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P Leaver and D McLeod

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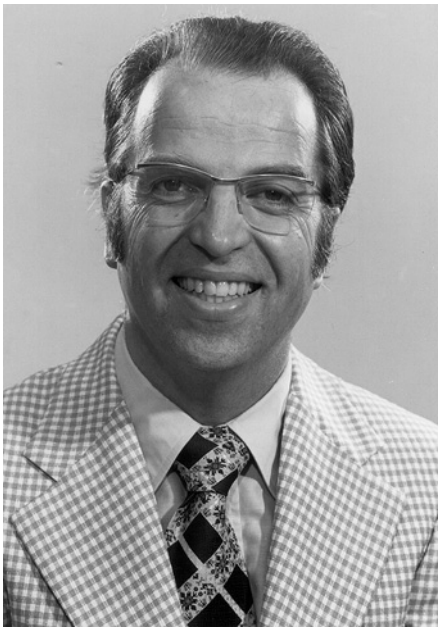
OBITUARY

Robert Machemer

With the death of Robert Machemer, ophthalmology has lost one of its brightest stars. The invention of the ophthalmoscope by Helmholtz in 1851 and the introduction of the head-mounted indirect ophthalmoscope by Schepens nearly 100 years later were seminal events in the recognition and treatment of retinal disease. Before 1970, however, the treatment of complicated retinal detachments, preretinal fibrosis and macular degeneration was unsatisfactory or impossible in all but a few cases. Progress in the treatment of these blinding conditions was limited by the vitreous, which, on account of its sticky and elastic nature and its firm adhesion to parts of the retina, represented a forbidding and forbidden no-go zone preventing surgical access to the retina and restricting detailed intra-operative examination and treatment of chorio-retino-vitreal disease. The arrival in the USA of Robert Machemer in 1966 would change that forever.

The eldest son of a respected ophthalmologist, Machemer was born on 16 March 1933 in Munster, Germany, and graduated in medicine in Freiberg, before going on to Gottingen University, where he decided that his own future also lay in ophthalmology. What's more, he fell in love with and married his classmate Christel Haller, who had majored in psychiatry. Gripped by ambition to pursue a career in clinical academe, he soon realised that the opportunities for this in his home country were poor. He therefore applied for and obtained a 2-year NATO Fellowship and went to work as a research fellow, under the supervision of Dr Ed Norton at the Bascom Palmer Eye Institute in Miami, Florida, USA. When, after only 1 year, Norton offered him a faculty position, the die was cast and with it the future course of ophthalmic history.

Robert was a man of broad interests extending outside the operating theatre and laboratory. Among these was a talent for DIY and micro-engineering, a combination that proved to have a remarkable outcome. In 1968, soon after his appointment to the faculty at the Bascom Palmer, a part-time faculty member, David Kasner, removed the vitreous from the eyes of a patient with dense opacities caused by amyloidosis using the "open-sky" method. Machemer was as impressed by the successful visual outcome as he was shocked by the uncontrolled and dangerous nature of the method. At home in his garage workshop he began to experiment with drill-jig, syringe and hens' eggs to see if he could find a method of aspirating the raw egg albumin through a tiny aperture and excising it cleanly, in such a way that there was little or no traction on the structures inside the egg (ie, the retina) while at the same time infusing fluid to maintain intraovular volume.



Those who have tried to develop a bright idea into a practical and commercially viable instrument will appreciate the enormity of the task that followed. Robert Machemer succeeded in building a finished instrument and in persuading Stortz to manufacture and market it but was shrewd and selfless enough to demand that only those who were prepared to undergo a practical course of instruction under his supervision were allowed to purchase the Vitreous Infusion Suction Cutter (or VISC VII). Previous experience had alerted him to the dangers of promulgating a new and potentially dangerous technique without precautions against its misuse, thereby allowing it to develop a bad reputation from the outset. By restricting the sale of his instrument to those who had been taught how and when to use it with safety, Machemer introduced pars plana vitrectomy to the ophthalmic world in a controlled and educated fashion, albeit with no regard to the negative impact this might have on his own financial gain.

Once established, pars plana vitrectomy took the world of retinal surgery by storm and new instruments and techniques came thick and fast. While Robert may have been a little slow to embrace some of these technological advances (such as the introduction of common gauge instrumentation), he remained at the forefront of retinal research throughout his career. His research into the pathogenesis of proliferative vitreoretinopathy in conjunction with surgical advances, enabling its successful treatment, has transformed the management of complex retinal detachments; this and other seminal work earned him millions of dollars in research grants and the receipt of awards and prizes too numerous to mention here.

In 1978, he was appointed to the post of chairman at the Duke University Eye Centre, North Carolina, USA, where he transformed the department into a first-rate centre for clinical research and teaching, stepping down from the chairmanship in 1991 to pursue his own research and finally retiring after 20 years to develop his many outside interests and hobbies. The world of modern ophthalmology will be the poorer for the death of this remarkable man.

Robert Machemer, born 16 March 1933, died 23 December 2009. He is survived by his wife Christel (nee Haller), daughter Ruth, brothers Hans and Peter and their families, and a granddaughter, Hallie.

P Leaver,[1] D McLeod[2]

[1]Retired Consultant Ophthalmic Surgeon; [2]Emeritus Professor of Ophthalmology, Academic Department of Ophthalmology, Manchester Royal Eye Hospital, Manchester, UK

Correspondence to P Leaver, Retired Consultant Ophthalmic Surgeon, 28 Meynell Crescent, London E9 7AS, UK; pjleaver@yahoo.com

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LETTERS

Nidek MP-1 microperimetry and Fourier domain optical coherence tomography (FD-OCT) in X linked retinoschisis

X linked retinoschisis (XLRS) is a frequent cause of macular dystrophy in males with an estimated prevalence of between 1 in 15 000 and 1 in 30 000. The diagnosis is based on the presence of central and peripheral schisis within the inner retina and supported by electroretinography, which shows a characteristic electronegative response to a bright flash in the dark-adapted state.[1]

Fundus related perimetry or microperimetry is a useful tool for assessing macular function and mapping central visual fields, scotomas and fixation behaviour.[2] The MP-1 microperimeter (Nidek technologies, Padua, Italy) utilises an LCD microperimeter and allows a direct correlation of macular function with pathology.

We present an observational study of nine patients (17 eyes) aged between 7.5 years and 20 years (median age 10 years) with XLRS who underwent MP-1 macular microperimetry and serial Fourier domain optical coherence tomography (OCT) scans through the anatomical fovea. All patients had their best-corrected visual acuity (BCVA) measured using a logMar acuity chart. Microperimetry involved the subject