

Neurology then and Now Letter

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Letter to Editor

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Abstract

I review the changes in the teaching and practice of neurology as they occurred over two generations of neurologists assuming a generation to be approximately 30 years. I illustrate the highlights and mention some of the leading figures who have contributed to altitude medicine and clinical neurology as it is taught and practiced today.

The Change in Vocabulary

In 2003 the completion of the Human Genome project led to the introduction of a new vocabulary into clinical neurology. This became imperative to accommodate terms such as “whole genome sequencing”, “microanalysis” RNAi and “karyotyping”. Rare neurological diseases ceased to remain clinical curiosities without hope of treatment and some became preventable such as phenylketonuria [1].

Grand Round

The obligatory practice of selecting a suitable patient to be presented at Grand Rounds has been abandoned in favor of audio-visual presentations usually eschewing actual patients. The nearest to the previous style was a Grand round given by Dr. Phillip Pearl “a Neuroscience Talk and Piano Performance”. Dr. Pearl is Director of Epilepsy and Clinical Neurophysiology at Boston Children's Hospital. He played the piano to illustrate the points about epilepsy in children. Patient interviews at grand rounds have been abandoned because of ethical considerations.

Raymond D. Adams, MD (1911–2008) [2] the founder of the Massachusetts General Hospital's clinical neurology program was an advocate of Grand Rounds in the classical style (Figure 1).

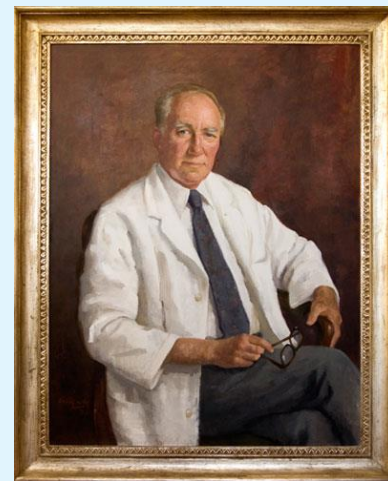


Figure 1: Adams, Raymond D., MD.
Artist: Augusta, George | **Date Created:** 1977 | **MGH Department Affiliation:** Neurology.

Internet Service

The ability of neurologists to access Internet Service is usually thought to begin around 2006. This changed dramatically the learning ability of clinical neurologists and their training. No longer was it necessary to spend hours in libraries but a short look at a cell phone is usually sufficient to find answers to difficult problems.

Rounds instead of starting at the bedside began in the office with a review of the problem rather than at the bedside with clinical examination of the patient. This was a radical change that required changes in teaching, record keeping and style of clinical activities in the hospital.

Traditionally, the journeyman years were a time of travel after completing apprenticeship. This tradition dates back to medieval times and continued for neurologists today. It was imperative to spend time at the National Hospital for Nervous Diseases in London now National Hospital for Neurology and Neurosurgery (NHNN), Queen Square, where Consultant Neurologists, that is unpaid neurologists such as Macdonald Critchley, Charles Symonds and Arnold Carmichael did morning ward rounds (Figure 2).



Figure 2: Sir Charles Symonds 1890-1978 “the neurologist’s neurologist”.

In 1957 Peter Kynaston Thomas (PK) (Figure 3) became senior registrar in neurology at the National hospital, Queen Square. He was in that position in 1961 when his duties included the procurement of patients for demonstrating at Grand Rounds. Macdonald Critchley told PK to bring a patient with amyotrophic lateral sclerosis (ALS) to the lecture theater. Unfortunately for PK there was no such patient at that time in the hospital. PK thought that he would bring a patient with the Landry Guillen-Barre syndrome instead and tell Macdonald about this switch before he began his demonstration, but Critchley would not listen, no matter how hard PK tried. Critchley was known for his showmanship and some considered him a better actor than neurologist. This then resulted in a superb demonstration of the clinical signs of ALS on a patient who did not have the disease.



Figure 3: Peter Kynaston Thomas, 1926-2008.

Peter’s love for travel lead him and Anita, his second wife, to the then highest road in the world at Khardung La (5600 m) pass at the Indian-Tibetan border. We met by chance in Chisumle a village below the pass. Subsequently we collaborated on the investigation of Neurological manifestations of chronic mountain sickness (CMS), the burning feet-burning hands syndrome, in Cerro de Pasco, Peru [3]. We demonstrated, for the first time, the reduced basal laminal thickness in the sural nerves of patients with CMS (Figure 4). This was unexpected but not surprising. We considered this not part of a neuropathic process but rather representing an adaptive phenomenon to life at high altitude and for CMS patients the result of severe hypoxia [3].

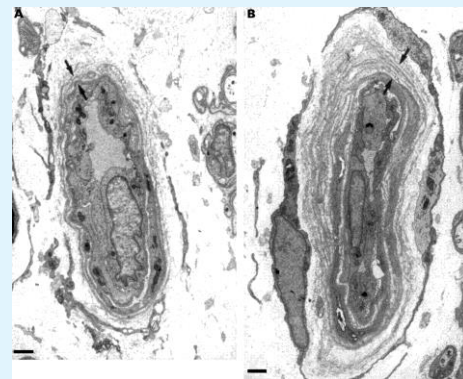


Figure 4: Electron micrograph of a typical endoneurial microvessel from (A) a 64 year old female patient with CMS compared with (B) one from a normal subject aged 55 years also living in Cerro De Pasco in which the surrounding basal laminal zone (between arrows) is thicker Bar=1 μ .

The mean thickness of the basal laminal zone was less in the three patients with CMS (1.13 (0.04) μ m) than in the control subjects, (1.67 (0.11) μ m) [3].

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In Boston, meanwhile, the journey man tradition in neurology continued at the Massachusetts General Hospital and Boston City Hospital (Derek Ernest Denny-Brown, 1901-1981) who was a New Zealand-born neurologist working in Oxford, London and Boston, who

made major contributions to neurology, such as the development of electromyography, the physiology of micturition, the treatment of Wilson's disease he epitomized the journeyman style of training for a career in clinical neurology.

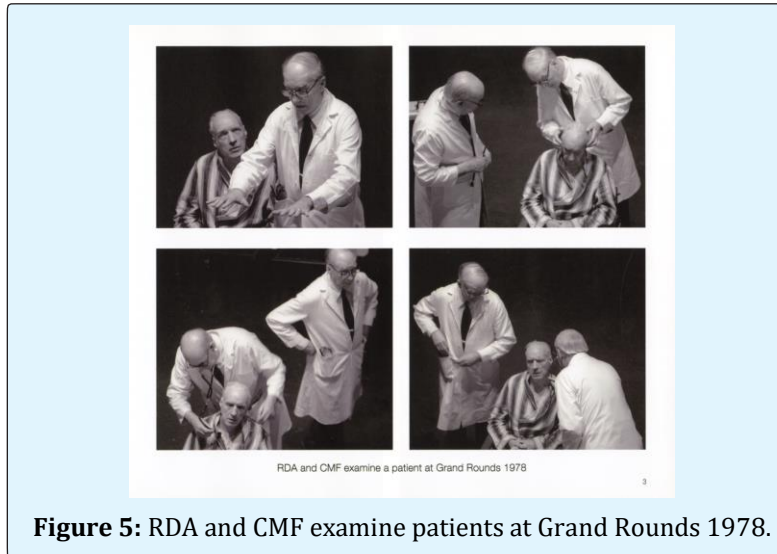


Figure 5: RDA and CMF examine patients at Grand Rounds 1978.

Raymond D. Adams (RDA) and C Miller Fisher (CMF) note the examination of the left carotid artery with a stethoscope listening for bruits by CMF (Figure 6) who made major contributions to the prevention and treatment of stroke and transient ischemic attacks and

who hosted eight “stroke fellows” during his career at the Massachusetts General Hospital (MGH). (Ronald Kobayashi; Honoring RDA, Remembering MGH Neurology)



Figure 6: Front row from left; CMF, RDA in the middle and to his left Charles Kubic the founder of the MGH neuropathology laboratory, front row; third from right E.P. Richardson (1918–1998) haunted by the suspicion of suffering from narcolepsy for if disturbed while looking down the oculars of his microscope he would wake up startled with red impressions under his brows suggesting he was sound asleep and, at the end of the row Betty Q. Banker, MD (1921–2010) then working in the neuropathology lab at the MGH.

The newly established department of neurology at the University of New Mexico (Figure 7) attracted faculty from far afield including the Massachusetts General Hospital and it soon acquired the nick name “the Harvard on the Mesa”. Neurology was taught as it was while Raymond D. Adams and C Miller Fisher where in charge at MGH (Figure 5).



Figure 7: Arnold Greenhouse MD (1926-2013) the first chairman of neurology at the University of New Mexico.

Finally this era came to an end in 1990 with the beginning of neurology as it is now practiced using largely computerized patient care.

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