

Augusta Klumpke: pioneering female neurologist

The latter part of the 19th century was an exciting period when women at last were succeeding in their battle to obtain their medical training and qualifications to practice in the UK, continental Europe and in the USA. Moreover, and perhaps not surprisingly, many of these determined and doughty pioneers showed themselves to be exceptionally able in their chosen specialities. Perhaps the best example of this was Augusta Klumpke (*Figure 1*), who became an outstanding neurologist in Paris. This year marks the 150th anniversary of her birth.

Augusta was born in San Francisco in 1859, the second child of a family of one brother and four other sisters. Her father was an Englishman who had emigrated to the United States and had become an affluent estate agent. Her American mother brought her and her elder sister to Europe to seek treatment for her sister's chronic osteomyelitis following a fracture of the femur. Sadly, this proved to be the end of the marriage and her mother, now alone, brought up the two girls first in Germany and then Geneva.

Augusta studied chemistry and natural sciences at Lausanne, with the intention of becoming a teacher. However, by a stroke of fate, her mother read in a fashion magazine that a Mdm. Madeleine Brès

Figure 1. Augusta Klumpke.



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had gained entry to medical school in Paris and had just qualified MD. Augusta promptly applied for, and was accepted for, a place in Paris and commenced in the Faculty of Medicine in 1877. She proved to be an outstanding student, gaining the prize in anatomy the following year. In 1882 Klumpke became medical externe at the Hopital de Lourcine, now the Broca Hospital, in Paris and 5 years later became the first woman in France to be appointed Interne des hôpitaux – again at the Broca.

Interestingly, Augusta was appointed externe along with an Englishwoman, Blanche Edwards who, after qualification, became well known in the French feminist movement.

It was during her period of externe that Klumpke began her contributions to neurology and neuroanatomy, this under the direction of Auguste Broca, son of Pierre Paul Broca (who described the motor speech area of the dominant cerebral cortex).

She became interested in the paper by Wilhelm Erb of Heidelberg on injuries to the upper part of the brachial plexus, the 5th and 6th cervical nerves, in which the arm hangs by the side, with the forearm pronated and the palm facing backwards, (the 'waiter hinting for a tip' position), and with sensory loss along the lateral aspect of the arm – 'Erb's palsy'. This paper inspired Klumpke to carry out clinical and experimental studies on brachial plexus injuries. Her thesis was published in 1885. In this she describes a patient with avulsion of the lowest root of the plexus (the first thoracic), with paralysis of the small muscles of the hand and sensory loss along the ulnar side of the arm. The concomitant injury to the adjacent cervical sympathetic chain had resulted in a Horner's syndrome, with constriction of the pupil and lid lag on the affected side. To this day this deformity of the hand is termed 'Klumpke's palsy' (*Figure 2*).

Interestingly, these nerve palsies were not uncommon in children when I was a medical student over 60 years ago. Erb's palsy might follow forcible traction in a difficult forceps delivery, while a Klumpke's palsy might result from a difficult breech delivery with an after-coming arm. Today,

a Klumpke's palsy might follow a violent abduction injury to the arm and is perhaps more often encountered as result of malignant infiltration of the lower nerve roots from malignant cervical lymph nodes or a carcinoma of the lung apex (Pancoast's tumour).

Klumpke's thesis was approved in 1889 and the following year she was awarded the silver medal of the faculty of medicine of Paris. Meanwhile, she had married the distinguished neurologist Joseph Déjerine, of the Charite Hospital, in 1888 and became Augusta Déjerine-Klumpke. The couple proved to be a powerful combination of talents. They published a splendid two-volume treatise on the anatomy of the central nervous system. Many of the beautiful illustrations were drawn by Augusta. Their daughter, Jeanne, was born in 1891. She in turn qualified as a doctor in Paris – her mother was one of her teaching faculty.

In 1914 Augusta was elected the first female president of the French Neurological Society. Joseph Déjerine died in 1917, but Augusta continued their neurological work. She pioneered rehabilitation of servicemen with injuries to the central nervous system during World War 1 (1914–1918). Her particular interest was in the management of paraplegia resulting from spinal injuries, which sadly were occurring in considerable numbers.

Augusta Déjerine-Klumpke died in 1927. She was buried beside her husband in the great Pierre Lachaise cemetery in Paris. [BJHM](#)

Conflict of interest: none.

Figure 2. The wasted hand muscles in a case of Klumpke's palsy.

