Jean Martin Charcot (1825 – 1893)

Vinay R Joshi*, Vivek B. Poojary**

Charcot is considered the father of neurology. Not so much appreciated are his contributions to medicine and rheumatology. In fact he has been considered one of the most influential physicians of all time.

Charcot was born on 29th November 1825 in Paris. His father was a carriage builder. He could support higher education of only one of his four sons. Charcot performed better than his brothers at the school, and could pursue higher education.1 Medicine was his choice. A keen observer and a gifted painter, Charcot possessed good visual memory. These assets were of great help to him in his future work. He was proficient in French, English, German, Italian languages and could access literature in these languages1. No wonder he was very well read.1

Charcot joined medical school of Paris University at the age of 19 years and qualified at 23 years of age. He was an intern at the great Salpetriere hospital, Paris, and subsequently worked in various capacities at the same hospital. [Chef de Clinique (1853), physician to the hospital of Paris (1856), Professor of the Pathological Anatomy at the Universitie of Paris (1872)]. In 1982 he became the first Professor of diseases of nervous system, (a position created for him) and established neurological clinic at Salpetriere hospital.2 He remained associated with the hospital till the end. At the Salpetriere he established pathology laboratory, introduced microscopy, photography, ophthalmoscopy, and set-up (pioneered) rehabilitation along with physiotherapy, hydrotherapy, speech therapy, electric stimulation, and electrostatic baths to treat paralysed muscles.1

Charcot used to work uninterruptedly during the day and late into the nights. He was a prolific writer. His articles and books were translated and published in other languages. Amongst the journals, Lancet and BMJ had published his articles. His writings are a valued possession of neurologists. Charcot was famous as a teacher. His clinics and lectures were popular and attended by students and doctors even from far away places. Charcot employed theatrical techniques in his lectures and clinical demonstrations to teach clinical skills. Some of his famous students were Babinski, Pierre Marie, Bechterew, Freud, and Bouchard.

Contributions to Rheumatology

• Charcot had studied arthritis for his MD thesis. It was published in 1853.3 In a detailed study of 41 cases, he clearly brought out the differences between gout and rheumatoid arthritis. He noted the nocturnal pain, the variable disease course, and association with systemic symptoms; he studied the disease onset, the joints affected, sequence of joint affection, and noted that the disease often began with involvement of small joints.3

Joint deformities interested him greatly. He analysed the mechanisms of deformities and illustrated the deformities with his own drawings.
These resemble hand deformities as seen in rheumatoid arthritis. Charcot further noted that unlike gout, there were no tophi and there was no relationship with rheumatic fever. Charcot had performed necropsy in six cases and described synovial inflammation and cartilage ulcerations situated at the cartilage periphery in continuity with synovial membrane. He called the disease chronic articular rheumatism. He was the first to describe rheumatoid pericarditis.

- Charcot studied kidney and gout relationship and had investigated the possible connection with lead poisoning. He had noted the high uric acid of gout and studied the efficacy of colchicine in gout.
- Charcot’s arthritis – Charcot began the study of neuropathic joints in 1868. In 1881 he discussed the condition at the 7th International Medical Congress, as ataxia associated arthropathy. It later came to be known as Charcot’s arthropathy or Charcot foot.

**Contributions to Medicine**

Charcot was an astute clinician, with a remarkable ability to diagnose and distinguish between different neurological disorders clinically. He was also a trained pathologist. His ability to correlate clinical findings with pathology was remarkable. Salpetriere hospital was meant for beggars, prostitutes, and insane. Charcot called it a “grand asylum of misery”. It’s 5000 patient population suffering from a variety of chronic, incurable diseases (especially neurological) gave him unlimited scope to study the illnesses in detail. Apart from many neurological conditions like multiple sclerosis, amyotrophic lateral sclerosis, he described Charcot-Leyden crystals in sputum, Charcot – Neumann crystals in semen, biliary triad or Charcot’s triad II due to stone in bile duct (triad I is related to multiple sclerosis), Charcot’s angina cruris (intermittent claudication of arterial origin), Charcot’s vertigo or cough syncope, and carotid hypersensitivity syndrome. He pioneered the study of diseases in the elderly. He was (literally) a “discoverer of diseases”. His name is immortalised in the 18 or more eponyms bearing his name. He was truly a great physician.

Charcot was fond of music and liked arts and sculpture. His house was a sought-after meeting place of intelligentsia of Paris. Politics and religion were never discussed at these meetings. Though having forbidding manners, he was popular with students and the patients.

Charcot suffered from angina and died of pulmonary oedema on 16th August 1893 at the age of 68 years. A bronze statue was erected in his memory, by his students, at the Salpetriere hospital. This was removed and destroyed during the World War II occupation of Paris by Germany.

P.S. : Historically Landre’-Beauvais was the first to describe RA in details (year 1800). He too was a physician at Salpetriere hospital and had studied arthritis for his doctoral dissertation. The title of his dissertation was “should one acknowledge a new kind of gout under the name of primary asthenic gout?”. He had described the onset, deformities, exacerbations, and pathological findings at autopsy and noted differences from gout. Unfortunately, his work had remained unrecognised until Charcot’s work was published.

**References**


**Erratum**

In the December 2013 issue of JAPI, the following correction (addition) to the Pioneers in Rheumatology-write up on William Heberden (Elder) should read as ‘In 1929 a group of physicians interested in rheumatology formed a study group. In 1937 it was named the Heberden Society to honour Heberden’s contributions to rheumatology. In 1984 the society was merged with the British Association of Rheumatology and Rehabilitation to form the present British Society of Rheumatology’.

1st time in India

VoliboM
(Voglibose 0.2/0.3 mg + Metformin 500 mg)

Boost
PPHG Control

Preserve
β-cell function

Control
65% β-cell

T2DM
48% β-cell

Avior Therapeutics