
VITREOUS SURGERY AND ADVANCES IN FUNDUS DIAGNOSIS AND TREATMENT

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Vitreous Surgery and Advances in Fundus Diagnosis and Treatment

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Preface

This book deals with two subjects in which great strides have been made in the past few years. The treatment of vitreoretinal disorders has shown spectacular progress as a result of the development of new instrumentation and techniques of vitreous surgery. New methods of investigation of the circulation of the choroid and retina, including techniques using monochromatic light, have resulted in impressive advances in fundus examination, diagnosis and, treatment.

Aside from eye research, the aims of the Eye Research Institute of Retina Foundation include teaching, the dissemination of new information, and the acceleration of the application of research to patient management. With these aims in mind, the Institute organized and sponsored the Vitreoretinal Congress held in Boston, June 4-6, 1975. An effort was made to include experts on the faculty from the leading ophthalmic centers both here and abroad in order to obtain a wide range of viewpoints and experiences. Herein lies the special value of this book.

Following introductory chapters on new concepts on the biochemistry of the vitreous, and on pathological changes found in this tissue, the major portion of the book deals with vitreous surgery including patient evaluation, current indications, techniques, complications, and results. Of special interest are the chapters dealing with new instrumentation of vitreous tissue removal in which each developer or inventor describes and compares his instrument with others. The techniques of both open-sky and closed vitreous surgery are discussed in considerable detail and followed by panel discussions which bring out differences of opinion and questions from the audience that clarify points of interest.

Chapters dealing with recent studies on new methods of investigation of retinal and choroidal circulation offer a new dimension to our understanding of diseases of the ocular fundus. New and valuable uses of monochromatic light in the examination and treatment of the retina and choroid are discussed.

We are indebted to Frank Shelton whose unique organizational talents and attention to editorial detail made it a pleasure to work on this book. We want to thank the Word Processing and Editorial Service Unit of Eye Research Institute of Retina Foundation for their countless hours in carefully preparing the manuscripts. Our appreciation also goes to Peggy Rodriguez for compilation of the references, David Tilden for many of the medical il-

illustrations, Gordon Siteman and Martin Rothenberg for photographic work, and Judith Cerone for her secretarial assistance. We are grateful to the staff of Appleton-Century-Crofts for their cooperation, and particularly Doreen Berne for her guidance.

H. MacKenzie Freeman, M.D.

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Foreword

Not long ago, a convention of retinal subspecialists would have been concerned primarily with debating the relative merits of the tools and techniques designed to assure the repair of retinal detachments. Almost two generations of ophthalmologists struggled to translate Gonin's original thesis into more effective treatment, and their preoccupation was justified by the urgent needs identified in the enlarging populations of older patients. Now, the optimistic prospect of visual recovery after detachment proves the value of their dedication and ingenuity.

The approach toward perfection in surgery is asymptotic and obligates a ratio of failure in patients with the most complex and obscure disease processes. However disappointing that fact may be, it does represent natural selection and identification of the worst manifestations of vitreoretinal degradation in which the fundamental mechanism of pathogenesis ultimately may be found. Consequently, persistent study of failures is an essential component of continuing ophthalmic investigation.

This volume, the published proceedings of the Vitreoretinal Congress which convened in Boston in June 1975, gives evidence of three significant advances that have occurred in ophthalmology while progressive improvements in surgical care were being realized. The first has been apparent for several years and has evolved gradually through a long series of studies which demonstrated the intimate association between alterations within the vitreous body and changes in the retina. Methods of examination, initially crude, have been refined to guarantee more accurate observations which in turn have become more relevant through experience. At the same time, timid intrusions into the vitreous space, originally reserved for desperate situations, have been thoughtfully assessed and judiciously extended to establish a new and beneficial province of intraocular surgery. The ability to operate safely within the posterior segment has been achieved in an amazingly brief period of time and its preliminary success has already demonstrated unanticipated benefits. Fundamentally, however, its great achievement has been to restore vision in a large number of patients previously considered inoperable. In so doing, vitreoretinal surgery has not only proven the validity of some concepts of pathogenesis but has also identified new ones. This book presents a comprehensive exposition of the present and prospective advantages of studying the vitreous body and of performing vitreoretinal surgery.

The second advance is the extent to which modern technology is utilized in vitreoretinal research. Fresh clinical insights have been achieved by a synthesis of methodologies of the physical sciences with those of the basic life sciences. The advances made in the understanding of retinal and choroidal circulation through the application of new photometric and photographic techniques evidence the benefits of such associations. Granted that fruitful interdisciplinary cooperation in investigation is nothing new, the scope and success of its application to a limited aspect of eye disease are impressive. That and other achievements encourage confidence in the competence and dynamism of current investigations, and even permit anticipation of further tangible achievements at an accelerating rate.

The third advance is not apparent in the publication of this book, but was visible when the Vitreoretinal Congress was held. A discussion among the 58 eminent faculty members in itself would have constituted a respectable conference. Actually, their presentations were made to more than 350 colleagues who also participated in discussions. The number actively involved clearly indicates that concern with vitreoretinal problems and the capability of solving them are no longer limited domains either attractive or comprehensible to relatively few ophthalmologists. This is evidence of great progress made in ophthalmology by its teachers as well as by their trainees. It is a sign of a vigorous growth which eventually will accrue to the benefit of patients threatened by the potentially blinding disaster of vitreoretinal disease.

The Officers of the Vitreoretinal Congress deserve praise for the efficient organization and conduct of a meeting which summarized brilliantly and comprehensively the progress and prospects in the study of vitreoretinal disease. They, and especially the Congress Chairman, Dr. Freeman, also merit gratitude for the onerous labor involved in making publication of the details of the Congress widely and promptly available. This book is not only a convenient record for participants; even more, it is valuable as a text for colleagues unable to attend and for students who will find it a milestone reference contribution toward their progress in preparing to meet the challenges of modern ophthalmology.

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Worcester, Massachusetts

March 1976

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