

## Gaspare Aselli's serendipity

Alberto Macciò

President of LymphoLab, Genova, Italy

### The strange and incredible history of the discovery of lymphatic circulation

We can define the history of Gaspare Aselli, an Italian surgeon and anatomist of the 17<sup>th</sup> century, as a history of love for science and research, but also as a history of friendship and respect between a Master and his Students.

Aselli was born in Cremona in 1581 into a noble and wealthy family. He soon discovered his love for the natural sciences and, after studying letters and philosophy in his hometown, he graduated in Medicine at the University of Pavia when still very young (Figure 1).

He then moved to Milan, where he also received the honorary citizenship, and, by the will of the then Spanish Governor Hurtado de Mendoza, was appointed First Surgeon of the Spanish Armies in Italy (1612-1620).

In 1624, when his work had spread in the scientific community of the time, he was appointed Professor at the University of Pavia.

He became famous for his text *De Lactibus sive Lacteis Venis Quarto Vasorum Mesaraicorum genere - Novo Invento* (1627),<sup>1</sup> where he described his experience on the anatomical dissection of lacteal vessels in the intestines of a dog (Figure 2).

In fact, these anatomical structures had already been widely described before him. Hippocrates is said to have mentioned them (R. Kapferer, 1951 - F. Perazzi, 1961)<sup>2,3</sup> and then certainly Erasistratus, who lived in the 3<sup>rd</sup> century BC, briefly but precisely described them (C. Singer, 1959),<sup>4</sup> while other important names in the history of medicine, such as Pliny the Elder, Galenus, etc., also dedicated some of their studies and reflections to these strange anatomical structures.

But why then should we refer to Aselli as the father of lymphology? Because it was, in fact, with his text that gave rise to a real movement of criticism and anatomico-functional debate began on circulation.

That is how, at the beginning of the 17<sup>th</sup> century, a new way was opened towards a correct understanding of the physiology of lymphatic vessels.

I am now going to talk to you, in a few but significant words, about the extraordi-

nary testimony given by Aselli's students (Senatore Settala and Alessandro Tadino) in a hot July 23, 1622, in Milan, where the Master wrote the opening words of Modern Lymphology.

I would like to remind you the meaning of the word *serendipity* that I used in the title of this article of mine, because we can undoubtedly maintain that Aselli was a clear example of this in his historical account.

If you are not a researcher or expert in the 18<sup>th</sup> century English literature, it is indeed difficult to know the precise meaning of the term *serendipity*. The Italian language encyclopedia Treccani defines it as the capacity or fortune to make unexpected and happy discoveries, perhaps by correctly interpreting a phenomenon, while you are looking for something else.

When it happens, this is considered such a positive sign that the same term also describes the pleasant sensation that is created by this circumstance. The biomedical researcher Julius H. Comroe gave an appropriate definition of the term: *Serendipity is looking in a haystack for a needle and discovering a farmer's daughter* (1976).

Originally, the term was coined by the writer Horace Walpole, who used it in a letter written on 28 January 1754 to Horace Mann, an English friend who lived in Florence. He said he had been inspired by the reading of the Persian fairy-tale *The tree princes of Serendip* of the Italian Cristoforo Armeno. Serendip was the ancient name of Ceylon (the current Sri Lanka). In the fairy-tale, the three characters overcome several

Correspondence: Alberto Macciò, LymphoLab Onlus, via Marcello Staglieno 10/15, 16129 Genova, Italy. E-mail: segreteria@linfologia.it

Key words: Italian Phlebolympology; history; Masters of the past; phlebology; lymphology.

Conflict of interests: the author declares no potential conflict of interests.

This paper is part of the monographic issue: '*Did the Masters of the past know the future? History and update of Italian Phlebolympology*' - Guest editor: Alberto Macciò (*Phlebology - Part I* edited by G. Agus; *Phlebology - Part II* edited by P. Bonadeo; *Lymphology* edited by F. Boccardo).

Received for publication: 30 June 2020.

Revision received: 10 July 2020.

Accepted for publication: 15 July 2020.

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*Veins and Lymphatics* 2020; 9:9255

doi:10.4081/vl.2020.9255

adversities with intuitions due to chance, but correctly interpreted thanks to their wit and spirit of observation.

They set out looking for gold, but found, for example, a very high-quality tea with a much greater value than the precious metal.

Another historical example of serendip-



Figure 1. Gaspare Aselli (1581-1625).



*So I thought that I had opened this second dog before it had had any food, and I suspected, which was true, that the obliteration of the vessels was due to the starvation of the intestines.*

To understand how much the fuse ignited by Aselli could be the starting point for many other scholars, just think that in *Experimenta nova anatomica* (1651)<sup>6</sup> Jean Pecquet described the cisterna chyli in dogs and the thoracic duct that was later also documented in humans by Thomas Bartholin in his *De lacteis thoracis in homine* (1652)<sup>7</sup> by dissecting two convicts (*in hominibus quarta ante strangulationem hora cibo potuque satiatis*) who, having had their last meal before capital punishment, had dilated lacteal vessels exactly like the well-fed dog of Aselli's experiment. In fact, they both mentioned this in their publications.

In 1625, at the age of 44, Aselli died and was buried in the church of St. Peter Celestine (in Milan).

This was written on his tombstone: *To the late lamented Gaspare Aselli, an incomparable man for the gentleness of his habits, citizen of Cremona, public professor of anatomy and surgery at the University of*

*Pavia and, during the Cisalpine war, proto-surgeon of the (Spanish) Royal Army, who died in the XLV year; Alessandro Tadini and Senatore Settala of the College of the Nobles of Milan, philosophers and physicians, to the excellent friend, very sad, they laid this stone* (XXIV April MDCXXVI).

And it is precisely in memory of these illustrious Colleagues, passionate and affectionate students of the Master, that I conclude my brief memory of the Father of Lymphology.

Indeed, it was them who had Aselli's observations published in 1627 in *De Lacteis Venis*; without their gesture and without their unconditional recognition, we would have lost the memory of it and we would have probably had to wait before reaching the same level of knowledge.

May this be a warning for the Masters of Science and Life, who shall therefore have to keep their Students in the utmost consideration, because it will be through them that the passion and accurate scientific work will be handed down to future and therefore indelible memory.

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