

## HISTORICAL NOTE

# Pan, Syrinx and syringomyelia

## Pan, Syrinx e siringomielia

Leonardo Palacios-Sánchez<sup>1</sup>, Juan Sebastián Botero-Meneses<sup>1</sup>, María Camila Vélez-Flórez<sup>2</sup>

### ABSTRACT

Many myths and legends have had a deep influence on modern language, and on modern medical vernacular. The terms “syrinx” and “panic” are two of the most characteristic examples and their use in neurology and other specialties is well known. This article reviews the history of these words in Greek mythology and their use in modern medicine. It is known by very few that clinical symptoms or conditions, such as syringomyelia and panic attacks, have a mythological origin in their definition and naming.

**Keywords:** history of medicine; mythology; syringomyelia.

### RESUMO

Muchos mitos y leyendas han tenido una profunda influencia sobre el lenguaje y el uso del argot médico moderno. Los términos “syrinx” y “pánico” son dos de los ejemplos más característicos y su uso en neurología y otras especialidades es bien conocido. Este artículo revisa la historia de estas palabras en la mitología griega y su uso en la medicina moderna. Es conocimiento de pocos que síntomas o condiciones como la siringomielia o los ataques de pánico, tienen un origen mitológico en su definición y denominación.

**Palabras clave:** historia de la medicina; mitología; siringomielia.

In Greek mythology, the god Pan represents the vital principle of both conservation and reproduction<sup>1</sup>.

He is depicted as having a man's body down to the waist, and goat's legs and hooved feet. He also has horns, pointy ears, a beard and a tail<sup>1</sup>. When he was born, his mother thought he was so grotesque that she abandoned him on a mountain. Hermes (Mercury to the Romans), his father, took him to Olympus to entertain Zeus and his heavenly court<sup>2</sup>.

Pan lived in Arcadia looking after sheep herds, helping the hunters, enjoying parties and encounters in which he drank a lot of wine and chased mortals and nymphs alike, in order to have intercourse with them. He enjoyed napping, something he did daily. What he did not forgive for any reason, was to be disturbed while he slept. Anyone who dared to wake him became prey to his dreaded persecution with tremendous cries that caused true horror and fear in the victim<sup>1,2</sup>.

Among the numerous women he courted were mortals, gods and nymphs. The moon goddess Selene, the nymphs Echo, Eupheme and Pitys were only some of the satyr's conquests. However, we will focus on one of his most-remembered paramours, a wood nymph called Syrinx. Pan felt instantly and tremendously attracted to Syrinx, so much so

that he fell in love. Pan pursued Syrinx all over including, one day, to the bank of the Ladon river.

When he was just about to throw himself at her, the nymph transformed herself into hollow water reeds. The transformation rendered Pan unable to distinguish her from the other river plants. Full of woe and melancholy, the satyr cut several of the reeds he found, tied them together with wax and threads, and constructed a flute, known from that day forward as the *pipes of Syrinx* or a *Pan flute* (Figure).

The tragedy of Pan and Syrinx was one of the stories that Hermes, messenger of the gods, told on his journey to rescue one of the many mortal and very beautiful lovers of Zeus, Io. Io was kidnapped by Hera, Zeus's very resentful wife. Hera kept her under the protection of Argos, the guardian with one thousand eyes. Argos, always vigilant, was instructed by Hera not to let Zeus anywhere near Io. The king of the gods, entrusted his son Hermes with the task of rescuing his darling Io. Gently playing a Pan flute, Hermes approached Argos to tell him stories. When he told the guardian the story of the poor nymph, Syrinx, Argos closed his one thousand eyes, fell asleep and was killed by the cunning young god, which allowed the latter to rescue Io and return her to his father. The eyes of the fallen Argos were kept by Hera, and transferred onto the tail feathers of the peacock, the goddess's favorite animal<sup>3</sup>.

<sup>1</sup>Universidad del Rosario, School of Medicine and Health Sciences, Neuroscience Research Group (Neuros), Neuroscience Department, Bogotá, Colombia;

<sup>2</sup>Universidad del Rosario, School of Medicine and Health Sciences, Bogotá Colombia.

**Correspondence:** Leonardo Palacios-Sánchez; Carrera 24 # 63c-69, Universidad del Rosario, Quinta Mutis, School of Medicine and Health Sciences; E-mail: leonardo.palacios@urosario.edu.co

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Figure. Pan and Syrinx, by Henry d'Arles.

The tale of Syrinx's desperate escape and her eternal persecutor, have resulted in a number of cultural consequences. As usual, the characteristics bestowed upon the gods and creatures of myths derive from the same virtues, or defects, that the Greeks saw in themselves, as well as from their eagerness to explain the world. Pan was held responsible for the terrifying sounds of forests, and that is where the word "panic" comes from<sup>4</sup>.

In relation to Syrinx and her modern link to neuroanatomy, the ependymal canal or medullary central canal is also called a syrinx, and syringomyelia is a condition in which a cyst or a tubular cavity forms within the spinal cord<sup>5</sup>.

The first description of this medullary cavitation occurred in 1546 by French anatomist Charles Estienne (1504-1564)

and was published in the book of his authorship, *De dissectione partium corporis humani libri tres*. The clinical manifestations of this condition were published in 1804 by French physician Antoine Portal (1742-1832) and in 1824, Olliver d'Angers first used the term "syringomyelia" in his *Traité de la moelle epinière et ses maladies*<sup>5</sup>.

This tubular cavity in the spinal cord arises from an obstruction of normal CSF transit through subarachnoid space - as explained in the intramedullary pulse pressure theory proposed by Greitz. Chiari type I malformation occurs in 50% of the cases, 0.5-4.5% in spinal cord trauma, infections such as meningitis due to tuberculosis and listeria. Clinical manifestations are various, with sensory loss (93%), pyramidal signs (82%), and muscular atrophy (60%) among the most common. It is known that complete spinal cord injury doubles the risk of developing clinical syringomyelia, as well as increasing canal stenosis by 25%, and post-traumatic kyphosis. The diagnosis is confirmed with magnetic resonance imaging (MRI) and complemented with cine-MRI<sup>6</sup>.

In addition to syringomyelia, other semiological terms are derived from the etymology of the word "syrinx", such as syringomas, small cutaneous tumors of benign behavior. In the same way, an object of daily use in any hospital, such as a syringe, gets its name from the same word<sup>4,6</sup>.

Who could imagine the etymological origin of the words syrinx, syringomyelia, panic and syringe is built on very colorful characters in Greek mythology, with more than two thousand years of history, as well as the fact that it remains in use thanks to the recognition that great doctors have given it by naming anatomical structures, emotional conditions and even medical ware after it.

## References

1. Garibay K AM. Mitología griega dioses y héroes. 10a ed. México, DF: Editorial Porrúa; 1986.
2. Graves R. Dioses y héroes de la antigua grecia. 20a ed. México, DF: Editorial Porrúa; 2001.
3. Hamilton E, Savage S. Mythology. [United States]: Grosset & Dunlap; 1942.
4. Demerdash A, Loukas M, Tubbs RS. The tragedy of syrinx. Childs Nerv Syst. 2014;30(3):371-3. <https://doi.org/10.1007/s00381-014-2360-4>
5. César G, Alfredo E B, María Victoria S. Siringomielia y otras etimologías mitológicas. Buenos Aires: Sociedad Argentina de Radiología; 2008.
6. Rusbridge C, Greitz D, Iskandar BJ. Syringomyelia: current concepts in pathogenesis, diagnosis, and treatment. J Vet Intern Med. 2006;20(3):469-79. <https://doi.org/10.1111/j.1939-1676.2006.tb02884.x>