

PIERRE DIONIS (1643–1718): SURGEON AND ANATOMIST

Dear Sir,

It has been said that the developments of the 16th century served as the stimulus for the scientific revolution that gave birth to spectacular progress during the 19th and 20th centuries. During the late Renaissance period of the 16th century, the renowned French surgeon Ambroise Pare played an enormous role in helping surgery regain the status it had lost during the Middle Ages. 17th century surgeons struggled to achieve recognition and autonomy, which served to fuel the hostility of physicians and barbers toward surgeons. Since the Middle Ages, barbers had not only cut hair, they also performed surgery. The surgeons of the 17th century no longer trimmed beards, but instead focused on their own academic advancement. Concurrently, the late 17th and early 18th centuries, in particular, were characterised by fantastic achievements in anatomy and surgery. During this time, France led Europe in such advancements, thanks, in part, to the work of Pierre Dionis (1643–1718) (Fig. 1). He was the first in a line of surgeons in Europe that became celebrated for their surgical skills and academic knowledge during the 18th century. Despite their proven skills and expertise, it was not until the end of the 18th century that surgeons were seen as being equal to physicians.



Fig. 1 Drawing of Pierre Dionis (1643–1718).

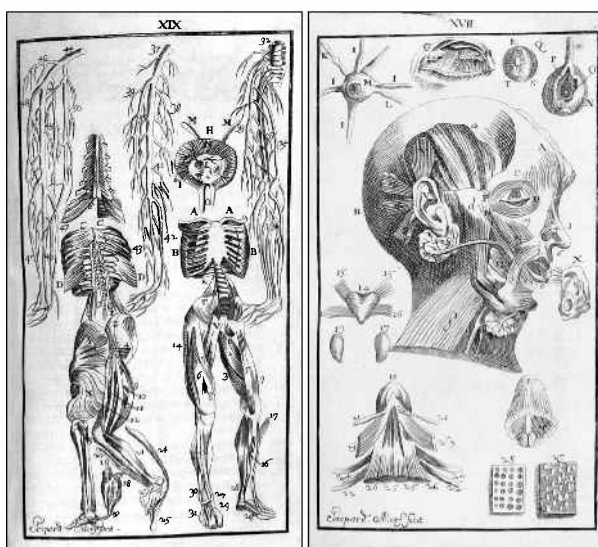


Fig. 2 Drawings from Dionis' *Anatomie de l'homme, suivant la circulation du sang, & les dernières découvertes*⁽⁶⁾ (Authors' personal collection).

Little is known of Dionis' early life. Presumably, he began practising medicine around 1661. Dionis likely received much of his surgical expertise from attending free classes that were held by the Confraternity of Saint-Come. He also attended demonstrations at an institution created by Louis XIII known as the Royal Garden.^(1,2) This institution specialised in the teaching of modern medical sciences and was a separate entity from the Paris University Faculty of Medicine. In his early 20s, Dionis was already considered a master surgeon and a prominent member of the Confraternity of Saint-Come. In 1673, Dionis was assigned by Louis XIV to perform both anatomical and surgical demonstrations at the Royal Garden. During Dionis' employment, the Royal Garden remained abreast of the latest scientific advancements and surpassed the Faculty of Medicine in the area of academic excellence. At a time when the majority of physicians believed and employed the methods of Galen's theory of circulation, Dionis was teaching the widely-accepted theory of circulation proposed by Harvey. In his book, *Anatomie de l'homme, suivant la circulation du sang, & les dernières découvertes* (The Anatomy of Man according to the Circulation of the Blood), he says of Descartes' circulation hypothesis:

"Nonetheless, we must say that this hypothesis is contrary both to reason and to experiment, but at this we should not be astonished. He did not know enough about the structure of the heart, and his meditations took up so much of his time that he was not able to obtain any great knowledge of that structure. All the same we must say that he did all a man could do, who knew nothing of the heart beyond what he knew of it."

Dionis' demonstrations often drew crowds numbering in the hundreds. He gave two ten-day lecture series at the Royal Garden; one was dedicated to anatomy, and the other to surgery. Dionis remained at the Royal Garden until 1680, when he was called upon to be surgeon to the daughter-in-law of Louis XIV, the Dauphine Marie Anna of Bavaria.^(3,4) Following this assignment, Dionis was appointed Surgeon in Ordinary to Queen Maria Theresa of Spain, the wife of Louis XIV, and also to Marie Adelaide of Savoy, who was the Duchess of Burgundy and mother of Louis XV. In 1712, Marie Adelaide of Savoy and her husband, the Duke of Burgundy, died of measles. Despite the tragic nature of this event, Louis XIV gave Dionis a reward of 3,000 pounds for his goodwill and treatment of Marie Adelaide and appointed him First Surgeon of the Royal Children's Hospital of France.⁽¹⁾ In 1715, the First Surgeon to Louis XIV, a surgeon by the name of Mareschal, asked Dionis to assist him in the treatment of Louis XIV, who was suffering from gangrenous arthritis in the lower limbs. Both Dionis and Mareschal agreed that amputation was the only option, but before the operation could be carried out, Louis XIV died on September 1, 1715. Prior to his death, Louis XIV suffered the loss of many family members.⁽⁴⁾ Almost all of his legitimate children died during childhood. Louis of France (the Great Dauphin) was his only child that survived to adulthood, but even he died in 1711 of variola.

The first evidence of a true understanding of the cause and phenomena of extrauterine pregnancy is found in the works of Pierre Dionis, published in 1718.⁽⁵⁾ Concerning the cause of tubal pregnancy, Dionis stated:

"If the egg be too big, or the diameter of the Fallopian tube be too small, the egg stops, can get no farther and shoots forth and takes root: and having the same communication with the blood vessels of the tube, that it would have had with those of the womb, had it fallen into it, is nourished and grows big to such a degree that the membrane of the tube, capable of no such dilatation as that of the uterus, breaks, and the fetus falls into the cavity of the abdomen, where it sometimes lies dead for many years, and at other times occasions the death of the mother, by breaking open its prison."

During his time as surgeon to the royal family, Dionis had the opportunity to write several books, one of which remained an influential resource in surgical technique for the next century. *Anatomie de l'Homme, suivant la circulation du sang, & les dernières découvertes* (Anatomy of Man, following the blood circulation and new discoveries) was published in 1690 and translated into several languages (Fig. 2). His most famous book, however, was published in 1707 and was titled *Cours d'opérations de chirurgie démontrées au Jardin royal* (A Course of Surgical Operations Demonstrated in the Royal Garden in Paris). This book was renowned as the first relevant surgical book since the Renaissance, and was translated into many different languages. Dionis also published the following books: *Histoire anatomique d'une matrice extraordinaire, cas de rupture au sixième mois de grossesse* (1683), *Dissertation sur la mort subite, avec l'histoire d'une fille cataleptique* (1709), and *Un traité général des accouchements qui instruit de tout ce qu'il faut faire pour être habile accoucheur* (1718).^(3,6-8)

Dionis wrote in a simple and elegant manner, reminiscent of the style of Ambroise Pare.⁽²⁾ His anatomy illustrations were of very high quality and were very informative, especially his illustrations of surgical instruments. His insight into the role of the surgeon is exemplified from the following excerpt from the first chapter of his book on surgery:

"But it must be granted that the Chirurgeon, to whose lot no more than this practical book falls, will frequently run the risque of Killing and Laming his Patients, when without the Direction of a Physician; and, even in the Presence of the Physician himself, will he not be in danger of committing Faults, if his Hand be not guided by his Head? 'Tis certain, that to walk well good eyes and agile and pliant legs are requisite, and that the one without the other is insufficient for that purpose. A blind Man, for instance, provided with good Legs, and led by a quick sighted and faithful Guide, may stumble for want of Light. So, whatever Experience a Chirurgeon may have, if he have not the Knowledge which ought to direct him in his Operations, he will work in the dark; and if he be not a good Theorician, he will never prove an able Practitioner."

Dionis passed away on December 11, 1718 (three years after Louis XIV) and was buried in Saint-Roch Church in Paris. Dionis was the father of two sons who both became prominent surgeons. The grandson of Dionis, Charles (1710–1776), became a renowned Professor of Medicine. It is the contributions of early physicians and anatomists such as Dionis on which we base our current knowledge of the human body and its treatment.⁽⁴⁾

Yours sincerely,

R Shane Tubbs

Department of Pediatric Neurosurgery
Children's Hospital
1600 7th Avenue South ACC 400
Birmingham,
AL 35233
USA
Email: rstubbs@uab.edu

Chris Groat
Marios Loukas

Department of Anatomical Sciences
St. George's University
Grenada

Mohammadali M Shoja
Mohammad R Ardalan

Tuberculosis and Lung Disease Research Center
Tabriz University of Medical Sciences
Tabriz
Iran

Aaron A Cohen-Gadol

Clarian Neuroscience Institute
Indianapolis Neurosurgical Group and Indiana University
Department of Neurosurgery
Indianapolis,
IN 34678
USA

REFERENCES

1. Laissus Y. Jardin du Roi. French Royal Botanical Garden. In: Encyclopedia of the Enlightenment. Vol 1. Chicago: Fitzroy Dearborn, 2001:736-9.
2. Simpson D. Pierre Dionis and the Franco-British dialogue in surgery. ANZ J Surg 2003; 73:336-340.
3. Boutaric JJ. Pierre Dionis, a surgeon in Molière's time. Rev Prat 2001; 51:1285-8.
4. Brockliss L, Jones C. The Medical World of Early Modern France. Oxford: Clarendon, 1997.
5. Cotlar AM. Extrauterine pregnancy: a historical review. Curr Surg 2000; 57:484-92.
6. Dionis P. [Anatomy of Man, Following the Blood Circulation and New Discoveries]. Paris: d'Houry, 1705. French.
7. Dionis P. A Course of Chirurgical Operations Demonstrated in the Royal Garden at Paris. London: Tonson, 1710.
8. Dionis P. A General Treatise on Midwifery. London: Bell, 1719.