

Sir Astley Cooper: pioneering surgeon, anatomist and teacher

This year marks the 250th anniversary of the birth of Sir Astley Paston Cooper, on 23 August 1768, one of the greatest figures in British surgery. I confess that he heads the list of my surgical heroes.

(In passing, I must mention that he is followed by Ambroise Paré (1510–1590), the French military surgeon, who showed, as a young man on his first wartime campaign, in what could be described as the first ‘controlled clinical trial’, the superiority of simple dressings over the standard dreadful treatment of boiling oil in the management of gunshot wounds. Third on my list comes Ephraim McDowell, who, in 1809, in the then frontier town of Danville, Kentucky, USA, performed the first successful elective abdominal operation, the removal of a massive ovarian cyst, and then followed this up with further successes.)

Astley Cooper was born in the village of Brooke, not far from Norwich; his father was a country clergyman and his mother a successful author. Astley was apprenticed to Edward Digby, surgeon at the Norfolk and Norwich Hospital, then, at the age of 16 years, was articled to his uncle, William Cooper, senior surgeon at Guy’s Hospital, London. At that time Guy’s and St Thomas’s Hospitals faced each other across St Thomas’s Street in Southwark and were closely associated with each other as the ‘United Hospitals’; all lectures in medicine taking place at Guy’s, while the combined teaching of anatomy and surgery was at St Thomas’s.

After a year, Astley Cooper switched allegiance to Henry Cline, at St Thomas’s, a more charismatic teacher and a pupil of John Hunter. Now Cooper began to show great promise as a dissector and commenced studies on the effects of arterial ligation

in dogs. He attended Hunter’s lectures, where he was introduced to Hunter’s novel experimental approach to anatomy and surgery. While still a student, Cooper was appointed demonstrator in anatomy, helped Cline with his surgical lecture course and in 1800 was appointed to the surgical staff at Guy’s.

I doubt if any surgeon has worked with greater dedication than Cooper. At the height of his fame, he would rise at 6, or even at 5 or 4 am and would go straight to a large shed next to his house, which was his laboratory and dissecting room. Here he would carry out human dissections and experimental studies on a range of animals. After breakfast, he would see patients, both public and private, in his home, then to Guy’s, where crowds of students would attend his lectures, ward visits and operations. Visits to private patients at their homes would follow, if necessary with immediate surgery. Home at 7 pm, a hurried meal, then out again to see more patients, lecture or attend meetings and rarely home before midnight. He would say that a day without dissection was a day wasted.

He wrote extensively and well. His books on Hernia (1804), Fractures and Dislocations (1822), Diseases of the Breast (1829), Structure and Diseases of the Testis (1830) and Anatomy of the Thymus (1833) can be read today with interest and pleasure – I can vouch for that. For example, he described large lymphatic channels emerging from the thymus and suggested that this mysterious gland must have some secretory function.

Cooper was not only a bold and skilful surgeon, but his work was based on careful observation and his experimental studies. For example, his extensive work on ligation of the carotid and vertebral arteries in the dog; one animal survived successive ligation of all four vessels, with subsequent injection showing the development of extensive collateral channels. An injected specimen after successful ligation of the distal aorta

in the dog, showing the development of an extensive collateral anastomosis, can be seen in the Gordon Museum at Guy’s.

Cooper was the first surgeon to tie the common carotid artery in man for an aneurysm. The first patient died following suppuration of the sac, but the second, a 50-year-old man, operated upon in 1808, survived the surgery for 13 years. Cooper ligated the common iliac artery on nine occasions, one of them the same day as the successful carotid ligation – a very respectable operating list for a vascular surgeon today.

In 1817, a porter aged 36 years was admitted to Guy’s with a massive leaking aneurysm of the left common iliac artery, the mass extending into the upper thigh. Cooper ligated the distal abdominal aorta through a vertical transperitoneal incision. He knew from his experiments on the cadaver that an extra-peritoneal approach would be impossible. The patient’s right leg remained viable, but the left side, with severe disturbance of its collateral circulation, became ischaemic and the patient succumbed after 40 hours. At autopsy, the aorta had been precisely tied, with no injury to adjacent structures. The specimen can also be seen today in the Gordon Museum.

It was not until nearly a century later, in 1924, that Rudolph Matas in New Orleans, with all the advantages of anaesthesia and antisepsis, was able to report successful aortic ligation for an iliac aneurysm.

Cooper resigned from the staff at Guy’s at the age of 57 years. He served as President of the Royal College of Surgeons for two terms and was Serjeant Surgeon successively to George IV (who created him a baronet), William IV and Queen Victoria. He died in 1841 at the age of 72 years from what was probably congestive cardiac failure. A truly remarkable surgeon, and my surgical hero, he lies buried in the crypt of the chapel at Guy’s Hospital. [BJHM](#)

Conflict of interest: none.

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