondine deprived her husband of the ability to breathe every time he goes to sleep and therefore sent him to death.

Pickwick

Pickwickian syndrome – in some way synonymous with obstructive sleep apnea syndrome – consists of marked somnolence, respiratory disturbances during sleep, excessive appetite, obesity, pulmonary hypertension, polycythemia, cyanosis. Sir William Osler coined the name pickwickians for obese, sleepy people [1, 11, 12].

The eponym derived from a character of Charles Dickens' novel *The Pickwick Papers* (1837) – the fat boy Joe (depicted in chapter 54 of the novel) – who often was overwhelmed by sudden irresistible sleep spells.

Sir Aguecheek

Aguecheek's disease – chronic portosystemic encephalopathy.

The name derived from Shakespearean *Twelfth Night* (1602). The character in question is Sir Andrew Aguecheek, a beef lover and drinker, who exhibits substantial fluctuations of his mind after having been drunk. Another character of the play – Sir Toby Belch – rightly suggested liver disease. The eponym Aguecheek's disease was introduced by W.H.J. Summerskill to name chronic portosystemic encephalopathy [13].

Lazarus

Lazarus complex (Lazarus syndrome) – a number of postresuscitatory (usually after cardiac arrest) symptoms that occur due to prolonged cerebral anoxia mostly of temporal lobes: 'moving through a tunnel', 'seeing a light', 'feeling outside one's body' etc. Anxiety, depression, insomnia, nightmares, delusions could also manifest [7, 14].

Lazarus movement – spontaneous opisthotonos, raising and flexion of the arms, head turning, twitching of shoulders rarely occurring in the brain-dead people after mechanical ventilation has been stopped, perhaps as a result of spontaneous discharge of cervical motor neurons [15].

Named from the biblical Lazarus of Bethany, the brother of Martha and Mary, who was raised from the dead after four days by Jesus (John 11:1–44).

St. Paul

St. Paul's evil – the old Irish name for epilepsy, supposing that St. Paul was ill with it. The episode happened during St. Paul's journey to Damascus, and was interpreted as a complex partial seizure, especially in the context of recurrent 'thorn in the flesh' mentioned in St. Paul's letters [16].

The other antique eponyms for epilepsy – St. John's evil (St. John's disease), St. Valentine's disease.

St. Vitus

St. Vitus' dance – chorea sancti viti (a term coined by Paracelsus) – for a long time (and until now) was a source of misunderstandings as it was equally assumed to be epilepsy, chorea and hysteria [17, 18]. The assumption with epilepsy relates to the famous engravings after Pieter Brueghel's drawings known as *Pilgrimage of the Epileptics to the Church at Molenbeek* (fig. 9). Very largely employed identification of St. Vitus' dance with Sydenham's (rheumatic) chorea is believed incorrect as St. Vitus'



Fig. 9. *Pilgrimage of the Epileptics to the Church at Molenbeek.* Engraved by Hendrick Hondius after Pieter Brueghel's drawing, 1642. Detail.

dance represents a completely different condition – dancing mania (a form of mass hysteria widespread in 14th and 15th Century Central Europe) – and has nothing to do with rheumatism.

St. Vitus was an early Sicilian Christian martyr at the time of the Roman Emperor Diocletian (about 300 A.D.). According to the legend, he performed a lot of miracles and healings that led to St. Vitus' reputation as the patron of nervous disorders. He was especially successful in healing unsteady step, trembling limbs, limping knees, paralyzed hands etc, i.e. conditions that mimicked dance movements. Sufferers of such conditions prayed successfully to the saint for relief at his chapels in Germany, Czech Republic and other countries [19].

Robin Hood

Robin Hood syndrome – cerebral steal syndrome, inverse cerebral steal: deprivation of blood (oxygen) to some areas of the brain due to occlusion, vasoconstriction or vasodilatation of the extracerebral as well as intracerebral arteries [1].



Fig. 10. Robin Hood. From: Louis Rhead: Bold Robin Hood and His Outlaw Band. New York, Blue Ribbon Books, 1912.

Named after the legendary folk hero Robin Hood from Sherwood Forest in Nottinghamshire who gave to the poor what he robbed from the rich (fig. 10).

Mona Lisa

Mona Lisa syndrome – the facial muscle contracture which develops after facial nerve palsy (Bell's palsy).

Named after the Mona Lisa smile (fig. 11) in the well-known portrait by Leonardo da Vinci *Mona Lisa (La Gioconda)* [3].

Pieter Brueghel

Brueghel syndrome – cranial dystonia (blepharospasm, hemifacial spasm, oromandibular dystonia).

Named after a few paintings of a Flemish painter Pieter Brueghel the elder (1525/30 –1569) depicting different dystonic facial expressions [20] (fig.12).

Alice in Wonderland

Alice in Wonderland syndrome – depersonalization, altered perceptions of body image, visual illusions, feel-



Fig. 11. *Mona Lisa (Gioconda)*. Leonardo da Vinci, 1503–1505. Detail. Paris, Louvre.



Fig. 12. *Yawning Man*. Pieter Brueghel, 1564. Detail. Brussels, Musées Royaux des Beaux-Arts.

ings of levitation, metamorphosis. The syndrome could occur as migraine aura, epilepsy (simple or complex partial epileptic seizures), also in hypnagogic, delirious states, encephalitis, cerebral lesions, drug intoxication, schizophrenia [21–24].

The name of the syndrome is derived from a character from Lewis Carroll's (C.L. Dodgson) novel *Alice's Adventures in Wonderland* (1865), graphically illustrated by Sir John Tenniel (fig. 13).

Humpty Dumpty

The name of the anthropomorphized egg Humpty Dumpty (fig. 14) from a different novel by Lewis Carroll *Through the Looking-Glass and What Alice Found There* (1872) sometimes is used to name some confused disturbances of cerebral blood flow (for example inverse cerebral steal) – Humpty Dumpty phenomenon [1].

It has recently been suggested [25] that the Humpty Dumpty phenomenon may refer to prosopagnosia, a form of visual agnosia, characterized by impaired recognition of familiar faces.

Straw Peter

Straw Peter syndrome – hyperactive child syndrome, attention deficit hyperactivity disorder.

The eponym derived from the main character of the book *Struwwelpeter* written by the 19th century German

children writer and pediatrician Heinrich Hoffmann [1]. The boy named Straw Peter (Struwwelpeter) (fig. 15) and his friends excellently represent all main features of hyperactive child syndrome (attention deficit hyperactivity disorder): hyperkinesias (fidgets with hands and feet), dif-

ficulty in sustaining attention, impulsiveness, aggressiveness, learning difficulties, etc.

Baron Munchausen

Munchausen's syndrome – repetitive simulation of severe organic disease leading to numerous consultations, hospitalizations and unnecessary operations.

The term was coined by Richard Asher [26]. Three types of syndrome could be defined: (1) abdominal, (2) hemorrhagic and (3) neurological. The last presents with complaints of various headaches, disturbances of consciousness, pseudoepileptic fits, etc.

The name of the syndrome is derived from Baron Karl Friedrich Hieronymous von Münchhausen (1720–1797) a real man whose fictional adventures were primarily depicted by the German writer R.E. Raspe (1785) and later by Gottfried August Bürger (1786) and others (fig. 16).

Epilogue

Habent sua fata libelli. The same could be said about literary eponyms. Some of them almost disappeared in the history of neurology, others are so deeply rooted in



Fig. 13. Alice in Wonderland. Original illustration by Sir John Tenniel, 1865.



Fig. 14. Humpty Dumpty. Original illustration by Sir John Tenniel, 1872.



Fig. 15. Straw Peter (Struwwelpeter). Original illustration from Heinrich Hoffmann's book.



Fig. 16. Baron Munchausen. From: *The Travels and Surprising Adventures of Baron Munchausen*, illustrated by G. Cruikshank.

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