

# *Surgery & Anatomy*

*How the pursuit of knowledge tempered  
by spectacle, led to modern surgery*





# *Surgery in the early modern period*

*By the 16th century, the teaching of anatomy had become an important part of surgical practice.*

Surgery has a long history and writers such as Hippocrates (c.460 BC - 370 BC), Galen (129 - c.210 BC), and Celsus (53 B.C – 7 AD) attest to its practice in the ancient world. In early modern Europe surgery was not a formal discipline and was practiced 'on the side' by barber surgeons who also cut hair and shaved their customers. In 1368, the Company of Barbers formed the Fellowship of surgeons and surgeons (both male and female) learnt their craft by apprenticeship. The Company of Barber Surgeons formed in 1540, regulated surgeons practicing in the City of London.

By the 16th century, the teaching of anatomy had become an important part of surgical practice and Henry VIII's act of 1540 allowed the dissection of four executed criminals at public demonstrations. Knowledge of anatomy and surgical techniques were enhanced by the publication of anatomical books such as Vesalius' *De humani corporis fabrica* and Colombo's *De re anatomica* which refuted the many of Galen's anatomical findings. Military surgeons such as Ambroise Paré who published *De chirurgie ende alle opera*, helped to progress surgical techniques. Paré worked for four French kings and his innovations included ligation of arteries rather than cauterization during amputation and he designed the Bec de Corbeau, a precursor to the haemostat.





# The rise of the Anatomy Theatre

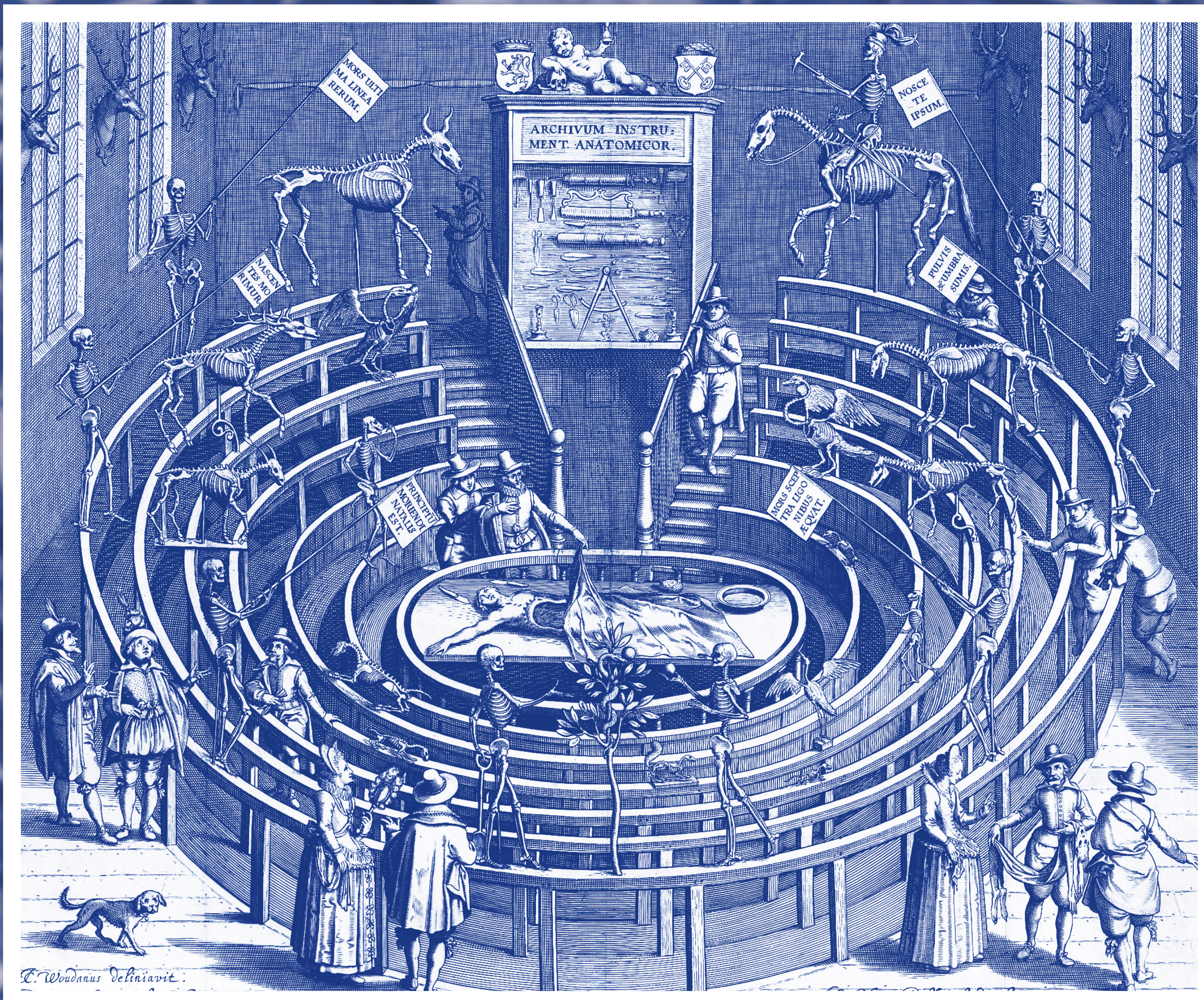
*In the 16th and 17th, a burgeoning interest in anatomy led to the construction of permanent anatomy theatres with appropriate spaces for dissection and increasingly enthusiastic audiences.*

The first public dissection was performed in 1400 in Venice by Galeazzo di Santa Sofia who had seen the procedure in Padua. Therefore, it seems fitting that the first anatomy theatre was built in Padua in 1595. The building housed spectators in six concentric galleries carved in walnut. Seating was hierarchical with the first row reserved for important personages such as professors of anatomy, rectors of the city and the nobility. The public were relegated to the fourth, fifth and six rows and some had to stand. Dissections were theatrical and those attending were entertained by musical performances between breaks. Although dissections were usually performed in the cooler months, scented candles were still used to offset the

smell of putrefaction. The Latin inscription at the theatre is apt and reads *Hic locus ubi mors est gaudet succurrere vitae* - this is the place where the dead are pleased to help the living.

Two years later, the Dutch built their own anatomy theatre in Leiden. This was the initiative of Professor of Anatomy, Pieter Pauw. It also contained six galleries but the structure was wider and flatter than the Paduan theatre. Dissections took place in Winter but the theatricality continued in Summer when curiosities such as human and animal skeletons, Egyptian mummies and Roman antiquities, were put on display.

Engraving of Anatomy theatre at Leiden', Wikimedia Commons





# *The first of the Surgical Colleges*

*In 1745, the Company of Surgeons was formed when it gained a Royal Charter in 1800, it became the Royal College of Surgeons.*

Anatomy and surgery are inextricably linked and with more opportunities to dissect cadavers and new surgical techniques, surgeons were increasingly seen as scientists. As the apprenticeship system began to decline, there was a greater demand for anatomy based surgical courses. The decline of apprenticeships also meant that women no longer had access to surgery.

In 1764, John Hunter who was an army surgeon, established an anatomy course to train surgeons. Hunter learnt anatomy at his brother's London anatomy school. After leaving the army, he worked on tooth transplants with dentist, James Spence. His anatomy school contained specimens showing the anatomy of humans and other vertebrates. He also illegally obtained the body of the Irish giant, Charles Byrne and displayed his skeleton in his museum. Hunter was appointed surgeon to King George III and most of his collection is in the Hunterian Museum in London.

In 1745, the Company of Surgeons was formed when it gained a Royal Charter in 1800, it became the Royal College of Surgeons. Qualifications were now required for surgical practice and from the late 18th century, universities such as Edinburgh, London and Glasgow began to include courses for surgery. Courses tended to vary and by 1848 for example, Edinburgh had the best reputation for a well-organized and thorough surgical course.



Hunterian Museum, London – showing skeleton of 2.31m giant, Charles Byrne, Wikimedia Commons

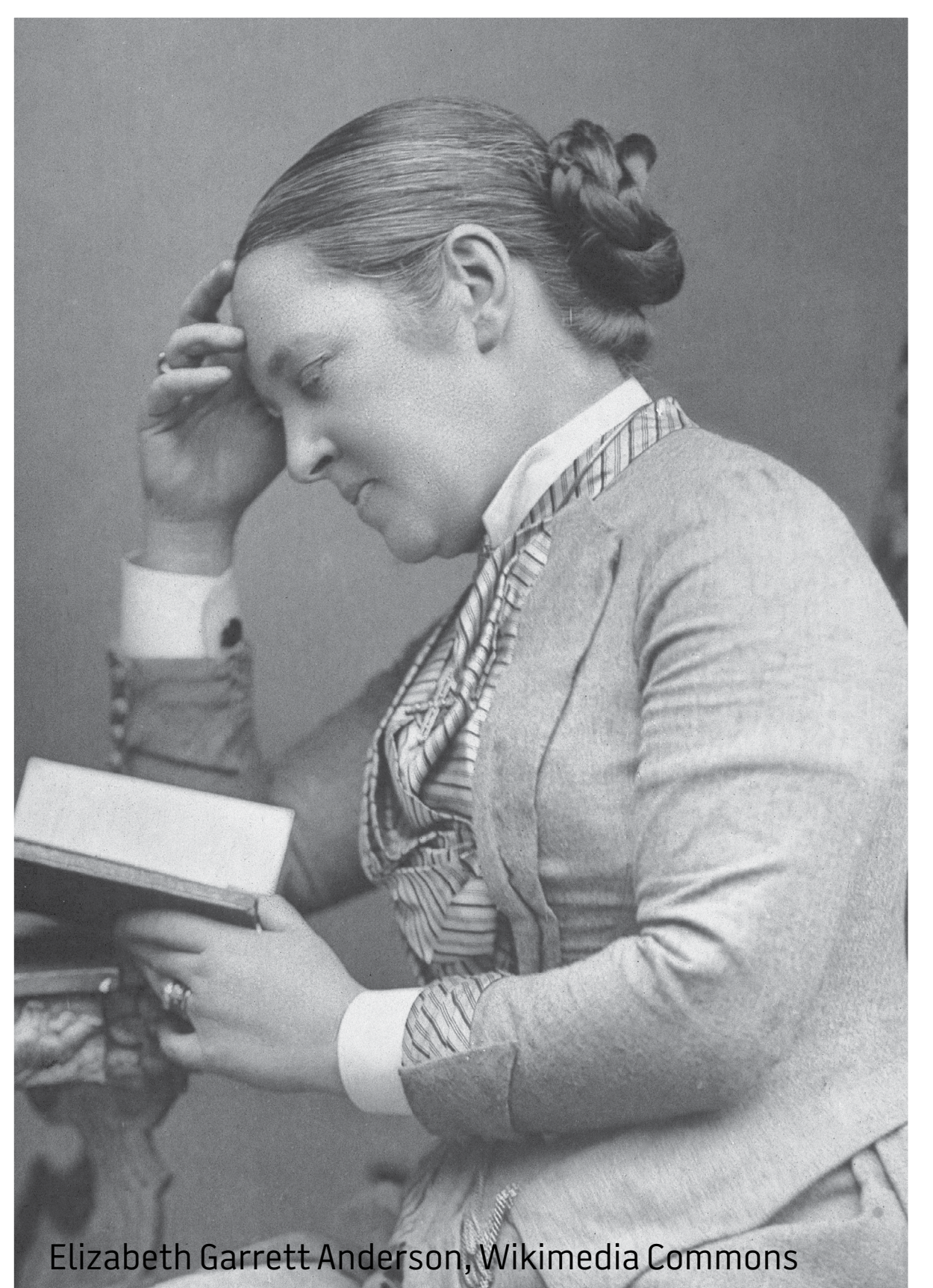


# Women & Surgery

As surgical training became formalized, women were still excluded from surgical practice and they were not allowed to attend university until the end of the nineteenth century. However, some determined women were able to overcome this barrier.

Mary Ann Bulkley was the niece of the artist, James Barry and after Barry died, she adopted her uncle's persona and attended the Edinburgh Medical School. Barry graduated in 1812 and spent the rest of her life as a military surgeon, rising to the rank of Inspector General. Barry's first posting was to Cape Town in 1816 where apart from improving sanitation and water supply, he performed one of the first-known caesarean sections. Barry was a controversial character and intractable when it came to improvement in the conditions of the poor, he frequently clashed with the military authorities. Before his death in 1865, Barry stipulated that he was to be buried in his clothes. However, the woman who laid out and washed the dead, discovered that he was a woman. She informed the physician who had issued his death certificate, but he chose not to believe her. Subsequent legal evidence does suggest that Barry who had spent his life as a successful military surgeon, was in fact, a woman.

In 1865 Elizabeth Garrett Anderson, became the first woman in Britain to qualify as a physician and surgeon. Qualified apothecaries were allowed to practice medicine and Anderson used this 'loophole' access a medical qualification. The apothecaries promptly banned women from sitting exams and although the Enabling Act of 1875 granted medical licences to women, it was not until the early twentieth century that women had untrammelled access to medical courses.



Elizabeth Garrett Anderson, Wikimedia Commons



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A photograph of the interior of the Old Operating Theatre in Southwark, London. The room is characterized by its curved wooden walls and floor. In the center, there is a large, oval-shaped wooden operating table. Above it hangs a large, ornate chandelier. To the left, there is a small table and a chair. To the right, there is a staircase leading up to a gallery. On the wall, there is a framed sign that reads "REGULATIONS FOR THE THEATRE". The overall atmosphere is historical and somewhat somber.

The Old Operating Theatre, Southwark, London, Wikimedia Commons

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*The first two rows ... were occupied by the other dressers, and behind a second partition stood the pupils, packed like herrings in a barrel, but not so quiet, as those behind them were continually pressing on those before and were continually struggling to relieve themselves of it, and had not infrequently to be got out exhausted. There was also a continual calling out of "Heads, Heads" to those about the table whose heads interfered with the sightseers*



Royal Australasian  
**College of Surgeons**

# 19<sup>th</sup> century