

Jacob Winslow: distinguished Danish anatomist

This year marks the 350th anniversary of the birth of the Danish anatomist Jacob Benignus Winslow, whose name is well known to anatomists and surgeons from the eponymous foramen of Winslow, the opening between the greater and lesser peritoneal sacs.

In passing, as I teach in the Department of Anatomy at Guy's, in its air-conditioned, sanitised and (comparatively) odourless surrounds, on well-preserved, bacteria-free cadavers, I compare my happy lot to that of my forebears, working by daylight or candlelight, on putrefying corpses, and where an accidental cut on the finger might lead to infection, overwhelming sepsis and death.

Winslow was born in Odense, Denmark in 1669. Both his father and grandfather were Protestant pastors and initially Jacob was to follow their profession. However, Winslow had many arguments with a medical student friend about the pros and cons of the two professions. Eventually, Winslow opted for medicine and his friend decided on a career in theology.

Winslow commenced his medical studies in Copenhagen and became especially attracted to anatomy, since surgery and the sight of blood troubled him. He travelled to Amsterdam to work under the renowned anatomist Frederick Ruysch, famed for his injection studies and brilliant anatomical preparations. From Amsterdam, Winslow transferred to Paris, to work under Joseph Duverney at the Jardin du Roi.

Winslow and his family were Lutheran and received financial aid from the Danish crown. However, at the age of 30 years he converted to Catholicism. Following this, he lost his stipend from the Danish crown and never returned to Denmark.

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Winslow qualified Doctor of Medicine in 1703. He was appointed physician at the Bicêtre Hospital in Paris in 1709 and in 1721 he succeeded Duverney as director of the Jardin du Roi. Over his long career Winslow became recognized as one of the leading anatomy teachers in Europe.

Winslow made many important contributions to anatomical knowledge – these, of course, were published in Latin, the lingua franca of scientific studies of those times. He gave an accurate description of the muscles and showed that these do not function alone, but synergistically with their antagonists.

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In 1715 he described the communication between the greater and lesser sacs of the peritoneal cavity, defined by the inferior vena cava posteriorly and the portal triad (bile duct, hepatic artery and portal vein) in front. To this day he is commemorated by the eponym ‘the foramen of Winslow’.

The surgical importance of this opening was stressed in 1908 by James Hogarth Pringle, an Edinburgh graduate and surgeon at the Glasgow Royal Infirmary. The portal triad is occluded by pressure between the thumb and the index finger, which is passed into the foramen, to control bleeding from the liver (in trauma), or from the cystic artery (inadvertently torn during cholecystectomy). The procedure bears the eponym of ‘Pringle’s manoeuvre’.

In 1732, Winslow published his major textbook ‘Exposition Anatomique de la Structure du Corps Humain’. His name is given in its French style as Jacques-Bénigne

Winslow. The following year, an English edition appeared, translated by the London surgeon George Douglas, whose anatomist brother described the pouch of Douglas in the pelvis – another well-known eponym.

This textbook was characterized by its clear descriptive anatomy, free from theoretical conjectures. It contained much original material, especially regarding the nervous system. Thus, Winslow described ten cranial nerves (the tenth, in fact, being what today would be recognized as the first cervical spinal nerve). Much of the terminology he introduces is used today. As examples, he named the olfactory, optic, trochlear, trigeminal, auditory and hypoglossal nerves. Although much of the terminology used by Winslow differs from the terms used today, the descriptions are anatomically correct. For example, he gave good accounts of complex anatomical structures such as the third (oculomotor) cranial nerve, the sympathetic trunk with its superior, middle and inferior ganglia, and the first thoracic ganglion. Elsewhere can be found good accounts of the muscles, the development, structure and relationships of the heart, and a detailed account of the skeletal system.

An interesting facet of the man is Winslow's concern with the methods of determining the certainty of the death of a subject, which he regarded as unreliable, carrying with it the danger of premature burial or dissection. He published an account of examples of when this had occurred and he advised that burial should not take place until putrefaction became obvious. Because of Winslow's great reputation, delayed internment of the corpse became a common practice.

Winslow went on with his teaching until, eventually, he retired as a result of severe deafness, which prevented him from working. He died in Paris in 1760 in his 91st year of age. A remarkable anatomical scientist. **BJHM**

Conflict of interest: none.