Augusta Klumpke (1859–1927)

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The second-half of the then 19th-century was the period in which women at last succeeded in gaining their medical training—in the UK, continental Europe, and the USA. Moreover, many of these pioneers showed themselves to be exceptionally capable in their chosen fields. A good

example of this was Augusta Klumpke, an outstanding neurologist [1].

Augusta was born in 1859 in San Francisco. Her father, an Englishman, had immigrated to the USA and had become a wealthy estate agent. Her American mother brought her and her elder sister to Europe to seek treatment for the sister's chronic osteomyelitis of the femur. Sadly, this proved to be the end of the marriage and her mother, alone, brought the two girls up in Germany and then in Switzerland.

Young Miss Klumpke became a science student in Lausanne, intending to become a school teacher. However, her mother read that Madeleine Brès had become medically qualified in Paris and she encouraged Augusta to apply for a place, and to be accepted, as a medical student in Paris in 1877. She proved to be a brilliant student and gained a prize for anatomical research the following year. In 1882, Augusta became a medical 'externe' at what is now the Broca Hospital in Paris. Five years later, she became the first woman in France to be appointed 'interne des hôpitaux'. Interestingly, her appointment as 'externe' was made together with an Englishwoman, Blanche Edwards, who became prominent in the French feminist movement.

It was while working as an 'externe' at the Broca that Klumpke began to make contributions to neurology and neuroanatomy. She became interested in an important paper by Professor Wilhelm Erb, of Heidelberg, Germany, on injuries to the upper part of the brachial plexus, the fifth and sixth cervical roots (to this day known as 'Erb's palsy'). Characteristically in this condition, the arm hangs down by the side with the forearm pronated and the palm facing backwards, in the 'waiter hinting for a tip' position; also there is sensory loss along the lateral side of the arm. This paper encouraged Klumpke to carry out clinical and experimental studies on injuries to the brachial plexus

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Augusta's thesis on this topic was published in 1885 [2]. In this she describes a patient with avulsion of the lowest root of the brachial plexus (the first thoracic), with Horner's syndrome (ptosis and a constricted pupil) on the affected side as a result of concomitant injury to the adjacent sympathetic chain, together with paralysis of the small muscles of the hand and sensory loss along the ulnar side of the forearm. To this day the syndrome is called 'Klumpke's palsy'.

Interestingly, these brachial plexus injuries were not uncommon in children when I was a medical student 65 years ago, usually as a result of a difficult vaginal delivery. Now, with frequent recourse to Caesarean section in such cases, this injury in babies is uncommon in the Western world (the Emperor Wilhelm II of Germany at the time of the First World War had this deformity from birth, which he hid under a long cloak). Klumpke's palsy might result from a difficult breech delivery with an after-coming arm. Today, upper plexus injuries may be seen following a violent distraction between the shoulder and the neck—the motor cyclist who lands on his shoulder and side of head. Klumpke's lesion may follow forcible abduction of the shoulder and may also result from malignant infiltration of the plexus from involved cervical nodes or from a carcinoma at the apex of the lung (Pancoast tumor).

Klumpke's thesis was approved in 1889 and the following year was awarded the silver medal by the Paris Faculty of Medicine. Meanwhile, in 1888, Augusta had

married the distinguished French neurologist Joseph Jules Dejerine of the Charité Hospital, Paris [3], and became Augusta Dejerine-Klumpke.

The Dejerines, husband and wife, made a powerful combination of talents. Among other contributions, they published a major two-volume treatise on the anatomy of the central nervous system, many of the beautiful illustrations being drawn by Augusta. Their daughter, Jeanne, was born in 1891. She, in turn, qualified as a doctor—her mother was one of her teaching faculty.

In 1914, Augusta was elected the first female president of the French Neurological Society. Dejerine, who was her senior by 10 years, died in 1917, but Augusta continued their neurological work. She became a pioneer during World War I in the rehabilitation of wounded soldiers with injuries to the central nervous system, in particular with the management of paraplegia resulting from spinal injuries.

Augusta Klumpke died in 1927. She was buried beside her husband in the famous cemetery of Pierre Lachaise in Paris.

References

1. Bogousslavsky J (2005) The Klumpke family—memories by Dr. Dejerine, born Augusta Klumpke. *Eur Neurol* 53:113–120
2. Dejerine-Klumpke A (1885) Contribution à l'étude des paralysies radiculaires du plexus brachial. *Rev Méd* 5:591–616, 739–790
3. Bassetti C, Jagella EC (2006) Joseph Jules Dejerine (1849–1917). *J Neurol* 253:823–824