Gabriele Fallopio (Fallopius): a father of modern anatomy

One of the commonest eponyms in anatomical terminology is 'the fallopian tube', used both by the lay public and the professionals. This year marks the 450th anniversary of the death of Gabriele Fallopio, known usually by his Latin name, Fallopius, who gave the first accurate description of the viscera of the female genital tract. He was one of a small group of anatomists in the 16th century who ushered in the modern era of anatomy.

For some 1500 years, surgeons and anatomists 'saw what they believed' and slavishly followed the voluminous writings of Galen (? AD 131–201), physician to the Roman emperor, Marcus Aurelius. Galen dissected and experimented extensively, mainly on the pig and the ape, since human dissection was forbidden. There was much that was excellent in his writings – good descriptions of the skeletal and muscular systems, experimental studies of the functions of the spinal cord by dividing it at successive levels in the pig, and so on. However, his views on the circulation of the blood, for example, were sheer conjecture.

In the medical schools, the Galenic texts were read out by the professor from his 'cathedra', his professorial chair, while dissection, if performed at all, was carried out by a porter. The professor, for example, would describe the kidney as being lobulated and the liver to be in five segments (as they are in the pig and hence in the Galenic writings), even though both organs on display were smooth.

A single shining exception to this rule was the work of Mondino de' Luzzi (1275–1326), generally known by the Latinised form of his name, Mundinus, who was professor of anatomy at the University of Bologna. He actually dissected the human body in person. His treatise on anatomy, published in 1316, incorporates many of his own observations, as well as discussing the application of anatomical and physiological principles to surgical practice.

However, it was Andreas Vesalius (1514–60), two centuries later, who revolutionized the traditional method of teaching and who must be recognized as the father of modern anatomy. Born in Brussels, he trained in Louvain, Paris and then Padua, where he was appointed professor of anatomy at the early age of 23 years. Remarkably, he taught by personally dissecting the human body. His students were instructed not to 'see what they believed' but to 'believe what they saw'.

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In 1543 Vesalius published his great work 'De Humani Corpora Fabrica' (The structure of the human body), in seven volumes, 700 pages and with 250 magnificent woodcuts, probably by the Flemish artist Nicholas of Calcar, a pupil of Titian. The illustrations, obviously made directly from the dissected bodies, are highly accurate and indeed are often used for teaching today. A year after publication, Vesalius retired from his chair, at the age of 29 years, and entered the service of Charles V of Spain as his surgeon. He died after being shipwrecked returning from a pilgrimage to the Holy Land.

At Padua, the chair of anatomy, now vacated by Vesalius, was taken by one of his pupils, Matteo Colombo (?1516–59), himself a sound anatomist and teacher in his master's tradition. He wrote an excellent text book (although without any illustrations) 'De re anatomica' in 1559 and corrected some of the errors in the Fabrica. Vesalius, for example, placed the lens in the centre of the eye, according to ancient and false belief. Colombo soon transferred to the chair of anatomy at Pisa and then Rome and was replaced at Padua by another disciple of Vesalius, Gabriele Fallopio, usually known by his Latinised name of Fallopius.

Fallopius was born in Modena, Italy, in 1523 and was first educated for the priesthood. He then studied medicine at Ferrara and then Pisa before becoming one of Vesalius's students at Padua. In 1551 he replaced Colombo as professor of anatomy and surgery, as well as occupying the chair of botany. It was not rare in those days for one multi-talented scholar to occupy a number of posts in this way.

In 1561, Fallopius published his textbook 'Observationes Anatomicae', which describes a number of discoveries he made in human anatomy, in the best Vesalian tradition. These include a good description of the inguinal ligament ('the Fallopian arch'), the canal for the facial nerve in the temporal bone ('the aqueduct of Fallopius'), the cochlea and the bony labyrinth of the middle ear and the chorda tympani branch of the facial nerve. He also gave a good description of the anatomy of the female genital tract, which included, of course, the anatomy of the uterine tubes. He died in office in Padua in 1562; this year is the 450th anniversary of his death.

The story of this succession of anatomical pioneers does not end here. Fallopius was succeeded in the chair in 1562 by Girolamo Fabrizi (Fabricius) (1533–1619), a pupil of Fallopius. He carried on the tradition of teaching and research using human dissection and in 1574 published his discovery of the presence of valves in the veins of the limbs. He failed to realize their functional significance at that time. However, one of his pupils was a young Englishman, William Harvey (1578–1657) who, in his subsequent work, used this discovery as an important part of his reasoning on the true nature of the circulation of the blood. BJHM

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