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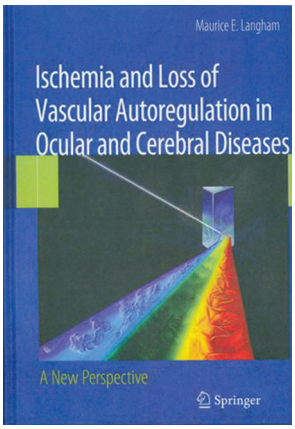
BOOK REVIEW

Ischemia and Loss of Vascular Autoregulation in Ocular and Cerebral Disease: A New Perspective

M.E. Langham. Springer; 2009, 192 pages, 94 illustrations, $99.00.

Maurice E. Langham's *Ischemia and Loss of Vascular Autoregulation in Ocular and Cerebral Diseases: A New Perspective* summarizes a life's work dedicated to understanding how a complex interaction of factors, such as intraocular pressures, ocular perfusion, and autoregulation affect ocular health. As such, this sole-authored text explores the subtle nuances of highly sophisticated instrumentation used to determine these factors that will exceed the needs or interests of most practicing ophthalmologists and neuroradiologists.



The book is divided into 3 main sections: "Invasive Studies of the Parameters Regulating Ocular Physiology and Vision"; "Noninvasive Studies on the IOP (intraocular pressure), PA (pulse amplitude), and Blood Flow Autoregulation in Healthy and Diseased Eyes"; and "Ophthalmodynamometry, the Ophthalmic Arterial Pressure and the Effect of Increased Vascular Resistance Proximal and Distal to the Ophthalmic Artery on Ocular Blood Flow, the IOP/PA Relation and Vision." Although the title suggests an equal treatment of autoregulation in ocular and cerebral disease, only Chapter 29, "Modulation of the Intraocular Pressure/Pulse Amplitude Relation in Subjects with Stenosis of the Internal Carotid Artery," and Chapter 30, "Alzheimer Disease and the Eye," focus on disease mechanisms that would likely be of greater interest to the neuroradiologist.

Three chapters are dedicated to an eponymous device that was invented by the author, the Langham pneumatic tonometer. They describe the theory and use of this instrument to calibrate the intraocular pressure and intraocular pressure pulse. Examples are given of patients with disturbed ocular perfusion associated with severe unilateral and complete unilateral occlusion of the internal carotid artery, bilateral complete occlusions of the internal carotid arteries, and abnormally high cerebral vascular resistance. The author also describes the effect of surgical endarterectomy on the IOP/PA relationship.

The illustrations, graphs, and line drawings have been carefully selected and help the author present a compelling story of the value of this approach to understanding the pathophysiology of ocular disease. The exhaustive references are current and include publications as recent as 2007. The well-conceived index provides the interested reader with ready access to specific items.

With such a narrow focus, this text provides a comprehensive and timely assessment of how intraocular pressure and ocular perfusion interact to maintain ocular health and how a disturbance in that relationship may explain ocular and cerebral disease states. In the context of understanding ocular physiology, it is an inch wide and a mile deep.

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