Foundations of Modern Stroke Medicine: 
The legacy of C Miller Fisher

Dr Charles Miller Fisher (December 5, 1913 – April 14, 2012) developed and wrote about the key scientific ideas that underpin almost every aspect of modern stroke medicine. His invariable curiosity and formidable scientific ability were applied to meticulously describe clinical and pathological features of many types of stroke. A major theme that Dr Fisher developed can be summed up as the idea that “strokes do not occur at random”, but instead follow characteristic patterns according to their cause and mechanism. He authored more than 200 publications detailing his observations. Some of the most significant discoveries are listed in Table 1. Every stroke clinician will immediately recognise the impact these have had on both our conceptual understanding and daily clinical practice. A single stroke unit ward round today might include the recognition of lacunar stroke syndromes, the urgent recognition and treatment of symptomatic carotid artery thromboembolism, and the diagnosis of a “late life migraine accompaniment” mimicking stroke or transient ischaemic attack (TIA).

Life before becoming a physician held great challenges for Miller Fisher, which may have shaped his extraordinarily determined and productive career in stroke medicine. He was born in 1913 in Ontario, into a large family of eight siblings, and then studied medicine in Toronto, where he was awarded his degree in 1938. He joined the British Royal Navy at the outbreak of war and spent three and a half years interred in a German Prisoner of War Camp, after his boat, HMS Voltaire, was sunk off the coast of Cape Verde. He spent nine hours in the sea, waiting to be rescued, on the very day his wife was due to give birth to their first child, and – in typically uncomplaining manner – reportedly said: “I thought perhaps she was in more trouble than I was”. He trained as a neuropathologist in Boston, and then returned to Montreal, where he began to define what he called “transient ischaemic attacks”. In perhaps his most famous observation, he repeatedly noted “premonitory fleeting symptoms” (including limb sensory symptoms, and monocular visual loss) experienced by patients prior to a hemispheric ischaemic stroke, and made the crucial link to carotid artery atheromatous disease. This led to wide acceptance of the thrombo-embolic theory of ischaemic stroke and TIA. He then moved to Massachusetts General Hospital in the 1950s where he had a long and highly productive career, in the process creating the first stroke service. He died at the age of 98, in 2012, leaving two sons and a daughter.

Table 1. Some of Miller Fisher’s outstanding contributions to stroke medicine

| 1. Thromboembolism as a stroke and transient ischaemic attack mechanism |
| 2. Carotid artery disease and stroke |
| 3. Characteristics and causes of TIA |
| 4. Causes and treatments of atrial fibrillation related stroke |
| 5. The lacunar hypothesis and stroke due to small vessel occlusion |
| 6. Localisation of brainstem injury |
| 7. Post subarachnoid haemorrhage vasospasm |
| 8. Mechanism of haematoma growth in intracerebral haemorrhage |
| 9. Reversible cerebral vasoconstriction syndrome |
| 10. “Late life migraine accompaniments” and the associations between migraine and stroke |
Miller Fisher thrived on the intellectual challenge of clinical practice and became legendary for his dedicated care and teaching, which inspired generations of physicians who trained with him. Louis Caplan, one of his clinical fellows, captured this approach in “Fisher’s Rules”, which remain a blueprint for becoming a great stroke clinician and scientist. We have listed our personal pick, but urge you to read the full publication in order to better understand the attitudes and values he promoted (Table 2).1

Miller Fisher’s ideal of lifelong learning through detailed observation was uniquely coupled with tremendous communication skills and empathy for the plight of patients affected by stroke. Descriptions abound of Miller Fisher in his office poring through his copious notes to correlate clinical observations with pathological findings. After his death his colleagues carefully collected these notes, one trainee doctor reportedly even checked through the bins to retrieve some that were accidentally disposed of!

One of the greatest lessons we can take from Miller Fisher’s life is that he made every day’s work an opportunity to make an observation or original contribution. “If you could describe that,” he would tell the attendee of his weekly case conference, “if you could really describe that patient’s findings and disease mechanism carefully and accurately, you would be the first to do so.” While evidence-based medicine in large populations is key to modern neurological practice (and especially to stroke medicine), Miller Fisher reminds us of the power of detailed narrative observations on the symptoms of disease and its impact in the individual patient. This is the way in which new patterns and mechanisms of disease are recognised, and by which the correct treatment for each patient can be determined through logical principles. Dr Miller Fisher (or CMF, to those who knew him) continued ward rounds until he was almost 90 years old, always asking the question “what can the patient teach us?” – a lesson which we would all do well to remember, even in this era of ever more sophisticated investigative techniques.

REFERENCES

Table 2: Fisher’s Rules: our personal pick

- Make the patient bedside your laboratory: study the patient seriously
- Settle an issue as it arises at the bedside: whenever possible, don’t leave a “maybe”
- Always be working on one or more projects; it will make the daily routine more meaningful
- Always try as hard as you can to disprove your hypothesis before accepting it
- Describe quantitatively and precisely: the details are important
- Fully accept what you have read or heard only when you have verified it
- Write often and carefully. Let others gain from your work and ideas.
- Resist the temptation to place the patient into a diagnostic cubbyhole which fits poorly
- The patient is always doing the best they can. Be supportive and never be angry with a patient or their family.
- Maintain a lively interest in patients as people

To list your event in this diary, email brief details to Rachael Hansford at Rachael@acnr.co.uk by 6th December, 2015

2015 – November

Ketogenic Study Evening
9 November, 2015; Dublin, Ireland
Jacquie McAleen, E. j.massociates1@me.com

Examining the utility of music interventions in neurological disorders of older people
Monday 16 November, 2015; RSM, London, UK
Lucy Church, T. 0207 290 3958, E. rnmprofessors@rsm.ac.uk – www.rsm.ac.uk/livemusicnow

Modern Thinking in MS Management
7pm Friday 20 November - 16:40 Saturday 21 November, 2015; The Palace Hotel, Manchester, UK
www.modernthinkingrsm.com

11th Essential Neuro MRI Course
Saturday 21st November, 2015; Liverpool Medical Institute, UK
One day intensive course in how to interpret MRI Brain & Spine – 6 Cat 1 CFP
Contact: Sam Pickup, T. 0151 709 9125 E. essentialcoursecourses@hotmail.com

Consultant PD Masterclass – Sheffield
Module 1-2, 3rd & 4th June 2015, Module 2 - 26th November 2015 (Both modules must be attended)
www.parkinsonsacademy.co.uk for further details.

Ketogenic Study Evening
25 November, 2015; Liverpool, UK. Jacquie McAleen, E. j.massociates1@me.com

The 2nd British Symposium on the History of Neurology and Psychiatry
A commemoration of the centenary of the death of Sir William Gowers
November 25th, 2015; Institute of Neurology, London, UK
Programme and registration details: Liz Bedcman at www.hnps.co.uk

History of Neurology and Psychiatry in London
November 26th, 2015; Institute of Neurology; Queen Square, London, UK
Programme and registration details: Liz Bedcman at www.hnps.co.uk

23rd Annual Meeting of the European Charcot Foundation
26-28 November, 2015; Milan, Italy – www.charcot-ms.org

December

The Brain Series: Sports and the brain
Evening of Thursday 3 December, 2015; RSM, London
Organised by: Clinical Neurosciences Section – www.rsm.ac.uk/events/cng02

Bipolar Disorder 2015
3 December, 2015; London, UK. T. 020 7501 6762; www.mwhealthcareevenvevents.co.uk

The Encephalitis Society Professional Seminar
7 December, 2015, London, UK
T. +44 (0)1563 692583, E. admin@encephalitis.info – www.encephalitis.info

BNPA Neurology & Psychiatry SrPs Teaching Weekend
11, 12 December, 2015; Oxford, UK. T. 01865 438 395; m. 07940 591096, E. admin@bnpa.org.uk

2016

January

London Sleep Medicine Training Course 2016
14 – 16 January, 2016; London, UK. T. 020 7501 6762; www.mwhealthcareevents.co.uk

February

Dementia 2016
11-12 February, 2016; London, UK. T. 020 7501 6762; www.dementiaseminarconference.com

Is it criminal? Acquired brain injury, challenging behaviour and rehabilitation
Partners in Care Brain Injury Services Conference 2016
24 February, 2016; Cambridge, UK
www.partnershipsincare.co.uk or contact samantha.coburn-kett@partnershipsincare.co.uk

March

Treating Depression 2016
24 March, 2016; London, UK. T. 020 7501 6762; www.mwhealthcareevents.co.uk

Neurology 2016: leading edge neurology for the practising clinician
30th March - 1st April 2016; London, UK. T. 020 344 84460. E. jean.reynolds@ucl.ac.uk

May

ABN Annual Meeting 2016
17-19 May, 2016; Brighton, UK. T. 020 7405 4060, E. info@abn.org.uk