

From the “Artist of Death” to the “Artist of Lymphatic Mapping”

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Medical history is always surprising us. Especially when we find that something we thought was new had already been discovered a few hundred years ago. The surprise is even greater when we find that between then and now there is a bridge that leads to a dynamic evolution of the past towards the present and continuing into the future. This discovery is like a biological phenomenon that evolves like a primitive cell that differentiates itself until it matures.

History, and in particular the history of medicine, is not a static science but a dynamically evolving sequence of events with alternating protagonists, the investigators. Each successive investigator “receives the baton” from the previous one and delivers it to the next, as in a relay race. A classic example of a long-distance relay race, one that has been going on for more than 300 years, is the anatomy of the lymphatic system, the understanding of its mechanism of function and the role of the regional lymph nodes in the locoregional treatment of neoplastic disease.

Frederik Ruysch was the first investigator to understand the direction of flow of lymph fluid through valves in “aqueous and milky vessels”, and he succeeded in demonstrating their anatomy. Frederik Ruysch himself declared that he was merely gratified to observe the miracles of God, and he presented himself as a “veritable artist of death”. His displays of anatomical virtuosity contained the message that he – and he alone – was able to “hide” death to the extent that he could make a corpse look like a living body.

A few decades later, Rudolf Virchow suggested that lymph nodes function as filters in the lymphatic system and proposed the theory that lymph fluid from any given area of the body drains through lymphatics to a specific lymph node and subsequently to other lymph nodes.

Virchow’s findings inspired William Halsted to pioneer radical mastectomy with en block axillary dissection as the treatment of choice for breast cancer. From that time, lymph node surgery became an essential element of surgical oncology.

Moving forward to the era of more conservative, organ- and function-sparing surgery, Donald Morton, only a few decades ago, developed the concept of lymphatic mapping

and sentinel lymph node biopsy to stage melanoma accurately and to avoid unnecessary lymph node dissection.

Today, the selective localization and biopsy of the sentinel node, followed by the appropriate approach to the regional lymph nodes is the gold standard of locoregional treatment for breast cancer and melanoma. Consequent to the success of this strategy, this concept is gaining ground for the management of other types of cancer as well.

Frederik Ruysch, Rudolf Virchow, William Halsted and Donald Morton, four pioneers in the evolution of lymphatic history, highlight with their work the most important landmarks in the accumulation of knowledge of the lymphatic system, namely, its anatomy and physiology, and its role in the natural history of neoplastic disease. Despite the fact that they lived at different times, each created the foundations for the work of the next.

This diachronic connection of those four historic persons has been brought to light by the excellent review of de Bree and colleagues published in this issue of the journal [1]. This article is not just a simple record of the history, but it is a homage to the protagonists and is the result of the laborious effort of the authors, who have managed to illuminate the pathway that connects those four remarkable people.

Their effort has led us to the functional connection of four different periods of time in such a way that the history of the lymphatic system has merged into a single entity and takes its place as a separate chapter in the History of Medicine. This achievement must be credited to de Bree and co-authors. The ability to trace and disclose the pathway of an historical evolution not only highlights the sensitivity and persistence of the authors but also underlines their loving relationship with their cognitive object and expertise, as it is fully demonstrated here.

History teaches us, as long as we know how to read it!

References

1. de Bree E, Tsiaoussis J, Schoretsanitis G. The history of lymphatic anatomy and the contribution of Frederik Ruysch. *Hellenic J Surg* 2018;90:308-14.

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