مجلہ طب العیون پاکستان

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THE OFFICIAL JOURNAL OF THE OPHTHALMOLOGICAL SOCIETY OF PAKISTAN

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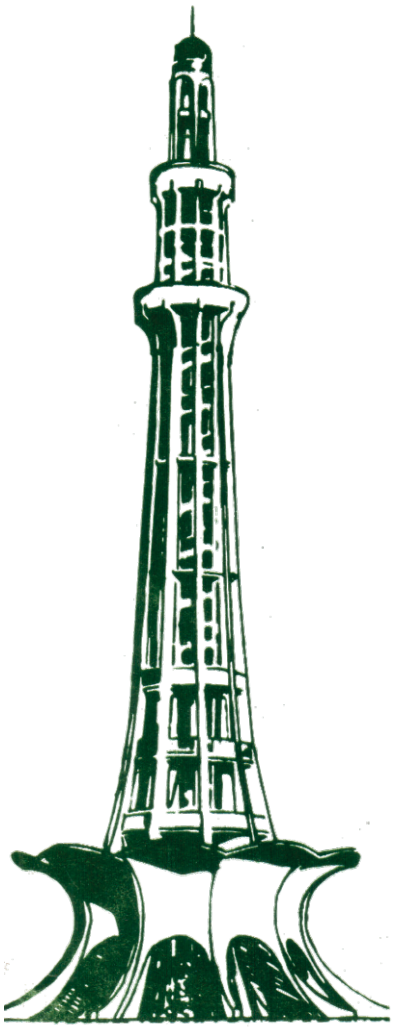

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BISMILLAHIR-RAHMANIR-RAHEEM

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Editorial

Say: Are the blind and the seeing man equal, or are the darkness and the light equal?
-Holy Qur'an 13:16

Complexities of Editorial Operations

Bismillahir-Ruhmanir-Raheem. The inaugural editorial of the JOURNAL, written over seven years ago, stated: "When editorial and printing operations become fully standardized and regular, the publication of the journal may be completely moved to Pakistan." Although it was hoped that this aim would be achieved within two years, it took three-times as long to arrive to a stage where a few colleagues in Pakistan decided to try their hand at publishing the JOURNAL from Pakistan. In December 1989, Professor Mumtaz Raja announced, following a generous praise for the founding Editor for executing his "responsibilities in a most commendable fashion" for the past seven years, that a trial edition of the JOURNAL will appear from Lahore during the 1990. The first issue of the Lahore edition received serious criticism on several quality and policy counts from many members and officers of the Ophthalmological Society of Pakistan (OSP). At Professor Raja's request, the founding Editor wrote his evaluatory remarks on that issue to him, adding several suggestions on how to improve the future issues. However, for one reason or another the quality of the Lahore edition went on deteriorating with every new issue, compelling Professor Raja to write to me that he was "not satisfied" with the Lahore venture.

On the basis of examination of several issues of the JOURNAL which had been edited by the founding Editor, the Pakistan Medical & Dental Council (PMDC) had placed the JOURNAL on the list of the journals approved by the PMDC. Many authors and the editors of the Lahore edition mistook it as the approval of the Lahore publication. The editors of the Lahore edition went so far as to publish the original of a letter of the PMDC to one of the authors verifying their approval of the JOURNAL, without clarification that the approval did not apply to their publication. This further added to the confusion, making it necessary for the PMDC to issue the following letter (No. PF. 11-F-90.6898, 29th Dec., 1990) to the Secretaries of Health of all the provinces and the Secretaries of Public Service Commission at Islamabad, Lahore, Hyderabad, Peshawer, and Quetta:

"I am directed to inform you that this Council has issued letters to certain doctors stating that the "Pakistan Journal of Ophthalmology" is on the approved list of the Council. On scrutiny of the matter, it was revealed that there are two Journals with the same name.... The journal issued from U.S.A. is on the list of recognised Journals. The other journal by the same name i.e. Pakistan Journal of Ophthalmology issued from Lahore is not on the approved list. You are requested kindly to make necessary correction in your list...." -Asstt. Secretary

This situation initiated serious discussions among the Society leaders on formulating plans that would dispel all confusion among the authors and the readers of the JOURNAL, and secure its continued publication with a standard and recognition it has achieved during the last seven years. After a plenty of time, many lengthy consultations, and a great deal of soul searching, Professor M. Naseem Panezai, the President of OSP decided to take the necessary step. He wrote an urgent letter to the founding Editor, in which he said:

"...PM&DC has rejected the Journal...introduced from Lahore due to its low quality and poor standard and I must take an immediate step....This is indeed a very sad and painful news....I being the President of the Ophthalmological Society of Pakistan ask you to continue the printing and publication of the Pakistan Journal of Ophthalmology under your editing....Please don't take this as an order but accept it as a request...for the sake of our national and professional interests. All of us know that it is very important that the (OSP) should have a quality publication...."

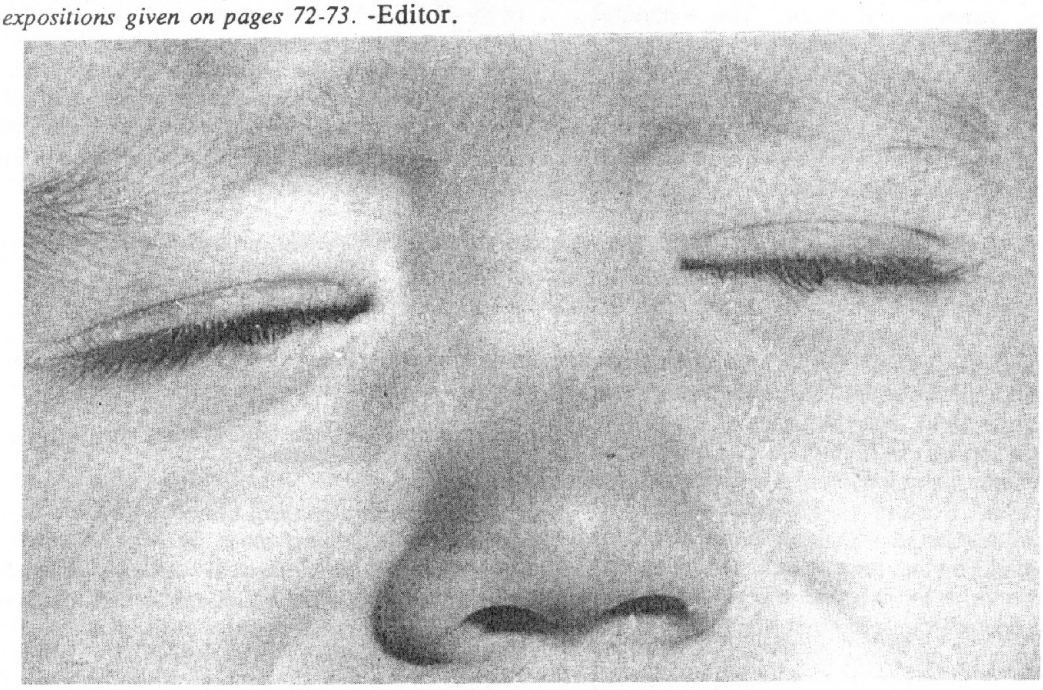
Although the founding Editor feels it his obligation to accept the request made by Mr. President in his above quoted letter, he still strongly feels that the editors of the failed Lahore effort deserve our appreciation for their earlier willingness to shoulder such an exacting responsibility under the circumstances and atmosphere currently prevailing in Pakistan. In addition to the personal literary experience, devotion, and ability of an editor, the reviewers having expertise in various subspecialties, comprehensive reference sources, knowledgeable printers, and diligent proof readers are very important prerequisites of the good editing of any medical journal. There is no doubt that the editors of the Lahore publication faced, despite their second to none ability and drive, an uphill and frustrating struggle due to other above mentioned limitations.

To bring medical journalism in Pakistan to optimum international standards, we must urgently attack our medical publication problems on two fronts: firstly, we must devote ourselves to building of modern and sufficiently well-stocked resource libraries in at least two or three leading teaching centers of the country; and secondly, establish an active and effective educational system for our authors, reviewers, and the would-be editors.

To do their part, the experienced editors of our established national medical journals should arrange regular workshops in Pakistan's teaching institutions on how to write medical papers, and also train selected medical graduates in the editorial operations. They should invite a few capable, energetic, and devoted young physicians from each Province to join their respective editorial boards. In the JOURNAL's case, once fully trained, these young editors will be able, *Insha Allah*, to successfully transfer its editorial and printing operations to Pakistan. *-KJA*

Camera Clinicals

In this section of THE JOURNAL, photographic documentation of interesting and challenging observations are presented to the readers. They should make their diagnosis from the given information, and compare their conclusions with the expositions given on pages 72-73. -Editor.



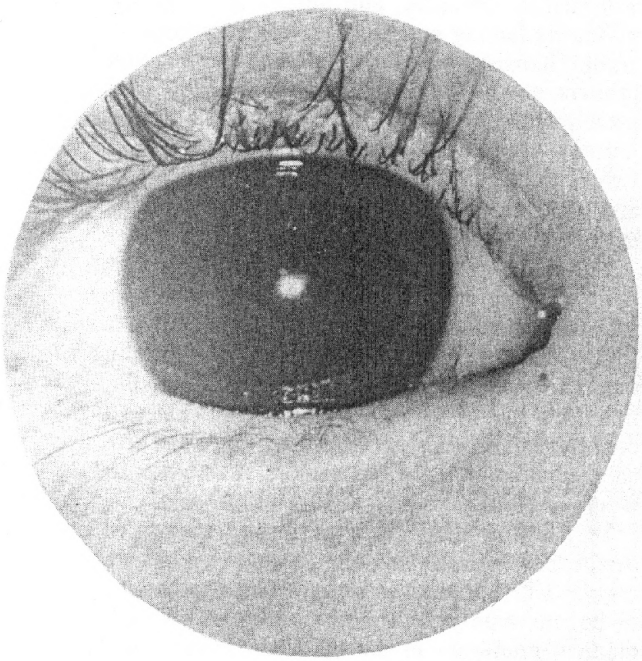


Figure 2

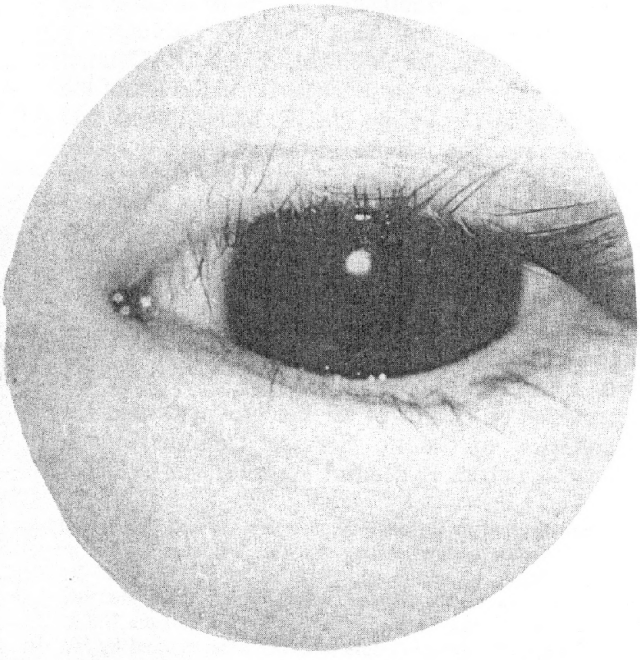


Figure 3

Figures 1, 2, and 3: A 13-month-old baby boy's mother was very concerned that since his birth there was something very peculiar about his eyes. She had taken the baby to a pediatrician, who had reassured her that the problem with his eyes will clear up as he becomes older. She had at times noticed some redness

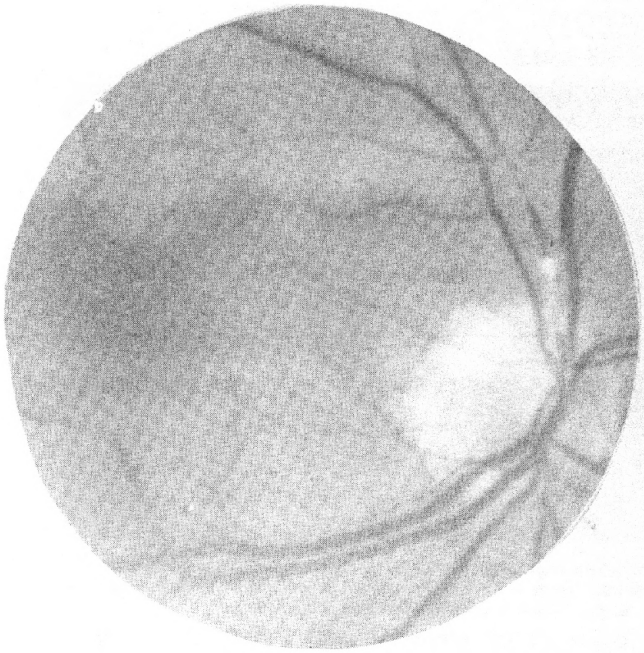


Figure 4

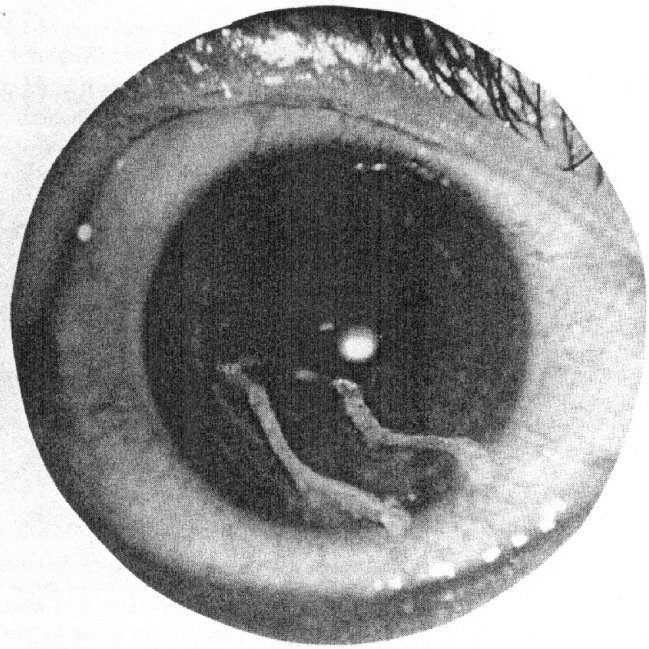


Figure 5

in both eyes of the baby, which sometimes cleard up on its own and at other times by the drops prescribed by the pediatrician. The baby was also bothered by "a lot of ear infections." There was no other problem with the baby's health or development. There has been no difficulty in the pregnancy or the birth of child, who was born at full term. None of the family members were known to have had any eye problem similar to that of the child.

The eye examination showed that every time the child cried, his eyes appeared as shown in the Figures 1, 2 and 3. Under the general anesthesia, the ocular examination was normal in all respects, except for the Schirmer's test, which showed 1 mm wetting of the strip in OD and less than 0.5 mm in OS after 11 minutes. Other than the smaller size of the left lacrimal gland, the lacrimal passages and the lacrimal glands were normal. The examination with the direct and indirect ophthalmoscopes showed that the physiologic optic cups were absent, but the fundi were otherwise normal. During a two-year follow-up, the eyes have remained unchanged, but are free of any visual or structural problem. (# 17193)

Figure 4: A 63-year-old woman noticed on waking up in the morning that she had lost sight in her right eye. A known hypertensive, she had had a heart attack in 1980, and required a double by-pass. She had worn thick plus glasses all her life. She had hypothyroidism for many years, and her mother was a known diabetic.

The eye examination showed that she had visual acuity of 20/40 (6/12) in the right eye and 20/20 (6/6) in the left eye with glasses. The external examination was unremarkable. The intraocular pressure was normal in each eye. The right eye had slight afferent pupillary defect. On ophthalmoscopic examination the fundus of the left eye was normal, but the right fundus had the findings shown in Figure 4.

Nearly 18 months later, the patient returned complaining again of having gone totally blind in her right eye . This time the right visual acuity was reduced to hand motion, and the ophthalmoscopy showed retinal edema involving the inferotemporal retina in the posterior pole. There was a prominent afferent pupillary defect. The eye has not regained sight. (# 4774)

Figure 5: The local emergency room physician referred an 11-year-old white girl for ophthalmic evaluation. He reported that the girl has been complaining of excruciating pain in her right eye since the early morning, when her mother found the child screaming and holding her face in the family bath room. The mother had informed the doctor that because of child's insistance, she had permitted the child to use her makeup paraphernalia , and that the child had done so for over a year without ever really hurting herself.

The eye examination required the instillation of topical anesthetic eyedrops. When the child opened her eyes, the right eye was angrily red and profusely watery. The right cornea had two track-like areas with white material in them (Figure 5). The visual acuity was 20/200 (6/60) in OD and 20/20 (6/6) in OS . The slit lamp examination showed a moderate cellular reaction in the right anterior chamber. (#19077)

In Memoriam

Dr. Jamshed Hormuzshaw Wania

(1929 -1991)

Khalid J. Awan, F.P.A.M.S.

Figure (Awan): Dr. Wania at the 13th Congress of the Asia-Pacific Academy of Ophthalmology, May 12-17, 1991, at Kyoto, Japan. Left, delivering the 1991 "de Ocampo Lecture;" center, immediately after reading the citation for the 1991 Jose Rizal Medal to Dr. Ram Prasad Pokhrel of Nepal, who is receiving it from Dr. Calvin Ring, the outgoing President of the APAO; right, receiving applause as the new President of the APAO.

"Jamshed, get in a taxi and come right over to the Park Hotel, and tell Shireen I have no intention of letting you in if she is not with you," I playfully phoned from my Kyoto hotel room. He laughed,"We have just come back from a tour, and Shireen is a bit tired." "No, no, you tell her she has to come. I have arranged a dinner get-together for all the Pakistanis attending the Congress, and it won't be complete without the President's wife being there, "I pleaded unyieldingly. He yielded.

The hotel had arranged our dinner alongside a beautiful traditional Japanese garden full of refreshing plants with crisp, bright, green leaves and varicolored, attractive flowers. In the garden's center was a fish pond surrounded by many softly lit hanging lanterns. The airlike transparency of its still water gave one the impression as if the brilliantly colored fish were magically gliding through a crystalline gel, and with every flip of a fish, the water's surface reflection would break into a momentary burst of sparkles. Jamshed, Shireen, everyone was so jovial and relaxed. Jamshed appeared particularly content and upbeat. Why not, he had garnered three of the top honors of the Asia-Pacific Academy of Ophthalmology just the day before. He had delivered the 1991 "de Ocampo Lecture," read the citation for the Academy's prestigious "Dr. Jose Rizal Medal,"and been installed as the new APAO President. Sadly, that delightful convivium in Japan has become the last memory of Jamshed for me. On June 18, 1991, he suddenly suffered a fatal heart attack while operating to restore the sight of one of his patients.

Jamshed Hormuzshaw Wania was born in Karachi on May 5, 1929 to Dr. Hormuzshaw Wania, also a noted ophthalmologist, and Mitha Bai. He received his Bachelor of Medicine and Bachelor of Surgery (M.B.,B.S.) from the Dow Medical College, Karachi in 1953. In 1956, he obtained his Diploma in Ophthalmology (D.O.) from the Royal College of Surgeons, London. During his stay in England, he held the positions of a House Officer, Royal Infirmary Stockport; Clinical Assistant, Moorfields Eye Hospital; Senior House Surgeon, Nottingham Eye Hospital; and Ophthalmic Registrar, Royal Infirmary Aylesbury and Oxford Hospitals. In 1957, he became the first Pakistani to receive the "Fight for Sight Fellowship" grant, and left for the United States to complete internship at the Ellis Hospital, Schenectady, New York, and a fellowship in neuro-ophthalmology at the Wilmer Eye Institute, Johns Hopkins Hospital, under the famous Professor Frank Walsh.

In 1959, he returned to Pakistan to practice ophthalmology, in addition to which he devoted a great deal of energy and time to charity work and professional activities. He contributed greatly to the progress and modernization of ophthalmology in Pakistan by participating in many activities of the Ophthalmological Society of Pakistan(OSP), of which he also was a past-President, and by arranging on his own frequent training workshops on modern ophthalmic techniques. He was one of the sincere and devoted members of the JOURNAL's Editorial Board. In 1988, the OSP honored his contributions by awarding him its most prestigious "Professor Ramzan Ali Syed Gold Medal." Jamshed was untiring, imaginative, direct, and a resolute believer in action. In his demise, Pakistan Ophthalmology has lost one of its foremost and most effective international representatives; and I.an intelligent staunch supporter.

Clinical Stages of Resolution of Surgical Expulsive Suprachoroidal Hemorrhage*

Khalid J. Awan, F.P.A.M.S.

ABSTRACT: The modern prognosis for the intraoperative expulsive choroidal hemorrhage has greatly improved, and it is possible to save an eye from this dreaded complication, provided it is detected immediately and managed promptly. The follow-up care and the monitoring of absorption of suprachoroidal hemorrhage are greatly helped by serial ultrasonography and fundus photography. As the hemorrhage resolves, the vascularized mass in the pupil becomes steadily smaller, and shows folds on its entire surface when viewed with an ophthalmoscope. On ultrasonography, the mass initially appears acoustically hollow on B-scan and exhibits low-amplitude internal reflectivity on A-scan. Depending on the size of blood clot, the complete clinical resolution of hemorrhage may take one month or more. (Pakistan Journal of Ophthalmology 7:61-64, July, 1991.)

Expulsive suprachoroidal hemorrhage, an uncommon but destructive complication, may occur when there is sudden loss of intraocular pressure due to surgical or spontaneous opening of the globe.[1] The modern advances in surgical techniques and ophthalmic technology have made it possible to save eyes from this previously disastrous surgical complication.[2] In fact, it now is also possible to improve the function of eyes saved from expulsive hemorrhage by reoperation.[3] The purpose of this communication is to delineate the ultrasonic and ophthalmoscopic characteristics which may help an eye surgeon to determine the proper course of hemorrhage resolution.

Materials and Methods

This study includes four patients, three women and one man, ranging in age from 72 to 81, whose eyes had been saved from an intraoperative expuslive suprachoroidal hemorrhage during a cataract operation. In the management of expulsive hemorrhage in these eyes the guidelines I have previously outlined in another publication were followed.[3]

Each eye was evaluated by serial examination of visual acuity, color vision, slit lamp changes, applanation intraocular pressure, ultrasonographic pattern, and fundus appearance, first daily for one week and then weekly until the time of repeat surgery. When chorioretinal layers appeared reasonably flat on ophthalmoscopy and B-scan ultrasonography, the reoperation was undertaken, irrespective of the total duration of post-expulsive hemorrhage period among different eyes. A detailed report on two of the four patients in this study appeared in another publication.[3] The clinical course of one of the two new patients follows as a representative case report.

CASE REPORT: A systemically healthy 79-year-old white woman had a successful extracapsular cataract extraction with posterior chamber intraocular lens implantation on her right eye by using the author's previously published technique.[4] The operation resulted in an excellent visual improvement with a final corrected visual acuity of 20/30.

A year after the surgery on the right eye, she underwent the same procedure on the left eye. During the final stages of cortical aspiration, an expulsive suprachoroidal hemorrhage developed. The eye was fortunately saved by immediate closure of the corneal wound and a partial exteriorization of the suprachoroidal blood through a posterior sclerotomy in the upper nasal quadrant. The closure of the wound was easily and tightly accomplished because of the ready availability of a strong scleral flap, which had been prepared as an integral part of my above mentioned technique.[4] The next morning, the fundus reflex was absent, and a vascularized mass occupied the pupil (Figure 1A). On B-scan ultrasonography, a large, dome-shaped, acoustically hollow mass occupied a large part of the globe (Figure 1B). The choroidal excavation which is so characteristic of the malignant

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*Presented at the XIII Congress of Asia-Pacific Academy of Ophthalmology, May 12-17, 1991, Kyoto, Japan.

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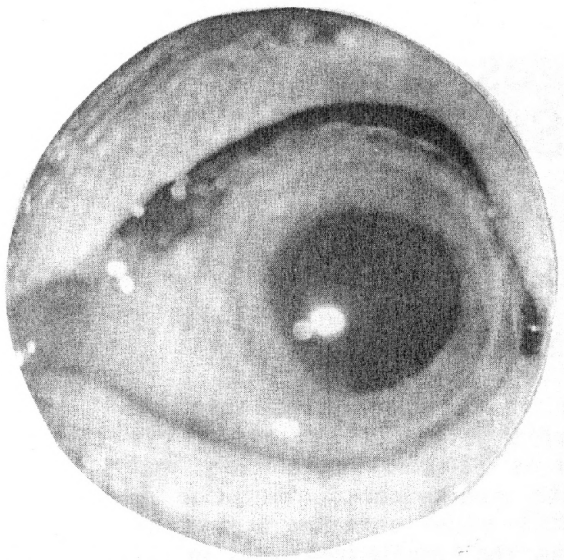

Figure 1A (Awan): Left eye. Expulsive suprachoroidal hemorrhage has pushed the retina against the pupil. Vision is questionable light perception.

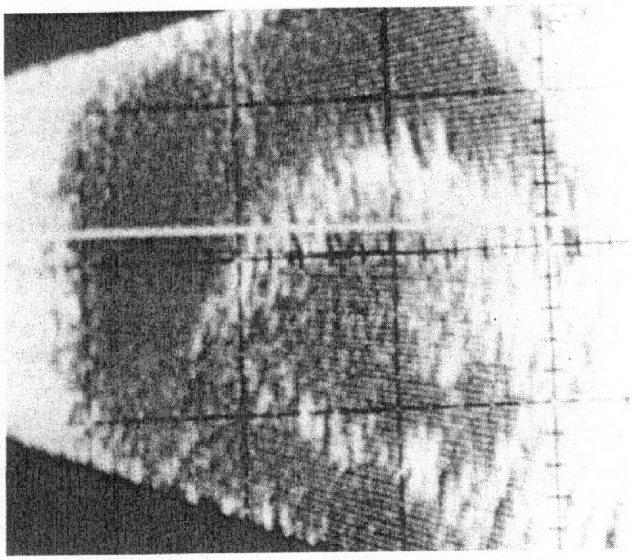

Figure 1B (Awan): Left eye. B-scan ultrasonograph of eye in Figure 1A. Note a large, rounded, acoustically hollow mass occupying the globe. There is no choroidal excavation.

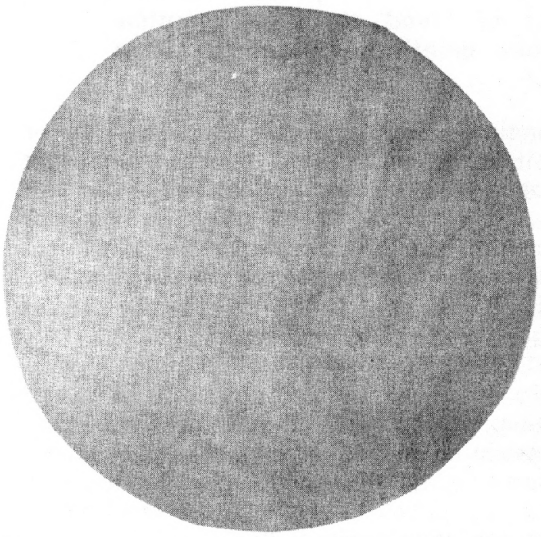

Figure 2A (Awan): Left eye. Two weeks after the expulsive hemorrhage. A large corrugated mass is visible temporal to the macula.

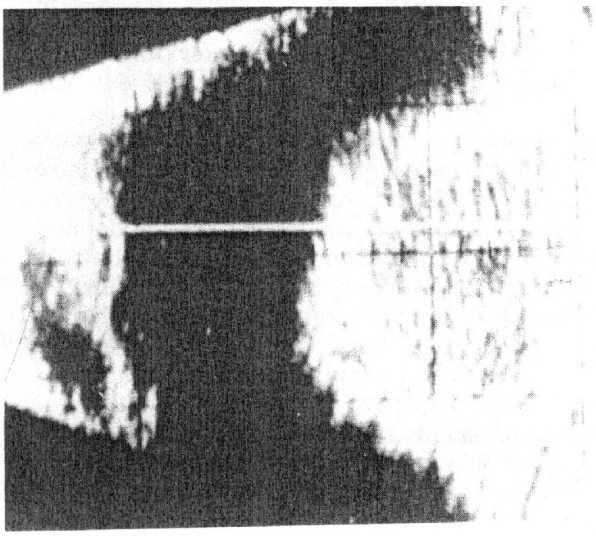

Figure 2B (Awan): Left eye. B-scan ultrasonograph of Figure 2A. The intraocular mass is much smaller in size.

choroidal melanoma was not present. The visual acuity at this time was limited to a doubtful light perception.

At two weeks post-hemorrhage, the intraocular mass became significantly reduced in size, and on ophthalmoscopy showed large folds on its entire surface (Figure 2A) and appeared solid on B-scan ultrasonography (Figure 2B). At four weeks post-hemorrhage, the mass elevation was much reduced and distinct folds were present only temporal to the macula on ophthalmoscopic examination (Figure 3A), on ultrasonography, the blood clot had become almost flat (Figure 3B). Eight weeks following the hemorrhage, the fundus reflex had become normal (Figure 4), and the chorioretinal layers were flat echographically as well as ophthalmoscopically, except for a rather subtle suggestion of folds on funduscopy. A posterior chamber intraocular lens implantation through the original cataract incision was performed without any difficulty or complication (Figure 5). B-scan ultrasonography on the 14th postoperative day showed completely normal intraocular structures (Figure 6). Other than a subtle blotchy depigmentation in the temporal retina, the ocular fundus appeared normal a year after the intraocular lens implantation (Figure 7), with a corrected visual acuity of 20/25, a line better than the other eye.

Discussion

At the beginning of this century, the prognosis for an expulsive hemorrhage was so bleak that some ophthalmic textbooks of that time recommended, "Even if it is stopped...the eye should be enucleated." [5]

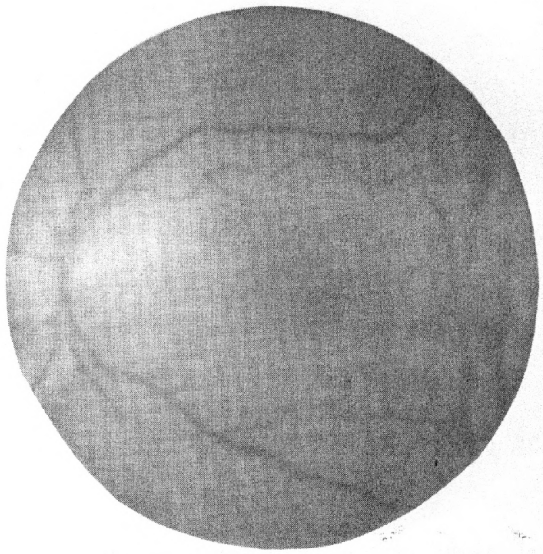

Figure 3A (Awan): Left eye. Four weeks after the hemorrhage the eye shows only minimal folding.

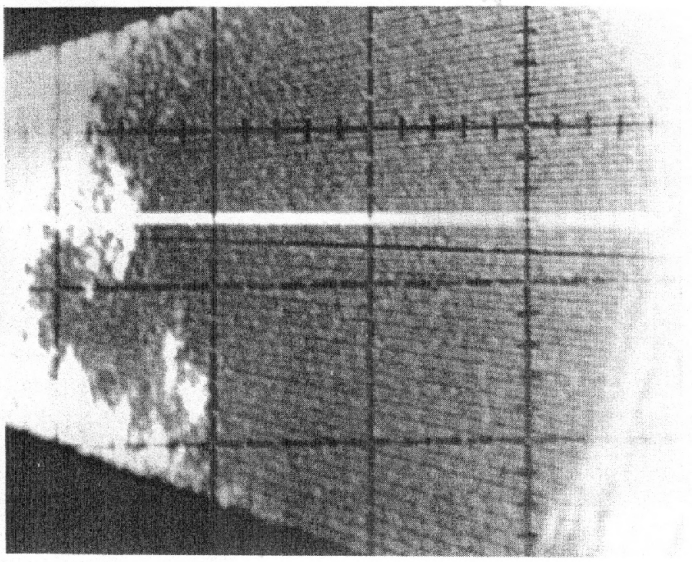

Figure 3B (Awan): Left eye. B-scan ultrasonograph of Figure 3A.

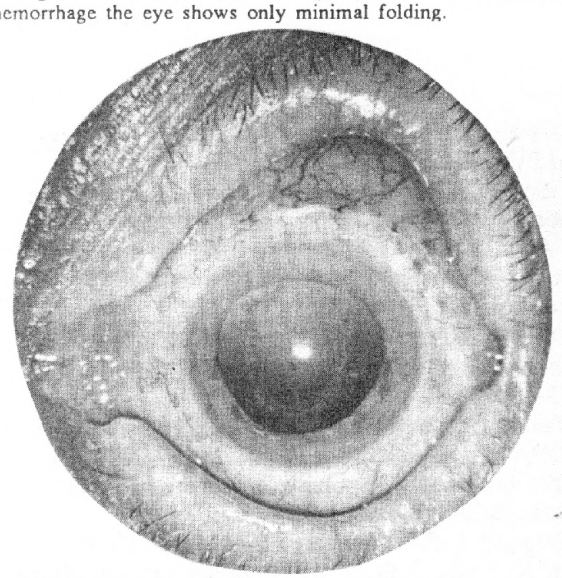

Figure 4 (Awan): Left eye. Eight weeks after the expulsive hemorrhage the fundus reflex is normal. Note the black silk sutures in the scleral flap two to three mm above the limbus.(see reference 4) This scleral flap was most helpful in the rapid closing of the cataract incision with stronger 8-0 silk sutures.

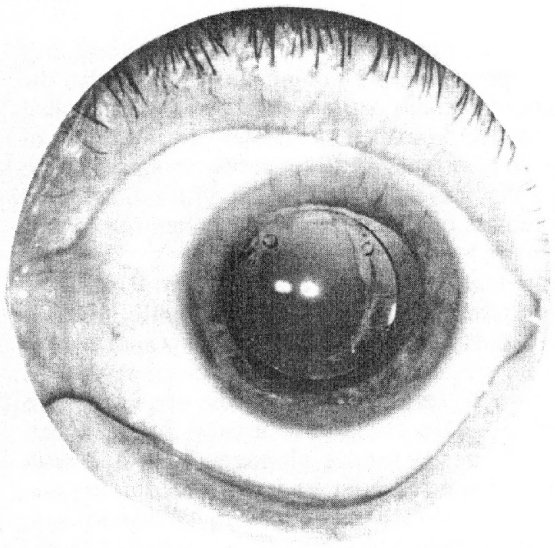

Figure 5 (Awan): Left eye. Post-intraocular lens implantation in the posterior chamber sulcus.

Fortunately, because of the modern advances in ophthalmic surgical techniques and technology the awful outcome of this dreaded complication is no longer a necessity, and "the outlook for a satisfactory recovery is not just possible; it is good."[2] The use of microscope, smaller incision, improved instrumentation, popularity of the extracapsular cataract extraction technique, protected filtering procedures, a more encouraging attitude of surgeons toward the expulsive hemorrhage, etc. have enhanced surgeons' ability to save eyes from this complication. Now the question is how and when to reoperate on these saved eyes for improving their function.

Although exact etiology of the expulsive suprachoroidal hemorrhage is not known, many systemic, ocular, and operative aspects have been implicated.[1,3,6,7] I have seen a patient with expulsive choroidal hemorrhage whose sister had lost an eye to a severe intraocular bleeding on the operating table. A familial tendency may play some role in the causation of expulsive choroidal hemorrhage. I have also come to realize that my patients who developed expulsive choroidal hemorrhage required, for one reason or another, an extended intraoperative manipulation. Hence, more prolonged the operative time, more concerned and cautious a surgeon should become. The

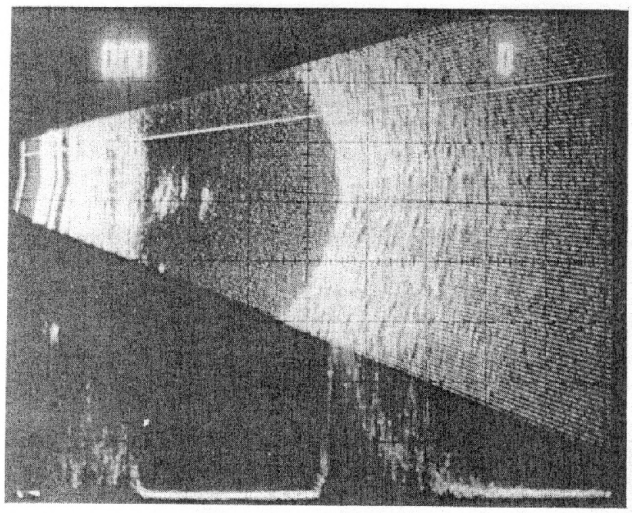

Figure 6 (Awan): Left eye. A few weeks after the intraocular lens implantation, the B-scan ultrasonography shows healthy eye with no elevationn of the retina or the choroid.

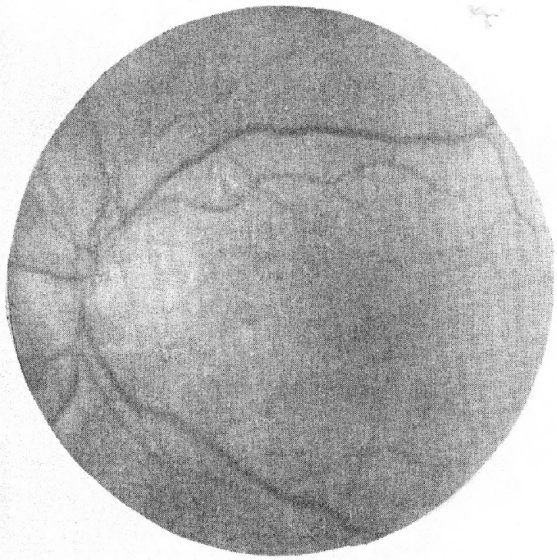

Figure 7 (Awan): Left eye. Ocular fundus one year after the intraocular lens implantation. The corrected visual acuity is 20/25.

eyes with a long-standing ocular inflammation may also be prone to this complication. Recently, the resistance to venous outflow caused by the retrobulbar injection was suggested as another possible cause of expulsive hemorrhage.[8] Some recent authors hold the opinion that it is the ciliochoroidal effusion that leads to the rupture of choroidal vessels, giving rise in turn to expulsive hemorrhage.[9,10]

Malignant melanoma of the choroid may be differentiated from the asymptomatic limited suprachoroidal hemorrhages, which may appear after intraocular surgery, by fluorescein angiography.[11] This may, however, be unnecessary in case of an expulsive hemorrhage as the diagnosis is usually not in doubt.

We used serial fundus photography and B-scan ultrasonography as guidelines for determining the progress of resolution of suprachoroidal hemorrhage. B-scan ultrasonography initially presented a large, acoustically hollow, rounded mass that became gradually smaller and more solid with the passage of time. Ophthalmoscopically, the mass showed large corrugations or folds on its entire surface, which lasted till the end-stage. It is interesting that when hemorrhage disappeared echographically, an appearance of indefinite fold in the fundus was still present on funduscopy. This spurious appearance of folds likely was due to a pigmentary disturbance, and it did not adversely effect the function of the eye. When the area of hemorrhagic mass appears flat on ultrasonography, the reoperation can be safely performed, irrespective of the ophthalmoscopic picture or the duration of post-hemorrhagic period. Depending upon the amount of bleeding, the complete resolution of expulsive choroidal hemorrhage may be expected to occur anywhere from four weeks to four months following this complication.

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Expert Opinions

Cataract Extraction and Intraocular Lens Implantation in Eyes with Chronic Non-granulomatous Uveitis

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ABSTRACT: A total of 67 patients, 62 with chronic non-granulomatous uveitis which had been dormant for at least four years in 52 and for one year or more in 10, and five with Fuchs' heterochromic iridocyclitis, had cataract extraction by phacoemulsification in the posterior chamber. All of these patients had intact posterior capsule and all, except for two who could wear contact lenses, received either primary or secondary implantation of polymethylmethacrylate (PMMA) lenses, single-piece type for the anterior chamber (six eyes) and with polypropylene haptics for the posterior chamber (59 eyes: 49 primary and 10 secondary).

All eyes (24) with primary "in the bag" lenses remained quiet with no cystoid macular edema (CME) during a follow-up period of five to seven years (median 6.4 years). In eyes (25) with primary iridociliary sulcus fixated lenses, two had a flare-up of uveitis with CME and two had flare-up of uveitis without CME, but all of them responded to steroids and indomethacin eye drops. Another patient in this group had flare-up of uveitis with CME that did not respond to treatment, necessitating removal of the implant. Of the eyes with secondary implants into the iridociliary sulcus (10), two developed a flare-up of uveitis which responded to topical steroids and indomethacin. All eyes (six) with anterior chamber angle-fixated secondary implants developed a flare-up of uveitis, five of these were controlled on conservative therapy, but one required the removal of implant. All of the sulcus fixed and all of the secondary, but very few "in the bag," lens implants showed an accelerated rate of posterior capsular opacification when compared to the implants in the non-uveitic patients who had undergone similar operations. Neither idiopathic non-granulomatous nor Fuchs' heterochromic uveitis is a contraindication to lens implantation surgery, and "in the bag" placement of the implant offers the greatest safety. (Pakistan Journal of Ophthalmology 7:65-68, July, 1991.)

In the not too distant past, uveitis in any form was considered an absolute contraindication to intraocular lens (IOL) implantation. Today this restriction is not valid anymore and uveitis is considered only a relative contraindication. However, when deciding on the choice of surgery, a careful appraisal of the type and nature of the uveitis must be considered. I wanted to examine the affects of intraocular lens implantation surgey on the eyes in which uveitis had been dormant for an extended period. This report concerns my experience with a limited number of patients with non-granulomatous uveitis or Fuchs' heterochromic iridocyclitis.

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Materials and Methods

A total of 67 patients, 52 with chronic non-granulomatous anterior uveitis which had been dormant for at least four years, 10 with similar uveitis dormant for at least one year, and five with Fuchs' heterochromic iridocyclitis composed the body of this study. Excluded from the study were all patients with granulomatous uveitis, pars planitis, diabetes, or glaucoma. The age in all three groups ranged between 60-72 years (mean 63.5 years). Every patient underwent posterior chamber (PC) phacoemulsification with an intact posterior capsule. If posterior capsule rupture occurred, the patient was not admitted into the study. Random selection, using the Tables of Random Numbers[1] and envelopes, assigned the patient to (A) implantation of a lathe cut lens with polymethyl-methacrylate (PMMA) optic and J-loop polypropylene haptics at 10° angulation into the capsular bag, (B) implantation of the same lens into the iridociliary sulcus, or (C) aphakia with contact lens fitting.

Twenty-six patients (21 with unveitis dormant for four years, three with uveitis dormant for three years, and three with Fuchs' heterochromic iridocyclitis) fell into Group A and 23 patients (17 with uveitis dormant for four years, four with uveitis dormant for three years and two with Fuch's heterochromic iridocyclitis into Group B. Since all patients but two (one with uveitis dormant for four years and the one with Fuchs' heterochromic iridocyclitis) of those who were in Group C failed to wear their contact lens, secondary IOL (intraocular lens) implantation was decided upon in them. Hence, a total of 16 patients fell into this category. A random selection determined the choice of a posterior chamber or an anterior chamber angle fixated lense in each patient. Although these patients had intact posterior capsules, we elected to try anterior chamber fixated intraocular lenses in some of them because those are the intraocular lenses preferred by many surgeons as secondary implants. In 13 patients with secondary implants (five with Pannu AC lens and eight with J-loop PC lens), the uveitis has been dormant for four years, and in three patients (one with Pannu AC lens and the two with J-loop PC lens), it had been inactive for one year. None of the patients with Fuchs' heterochromic iridocyclitis (5) required secondary IOL implantation.

In some of these patients, there were adhesions between the capsule and the iris. These could have been separated in all patients, and J-loop lenses could have been implanted into ther iridociliary sulcus. However, at the time of the study first submitted in the Spring of 1986, the most commonly used IOLs for secondary implants were anterior chamber angle fixed lenses. I wanted to see the behavior of the eye when the anterior iris is in contact with the lens and not the posterior iris and the ciliary body, as in a sulcus fixated intraocular lens. Since I never considered closed loop anterior chamber angle fixed IOLs safe, and was already aware of increasing problems with them, I chose an open loop, all-PMMA design, the Pannu lens, which I have used successfully as an anterior chamber angle fixed implant in complicated cases and secondary implant in eyes without capsular support.

Before submitting this paper, we re-examined several of the patients in the study. Of the 52 patients whose uveitis was dormant for more than 4 years at the time of the surgery, 11 were available, 6 in-the-bag, 3 fixated and 2 aphakic. Of these patients, the in-the-bag lens group showed no problems except that 1 patient's posterior capsule fibrosed and required capsulotomy. One aphakic patient with a sulcus fixated lens had one flare-up of uveitis controlable on topical medication).

Of the group of patients whose uveitis was dormant for one year, only one in-the-bag and one sulcus fixated lens patient could be checked. Both patients had increased fibrosis. The sulcus fixated IOL group had a flare-up of uveitis which could not be controlled medically and the IOL had to be removed. During explantation, the haptic had to be amputated and rotated out of the eye.

Preoperative and postoperative examinations included vision, PAM (potential acuity meter) or Worst fundus reading chart evaluation, anterior segment slit lamp examination, endothelial cell count with the Pro-Koestler Endothelial Cell Counter and pachometry, intraocular pressure, gonioscopy, and slit lamp fundus examination with Goldmann 3 mirror lens. Vision, slit lamp, and intraocular pressure examinations were repeated on every postoperative visit. Gonioscopy and slit lamp fundus examinations were performed at one month, three months, six months and yearly intervals. Fluorescein angiography using Topcon fundus camera was performed at two months, eight months and two years. Iris fluorescein studies using the Topcon or Zeiss photo slit lamp were performed at the same time, as well as when the question of the flare-up of uveitis arose.

All patients received pre-and postoperative dexamethasone and indomethacin eye drops starting three days preoperatively and continuing four times a day for two weeks, three times a day for two weeks, twice a day for a month, daily for two months, and every-other-day for a least one year. The medications were increased if any signs of flare-up or uveitis occurred (cells, flare, fluorescein signs, etc.). In addition, all patients were given 1 ml of Celestone subconjunctivally at the end of surgery and an antibiotic steroid combination ointment. In the case of flare-up of uveitis and/or CME, the administration of topical steroids was increased to every two hours during waking hours, altering this dosage only if the intraocular pressure rose above 30 mmHg, or the inflammatory changes subsided. The topical indomethacin eye drops administration was increased to every three hours during waking hours. Systemic steroids were given in the form of Prednisone 80 mg every-other-day at 8:00 a.m. was reached. Vitamin C, 1,000 mg, was also given daily per mouth. If no improvement occurred after three months of weekly retrobulbar celestone injections, the IOL was removed.

All secondary implants were performed under the protection of Healon^{R} (1% sodium hyaluronate) .

All patients were observed between 5 and 7 years (mean 6.4 years) postoperatively.

Results

The postoperative course during the first six weeks was no different among the three groups of this study or between the uveitic andd non-uveitic patients in our practice of similar surgery and therapy. During the observation period, the flare-up of uveitis, with or without cystoid macular edema (CME), occurred as shown in Table 1.All cystoid macular edema was confirmed with fluorescein angiography.The time of the uveitis flare-up is presented in Tables 2 and 3. Note that some patients had more than one flare-ups.

Table 1
Uveitis flare-up with or without cystoid macular edema

IOL type & placement site	4-year dormant uveitis	1-year dormant uveitis	Fuchs' heterochromic iridocyclitis
A. Primary Implant			
In-the-bag (J-loop)	0(21)	0(3)	0(2)
Sulcus (J-loop)	2*(17)	1(4) (CME, IOL removed)	1(2) (CME)
Aphakic with contact lens	1*(1)	-	0(1)
B. Secondary Implant			
Anterior chamber angle (Pannu)	1*(5)	1(1) (CME, IOL removed)	0(0)
Sulcus (J-loop)	1*(8)	2*(2)	0(0)

*Responded to therapy; CME: Cystoid macular edema; IOL: Intraocular lens

The fibrous opacification of the posterior capsule significant enough to decrease the vision to 20/40 or less occurred in 39 patients (five with in the bag IOL, 21 with primary sulcus fixated PC IOL, six with secondary Pannu AC IOL, five with secondary sulcus fixated PC IOL, and two with contact lens) in six months to seven years of observation period. In comparison, only 13% of 100 non-uveitic patients who had similar operations developed posterior capsular opacification of such degree in seven years that it required capsulotomy. In a majority of these patients, such opacification occurred after four years, whereas in the uveitis patients, almost all the sulcus fixated lenses and all the secondary implant patients, including the one-piece PMMA Pannu lens, opacified within two and a half years. The eyes with "in-the-bag" lenses behaved like the non-uveitic eyes.

The preoperative endothelial cell counts were between 1300 and 1700. Postoperative cell counts performed three months after surgery in the primary cases were acceptable; however, after the flare-up of uveitis, further cell loss occurred. Due to the use of 1% sodium hyaluronate (Healon^{R}) during operations, the cell loss in secondary implantations was almost similar to that seen in the primary implantations. Here, a flare-up in uveitis produced further cell loss.

Table 2
Time of uveitis flare-up in primary implant cases

	4-year dormant uveitis			1-year dormant uveitis			Fuchs' heterochromic iridiocyclitis		
Lens placement	In the bag	sulcus	aphakia	In the bag	sulcus	aphakia	In the bag	sulcus	aphakia
4 MO	1	-	-	-	1	-	-	-	-
8 MO	-	1	-	1	X	-	1	-	-
1 YR	-	-	-	X	XR	-	-	-	-
2 YR	X	-	1	XC	-	-	XC	-	-
2 1/2 YR	-	X	-	-	-	-	-	-	-
4 YR	-	-	-	-	-	-	-	-	-

X : More than one flare-up ; R : IOL removed; C : Cystoid macular edema

Table 3
Time of uveitic flare-up in secondary implant cases

	4-year dormant uveitis		1-year dormant uveitis		Fuchs' heterochromic iridocyclitis	
	J-loop sulcus	Pannu ant. ch. ang.	J-loop sulcus	Pannu ant. ch. ang.	J-loop sulcus	Pannu ant. ch. ang.
7 MO	1	1 CME, R	1	-	0	-
14 MO	-	-	X	1 CME, R	-	-
2 YR	X	-	-	-	-	-
2.5 YR	-	-	X	-	-	-
3 YR	X	-	-	-	-	-

R : IOL removed; X: More than one flare-up; CME: Cystoid macular edema

Discussion

After years of observing the behavior of eyes with dormant idiopathic non-granulomatous uveitis and of Fuchs' heterochromic[2,3] iridocyclitis, studies showed that cataract extraction and intraocualr lens per se usually does not trigger a flare-up of uveitis. Even intraocular lens implantation in Fuchs' heterochromic iridocyclitic eye did not cause recurrence of uveitis. Most of the inflammatory reaction following intraocular lens implantation is the result of: (A) surgical trauma; (B) "toxic lens syndrome", and (C) infection. Scattered experience with uveitic eyes suggested that uveitis may become considered a relative rather than an absolute contraindication to intraocular lens implantation. Since, however, there are many eye and systemic diseases associated with uveitis[3-7] of different forms, a common sense approach is called for. For instance, one should not implant an intraocular lens into an eye with leprotic uveitis or with schistosomiasis, sclerotic uveitis (staphyloma, scleromalacia), juvenile rheumatic arthritic uveitis, etc. None of our patients belonged to such groups. Indeed the majority of our patients could be classified as idiopathic anterior uveitis. It is interesting to notice that in this series the "in-the'bag" lenses did not have flare-up whereas the sulcus and some anterior chamber angle fixed lenses did flare up.

In a few patients the intraocular lens seemed to be an irritating factor since the removal of it led to a resolution of the inflammatory process. In some others (where flare-up occurred), the uveitis was associated with such systemic diseases as old age rheumatoid arthritis.

This paper was first presented at the Symposium of Cataract and Refractive Surgery meeting in April of 1986. During the review process, two papers appeared on a similar subject. Foster et al[8] reported the findings in 44 eyes of 38 patients with uveitis. Thirty-two patients had posterior chamber implants and 12 patients did not. The ones with the lens achieved 20/40 or better vision in 87% whereas 67% of those who did not receive implants also achieved 20/40 vision. They recommended complete removal of lens cortex and placement of an all PMMA posterior chamber lens within the capsular bag. Michelson et al[9] reported their experience with lens implantation in pars planitis. They had, however, a great number of complications and felt that even in eyes with "burned out uveitis" a continual low grade inflammation may complicate the use of IOL implantation. Both of these authors recommended careful patient selection. I feel that these two articles published very recently support my findings of a few years ago.

Conclusion

Idiopathic non-granulomatous anterior uveitis is not a contraindication to intraocular lens implantation anymore; neither is Fuchs' heterochromic iridocyclitis. However, it is safer to wait more than one year after the last flare-up of the uveitis. Lenses should not be placed in "hot" or not completely quiet eyes. Placement of the lens into the capsular bag, a procedure made easy by the techniqe described by Galand,[10] and by Baikoff[11] seems to offer the greatest safety in this operation. Intraocular lenses should not be placed in the iridociliary sulcus in patients with a history of uveitis. Even chamber angle fixed lenses should be used only if absolutely necessary. Each patient has to be evaluated individually. The type and the course of th uveitis has to be determined before a decision is made to implant an intraocular lens.

Declaration

The author has no proprietary interest in any of the products or devices mentioned in this paper.

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(Editor's note: Due to space limitation, several of the tables on the preoperative and postoperative endothelial cell counts and timing and incidence of posterior capsular opacification could not be included. The interested reader may get them from the author.)

Conjunctival Aerobic Bacterial Flora in Pakistan

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ABSTRACT: To evaluate conjunctival aerobic flora in Pakistani population, we cultured cotton swab conjunctival specimens from 3,727 adults and 158 children. Cultures were positive for these bacteria in 185 out of 7,454 adult eyes (2.5%) and 13 out of 316 pediatric eyes (4%). The average number of bacterial species isolated from the pediatric eyes (0.04%) was greater than that from the adult eyes (0.025%). The predominant bacterial species in adults was *Staphylococcus aureus* (39%), followed by the coagulase negative staphylococci (24%). Both types of organisms were isolated in equal quantity from the eyes of children (23% each). *Streptococcus pneumoniae* was found much more frequently in children (15.4%) than in adults (1.08%). Also, when compared with adults, children had a significantly higher isolation rate for Gram-negative bacterial species (66% in children to 23% in adults). (Pakistan Journal of Ophthalmology 7: 69-71, July, 1991.)

The presence of microorganism as residents of the normal conjunctiva was first reported in the 19th century.[1] Since then, numerous studies have been carried out in various parts of the world to study, identify and classify organisms isolated from the normal and infected conjunctiva by microbiologist and ophthalmologists alike.[2-10] Modern studies have addressed the question of influence of age on the microbial flora, normal or pathogenic, of the conjunctiva. Although both aerobic and anaerobic bacteria were the subject of a recent study, most published reports have dealt with a comparative study of only aerobic bacterial flora in the adult and the pediatric eyes.[3,4,5,6,11]

We conducted a study to evaluate and compare the conjunctival aerobic bacterial flora in the non-symptomatic pediatric and adult Pakistani patients who visited the Akhtar Eye Hospital, Karachi during a three-years (1988-1990) period. To our knowledge, this is the first survey of its nature that has been carried out on a large, randomized, and non-selective Pakistani population of 3,885 subjects.

Materials and Methods

This study included 3,885 patients who underwent ocular surgical procedures at the Akhtar Eye Hospital, Karachi over a period of three years (1988-1990). Those aged 16 years or under were assigned to the pediatric category. All patients were free from clinical manifestations of infection at the time of study. The patients had not received any antibiotics or other ocular medications prior to their inclusion in the study for at least two weeks. If a patient showed any signs of the blockage of nasolacrimal passages, he was excluded from the study.

A sterile cotton swab was applied to the inferior conjunctival fornix of each eye. The swabs were then cultured directly onto 10% blood agar (from Oxoid) and MacConkey agar (from BBL) plates. The plates were then incubated for 48 to 72 hours and checked daily for bacterial growth. After incubation, a Gram staining of all positive cultures was done. The colonies were identified and differentiated by standard bacteriologic techniques used for the differentiation of Gram-positive and the Gram-negative organisms.

Results

Results of the conjunctival cultures are presented in Table 1. The percentage of eyes with positive culture results was greater in children (4.1%) than in adults (2.5%). Also, the average number of bacterial species isolated per eye was higher in children (0.04%) than in adults (0.025%). The type and number of bacterial species isolated in adults were, however, greater than in children (12-14 in adults versus 7-9 in children). The percentage of the eyes which grew no organisms was almost identical in children (95.5%) and adults (98%).

Positive cultures according to the species are shown in Table 2. *Staphylococcus aureus* was the predominant gram positive organism isolated from adults (39%) followed by the coagulase negative *Staphylococcus* species (24%). No difference existed in the prevalance rate of these two varieties in children (23% each). A significant difference in isolation rate existed in *Streptococcus* species among children (30.9%) and adults (4.3%). *Streptococcus pneumoniae* was the predominant species in children (15.4%), while in adults it had much lower percentage (1.8%).

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Table 1
Conjunctival culture for aerobes (3,727 adult and 158 pediatric subjects)

Feature	Children	Adults	Total
Number of eyes	316	7454	7770
Eyes with no growth	303 (95.5%)	7269 (98%)	7572
Culture positive eyes	13 (4.1%)	185 (2.5%)	198
No. of species isolated	7-9	12-14	19-23
Species per eye (average)	0.04	0.025	-

Gram-negative rods grew from 23% of the adult eyes and from 23% of the pediatric eyes. The culture results were otherwise identical in the two groups. The status of conjunctival anaerobic and other organisms (virus, etc.) was not known in the subjects of this study.

Discussion

The present three-year study analyzes and compares the aerobic conjunctival flora in pediatric and adult patients admitted for surgery to the Akhtar Eye Hospital at Karachi, a post graduate teaching institute for ocular diseases. In it the qualitative isolation and identification of potential pathogen from the conjunctival specimen without counting the number of organisms. Numerous studies have been carried out in the past 50 years to study the aerobic bacterial flora of the normal adult conjunctiva.[2,4-11] Despite geographic and chronologic differences of these studies, their data show a remarkable consistency. Although in general similar to these studies, our data differ in certain important aspects.

Staphylococcus aureus was the most common organism to be isolated from the adult conjunctiva (39%) in our study. This finding correlates with the study of Locatcher, Khorazo ad Seegal,[3] who report a 42% isolation frequency of this organism from 10,271 individuals studied beween 1952 and 1968. In our studty, coagulase negative staphylococci was the second most frequently cultured organism from the adult eyes (24%). Pediatric eyes had an equal rate of isolation for both the coagulase positive and coagulase negative organisms (23% each). This finding differed from that of Singer, Isenberg and Apt,[5] who reported coagulase negative *Staphylococcus* as the predominant organism to be isolated from both pediatric (36%) and adult (40%) conjunctivae. Brook[12] reported similar data on aerobic and anaerobic flora in pediatric patients with conjunctivitis. He did not, however, compare his data with those of any an adult population.

Our study found a significant difference in the prevalence of *Streptococcus* species between the pediatric and the adult conjunctivae (30% in children versus 4% in adults). These figures compare favorably with those reported in a similar study by Singer,

Table 2
Species of organisms isolated

Species isolated	Children	Adults	Total
Gram-positive			
Staphylococcus aureus	3(23%)	72(39%)	75
Coagulase neg. *Staph.*	3(23%)	44(24%)	47
Strep. pneumoniae	2(15.4%)	2(1.08%)	4
Other *Streptococcus sp.*	2(15.4%)	6(3.2%)	8
Gram-negative			
Escherichia coli	1(7.8%)	13(7%)	14
Pseudomonas aeruginosa	1(7.8%)	16(8.6%)	17
Other *Pseudmonas* species	-	9(5%)	9
Proteus mirabilis	-	1(0.5%)	1
Other *Proteus* species	1(7.8%)	6(3%)	7
Salmonella species	-	1(0.5%)	1
Klebsiella species	-	14(8%)	14
Citrobacter species	-	1(0.5%)	1

Isenberg and Apt.[5] They cultured *Streptococcus* species from 14.9% pediatric conjunctivae versus 2.2% in adults.[5] The streptococcal colonization of skin and the upper respiratory tract is known to be more common in children than in adults.[16,17] Since these sites are believed to be an important source of conjunctival flora, Singer and colleagues[5] reason that more streptococci should be expected in the conjunctiva of children. Cason and Winkler[9] however cultured streptococcal species from less than 1% of their patients in Birmingham, Alabama. Gram-negative rods in our study were cultured in 33% of the adult cases and in 23% of the children. The Table 2 shows that the number of Gram- negative rod species isolated from pediatric conjunctivae (*Escherichia coli, Pseudomonas aeruginosa, and Proteus* species) was, however, lower than in adults (*E. coli, P. aeruginosa, Pseudomonas, Proteus, Klebsiella, Citrobacter and Salmonella* species). In their similar study, Orfila and Courden[2] also reported a prevalence of Gram-negative rods (11.6%) in an Algerian population.

The high percentage of eyes which did not show any growth in our present study (95.5% in children and 98% in adults) was probably due to the non-innoculation of conjunctival swabs into the transport medium prior to culturing, the inappropriate nutrient environment in our media for cultivation of fastidious organisms, and our discarding of plates after 48 to 72 hours, which did not allow time for the emergence of slow growing organisms.The frequency of the remaining bacterial flora in the children and the adults in our study is consistent with the findings of most of the previously published reports.

Singer, Isenberg and Apt[5] have attributed the differences in the conjunctival flora between adults and children to a number of factors, which include age related variation in general immune responsiveness,

tear composition and dynamics, patterns of exposure to bacteria, past antibiotic utilization and the flora of adjacent areas such as skin and upper respiratory tract. They reported an average of 1.13 species isolated per pediatric eye and 1.47 per adult eye. Brook's findings in children were identical.[12]

The average number of bacterial species isolated per eye in children (0.04) in our study was greater than in adults (0.025). One possible explanation for this might be that we studied a much larger population (3,885 patients) with a pediatric to adult ratio of approximately 1:20, with more pediatric cases positive for culture than adults. Singer et al.[5] on the other hand studied a much smaller population (144) with a pediatric to adult ratio of approximately 1:5, and, therefore, missed a possible trend toward increased bacterial isolation from pediatric conjunctivae. The frequency of normal conjunctivae without any bacterial growth has shown marked disparity in studies so far reported. Perkins and colleagues,[6] Chang,[8] and Locatcher-Khorazo and Seegal[3] have reported a lower percentage of such eyes, that is 9.4%, 9% & 0% respectively. On the other hand Singer et al.,[5] Bachrach et al.[7] Smith,[10] and Debnath[15] reported higher values of 22%, 33%, 47% & 30% respectively of the conjunctivae that showed no growth. Interestingly, we found the higher percentage of eyes with no growth in both children (96%) and adults (98%) than any other modern published data.

The results of our study are of particular interest to the ophthalmologists of Pakistan. However, the usefulness of our conclusions must be viewed in the light of the fact that in our study only two aerobic cultivation techniques were used and no broth media or anaerobic culture techniques were employed. Sterility at the time of surgery presumably decreases the frequency of postoperative infection , and, hence, the information gained from our report will help the Pakistani ophthalmologists in adopting a more specific approach toward therapy and control of ocular infection. An awareness of difference bertween the normal aerobic bacterial flora of the adult and the pediatric conjunctivae will allow not only a better interpretation of clinical results but also aid in the better management of potential ocular pathogens.[5]

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Ophthalmic "Pastpourri"

Expulsive Hemorrhage and Immediate Enucleation

In discussing the operative expulsive hemorrhage, Knapp wrote a hundred years ago: "...suppuration and panophthalmitis...(have) been noticed with such frequency as to induce some operators to advise immediate enucleation...."

- H. Knapp, 1891

1-20-80-91

Figures 1,2 and 3: Congenital Lacrimal Deficiency (Alacrima)

ABSTRACT: A 13-month-old white baby boy had no tears when he cried. The Schirmer's test was grossly abnormal, with only 1 1/2 mm wetting of the strip in the right eye and even lesser in the left eye after 11 minutes.The left lacrimal gland was slightly smaller, but both lacrimal glands appeared normal on examination under anesthesia, which otherwise was normal. Other than self-limiting recurrent redness of the eyes, no symptoms or systemic abnormalities were present in the child. (Pakistan Journal of Ophthalmology, 7:58, 72, July 1991.) Reprint requests to Khalid J. Awan, F.P.A.M.S., 1921 Park Avenue, SW, Norton, Virginia 24273 USA.

Alacrima, or the congenital absence of tears on crying or in response to irritating stimuli in the presence of grossly and histologically normal is a rare and isolated condition.[1-4] It may be (1) due to the persistence of normal neonatal alacrima, (2) from lacrimal gland hypoplasia, (3) because of neurologic deficits, such as aplasia of lacrimal nucleus, etc. (4) associated with anhidrotic ectodermal dysplasia, and (5) a component of Riley-Day syndrome. The condition is usually bilateral, but very rarely has been reported occurring unilaterally.[4] The structural changes may vary from a mild irritation of the eyes to so severe a keratoconjunctivitis sicca that it may necessitate removal of the eye to relieve persistent discomfort.[4]

Sjörgren[3] concluded that only 35% of the full-term infants have normal tear secretion rate, and that 13% have a physiologic reflex absence of tears, which normally disappears within a few weeks. For some unexplained reason, this normal alacrima may persist as an abnormal condition in rare instances. It appears that the case reported here belongs to this category.

The treatment of alacrima depends on the severity of symptoms or the associated disorders. Frequent instillations of tear substitutes[1], occlusion of puncta,[3] subcutaneous injections of prostigmine (0.25 mg) or mecholyl (3.0 mg) to stimulate the lacimal glands in autonomic dysfunciton (Riley-Day syndrome),[1] partial tarsorrhaphy,[5] and enucleation in extreme cases,[4] have been employed.

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Figure 4: Multi-stage Loss of Retinal Arterial Circulation

ABSTRACT: A 63-year-old hypertensive woman developed embolic occlusion of the superior temporal retinal artery. Her visual acuity returned to normal, but the inferior field defect remained. Nearly 18 months later, inferior temporal artery of the same eye became occluded due to the same cause, and eye became permanently blind. This interesting case emphasizes the need for a full "central retinal artery occlusion workup" in patients with branch retinal artery obstruction, and also raises the question of a more aggressive therapeutic approach in at least systemically more at risk patients. (Pakistan Journal of Ophthalmology 7:59,72, July 1991.) Reprint requests to Muhammad Humayun, F.P.A.M.S., 176 Portland Street, Suite 600, Dartmouth, Nova Scotia B2Y 1J3 , Canada.

A branch retinal artery occlusion causes a sudden painless loss of corresponding field of vision, and whitening of the part of retina supplied by it. The boundries of the ischemic area appear more intensely white due probably to secondary blockage of axoplasmic flow in the nerve fibers as they reach the affected retina.[1] Of all the retinal arterial occlusions, 38% are branch occlusions, 57% are central artery occlusions and remaining 5% cilioretinal.[2] Recently, neovasculrization and vitreous hemorrhage following retinal branch occlusion has also become focus of attention.[3]

It is estimated that nearly 80% of eyes with branch retinal artery occlusion recover 20/40 (6/12) or better vision.[1] Our patient fell into this category, but the second embolic phenomenon unexpectedly blinded her. This emphasizes the importance of full "central retinal artery occlusion workup" in these patients, and of aggressive treatment in at least systemically more compromised patients with branch occlusion.

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Figure 5: Corneal Burn in a Child from a Curling Brush

ABSTRACT: An 11-year-old girl developed corneal burns in her right eye when she used her mother's electric hair curling brush. Apparently the child had been using her mother's cosmetics with her permission but without any supervision. Fortunately, the burns healed without any serious sequelae with topical antibiotic and eyedrops. Nonetheless, it is important that parents do not allow young children to use curling irons and brushes. (Pakistan Journal of Ophthalmology 7:59, 73, July 1991.) Reprint requests to Khalid J. Awan, F.P.A.M.S., 1921 Park Avenue, SW, Norton, Virginia 24273 USA.

I[1] and others[2] have reported thermal corneal burns from the electric curling irons. However, their occurrence in children has not received much attention. In 1984, I[3] drew the attention of physicians and the lay media to many occurrences of corneal burns in todlers from the lit cigarettes of inattentive adults. The case reported here is significant for two reasons. Firstly, the thermal burn of the eye from an electric curling brush has not been previously recorded, and secondly, the occurrence of ocular burns from hair curling iron and brush in children have not recieved any attention.

In a recent report of four cases of contact thermal burn of the cornea from electric curling iron, one was a 13-year-old girl.[2] So far that appears to be the only pediatric case of this injury. It is not unreasonable to assume that there occur many other cases that go unreported.

Fortunately, despite the apparent horror of the event and dramatic look of the damage, these injuries respond to treatment without loss of sight. The coagulated epithelium forms a milky white coating in the burned area, and probably also protects the deeper tissues from the effects of heat. It is the large epithelial defect left after the debridement that causes reaction in the anterior chamber of some eyes and not the heat penetration into the anterior chamber. The standard treatment of these injuries is reassurance to the patient, and the parents, use of topical antibiotic eyedrops, and patching of the injured eye. In some cases short acting cycloplegics may be advised. Manufacturers' warning on the devices and parents' greater use of discretion in allowing the children to use them will serve as important prophylactic measures.

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Ophthalmic "Pastpourri"

MYOPIC VIEW, OLD AND NEW

A Century Ago:

Edward Jackson, of Jackson's cross-cylinder fame and who later became the renowned Editor-in-Chief of the *American Journal of Ophthalmology*, emphatically recommended that " the constant wearing of corrective lenses, no matter what their strength, with careful attention to other aspects of ocular hygiene, checks promptly and permanently the advance of myopia in majority of cases."

- Jackson, E: The full correction of ametropia. J Am Med Ass September 2, **1891.**

Today:

In 1970, Sir Stewart Duke-Elder commented on Jackson's above view on myopia, and writes in his famous *System of Ophthalmology* that "...such insistence is unjustified in simple myopia and its value is questionable even in higher degrees associated with degenerative changes."

- System of Ophthalmology, vol. 5, St. Louis, C.V. Mosby Company, **1970.**

Book Reviews

Edited by Khalid J. Awan, F.P.A.M.S.

OCULAR PATHOLOGY. CLINICAL APPLICATIONS AND SELF-ASSESSMENT, 4th Edition, 1991. By David J. Apple and Maurice F. Rabb. The C. V. Mosby Company, 11830 Westline Industrial Drive, St. Louis, MO 63146. Clothbound, full-sized 564 pages, index, 824 illustrations and 167 color plates. US$ 125.00.

This book was initially published under the title of *Clinicopathologic Correlation of Ocular Disease: A Text and Stereoscopic Atlas.* This title was carried to the second edition, but for the third edition, the authors decided to drop the stereoscopic viewmaster reels in favor of the present color plates and added the self-assessment question-answer section, which amply justifies the current title.

The authors are clinicians and teachers of high standing. Dr. David Apple is also a highly regarded pathologist, and Dr. Maurice Rabb's interest and expertise in stereophotography is well-known, and his color slide collection is one the of best in the world, which perhaps was a factor in inclusion of stereoscopic viewmaster slides with the earlier editions. The color plates of the current edition do full justice to the excellent slides they replace. The quality of paper and binding is superior, and printing fully maintains the highly reputable standards of the Mosby Company.

The book is divided into ten chapters of Introduction; Development Anomalies; Cornea: Lens and Pathology of Intraocular Lenses; Glaucoma; Uvea; Fundus; Retinoblastoma, Leukokoria, and Phakomatoses; Optic Nerve; and Conjunctiva and Eyelids. Appended at the end of the book is a section on self-assessment, which contains multiple-choice questions related to and serially arranged in order of the above chapters. The second half of the self-assessment section contains the answers to these questions. There is no doubt that this section is a most helpful learning tool for the residents and trainees, but in this reviewer's opinion even practicing ophthalmologists and teachers may greatly benefit from it.

That this is the 4th edition of *Ocular Pathology* in 16 years is a clear proof of its popularity, and of its authors' diligence and desire to keep their readers up-to-date in what they read. In a way, by producing this volume they have also admirably met the challenge they were forced to face when the late Paul Henkind ended his critique of the first edition of the book with the following couplet:

"They missed the mark it's plain to me,
But for yourself you'll have to see..."

To receive such a discouraging pan from one of the elite of American ophthalmology about one's first effort would have severely depleted anyone else's mind of any fancy notions of making a second attempt, but admiration is owed to the devoted and confident authors of the *Ocular Pathology. Clinical Application and Self-Assessment,* in whom it incited an even stronger determination. Within four years they were back with a much improved and tremendously popular second edition, about which another of the elite of American Ophthalmology, and himself a great ophthalmic clinician-pathologist, wrote: "In this new edition...the authors have combined all practically important clinical and pathologic knowledge of eye disease (in) a well organized presentation, which is supported by outstanding illustrations and tables in the text...This book is a resident's dream come true...How fortunate we are to have the new improved edition of this book! It is most enthusiastically recommended." This justified praise vindicated the authors' intent and ability.

The sum total of any book's value is judged both by its contents and by its quality of writing. This edition wins on both counts. The contents are rich in clinical and histopathologic descriptions of diseases, in accounts of their foundations in basic sciences, and even in historical perspectives. Each chapter is introduced with a brief but complete anatomico-physiologic introduction, and at appropriate places outlines of embryological development are also included. The text is profusely illustrated with exquisitely reproduced illustration of such first-rate and high quality that this reviewer doubts the reader will find any better in any other publication.

That the authors have very wisely included many beautiful schematic artworks from early part of this century and before speaks for their taste and sense of history. They deserve much praise for this enjoyable and stimulating aspect of their book. The text is so heavily referenced that neither any of the important previous publications nor any of the latest views appear to have been left out. One very minor "floater" ran into this reviewer's view on page 54 where the volume number (83) of the journal for reference 143 has been left out, perhaps on account of an oversight in proof reading.

The book also scores very high in readability. The writing is easy to follow and free of complex, confusing sentence constructions. The related concepts are put down in such a fashion that they effortlessly merge into each other, and are easy to retain. The question-answer assessment section is presented in a multiple-choice format. The questions are selected with practicality in mind, and their answers are also provided with page numbers of the book on which the further details related to the topics of questions are discussed.

This reviewer approached the presesnt edition with the first edition's reviewer's critical comment, "But for

yourself you'll have to see...," still ringing in his mind. Well, he has tasted it, and he likes it; in fact, likes it a great deal, and he is confident that an overwhelming majority of those who try it will too. This book is highly recommended to trainess, practicing ophthalmologists and teachers alike. In Pakistan, it will be of tremendous value to those physician who have any interest in eye diseases, and if its cost in foreign exchange is difficult for the individual reader in Pakistan to meet, the medical teaching institutions must keep this book on their library shelves. This reviewer enthusiastically joins Professor Rubin, who exhorts in the preface: "So read on, dear colleagues. You'll be glad you did." ✱

1990 YEAR BOOK OF OPHTHALMOLOGY. Edited by Peter R. Laibson. Mosby-Year Book, Inc., 11830 Westline Industrial Drive, St. Louis, MO 63146. Clothbound, half-sized 262 pages, index, black and white illustrations. Price, US$ 65.00.

The 1990 edition of this time-honored publication is the second under the editorship of Dr. Laibson. The format has not changed from the previous editions. This edition brings to its readers the summaries of the most significant–in view of its editors–ophthalmic articles which appeared in print in the year 1989, accompanied with brief comments by the editors.

The staff members from various subspecialty departments of the Wills Eye Hospital have introduced the sections on their respective fields with editorials summarizing the up-to-date views on the topics of their choice. Hence, RE Adams summarizes the current views on "Cause and Composition" of cataract in 1989; EJ Cohen sheds light on the "External Disease" of the cornea; RP Wilson reviews "Glaucoma Crare" in 1989; RC Sergott evaluates "CT and Magnetic Resonance Imaging 'Negative' Neuro-Ophthalmology: The Medical and Economic Impact:" JC Flanagan introduces a "New Orbital Implant" with improved motility; JJ Augsburger updates the "Advances in Retinoblastoma;" RC Eagle, Jr introduces "Immunohistochemistry in Ophthalmic Pathology;" LB Nelson comments on the use of "Anterior Transposition of the Inferior Oblique;" the Chief Editor himself tackles the subject of "Intraocular Lenses and Pseudophakic Bullous Keratopathy;" and in the final section, WE Benson and JA McNamara present the "Advances in the Treatment of Retinopathy of Prematurity."

The editor of section on cataract presents current views on the cataract related biochemical changes, and comments on the recent view about the association, not so strong, of cataracts with age-related macular degeneration (AMD). He recommends the use of ultraviolet-blocking intraocular lenses in patients with AMD. The commentator of the section on cornea stresses the resurgence of sexually transmitted gonococcal conjunctivitis in the United States; proposes that when the visual acuity is satisfactory, any meddling with the sutures of keratoplasty should be avoided, even if the corneoscopy shows irregular topography; and warns that the risk of infection increases 10-fold with the overnight use of cosmetic extended-wear soft contact lenses. Apparently, *Acanthamoeba* keratitis still remains a very serious ocular disease and without any satisfactory treatment. Commentator in the glaucoma section has made a compassionate case for the contrast sensitivity loss in glaucoma patients. He justly suggests a discussion of this aspect with patients who despite having good acuity in the darkened rooms of their ophthalmologists complain about visual difficulties. It also is illuminating to read that one-third of his patients undergoing filtration procedure now receive 5-fluorouracil (5-FU) injections. His technique is to inject subconjunctivally, 180° away from the site of fistula, 0.1 mL of 10 mg/mL 5-FU solution, and apply ointment to avoid any spillage from the injection site. He uses no injection at the time of surgery, four injections in the first postoperative week, and three the next. He stresses that early injections are important for success. This reviewer agrees with him in that the combination of a trabeculectomy with releasable sutures and 5-FU provides the safest method for the best results. Because of the financial interests of doctors and the inadequate training of those who order and those who read them, argues the editor of the section on neuro-ophthalmology, the "unnecessary and inadequate CT and MRI scanning will continue to be large financial drain on the United States' health care system." It certainly ought to be a sobering thought for the public, physicians and the government of Pakistan. The section on oculoplastics begins with high praise for the new integrated orbital implant of coral porous hydroxyapatite introduced by Dr. Arthur C. Perry. However, not enough time has passed in the employment of this implant to accept the editor's view without reservation. The editor of oncology section has very lucidly delineated the step by step approach to the latest management of retinoblastoma. The editor of the section on pathology expounds on the application of the new technique of immunohistochemistry in ophthalmic pathology for the differentiation of cells by using monoclonal antibodies. Introducing the section on refractive surgery with a statement that the "Corneal transplant is performed most often today for pseudophakic bullous keratopathy," Dr. Laibson raises the question "Why were so many anterior chamber lenses inserted before the problem of pseudophakic bullous keratopathy was recognized?" We in Pakistan can learn a lot from this observation of Dr. Laibson before embarking upon the use of any new devices.

There are many other up-to-date pearls of practical advice and scholarly opinion scattered throughout the pages of *1990 Year Book of Ophthalmology*. This reviewer recommends it without the slightest of reservation to all interersted in ocular disorders. ✱

PEDIATRIC OPHTHALMOLOGY, 3rd Edition, 1991. By Leonard B. Nelson, Joseph H. Calhoun, and Robison D. Harley. W.B. Saunders Company, The Curtis Center, Independence Square West, Philadelphia, PA 19106. Clothbound, full-sized 532 pages, 526 black and white illustrations, six color plates, index, 16-page table of contents. Price US$125.00.

This textbook initially came out in 1975 as a product of the labors of Dr. Harley and his many colleagues at the Wills Eye Hospital. The subspecialty of pediatric ophthalmology was then coming into its own, and not many books totally devoted to it were available. Over the previous decade, L. Beverly Holt's pocketbook-sized *Pediatric Ophthalmology* had perhaps been the only book on this subject. Compared to that tiny text the Harley's first 1,112-page edition was, in all honesty, an overpowering colossus. The second edition swelled even more, to 1,552 pages, and had to be issued in two volumes. Frankly, this reviewer had considered even the first volume to be unwieldy, and it also had scattered throughout it information that some authorities considered either inadequate, or misleading. Hence, it was a delight to see the slimmed down single-volume third edition, with only one-third the number of second edition's pages and in a contemporary full-size format, particularly suitable for a book with lengthy and extensive tables.

The number of contributors has also come down from the second edition's 67 to the present 33. This has purged much of the problem of the conflicting and overlapping information of the previous editions. Another major change is that the senior editor has invited two very capable pediatric ophthalmologists of the Wills Eye Hospital to share the editing responsibility with him. The contributors are, on the other hand, from almost all the major ophthalmic centers of the United States, offering different points of view acquired from wide and varied experiences.

The book is exquisitely printed on a very high quality paper, and the reproduction of illustrations is also excellent, adding one more testimonial to the high reputation of the publisher W.B. Saunders.

The contents of the book are divided into 24 chapters of Genetics of the Eye Disease, Retinopathy of Prematurity, Electrodiagnostic Tests of the Retina and Higher Centers, Refraction in Infants and Children, Amblyopia, Sensory Adaptations in Strabismus, Strabismus Disorders, Disorders of the Conjunctiva, Diseases of the Cornea, Cataracts and Lens Anomalies in Children, Glaucoma in Infants and Children, Uveitis in Children, Diseases of the Retina and Vitreous, Congenital Abnormalities of the Optic Disc, Disorders of the Lacrimal Apparatus in Infancy and Childhood, Disorders of the Lids, Disorders of the Orbit, Ocular Tumors in Children, Systemic Hamartomatoses (Phakomatoses), Ocular Abnormalities in Childhood Metabolic Diseases and Leukemia, Pediatric Neuro-Ophthalmology, Nystagmus, Role of the Ophthalmologist in Reading Disorders, and Ophthalmologist's Role with Visually Impaired Children.

The Chapter 1 on Genetics of Eye Disease by IB Bateman, HH Punnett, and RD Harley; Chapter 2 on Retinopathy of Prematurity by JT Flynn; Chapter Chapter 9 on Diseases of the Cornea by PR Laibson and GO Waring; Chapter 13 on Diseases of the Retina and Vitreous by RP Schroeder, WT Tasman, and WE Benson; Chapter 19 on The Systemic Hamartomatoses (Phakomatoses) by JA Shields and CL Shields; Chapter 20 on Ocular Abnormalities in Childhood Metabolic Diseases and Leukemia by RM Robb; Chapter 23 on Role of the Ophthalmologist in Reading Disorders by RD Reinecke; and Chapter 24 on the Ophthalmologist's Role with Visually Impaired Children are exceptionally well-written and highly useful. The other chapters though good do not retain a uniform standard. Some omissions are noticeable here and there. For instnace, the description of myelinated nerve fibers on page 299 includes no comment as to their association with refractive errors, and to say that with them "unilaterality is the rule" is misleading. Such omissions and oversights take away some of the shine from the otherwise justified claim of the editors to maintaining of the "high standard of clinical usefulness." This reviewer also feels that a more exhaustive index would have increased the value of book for the busy practitioner. Some excesses also are noticeable in various sections. For instance, a whole page (315) is allotted to the figures about a rare vascular anomaly. No doubt the photgraphs here are absolutely stunning, but *Pediatric Ophthalmology* is not an atlas, and an equal impact could have been easily achieved by reproducing them in half as much space. Some of the chapters provide up-to-date and exhaustive references; the others only selective ones.

These are minor distractions, and on the whole, the book will prove useful to the ophthalmic residents, pediatricians, and family practioners. It also deserves to be available in all medical libraries of Pakistan. ✱

DIAGNOSTIC PICTURE TESTS IN OPHTHALMOLOGY. By Montague Rubin and Simon Rubin. Chicago,Year Book Medical Publishers, Inc., 1987. Softbound, pocketbook size, 128 pages, 243 color illustrations. Price, UK L 9.95.

This is a randomly arranged collection of mostly clinical color photographs from the senior author's collection. Most of the transparencies were used by him for teaching at the Moorfields Eye Hospital. The book is intended for the postgraduate students preparing for examination, and who might not have had the opportunity to see many of the eye conditions depicted here. Each figure is accompanied by multiple choice questions, the answers to which are given at the end of the book. The quality of figures varies from the excellent to the mediocre. Nonethless, at its price, the book is a stimulating and useful bargain. ✱ *-KJA*

Abstracts from Elsewhere

Edited by Khalid J. Awan, F.P.A.M.S.

American Journal of Ophthalmology

OCULAR ADNEXAL KAPOSI'S SARCOMA IN ACQUIRED IMMUNODEFICIENCY SYNDROME. U Dugel, S Gill, T Frangieh, and A Rao. The authors examined histopathologically 18 ocular adnexal Kaposi's sarcoma lesions related to acquired immunodeficiency syndrome. These lesions were classified into three types. Type I consisted of thin, dilated vascular channels lined by flat endothelial cells with lumen-containing erythrocytes. Type II featured plump, fusiform, endothelial cells, often with a hyperchromatic nucleus and foci of immature spindle cells and occasional slit vessels. Type III was characterized by large aggregates of densely packed spindle cells with hyperchromatic nuclei, occasional mitotic figures, and abundant slit spaces often containing erythrocytes in between. Clinically, type I and type II tumors were patchy and flat (less than 3 mm in height) and of less than four months' duration. Type III tumors were nodular and elevated (greater than 3 mm in height). We describe the clinical and histopathologic types of Kaposi's sarcoma that may help in diagnosis. *(Am J Ophthalmol 110:500-503, November, 1990.) Reprint requests to Narsing A. Rao, M.D., Doheny Eye Institute, 1355 San Pable St., Los Angeles, CA 90033.*

PSEUDOEXFOLIATIVE FIBRILLOPATHY IN THE SKIN OF PATIENTS WITH OCULAR PSEUDOEXFOLIATION. BW Streeten, A J Dark, R N Wallace, ZY Li, and JA Hoepner. The authors discovered that in addition to its occurrence within the eye, pseudoexfoliative fibrillopathy has been reported in the conjunctiva and around a posterior ciliary artery. To determine whether it has a more diffuse extraocular distribution, we studied skin biopsy specimens ultrastructurally from one to three areas in 13 patients with classic pseudoexfoliation. A fibrillopathy closely resembling that in the eye was found in 11 of the 13 patients. Only one of the 13 control subjects, a 78-year-old man with advanced low-tension glaucoma, had a similar fibrillopathy. In the patients with pseudoexfoliation who were more than 70 years of age, the accompanying dermal elastosis made evaluation difficult, because the pseudoexfoliative nodules in the skin occur primarily along elastic fibers, and their morphologic characteristics appeared to be influenced by the elastotic process. These results suggest that pseudoexfoliation is a systemic process related closely to elastosis, and that further search for pseudoexfoliative fibers should be made in the elastic system of the deep tissues and internal organs. *(Am J Ophthalmol 110:4990-499, November, 1990.) Reprint requests to Barbara W. Streeten, M.D., Department of Pathology, Weiskotten Hall, SUNY Health Science Center, 766 Irving Ave., Syracuse, NY 13210.*

IDENTIFICATION OF *TOXOPLASMA GONDII* IN PARAFFIN-EMBEDDED SECTIONS BY THE POLYMERASE CHAIN REACTION. AP Brezin, CE Egwuagu, M Burnier, C Silbeira, RM Mahdi, RT Gazzinelli, R Belfort, and RB Nussenblatt. The authors used the polymerase chain reaction to amplify DNA fragments specific to Toxoplasma gondii. The sensitivity of the technique allowed for the detection of as few as ten cultured T. gondii tachyzoites. We applied the same amplification technique to deparaffinized ocular sections from two cases of ocular toxoplasmosis. Although toxoplasmic cysts could only be seen in one eye by optical microscopy, polymerase chain reaction allowed the identification of the parasite in both cases. Our study indicates the feasibility of a sensitive DNA-based assay to complement pathologic studies of an ocular parasitic disease. *(Am J Ophthalmol 110:599-604, December, 1990.) Reprint requests to Charles E. Egwuagu, Ph.D., Laboratory of Immunology, National Eye Institute, National Institutes of Health, Bldg. 10, Rm. 10N202, Bethesda, MD 20892.*

IMMUNOHISTOLOGIC STUDY OF EPIRETINAL MEMBRANES IN PROLIFERATIVE VITREORETINOPATHY. C Baudouin, DF Reygrobellet, WC Gordon, F Baudouin, G Peyman, P Lapalus, P Gastaud, and NG Bazan. The authors performed an immunohistologic study on 11 specimens of epiretinal membranes surgically obtained from patients who had rhegmatogenous retinal detachment with proliferative vitreoretinopathy. Immunostaining procedures were used to identify immunoglobulin and complement deposits, to visualize class II antigen expression by proliferating cells, and to determine eventual infiltration by cells of the immune system. Diffuse deposits of IgG, IgA, IgE, C1q, C3c, and C3d were found in epiretinal membranes, whereas numerous cells, including glial or pigmented epithelial cells, expressed HLA-DR and HLA-DQ antigens. Some macrophages and B or T8 lymphocytes were identified. These results suggest activation of the immune system during the course of proliferative vitreoretinopathy. Class II antigen expression could

be dependent upon growth-promoting factors and interferon gamma and could play a crucial role in this immune reaction, which resulted in immunoglobulin deposition and activation of complement. However, the eventual role of immune phenomena in the extension of proliferative processes remains to be determined. *(Am J Ophthalmol 110:593-598, December, 1990.) Reprint requests to Nicolas G. Bazan, M.D., LSU Eye Center and Neuroscience Center, 2020 Gravier St., Ste. B, New Orleans, LA 70112.*

CAUSES OF FAILURE AFTER REPEAT VITREORETINAL SURGERY FOR RECURRENT PROLIFERATIVE VITREORETINOPATHY. H Lewis, TM Aaberg. The authors showed that during the last two years, they performed vitreoretinal surgery on 37 eyes with retinal detachments and recurrent severe proliferative vitreoretinopathy in 37 patients who had had previous failed scleral buckling and vitreous surgery for proliferative vitreoretinopathy. Anterior proliferative vitreoretinopathy was present in 32 of 37 eyes (86%); posterior proliferative vitreoretinopathy of fixed retinal folds in four quadrants of narrow or closed funnel shape occurred in 23 of 37 eyes (62%); and subretinal proliferation was noted in 16 of 37 eyes (43%). The retinas in 12 eyes (32%) redetached from new or recurrent anterior proliferative vitreoretinopathy in nine eyes, reopening of pre-existing retinal breaks in two eyes, or recurrent posterior periretinal proliferation in one eye. With additional vitreoretinal procedures in six eyes and after a mean follow-up period of 11 months, 27 of 37 retinas (73%) were totally reattached, and an additional five eyes (13%) had retinal reattachment posterior to the scleral buckle. Of the 32 patients with posterior retinal reattachment, final visual acuity of 5/200 or better was attained in 19 years (59%). *(Am J Ophthalmol 111:15-19, January, 1991.) Reprint requests to Hilel Lewis, M.D., Jules Stein Eye Institute, 100 Stein Plaza, Los Angeles, CA 90024-7007.*

PHOTIC RETINAL INJURY FROM ENDOILLUMINATION DURING VITRECTOMY. F Kuhn, R Morris, and M Massey. The authors treated a patient who developed a paramacular area of light-induced retinal damage after endoscopic epimacular membrane removal. Postoperative color photographs showed complete absence of the membrane, but fluorescein angiography demonstrated a previously absent superior paramacular lesion consistent with a photic injury. Operative microscope illumination had been eliminated by corneal shielding, which implicated endoillumination as the source of injury. We recommend the following procedures to avoid this complication: careful planning of vitreous surgery for epimacular membrane removal; using filters; minimizing the length of surgery; keeping the light output low; maintaining maximal light pipe distance from the retina; eccentric orientation of the light pipe; and use of intermittent and variable site illumination techniques. *(Am J Ophthalmol 111:42-46, January, 1991.) Reprint requests to Robert Morris, M.D., Helen Keller Eye Research Foundation, 700 S. 18th St., Birmingham, AL 35233.*

INCREASED INTRAOCULAR PRESSURE IN SEVERLY BURNED PATIENTS. LS Evans. The authors state that six eyes of three patients with severe body burns had intraocular pressure ranging from 37.2 to 81.7 mm Hg. Because of extreme orbital congestion, lateral canthotomies were performed, which caused abrupt decrease in intraocular pressure (range, 17.6 to 49.0 mm Hg). None of the patients had a history of glaucoma, narrow angles, or any precondition for a pupillary block mechanism. Two patients survived and neither had optic nerve damage or increased intraocular pressure after hospital discharge. Tonometry should be performed in patients with severe burns and orbital congestion, especially in those patients receiving large amounts of intravenous fluids. Lateral canthotomies may be of benefit to relieve potentially damaging high intraocular pressure. *(Am J Ophthalmol 111:56-58, January, 1991.) Reprint requests to Lawrence S. Evans, M.D., Department of Ophthalmology, Stritch School of Medicine Loyola University of Chicago, 2160 S. First Ave., Maywood, IL 60153.*

SURGICAL MANAGEMENT OF OCULOMOTOR NERVE PALSY. I Gottlob, RA Catalano, and RD Reinecke. The authors treated seven patients with unilateral oculomotor nerve palsy by transposition of the insertion of the superior oblique tendon of the insertion of the superior oblique tendon to a point anterior and medial to the insertion of the superior rectus muscle without trochleotomy (Scott procedure). Additionally, large recessions of the lateral rectus muscle of involved eyes and, occasionally, recess/resect procedures of horizontal recti muscles of noninvolved eyes were performed. All patients were followed up between one and eight years. Orthophoria in the primary position was achieved and maintained with one operation in four patients. A fifth patient had only a small residual exotropia. In two patients who had aberrant regeneration of the oculomotor nerve, surgery on horizontal recti muscles of the noninvolved eye improved the eyelid position of the involved eye after three operations. *(Am J Ophthalmol 111:71-76, January, 1991.) Reprint requests to Robert D. Reinecke, M.D., Wills Eye Hospital, 9th and Walnut Sts., Philadelphia, PA 19107.*

SURGICAL REMOVAL OF SUBFOVEAL NEOVASCULARIZATION IN THE PRESUMED OCULAR HISTOPLASMOSIS SYNDROME. MA Thomas, HJ Kaplan. The authors treated two patients with presumed ocular

histoplasmosis, subfoveal neovascular membranes, and progressive visual acuity loss to 20/400. Vitreoretinal surgical techniques were used to remove the subfoveal membranes. Visual acuity returned to 20/20 with seven months of follow-up in one patient (Case 1) and to 20/40 with three months of follow-up in the other patient (Case 2). No evidence of persistent or recurrent subretinal neovascular membranes in either patient have been noted. These preliminary results suggest that vitreoretinal surgical techniques may be successful in mechanically removing subfoveal neovascular membranes with preservation of overlying neurosensory retinal and thus preservation of central visual acuity. *(Am J Ophthalmol 111:1-7, January, 1991.) Reprint requests to Matthew A. Thomas, M.D., Retina Consultants, Ltd., Ste. 17413, One Barnes Hospital Plaza, St. Louis, MO 63110.*

A COMPARISON OF PENETRATING KERATOPLASTYTO EPIKERATOPLASTY IN THE SURGICAL MANAGEMENT OF KERATOCONUS. JD Goosey, TC Prager, CB Goosey, EF Bird, JC Sanderson. The authors talked of 40 patients intolerant to contact lenses, 47 eyes with keratoconus were surgically corrected with either epikeratoplasty (N=31) or penetrating keratoplasty (N=16). The percentage of eyes in both groups that had visual acuity of 20/40 or better with contact lenses at one year were equal (14 of 15 eyes [93.3%] in the penetrating keratoplasty group; 27 of 29 eyes [93.1%] in the epikeratoplasty group); however, the penetrating keratoplasty procedure resulted in a higher percentage of eyes that had visual acuity of 20/20 than the epikeratoplasty group (11 of 15 eyes [73%] compared with seven of 29 eyes [24.1%], respectively). Both procedures resulted in significant corneal flattening, with the penetrating keratoplasty group producing an average of 3 diopters more keratometric reduction than the epikeratoplasty group one year postoperatively. Although no irreversible graft failures occurred, five of 16 eyes (31%) in the penetrating keratoplsty group. Both procedures were effective in the surgical management of keratoconus. *(Am J Ophthalmol 111:145-151, February, 1991.) Reprint requests to John D. Goosey, M.D., Hermann Eye Center, 6411 Fannin St., Houston, Tx 77030.*

STABILITY OF REFRACTION DURING FOUR YEARS AFTER RADIAL KERATOTOMY IN THE PROSPECTIVE EVALUATION OF RADIAL KERATOTOMY STUDY. GO Waring III, MJ Lynn, ER Strahlman, MH Kutner, W Culbertson, PR Laibson, RD Lindstrom, MB McDonald, WD Myers, SA Obsbaum, JJ Rowsey, RE Smith, and the Prospective Evaluation of Radial Keratotomy Study Group. The authors discussed that the Prospective Evaluation of Radial Keratotomy Study is a nine-center clinical trial of a standardized technique of radial keratotomy in 435 patients who had simple myopia with a preoperative refraction between -2.00 and -8.00 diopters. We studied the stability of the refractive error during four years after surgery for each of 341 eyes first operated on that had a single surgical procedure. Between baseline and two weeks after surgery, all eyes became less myopic; between two weeks and three months, 161 eyes (59%) lost 1.00 D or more of the initial effect; and between three and six months, 266 eyes (95%) had a stable refraction with less than 1.00 D change.

The change from six months to four years was less than 1.00 D for 246 eyes (72%). There was 1.00 D or more decrease in surgical effect (increased minus power) for 82 eyes (24%). Eyes with larger amounts of preoperative myopia and smaller diameter of the clear zone were more likely to have an increasing effect of the surgery. The duration of this continued increasing effect of the surgery is unknown. *(Am J Ophthalmol 111:133-144, February, 1991.) Reprint requests to George O. Waring III, M.D., Department of Ophthalmology, Emory Eye Center, 1327 Clifton Rd. N.E., Atlanta, GA 30322.*

CONTROL OF INTRAOCULAR PRESSURE WITH APRACLONIDINE HYDROCHLORIDE AFTER CATARACT EXTRACTION. SB Wiles, D MacKenzie, and CH Ide. The authors conducted a randomly assigned, double-masked, controlled clinical trial to assess the efficacy of 1% apraclonidine hydrochloride in controlling postoperative intraocular pressure increases in patients undergoing extracapsular cataract extraction. Apraclonidine hydrochloride was given either one hour preoperatively or immediately after uncomplicated extracapsular cataract extraction with posterior chamber intraocular lens implantation. No patient who received preoperative apraclonidine had an intraocular pressure increase to 30 mm Hg postoperatively. Nine of 20 patients who received it postoperatively had increase of intraocular pressure to 30 mm Hg or more. *(Am J Ophthalmol 111:184-188, February, 1991. Reprint request address: Stephen B. Wiles, M.D., Mason Institute of Ophthalmology, One Hospital Drive, Columbia, MO 65212 USA.)*

IN VIVO PHOSPHORUS 31 MAGNETIC RESONANCE SPECTROSCOPY OF HUMAN UVEAL MELANOMAS AND OTHER INTRAOCULAR TUMORS. PD Potter, CV Weymarn, and L Zografos. The authors studied the characteristic organophosphate metabolites of suspected uveal melanomas before proton beam irradiation were determined qualitatively by phosphorus 31 magnetic resonance spectroscopy in vivo using a three-turn surface coil. Spectra of choroidal hemangioma, osteoma, and metastasis were also obtained in vivo and compared with those of uveal melanomas. Analysis of spectra performed at 1.5 T

showed significant peaks of phosphomonoesters, inorganic phosphate, phosphodiesters, phosphocreatine, and adenosine 5'-triphosphates. The unusually high concentration of phosphodiesters may be considered as a marker for uveal melanomas and other choroidal tumors. By analyzing the ratio of phosphocreatine to phosphodiesters spectral area values, we interpreted qualitatively spectra of intraocular tumors to differentiate malignant tumors from benign lesions. Nevertheless, the main limitation of interpreting the spectra was their contamination by signals from surrounding tissues. *(Am J Ophthalmol 111:276-288, March, 1991.) Reprint requests to Leonidas Zografos, M.D., University Eye Hospital, 15 Avenue de France, CH 1004 Lausanne, Switzerland.*

THE MANAGEMENT OF RETINAL DETACHMENTS ASSOCIATED WITH CHOROIDAL COLOBOMAS BY VITREOUS SURGERY. A Hanneken, ED Juan, BW McCuen II. The authors used vitreous surgery to treat eight eyes of seven patients with complicated retinal detachments associated with large choroidal colobomas and no peripheral retinal breaks. Small, atrophic breaks were detected in the base of coloboma in four eyes and elsewhere in another eye. Adjunctive surgical techniques included cyanoacrylate retinopexy in four eyes, silicone oil tamponade in five eyes, and retinectomy in two eyes. The number of surgical procedures ranged from one to five, with an average of three. Retinal reattachment was achieved in seven of the eight eyes, with final visual acuity ranging from light perception to 20/100. Proliferative vitreoretinopathy, the most frequent cause of redetachment, occurred in six of the eight eyes. *(Am J Ophthalmol 111:271-275, March, 1991.) Reprint requests to Brooks W. McCuen, M.D., Department of Ophthalmology, Duke University Medical Center, P.O. Box 3802, Durham, NC 27710.*

A SIMPLE TRANSPOSITION PROCEDURE FOR COMPLICATED STRABISMUS. EG Buckley, LM Townsend. To correct a complicated paralytic strabismus, the authors combined a recession and resection of recti muscles with a vertical or horizontal transposition in eight patients. The transposed muscles were reattached to the globe parallel to the spiral of Tillaux and adjacent to the paralysed muscle. There were no surgical or postoperative complications or symptomatic deviation problems. Postoperatively, seven out of these eight patients demonstrated fusion in the primary position or required a slight head turn to fuse. *(Am J Ophthalmol 111:302-306, March, 1991. Reprint requests address: Edward G. Buckley, M.D., Duke University Eye Center, Box 3802, Durham, NC 27710.)*

POSTOPERATIVE COMPLICATIONS AFTER MOLTENO IMPLANT SURGERY. SM Melmed, M Cahane, I Gutman, M Blumenthal. The authors implanted Molteno implant in one eye of 41 patients with non-controlable glaucoma. The intraocular pressure was brought down to less than or equal to 18 mm Hg from a mean intraocular pressure of 40 ± 13.2 mm Hg in 32 (78%) of the eyes. During a 16-month follow-up, visual acuity was unchanged in 23 (56%) eyes, improved in nine (22%) eyes, and deteriorated in nine (22%) eyes. Serious postoperative complications were shallow anterior chamber with hypotony in six (14.6%) eyes, vitreous hemorrhage in two (4.9%) eyes, retinal detachment in one (2.4%) eye, and malignant glaucoma in one (2.4%) eye. The less grave complications included hyphema in four(9.8%) eyes, choroidal effusion in 15 (36.6%) eyes, obstruction of the tube in six (14.6%) eyes, recession of the tube into the angle in two (4.9%) eyes, and Tenon's cyst formation in three (7.3%) eyes. *(Am J Ophthalmol 111:319-322, March, 1991. Reprint request address: Shlomo Melmed, M.D., Goldschleger Eye Institute, Chaim Sheba Medical Center, Tel Hashomer , Israel.)*

A COMPARISON OF TOTAL AND PARTIAL TENONECTOMY WITH TRABECULECTOMY. KN Miller, M Blasini, MB Shields, C Ho. At the time of trabeculectomy on 49 eyes, the authors assigned randomly 23 eyes to partial tenonectomy and 26 eyes to a total tenonectomy. They found no statistically significant difference in success rate between the two groups in the postoperative intraocular pressure, the requirements for postoperative medications, or further surgical intervention.*(Am J Ophthalmol 111:323-326, March, 1991. Reprint request address: M. Bruce Shields, M.D., Duke University Eye Center, Box 3802, Durham, NC 27710 USA.)*

THERAPEUTIC ULTRASOUND FOR THE TREATMENT OF GLAUCOMA. RH Silverman, B Vogelsang, MJ Rondeau, DJ Coleman. In 20 centers in the United States, 880 eyes received 1,117 therapeutic ultrasound treatments for glaucoma. In all of these eyes, conventional medical and surgical methods of treatment had failed. Out of these treatments, 782 (70%) led to an initial decrease of intraocular pressure from a preoperative mean of 38.1 mm Hg to 22 mm Hg or less. The single treatment success rate with intraocular pressure between 6 mm Hg and 22 mm Hg was 48.7% at six months. Retreatment was accompanied by a success rate of 79.3%. The most common complications were a rise of intraocular pressure lasting a few hours, mild iritis, scleral thinning (in 28 or 2.5% of the treatments), and phthisis bulbi (in 12 or 1.1% of the treatments.) *(AM J Ophthalmol 111:327-337, March, 1991. Reprint request address: D. Jackson Coleman, M.D., Department of Ophthalmology, Cornell University Medical College, 1300 York Avenue, NewYork, NY 10021.)*

THE EPIDEMIOLOGIC ASSOCIATION OF FUCHS' HETEROCHROMIC IRIDOCYCLITIS AND OCULAR TOXOPLASMOSIS. IR Schwab. Out of a total of 25 patients with Fuchs' heterochromic iridocyclitis, 16 had fundus lesions suggestive of toxoplasmosis. Of these 16 patients, 13 also had positive serologic test for toxoplasmosis. Because the author found that the incidence of toxoplasmosis in general ophthalmic population of the area was only 4%, he proposes that the above data show that there is a subgroup of patients with Fuchs' heterochromic iridocyclitis in which toxoplasmosis has a causal relationship with this entity. *(Am J Ophthalmol 111:356-362, March, 1991. Reprint request address: Ivan R. Schwab, M.D., Department of Ophthalmology, University of California at Davis, 1603 Alhambra Blvd., Sacramento,CA 95816 USA.)*

NEURO-IMAGING AND POSITRON EMISSION TOMOGRAPHY OF CONGENITAL HOMONYMOUS HEMIANOPSIA. TM Bosley, M Kiyosawa, M Moster, R Harbour, R Zimmerman, PJ Savino, RC Sergott, A Alavi, and M Reivich. The authors state that Congenital homonymous hemianopsia is an uncommon asymptomatic visual field defect discovered typically in youth and adult life that is caused by a diverse group of insults to the retrochiasmal afferent visual system occurring prenatally, at birth, or during early childhood. We treated eight patients with congenital homonymous hemianopsia; seven with damage involving the optic radiations and one with an abnormality of the optic tract. We performed positron emission tomography using ^{18}F-fluoro-2-deoxyglucose on two patients with dense homonymous hemianopsias, lesions of the contralateral optic radiations, and largely intact occipital cortex. These studes showed minimal abnormalities in resting visual cortex glucose metabolism of the affected visual cortex. *(Am J Ophthalmol 111:413-418, April, 1991.) Reprint requests to Thomas M. Bosley, M.D., Neuro-Ophthalmology Service, Wills Eye Hospital, 9th and Walnut Sts., Philadelphia, PA 19017.*

EPIKERATOPLASTY WITH NONLYOPHILIZED TISSUE IN CHILDREN WITH APHAKIA. DM Armesto, AM Lee, TC Prager, CB Goosey, JD Goosey. The authors studied 75 epikeratoplasty procedures using nonlyophilized tissue performed by eight ophthalmic surgeons in 70 eyes (47 patients) to correct for aphakia in children less than 8 years of age (mean age, 3.4 $\pm$ 2.1 years). Of the 47 patients in the study, 24 were girls and 23 were boys; 23 patients had bilateral surgery. Seven of the epigrafts required removal; two were not replaced, and five underwent successful repeat epikeratoplasty. Over-all, the success rate (that is, the percentage of epigrafts that remained optically and functionally clear throughout the course of this study) for the epikeratoplasty procedure was 89% (62 of 70 eyes) for initial surgery and 96% (67 of 70 eyes) for repeat surgery. The average spherical equivalent was +14.4 $\pm$ 3.7 diopters preoperatively and +0.3 $\pm$ 2.9 diopters one year after the operation. One year after the final surgical procedure, 42 of 56 eyes (75%) were within 3 diopters of emmetropia. In the 29 verbal patients, best-corrected visual acuity was 20/100 or better in 25 (86.2%) one year after the operation. *(Am J Ophthalmol 111:407-412, April, 1991.) Reprint requests to David M. Armesto, M.D., Department of Ophthalmology, Hermann Eye Center, 6411 Fannin, Houston, TX 77030.*

RELATIVELY ENHANCED S CONE FUNCTION IN THE GOLDMANN-FAVRE SYNDROME. Sg Jacobson, AJ Roman, MI Roman, JDM Gass, JA Parker. The Goldmann-Favre syndrome is an autosomal recessive vitreoretinal degenerative entity in which retinitis pigmentosa is associated with macular and peripheral retinoschisis. The authors used electrophysiologic and psychophysiologic tests to measure the rod, midspectral, and S(blue) cone function in four patients with Goldmann-Favre syndrome. Spectral electroretinography gave a predominantly S cone signal. With dark-adapted perimetry, all patients had severely reduced rod sensitivities. With S cone perimetry, they had normal or subnormal S cone function. Sensitivity differences between S and midspectral cones were significantly different from normal in that there was relatively higher sensitivity of S cones compared to midspectral cones throughout the visual field. This relationship of dysfunctional cone mechanism is similar to that of a recently identified retinal degeneration with S cone hypersensitivity (enhanced S cone syndrome), suggesting that these two conditions are not separate entities, but are merely recognizable phenotypes the same retinal dysfunction spectrum. *(AM J Ophthalmol 111:446-453, April, 1991. Reprint request address: Samual G. Jacobson, M.D., Bascom Palmer Eye Institute, P.O. Box 016880, FL 33101 USA.)*

INITIAL GLAUCOMATOUS OPTIC DISK AND RETINAL NERVE FIBER LAYER ABNORMALITIES AND THEIR PROGRESSION. A Tuulonen, PJ Airaksinen. The authors found that after an average of ten-year follow-up of 61 eyes of 61 patients with ocular hypertension, 23 (38%) developed glaucoma. The initial sign of glaucoma in these 23 patients was diffuse enlargement of the optic disk cupping in 10 and generalized thinning of the nerve fiber layer in 12, focal optic disk damage in 10, and localized retinal nerve fiber thinning in 11. There exists a great variability in the appearance and progression of the initial glaucomatous changes in the optic disk and the nerve fiber layer in the patients with ocular

hypertension. (Am J Ophthalmol 111:485-490, April, 1991. Reprint request address: Anja Tuulonen, M.D., Department of Ophthalmology, University of Oulu, SF-90220, Oulu, Finland.)

INTRAOCULAR PRESSURE AND THE RATE OF VUSUAL FIELD LOSS IN CHRONIC OPEN-ANGLE GLAUCOMA. C O'Brien, B Schwartz, T Takamoto, and DC Wu. The authors measured the rate of change of visual field threshold values over time (mean follow-up, 44.9 ± 17.4 months) by trend analysis in 40 eyes of 40 patients with chronic open-angle glaucoma. Twenty-eight eyes had stable visual fields, and two eyes had significant visual field deterioration and showed a correlation between indices of intraocular pressure and the rate of visual field loss in the superonasal region of the visual field, such that the greater the ariation of intraocular pressure the greater the rate of loss. The group losing visual fields had a higher mean visual field threshold value and significantly less optic disk pallor and cupping at the start of the study than the stable visual field group. Thus, a significant rate of visual field loss occurred at an earlier stage of the disease and showed a correlation with intraocular pressure in this stage. *(Am J Ophthalmol 111:491-500, April, 1991.) Reprint requests to Bernard Schwartz, M.D. Department of Ophthalmology, Box 450, New England Medical Center Hospitals, 750 Washington St., Boston, MA 02111.*

A MAGNETIC RESONANCE IMAGING STUDY OF THE UPSHOOT-DOWNSHOOT PHENOMENON OF DUANE'S RETRACTION SYNDROME. JN Bloom, ER Graviss, PG Mardelli. The authors state that patients with Duane's retraction syndrome may have an associated upshoot or downshoot of the involved eye in adduction. This vertical movement has been attributed to the lateral rectus muscle slipping over or under the globe and acting as an elevator or depressor, respectively ("bridle-effect"). We used magnetic resonance imaging to investigate this phenomenon in two patients, one with an overshoot and the other with an undershoot. Minimal vertical displacement of the lateral rectus muscle in relation to the orbit was noted both on upshoot and downshoot. The bridle-effect theory must be modified to account for this finding. *(Am J Ophthalmol 111:548-554, May, 1991.) Reprint requests to Jeffrey N. Bloom, M.D., Bethesda Eye Institute, St. Louis University School of Medicine, 3655 Vista Ave., St. Louis, MO 63110.*

A POPULATION-BASED STUDY OF OCULAR ABNORMALITIES IN PREMATURE CHILDREN AGED 5 TO 10 YEARS. JE Gallo, and G Lennerstrand. The authors studied the prevalence of ocualr abnormalities in 528 children born prematurely (less than 1,501-g birth weight, less than 33 weeks' gestational age, or both) in Stockholm County from 1976 to 1981. The control group consisted of 1,047 randomly selected full-term children. Through various searches of the ophthalmic records from the period of 1981 to 1986 of Stockholm County, we found that 134 of the 528 premature children (25.4%) and 121 of the 1,047 full-term children (11.5%) had needed ophthalmic care for different reasons. The prevalence of ocular abnormalities was much higher in premature children than in full-term children: reduced visual acuity of 20/33 or worse in the best eye (21 of 528 [4.0%] and one of 1,047 [0.1%]); myopia (33 of 528 [6.3%] and 18 of 1,047 [1.8%]); anisometropia of 1 diopter or greater (31 of 528 [5.9%] and 15 of 1,047 [1.5%]); strabismus (52 of 528 [9.9%] and 22 of 1,047 [2.1%]); and nystagmus (13 of 528 [2.4%] and one of 1,047 [0.1%]). Children with birth weight less than 1.000g had the highest rates of ocular abnormalities. We conclude that visual and oculomotor development of premature children should be carefully examined. *(Am J Ophthalmol 111:539-547, May, 1991.) Reprint requests to Gunnar Lennerstrand, M.D., Department of Ophthalmology, Karolinska Institute, Huddinge University Hopsital, S-14186 Huddinge, Sweden.*

LATE RECOVERY OF FUNCTION AFTER OCULOMOTOR NERVE PALSY. KC Golnik, and NR Miller. The authors studied three patients who developed oculomotor nerve paresis from different causes. Each patient improved somewhat over several months, after which there was no further improvement for at least six months. Although the pareses were thought to be stable after the period of no improvement, each patient subsequently had further improvement in both motility and alignment with resolution of diplopia in primary position and in more than one of the cardinal positions of gaze. Patients with oculomotor nerve paresis may improve further after an initial period of improvement followed by several months of stability. *(Am J Ophthalmol 111:566-570, May 1991.) Reprint requests to Neil R. Miller, M.D., Johns Hopkins Hospital, Wilmer Eye Institute, 600 N. Wolfe St., Maumenee Bldg., Rm. B-109, Baltimore, MD 21205.*

IN VITRO VIDEOGRAPHIC COMPARISON OF ARGON AND ND:YAG LASER IRIDOTOMY. BE Prum, SR Shields, MB Shields, D Hickingbotham, and DB Chandler. The authors used an in vitro technique high-magnification video recording to evaluate from teh posterior side of the iris the immediate sequence of events during argon and Nd:YAG laser peripheral iridotomy. The observed effects differed strikingly. The argon laser caused a gradual mounding up of iris pigment epithelium with each successive energy application before final penetration. This effect was reduced but not eliminated with higher power levels. The Nd:YAG laser caused complete disruption and dispersal of the pigment

epithelium with a single pulse of energy. Additionally, a multiple focal point configuration of the Nd:YAG laser was observed to produce a significantly larger iridotomy than a single focal point configuration for comparable energy settings. These observations may in part explain the observed clinical advantage of the Nd:YAG laser over the argon laser for creation of a patient iridotomy. *(Am J Ophthalmol 111:589-594, May, 1991.) Reprint requests to M. Bruce Shields, M.D., Duke University Eye Center, P.O. Box 3802, Durham, NC 27710.*

SCLERAL BUCKLING FOR RHEGMATOGENOUS RETINAL DETACHMENT ASSOCIATED WITH SEVERE MYOPIA. FJ Rodriquez, H Lewis, AE Krieger, MO Yoshizumi, and Y Sidikaro. The authors discussed that from Jan. 1, 1980, to Dec. 31, 1989, they performed scleral buckling surgery on 48 eyes of 46 patients for rhegmatogenous retinal detachmnets associated with severe myopia (greater than 5.00 diopters). Forty eyes of 38 patients were observed for at least six months, and the man follow-up period was 46 months. Intraoperative complications occurred infour of 48 eyes (8%) and included retinal incarceration (two eyes), choroidal hemorrhage (one eye), and choroidal detachment (one eye). Three of the 40 eyes (7.5%) followed up for more than six months developed a recurrent retinal detachment and underwent a revision of the scleral buckle. At the last follow-up examination, the retinas of all 40 eyes were totallyreattached. Final visual acuity of 20/40 or better was attained in 26 of 40 eyes (65%). Because of the low rate of intraoperative complications and the high rate of success, scleral buckling is recommended for most patients with rhegmatogenous retinal detachments associated with severe myopia. *(Am J Ophthalmol 111:595-600, May, 1991.) Reprint requests to Hilel Lewis, M.D., Jules Stein Eye Institute, 100 Stein Plaza, Los Angeles, CA 90024-7007.*

UNILATERAL FROSTED BRANCH ANGIITIS. SL Sugin, DE Henderly, SM Friedman, LM Jampol, JW Doyle. The authors examined two patients with monocular frosted branch angiitis. The patients were young and healthy; they rapidly developed severe visual loss with thick, white sheathing of the retinal veins and responded promptly to systemic corticosteroids. The fluorescein angiograms showed late leakage from the retinal veins, without evidence of stasis or occlusion. Frosted branch angiitis can be either a unilateral or a bilateral condition. We believe the potential for visual loss and the prompt response to systemic corticosteroids make early, accurate diagnosis and institution of therapy desirable. *(Am J Ophthalmol 111:682-685, June, 1991.) Reprint requests to Dale E. Henderly, M.D., Northwestern University, Department of Ophthalmology, 303 E. Chicago Ave., Ward Bldg., 4th Fl., Chicago, IL 60611.*

ACUTE MULTIFOCAL INNER RETINITIS. RE Foster, FA Gutman, SM Meyers, and CY Lowder. The authors noted that two patients developed acute changes in vision two to four weeks after a febrile illness. On ophthalmic examination, each patient had bilateral vitreitis without anterior segment inflammation and multiple, bilateral, round, yellow-white inner retinal lesions that were located in the posterior pole and midperiphery. Laboratory tests did not contribute to a diagnosis. Symptomatic visual loss was caused by neuroretinitis and serous retinal detachment in one patient and by an occluded branch retinal artery in the other. The multifocal retinal lesions resolved gradually without treatment over several months with minimal or no residual retnal changes. Acute multifocal inner retinal lesions may be associated with a preceding nonspecific viral illness and may cuase a sudden change in vision if associated with neuroretinitis, serous retinal detachment, or retinal vessel occlusion. We have termed this constellation of ophthalmic findings acute multifocal inner retinitis. *(Am J Ophthalmol 111:673-681, June, 1991.) Reprint requests to Froncie A. Gutman, M.D., Department of Ophthalmology A31, Cleveland Clinic Foundation, One Clinic Center, 9500 Euclid Ave., Cleveland, OH 44195-5024.*

AN IN VITRO STUDY OF THE POTENCY AND STABILITY OF FORTIFIED OPHTHALMIC ANTIBIOTIC PREPARATIONS. BE Bowe, JW Snyder, and RA Eiferman. The authors studied the potency of fortified ophthalmic antibiotic preparations of cefazolin sodium (50 mg/ml) and tobramycin sulfate (15 mg/ml), as measured by the minimum inhibitory concentration, against *Streptococcus pneumoniae* and *Pseudomonas aeruginosa*, respectively. They also examined absorbance spectra, pH, and the effect of storage temperature on these fortified solutions to determine their stability over a four-week period. Cefazolin and tobramycin maintained a constant potency throughout the experiment. There was no difference in potency if the fortified solutions were stored at 4 C or 24 C. Cefazolin stored at 24 C exhibited changes in both its absorbance spectra and pH after seven days. Cefazolin stored at 24 C exhibited changes in both its absorbance spectra and pH after seven days. Cefazolin stored at 4 C and tobramycin stored at 24 C and 4 C remained stable throughout the four-week period. *(Am J Ophthalmol 111:686-689, June, 1991.) Reprint requests to Richard A. Eiferman, M.D., 301 E. Muhammed Ali Blvd., Louisville, KY 40202.*

PSEUDOPHAKIC PUPILLARY-BLOCK GLAUCOMA IN CHILDREN. RB Vajpayee, SK Angra, JS Tityal, YR Sharma, and VK Chabbra. The authors studied 16 children, ranging in

age between 3 and 8 years, who had posterior chamber intraocular lens implantation and developed inflammatory pupillary-block glaucoma. Prophylactic peripheral iridectomy had not been performed in any of the eyes. The patients were treated medically, and YAG laser iridotomy was performed successfully one week after initial control of intraocular pressure. Of 16 eyes in which intraocular pressure remained uncontrolled, trabeculectomy was necessary in three eyes and irreversible glaucomatous visual loss occurred in two eyes. Their data demonstrate the need for stringent and more frequent postoperative follow-up of children after intraocualr lens implantation, especially during the first four postoperative weeks. Careful long-term follow-up for treatment after cataract is mandatory to prevent development of amblyopia. *(Am J Ophthalmol 111:715-718, June, 1991.) Reprint requests to R.B. Vajpayee, M.D., Dr. R.P. Centre for Ophthalmic Sciences, All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110029, India.*

OPTIC NERVE SHEATH DECOMPRESSION FOR THE TREATMENT OF PROGRESSIVE NONARTERITIC ISCHEMIC OPTIC NEUROPATHY. TC Spoor, MJ Wilkinson, and JM Ramocki. The authors performed optic nerve sheath decompression on four patients (five years) with visual loss secondary to nonarteritic anterior ischemic optic neuropathy. Four of the five eyes had marked improvement in visual function after the operation. Optic nerve sheath decompression is an effective treatment for patients with nonarteritic ischemic optic neuropathy and progressive visual loss. *(Am J Ophthalmol 111:724-728, June, 1991.) Reprint requests to Thomas C. Spoor, M.D., F.A.C.S., Kresge Eye Institute, Wayne State University, 4717 St. Antoine, Detroit, MI 48201.*

SYMPTOMATIC RETINOSCHISIS-DETACHMENT INVOLVING THE MACULA. JS Ambler, JDM Gass, and FA Gutman. The authors treated three patients (four eyes) in whom posteriorly situated retinoschisis-detachments became symptomatic because of elevtion of a limited area of full-thickness retina at the macula adjacent ot these lesions. Laser photocoagulation alone was successful in achieving long-term macular reattachment in one eye but failed in both eyes of a bilaterally affected patient. In this patient, retinal cryopexy, external drainage of subretinal and retinoschisis cavity fluid, and intravitreal air injection attained long-term macular reattachment and retinoschisis cavity collapse in both eyes. In the third patient, cryopexy, drainage of subretinal and retinoschisis cavity fluid, and scleral buckling failed to reattach the retina. Subsequent laser photocoagulation induced reabsorption of subretinal fluid but without retinoschisis cavity collapse. Alternative management strategies for these unusual cases include retinal cryopexy alone and vitrectomy techniques. *(Am J Ophthalmol 112:8-14, July, 1991.) Reprint requests to John S. Ambler, F.R.A.C.O., F.R.A.C.S., 2nd Fl., Lions Clinical Reseach Bldg., Princess Alexandra Hospital, Ipswich Rd., Woolloongabba, Brisbane, Queensland, 4102, Australia.*

FENESTRATED SHEEN MACULAR DYSTROPHY. SR Sneed, and PA Sieving. The authors examined a family with fenestrated sheen macular dystrophy. The red macular lesions were strikingly apparent in the propositus and more subtle in one affected cousin. Pronounced macular retinal pigment epithelial disruption or mottling was present in the father of the propositus, who also had markedly reduced electroretinogram rod and cone responses. The extent of electroretinogram amplitude reduction indicates abnormal functionof the peripheral retina in addition to the clinically evident macular changes. Affected family members showed peripheral retinal pigment epithelial granularity. Central visual acuity remained normal despite the presence of macular lesions. *(Am J Ophthalmol 112:1-7, July, 1991.) Reprint requests to Scott R. Sneed, M.D., W.K. Kellogg Eye Center, 1000 Wall St., Ann Arbor, MI 48105.*

DIODE LASER COMPARED WITH ARGON LASER FOR TRABECULOPLASTY. R Brancato, R Carassa, and G Trabucchi. The authors compared the efficacy of diode laser and argon laser trabeculoplasty. In the diode laser group the intraocular pressure was 23.0 $\pm$ 3.97 mm Hg before the treatment, 20.2 $\pm$ 4.49 mm Hg at two hours, 16.3 $\pm$ 3.13 at six months, and 16.9 $\pm$ 2.80 mm Hg at one year. The differences from baseline were statistically significant at six months (P = .0001) and at one year (P = .0001) but not at two hours. In the argon laser group the intraocular pressure was 23.4 + 3.6 mm Hg before the treatment, 22.7 + 4.35 mm Hg at two hours, and 17.6 _ 4.53 mm Hg at six months. One patient had uncontrolled mean high intraocular pressure and underwent surgery. In the nine patients who completed the study the intraocular pressure at one year was 16.7 + 3.00 Hg. The differences from baseline were significant at six months (N = 10; P = .0001) and 12 months (N = 9; P = .0001) but not at two hours. Differences between the two groups were not significant at two hours, six months, and one year. Laser trabeculoplasty may be effectively with a diode laser. *(Am J Ophthalmol 112:50-55, July, 1991.) Reprint requests to R. Brancato, M.D., Clinica Oculistica Universita di Milano, H.S. Raffaele, via Olgettina 60, 20132 Milano, Italy.*

IN THE NAME OF ALLAH, THE BENEFICENT, THE MERCIFUL

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To you have come signs from your Lord;
Whoever therefore sees,
Does so for himself;
And whoever remains blind,
Does so to his own loss.
Holy Quran 6:105

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