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PAKISTAN JOURNAL OF OPHTHALMOLOGY

THE OFFICIAL JOURNAL OF THE OPTHALMOLOGICAL SOCIETY OF PAKISTAN

In This Issue

Complete Contents on the Next Page

OCTOBER, 1992 Volume 8, Number. 4

BISMILLAHIR-RAHMANIR-RAHEEM

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

The First Organized Financial Trust for the Blind

Bismillaahir Ruhmaanir Raheem. Nuhmodohoo wa Noosulle ala Rasoolaihil Kareem.

Abasa wata wullaa.
Un jaa 'a hol a'amaa.
(He frowned and turned away.
When the blind man came unto him.)
-Holy Qur'an 80:1-2

Under the title of "Blind, Training and Welfare of," M. Robert Barnett[1] writes in a recent edition of *Encylopaedia Britannica*::

> "...the history of organized efforts to help the blind can be traced to enlightened philosophy of compassion toward the handicapped as exemplified by such religions as Christianity and Budhism."[1]

Whatever might be the basis of this view of Barnett, it's neither reliable research nor accurate interpretation of historical records. There are some who might say that Britannica's publication of such items is just a part of propaganda agenda of the West, or is an indirect means of expressing the concealed religious prejudices of certain pretentious western scholars. More likely, the case is that of Barnett's serious deficiency of knowledge about the Islamic history, which unfortunately is still intentionally ignored in the West.

No doubt Christ reformed social conduct through his doctrines of compassion. However, Barnett is not right in his assumption that this"enlightened philosophy of compassion" was the motivational drive for the care of the blind in the historical past. Dr. C.L. Hodgeboom,[2] a scholar of no lesser stature than Barnett himself, and of the same national background, made this clear without any ambiguity a hundred years earlier in an extensively researched article about the blind which he contributed to another reputable American publication *The American Cyclopaedia. A Popular Dictionary of General Knowledge*. In that article, he commented:

> "...and long after the commencement of the Christian era they (the blind) received but little of the sympathy which the doctrines of Christianity inculcate."[2]

Not Christ's teachings but their actual application by those who profess the Christian faith is the point here. Even in today's preposterous design of "new world order," this "enlightened philosophy of compassion" has been totally ignored by the modern world's hoity-toity leaders in carrying out their unworthy schemes. The most recent example of this is the cleverly instigated Persian Gulf War, which made "heroes" of the monsters among their respective peoples on both sides. It was relentlessly propagandized by its perpetrators as a war against aggression and human suffering, but look what a postwar survey "made independently of the Iraqi government" concluded in the September 24, 1992 issue of the *New England Journal of Medicine* :

> "These results provide strong evidence that the Gulf war and trade sanctions caused a threefold increase in mortality among Iraqi children under five years of age. We estimate that an excess of more than 46,900 children died between January and August 1991."[3]

(That is nearly 200 children under 5, forget the rest, dying every day since the end of war nine months ago. How many lives of innocent children did Christ set as the price for a barrel of oil according to Barnett's "enlightened philosophy of compassion?")

Even according to Barnett's article, it was not until over a thousand years after the emergence of Christianity that the "first" organized effort to help the blind was made by its followers. Presumably, William the Conqueror did so, in the 11th century, by founding several hospices for the handicapped "in expiation of his sins." Hodgeboom,[2] however, credits Louis IX of France for establishing the first known asylum for the blind in 1260. This asylum, called the *hospice des Quinze Vingts,* is operating even today in Paris.

Barnett's mention of Christian clergymen taking care of the blind through personal efforts in the 4th and 5th centuries also is not without precedent in the pre-Christian era. There existed, for instance, a deep-rooted tradition of caring for the blind among the pagan Arabs. Thus, it is on record that on the darker nights, they would burn aloes wood in bonfires outside their dwellings so that the needy blind could follow its scent to the location of bonfire to receive help.[4]

Most western writers either misquote or omit altogether any mention of the true teachings of Islam and contributions by Muslims to all areas of human progress. Although Britannica item makes mention of Christianity and Budhism, it ignores Islam's doctrines of compassion toward all living creatures and its emphatic teachings of showing not only compassion but also respect to the blind, as is clear from the Qur'anic verses at the beginning of this editorial. The urgency of message in these verses is further augmented by the fact that they are directed to a personage of no lesser stature than the Prophet Mohammad*Sullullaaho Alaihe Wasullum* himself.

The background of this revelation is that one day the Prophet*Sullullaaho Alaihe Wasullum* was engaged in a serious discourse with prominent leaders of the Meccan pagans to explain Islam to them. Meanwhile, Abdullah bin Oom-Muktoom, a blind and poor Muslim, walked in and repeatedly interrupted the conversation with his own impatient and incessant questions. The signs of

irritation appeared on the face of the Prophet *Sullullaaho Alaihe Wasullum*, thinking that the pagan leaders might become miffed at such intrusion by a man they considered below their station, and because of this might not accept his message. Asking the blind man to be patient, he turned away from him.[5]

The meeting was hardly over when Allah revealed *Surah Aabasa*, that begins with the above verses, emphasizing more strongly the kindness toward the blind and equality of men regardless of their social or material circumstances. In the verses that follow, the Qur'an uses the Arabic word *Kullaa* as a reminder to the Prophet *Sullullaaho Alaihe Wasullum*. *Kullaa* is an exclamatory word which literally means "no!, never!, certainly not!, not at all!, or by no means!,"[6] and is used for such strong expressions as "It should never happen," etc. According to Qootub[7] this is the only time in the whole of Qur'an that Allah uses *Kullaa* to admonish the Prophet, which affirms the importance of respect and kindness for the blind in Islam.

From that day on the Prophet *Sullullaaho Alaihe Wasullum* treated Ibn-e-Oom-Muktoom *Rudhee Allaho Unho* with even greater kindness and respect whenever he came for a visit. On seeing him the Prophet *Sullullaaho Alaihe Wasullum* would affectionately say, *'Murhaba, bemun aatubnee feehe Rubbee.'* (Welcome to the man in regard to whom my Lord admonished me.)[5] Furthermore, on many occasions when the Prophet *ullullaaho Alaihe Wasullum* had to go out of Madina, he designated Oom-Muktoom *Rudhee Allaho Unho* to lead the prayers. And a time came when the same Ibn-e-Oom-Muktoom was also appointed governor of Madina, the Muslim capitol.[8]

Not only in their social treatment but also in their welfare through organized programs, the blind received special consideration during the heyday of the Muslim Empire. There is a clearcut record of the establishment of a formal government financial trust for the blind by the second caliph, *Hudhrut* Omar the Great *Rudhee Allaho Unho*.

Near the middle of 8th century, *Imam* Abu Yusuf (Ibraheem bin Yaqub), a great jurist of Islam, was asked by Haroon-ur-Rashid, the caliph who ruled from 785 to 808 *(170 Hijri-193 Hijri)*, to prepare a book on the collection and lawful expenditures of taxes according to *Shariah* (the Islamic legal codes). In the chapter on rights of the *Dhimmis* (non-Muslim citizens) in his *Ketab-ul-Kharaj* (A Book on Revenue), *Imam* Abu Yusuf[9] records the following incident as the basis for his *Sharaee* (legal) code that says that needy *Dhimmis* of an Islamic state have the right to financial aid from the government treasury:

> "Omar-al-Farooq *Radee Allaho Unho* saw an elderly blind man asking for alms at the front door of a house. He tapped on his arm, and inquired:
>
> 'What is your religion?'
>
> 'I am a Jew,' said the beggar.
>
> 'Why do you beg?' asked Omar *Radee Allaho Unho*.
>
> 'I pay *Jizia* (tax) and meet my other financial needs from the alms I collect,' replied the beggar.
>
> Omar Farooq *Radee Allaho Unho* took hold of his hand, brought him home, and gave him what he needed.
>
> Then he called the Secretary of the *Bait-ul-mal* (the Government Treasury) and instructed him to establish an account from which that blind man and others like him could be regularly povided for the rest of their lives. He said, 'By Allah, it is not justice that we benefit from them when they are young and able, and forsake them when they become aged and helpless,' and recited this verse from the Holy Qur'an: *Innamul Sadaqaatoo Lilfooqarae Wulmusakeene.* (The charity proceeds are for the poor and the needy.) Then he explained that by *Fooqara* means the poor among the Muslims and *Musaakeen* are the needy among the People of the Book, and he (the blind Jewish man) is one of them.'" [9]

Hudhrut Omar *Radee Allaho Unho* governed from 634 to 644 *(13 Hijri-24 Hijri)*. Therefore, the financial trust he ordered for the blind was established at least four to five centuries before that of Louis IX in Europe. When he compiled his *Ketab-ul-Kharaj*, *Imam* Abu Yusuf's intended purpose was not to prove Muslim priority in establishing of welfare programs for the blind. He actually presented the creation of this trust by Caliph Omar *Radee Allaho Unho* as a precedent in support of the legal code he formulated for the Islamic government of Haroon-ur-Rasheed. That these facts were recorded and published in the mid-8th century, within just a hundred years of actual occurrence of the incident, by a highly reputable and upright jurist of that era, and not in modern times by any biased or apologetic Muslim author striving to glorify the Muslims, attests to their accuracy. Therefore, the first formal and organized trust for the blind was established in 7th century by *Hudhrut* Omar the Great *Radee Allaho Unho* and not by William the Conqueror of England or Louis IX of France. *-KJA*

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Camera Clinicals

In this section of THE JOURNAL, *photographic documentation of interesting and challenging observations are persented to the readers. They should make their diagnosis from the given information, and compare their conclusions with the expositions given on page 97 and 98.* -Editor.

Figure 1

Figure 1: A mother brought her six-month-old male infant for eye evaluation. She had noticed that baby did not close his eyes while asleep. She also gave history of attacks of redness of his right eye which cleared up spontaneously or by the application of ointment a general practitioner had prescribed. The child was healthy and normally developed in all other aspects.

External eye examination showed the findings in Figure 2. The child followed objects with the left eye and only light with the right. No abnormality was present inside the mouth or the nasal cavity. Slit lamp examination showed haziness and drying of the cornea on right. Ophthalmscopic examination showed no abnormality in either eye. Mother planned to call back with her decision about the suggested therapy.

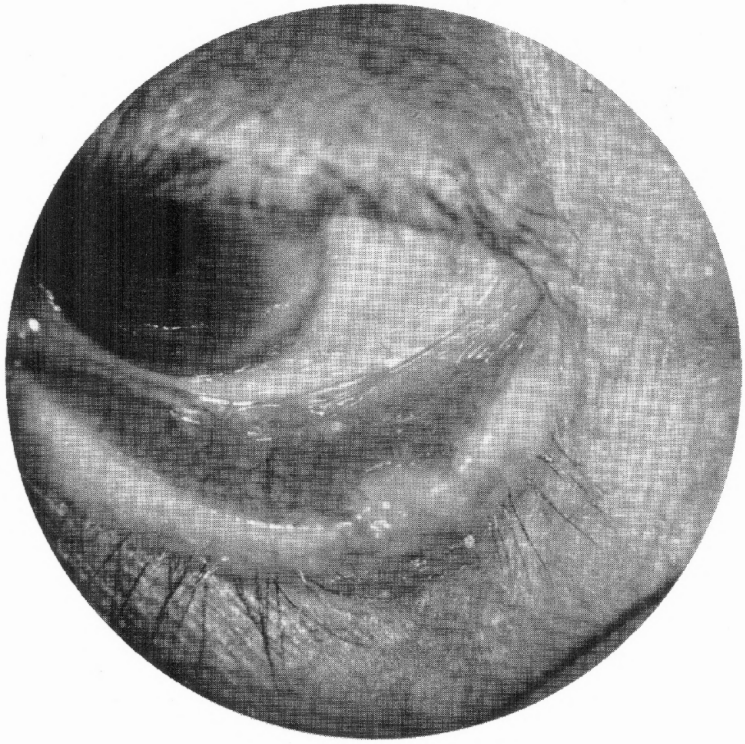

Figure 2

Figure 2: A 76-year-old man underwent a successful extracapsular cataract extraction with posterior chamber intraocular lens implantation on his left eye, recovering final visual acuity of 20/30 (6/9) with glasses in it. The right eye had a cataract and its corrected visual acuity was 20/60 (6/18). Nearly a year after the cataract surgery on the left eye patient returned with a complaint of irritation and redness of the left lower eyelid. He had used artificial tears, but it did not cure the condition. He wanted to know if there were any "ingrowing" eyelashes.

The eye examination showed that the visual acuity was 20/70 in the right eye and 20/30 in the left eye. Externally, the lower left eyelid had a circumscribed area of redness with findings shown in Figure 1. Other than a slight roughness of the lid margin the skin was not involved. Slit lamp examination was unremarkable. On ophthalmoscopy, previously noted changes of pigmentary dispersion in the maculae was still present. The patient received topical corticosteroid-antibiotic eyedrops every two hours during waking hours and hot compresses four times a day. After ten days treatment, the condition cleared up. The condition reappeared a week after the cessation of therapy. After three treatment-recurrence cycles, a more aggressive approach cured the condition.

Disposable Soft Contact Lens: Desirable?, Dangerous?*

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

ABSTRACT: Within a period of ten months, we saw three patients who had developed corneal complications from use of disposable contact lens (DSCL). One of these patients had corneal ulcer and the other two had early to moderate infiltrative keratitis. During the same period only two patients with keratitis related to the use of extended-wear soft contact lens were seen. Despite the fact that all five patients responded to topical medical therapy and discontinuation of contact lens wear, our experience shows that disposable lens has failed to deliver the safety and promise initially expected of it. No doubt a safe disposable contact lens is highly desirable. However, there is an urgent need of carefully planned studies on large series to reevaluate the safety of currently available disposable lenses before this desirability is accepted as true reality. (Pakistan Journal of Ophthalmology 8:89-90, October, 1992.)

In May of 1991, the International Committee on Contact Lenses published a position paper on disposable contact lenses (DSCLs) that concluded that the "concept of disposable lenses represents a significant advance in eye care that has been justifiably embraced with enthusiasm by practitioners and patients alike."[1] The International Committee on Contact Lenses is an autonomous multi-disciplinary group comprised of ophthalmologists, optometrists, and opticians, and is sponsored through a grant from the International Division of Bausch & Lomb Incorporated, one of the manufacturers of disposable lenses.

In June 1991, right on the heel of the above report and citing several published case reports of disposable lens complications,[2-5] John[6] warned that " continued caution must be exercised by all eye care specialists who dispense disposable soft contact lenses," because "these lenses certainly do not provide the solution to all problems related to conventional wear of soft contact lenses." Nonetheless, disposable lenses have rapidly become very popular since their first introduction in 1987.

We saw three patients with corneal complications from soft disposable contact lens wear during a period of 10 months. Surprisingly, only two similar cases related to the extended-wear soft contact lens wear were seen during the same period. This observation made it necessary to publish this report to alert the ophthalmologists who prescribe disposable soft contact lenses and consider them safer than other types of conventional soft contact lenses.

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*Funded by the Pakistan Academy of Medical Sciences.

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Materials and Methods

From September 16, 1991 to July 17, 1992, three patients who had been using disposable soft contact lenses visited our clinic with complaints of eye irritation and dimness of sight. The eye examination in all three showed corneal complications that apperaed directly related to the wear of disposable lens. To compare, the records of all the patients who had been assigned the diagnosis of contact lens wear complication during this period were reviewed. Only two of these patients were using conventional extended-wear soft contact lens. Brief histories of three patients with complication of disposable lens follow.

CASE 1: The emergency room of a local hospital referred a 23-year-old woman with a diagnosis of conjunctivitis and a severe foreign body sensation of the left eye, which the patient thought was due to her disposable soft contact lens that had "slid behind the eye." The emergency room doctor had been unable to remove the lens because the emergency room had "no equipment to take the lens out of the eye." On further questioning the patient informed that she had been wearing contact lenses for many years, and had shifted to disposable lenses (Bausch and Lomb) only a few months before. She had not been wearing the contact lenses overnight. The symptoms had developed over a period of two days with a very uncertain feeling of irritation, but had become unbearable during the night of patient's visit to the emergency room.

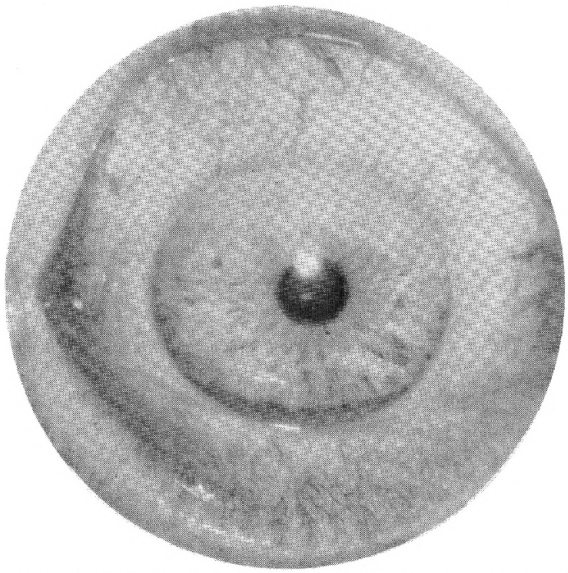

Figure 1 (Awan): Case 1. Left eye. Keratoconjunctivitis related to disposable soft contact lens wear. On biomicroscopy the cornea had epithelial edema and a couple of punctate areas with surrounding stromal infiltration.

On eye examination the visual acuity was 20/30 (6/9) in the right eye and 20/80 (6/24) in the left eye with glasses. External examination showed that the right eye was normal, but the left eye was moderately red, watery, and had blepharospasm. The redness was more marked around the limbus and the cornea had a slight loss of lustre (Figure 1). The slit lamp examination showed some generalized epithelial edema and couple of punctate staining areas. Upon double eversion of the eyelids no contact lens was found.

The patient was instructed not to wear any contact lenses for at least two weeks and placed on hourly topical antibiotic drops during the waking hours for the first 24 hours, after which corticosteroid-antibiotic combination drops were used q. 2hrs. The condition significantly improved in five days, after which the drops were reduced to q.i.d. for another five days.

CASE 2: A 32-year old woman came in with complaint of pain, redness, and discharge from her left eye. She gave history of the trouble having started several days before when she woke up in the morning and noticed that the eyelids on the left side were stuck together. She had washed the eye with warm "salt water," but to no avail. To take the redness out of the eye she had been using Visine[R] drops because, she said, she was too busy to go to the doctor. Now the eye had become very painful. The patient had been using disposable contact lenses (Bausch and Lomb) for over a year. She was in a habit of using the lenses overnight whenever she felt they "would not bother the eyes."

Eye examination showed visual acuity of 20/25 (6/7.5) in the right eye with disposable contact lens and counting fingers at three feet in the left without any correction. On external examination, the right eye was normal. The left eye was red and had some yellowish discharge on the lashes. The cornea showed a whitish area in the midperiphery of the cornea at 4 o'clock position. On slit lamp examination it was a small corneal ulcer with moderate cells in the anterior chamber. After taking culture, the patient was placed on Polytrim[R] hourly eye drops around the clock and atropine 1% drops twice a day. She was advised to discontinue the use contact lenses until allowed to resume their use. Two days later Pred Forte[R] eye drops were added six times a day. A week later the cornea became epithelialized. In another week the stromal infiltration cleared up, and atropine drops were stopped and others reduced to four times a day for two weeks.

CASE 3: A 21-year-old man who was using disposable contact lenses (Acuvue) developed symptoms and signs similar to Case 1 and responded to similar therapy.

Comment

No doubt our three cases are a very small number from which no scientifically sound and reliable conclusions can be drawn. However, their occurrence does qualify as a cause for concern if not alarm. The concept of "disposable" is not only appealing as a convenience, it also unavoidably creates an assumption of a decreased demand for cleanliness standard.

It is possible that not the quality and the claimed safety of disposable lens but a relaxation in attitude of the patient toward maintenance and usage standards is responsible for its complications. Nonetheless, it appears imperative that reputable ophthalmic centers conduct independent studies on different types of disposable soft contact lenses on large numbers of well-defines patients to establish their respective levels of safety, and recommendations under which these may be achieved. Until that is done, the risks of disposable lenses should be considered at least as high as those of the conventional extended-wear soft contact lenses. Yes, disposable soft contact lens is desirable. But an optimum and scientifically proven standard of its safety must be established before this desirability is accepted as a reality.

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An Analysis of Fundus Fluorescein Angiography Findings in 220 Cases at the Civil Hospital, Karachi

M. Idress Adhi, F.R.C.S., Sajid Mirza, M.B.,B.S., Zia A. Shaikh, F.R.C.S., and Khwaja S. Hasan, F.R.C.S.

ABSTRACT: This is the first report of a planned study of fluorescein angiography from Pakistan. A total of 220 patients underwent fundus fluorescein angiography (FFA) from January 1, 1990 to December 31, 1992 on outpatient basis at the Department of Ophthalmology, Civil Hospital, Dow Medical College, Karachi. The method proved safe and financially affordable for our people, at an average cost of Rs. 300.00 (US $12) per test. Out of a total of 220 cases, 70 (31.82%) had non-inflammatory retinal vascular disease; 44 (20%) had inflammatory diseases, 21 (9.55%) had degenerative macular disease, 19 (8.64%) had central serous retinopathy, 18 (8-18%) had hereditary retinal dystrophies, 10 (4.6%) had cystoid macular edema, eight (3.64%) had traumatic maculopathy, five (2.27%) had angioid steaks, three (1.4%) had retinal detachment, and 22 (10%) made up the miscellaneous group. The procedure also proved very helpful in selecting patients for laser photocoagulation. (Pakistan Journal of Ophthalmology 8:91-95, October, 1992)

In 1961, Novotny and Alvis,[1] two medical students at the Indiana University, U.S.A., introduced a new method of studying and permanently recording functional and structural changes in the living eye. They published their first article on this marvelous technique, photographic fluorescein angiography, in the journal *Circulation*. Great credit goes to the editors of *Circulation* for their perspicacity, for the *American Journal of Ophthalmology*, world's leading ophthalmic publication, rejected this article when the authors first submitted it to them. Today, within only two decades, fluorescein angiography has become one of the most important and major advances in ophthalmology, proving that the merit and practical significance of a concept and not its publication in a journal with big reputation are the ingredients of which the breakthroughs are made.

Fundus fluorescein angiography (FFA) involves observation and serial photography of the passage of fluorescein sodium dye through the ocular tissues after this dye is injected superficial forearm vein.[2] By employing appropriate filters, the photography may be black and white or in color, and may be stereographic.

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Fluorescein angiography is mostly employed in study of ocular fundus. Nonetheless, it is also being used in study of the anterior segment disorders, in the diagnosis of necrotizing scleritis, for instance.[3] Also, low dose fluorescein angiography improves the quality of fluorescein pictures of conjunctiva and episclera.[4]

Oral fluorescein angiography decreases the risk of reactions that have been reported with the intravenous route, but this method lacks the ability to clearly show very early phases.[5]

We report our experience with FFA as an outpatient procedure in our department from January 1, 1990 to December 31, 1991. This is the first report of such a study from Pakistan.

Subjects and Methods

From January 31, 1990 to December 31, 1991, 220 patients who visited the Eye Department, Civil Hospital, Karachi or were referred from other centers were selected for funds fluorescein angiography. All of these patients had visual impairment not fully explained by media opacities.

Each patient gave detailed account of history of visual impairment and past eye diseases, family history, past and present systemic disorders, and information about all known allergy. Particularly noted were diabetes mellitus, hypertension, or ischemic heart disease and details of pertinent drugs.

Pregnant or lactating mothers, mentally retarded persons, and the patients with hepatic or renal failure were not included in the series.

All patients underwent full ophthalmological evaluation. Each patient had assessment of anterior and posterior segments. Visual acuity was noted unaided and corrected in all cases. Slit lamp examination included applanation tonometery, gonioscopy and funduscopy with 3-mirror lens. Presence of afferent pupillary defect was noted and both direct and indirect ophthalmoscopy was performed.

All the patients and parents in case of children were fully explained about the procedure and written consent was obtained in each case.

The pupils were dilated with tropicamide 1% and phenylephrine 10%, dropping the eyes one hour prior to the procedure and repeating it after thirty minutes. All patients received subcutaneous test dose of 0.2 ml sodium fluorescein to uncover sensitivity to it. The patients were explained about the yellowish discoloration of urine and skin after the test.

The examination and testing room was supplied with an emergency tray containing essential medicines including injectable antihistamines, diazepam, corticosteroids and adrenalin, and oxygen supply and inhalation equipment.

Five ml of 10% or two ml 25% (diluted in 3 ml saline) of sodium fluorescein was injected in a superficial vein of forearm, maintaining the intravenous line with butterfly cannula.

Prior to bolus injection of the dye color fundus photography was performed using 400 ASA, 100 ASA Fujichrome or Kodachrome films.

For recording of angiography, we used 400 ASA Agfapan. In few patients we also recorded angiography on colored films. Olympus camera was used for fundus photography and angiography.

Results

One patient (0.45%) showed significant sensitivity to test dose of the dye, and angiography in him was cancelled. Another patient (0.45%) went into shock during the procedure, but was successfully and uneventfully revived.

The most common side effect was nausea which appeared in 27 (12.3%) patients, while 9 (4%) patients vomited during or after the procedure. Other side-effects were sweating and palpitation in 18 (8.2%) patients and subjective feeling of warmth and dizziness in 12 (5.4%) patients. Five patients (2.3%) had extravasation of the dye at the site of injection, which caused local tissue staining in one patient lasting for one week. More than one side effect were also noted in a number of patients. An overwhelming majority of patients, 185 (84%), had no difficulty with FFA.

Retinal vascular disease was the most common indication for FFA. Twenty out of 43 (19.5%) diabetic patients were advised either focal or scattered laser photocoagulation after identification of focal leaking spots or capillary non-profusion.

On account of identification of retinal ischemia, six out of 24 (10.9%) patients with either branch or central retinal vein occlusion were selected for sector or scattered laser photocoagulation.

The FFA was immensely helpful in documenting the classical lesions of acute posterior multifocal placoid pigment epitheliopathy (APMPPE), of which there were seven cases (3.1%). (Figure 1, A and B)

Age related macular degeneration (ARMD) was present in 20 (9.09%) out of 220 patients. Six of these patients had advanced disciform lesions in both eyes, which were not amenable to laser photocoagulation. The rest of the patients had dry type of ARMD.

Retinitis pigmentosa and Stargardt's disease were common in the hereditary group. Four patients with cone dystrophy were identified. Optic disc abnormalities including optic disc drusen (1), optic pit (1), papilledema (1) and ethambutol optic neuropathy (1) were detected. One patient who had been initially diagnosed of having maculopathy turned out to be a case of choroidal and optic nerve metastases from adenocarcinoma of the breast.

Five cases (2.3%) had angioid streaks of the ocular fundus, two of whom also had advanced disciform macular degeneration (Figure 1, C).

Eales's disease was the most common finding in the inflammatory group (Figure 1, D). It was noted in 11 (5% of total patients in the series) out of 44 (20%) cases of chorioretinal disorders. Focal chorioretinitis was found in six patients.

Cystoid macular edema was documented as a cause of poor vision in 10 (4.5%) patients. Central serous retinopathy was found in 20 (9%) patients, one of whom was associated with congenital optic pit. Two (0.9%) patients had unilateral persistent hyaloid vessels. Table 1 summarizes these findings.

The average cost of each test was Rs. 300 (US$ 12), making it only moderately priced test in Pakistan.

Discussion

The use of sodium fluorescein in study of vasculature of the human eye was first described in early 1960s by Novotny and Alvis.[1] It is highly water soluble and fluorescent. Fluorescence is the ability of certain substance to emit high energy of longer wavelength than the light energy necessary for excitation.[6] In blood stream fluorescein is excited by a wavelength of 465 nm and emits a wavelength of 525 nm.[6] Forty to 85% of the dye in blood is absorbed by plasma proteins (predominantly albumin) while 15 to 17 % is bound to erythrocytes. A small portion remains free as negatively charged ion.[7]

Within three to five minutes after intravenous injection the dye is equally distributed throughout the blood. Most of the dye is eliminated within one hour, predominantly by the kidney.[7]

The exact incidence of various adverse reactions is not easy to establish from literature.[5] Reported overall incidence of reactions varies from less than 1%,[7] to high incidence of 21% for minor adverse effects.[4] A very low incidence (0.05%) has been reported for life threatening serious reaction.[5]

Chishti[8] discussed usual and unusual reactions to intravenous fluorescein and reported, like our observation, nausea and vomiting to be the most common adverse reaction. Other reported mild reactions include chills or warmth, hypersalivation, dizziness, urticaria, itching and facial edema.[9]

Wheezing, laryngeal edema, bronchospasm, pulmonary edema, respiratory arrest, basilar artery ischemia, atrial fibrillation, chest pain, myocardial infarction, loss of consciousness and shock are among the reported serious adverse reactions.[9] Skin necrosis at the site of injection may occur if there is extravasation of fluorescein.[10]

There is a greater likelihood of a reaction to intravenous fluorescein in a patient with history of atopy or drug reaction,[9] but a life threatening reaction, such as acute pulmonary edema, may occur even in a patient without atopy or a respiratory disease.[11]

The precise nature of reaction to intravenous fluorescein is not clear. Some may be due to hypersensitivity (anaphylaxis) as a result of an immunological response of the host to hapten (drug) protein combination.[5] Raised serum histamine levels have been found after the administration of intravenous fluorescein to people who have experienced a reaction, but this has also been true of a large proportion of those who experienced no ill effects.[12]

The great significane of FAA lies in the fact that it can provide valuable information about retinal circulation, the integrity of the blood retinal barrier and the health of retinal pigment epithelium through a simple clinical procedure.[13]

In posterior retinal dystrophies, the choroid reportedly appears dark on angiography due to the absence of dye transit.[14] We have found that in the absence of adequate facilities for electro-diagnostic testing, FFA is of great help in making diagnosis of some of the heredomacular degeneration.

Acute posterior multifocal placoid pigment epitheliopathy (APMPPE) is characterized by multiple yellow lesions of the retinal pigment epithelium which show early hypofluoresence and delayed hyperfluorescence on angiography.[15] We have found FFA very helpful in diagnosing and managing of APMPPE and other chorioretinal inflammatory disorders.[16]

New blood vessel formation within the eye is associated with a variety of retinal diseases, such as diabetic retinopathy, retinal vein occlusion, sickle cell retinopathy, retinopathy of prematurity, Eales's disease, etc. The neovascular tissue in these disorders is

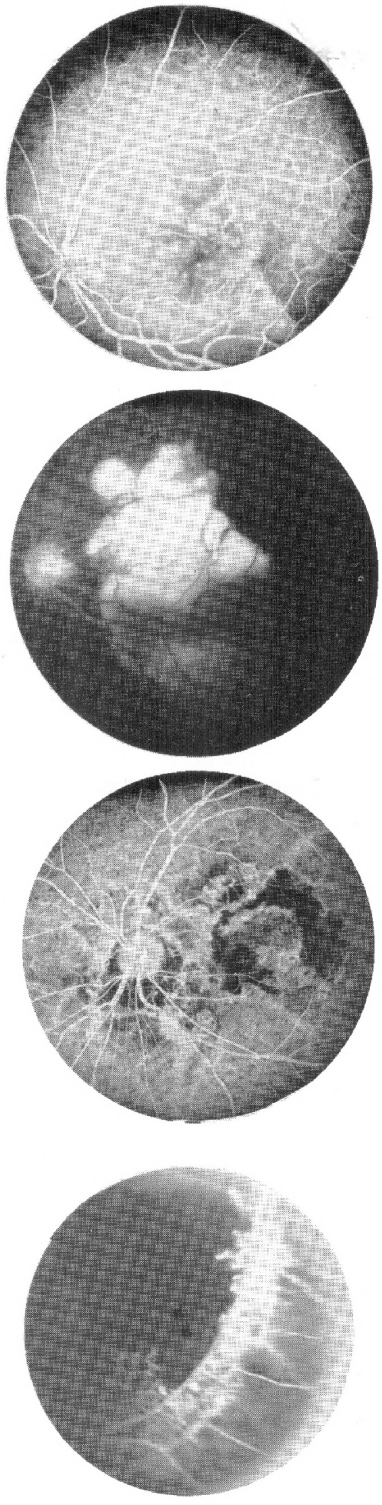

Figure 1 (Adhi, Mirza, Shaikh, and Sharif-ul-Hasan): Fluorescein angiographs. A and B, arteriovenous and late phases in APMPPE; C, angioid streaks and advanced macular degeneration in a patient without pseudoxanthoma elasticum; and D, large areas of nonperfusion and stumps of obliterated vessels in the peripheral retina in Eales's disease.

Table 1
Final diagnoses based on fluorescein angiography
(Total cases, 220)

I. **Retinal vascular diseases:**	70	31.8%
Diabetic retinopathy	43	19.55%
Retinal vein occlusion	24	10.90%
Hypertensive retinopathy	2	00.91%
Ischemic optic neuropathy	1	00.46%
II. **Degenerative maculopathies:**	21	9.55%
Age related macular degeneration	20	0.09%
Foerster Fuchs' maculopathy	1	0.46%
III. **Hereditary retinal dystrophies:**	18	8.18%
Stargardt's disease	6	2.73%
Leber's disease	2	0.90%
Cone dystrophy	4	1.80%
Retinitis pigmentosa	3	1.40%
Fundus flavimaculatus	1	0.45%
Best's disease	1	0.45%
Familial drusen	1	0.45%
IV. **Inflammatory diseases:**	44	20.00%
Eales's disease	11	5.00%
Acute posterior multifocal placoid pigment epitheliopathy	9	4.10%
Bechet's disease	3	1.40%
Optic neuritis	7	3.18%
Fungal endophthelmitis	1	0.45%
Chorioretinitis	5	2.27%
Panuveitis	2	0.90%
Vasculitis	4	1.80%
Juxta papillary choroiditis	1	0.45%
Focal choroiditis	1	0.45%
V. **Central serous retinopathy**	19	8.64%
VI. **Cytoid macular edema**	10	4.60%
VII. **Traumatic maculopathy**	8	3.64%
VIII. **Angioid streaks**	5	2.27%
IX. **Retinal detachment**	3	1.40%
X. **Miscellaneous**	22	10.00%
Subretinal hemorrhage	2	0.90%
Persistent hyaloid membrane	2	0.90%
Amblyopia	2	0.90%
Optic disc drusen	2	0.90%
Choroidal effusion	1	0.45%
Choroidal tears	1	0.45%
Vitreous hemorrhage	1	0.45%
Macular hole	1	0.45%
Disc collaterals	1	0.45%
Optic pit & central serous choroidopathy	1	0.45%
Choroidal nevus	1	0.45%
Choroidal folds	1	0.45%
Ethambutol optic nerve toxicity	1	0.45%
Retinoschisis	1	0.45%
Papilledema	1	0.45%
Choroidal and optic nerve metastases	1	0.45%
Fluorescein sensitivity	1	0.45%
Unexplained	1	0.45%
Total	220	100%

dramatically demonstrated by FFA. The common factor between these widely varying conditions appears to be retinal hypoxia. Retinal capillary closure is almost always seen as a precursor of retinal neovascularization, no matter what the primary cause.[17]

Fluorescein angiography was a very useful tool for our patient selection for both focal and panretinal laser photocoagulation.

Five cases had angioid streaks. Only two of these had positive histopathologic findings compatible with pseudoxanthoma elasticum. Interestingly, two of the other three patients who did not have pseudoxanthoma elasticum had bilateral disciform macular degeneration with choroidal neovascular membrane.

Senile macular degeneration or age related macular degeneration is there most common cause of incurable legal blindness in the elderly Caucasian population but is comparatively rare in other races.[17B] In our series we were able to document cases including both dry and wet types. Also cases with choroidal neovascular membrane were identified on FFA, which were not amenable to laser photocoagulation.

Our study proves that FFA is a safe and relatively cost-effective procedure for our population. We recommend that it should be carried out more often than what is the case at present at the referral centers of Pakistan. This will not only permit us to provide better patient care but also help us in our research projects to determine the pattern and prevalence of retinal diseases in Pakistan.

Acknowledgment

We thank Dr. Akhtar Jamal Khan and Mr. Ibrahim Ismail for their help.

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Ophthalmic "Pastpourri"

A Stitch in Time

Over a hundred and a score years ago, Henry W. Williams, ophthalmic surgeon to the City Hospital of Boston, Massachusett, USA presented a novel idea before the annual meeting of the American Ophthalmlogical Society. "The advantages of the corneal flap extraction (of cataract)," he said, " may be much enhanced, and its dangers materially lessened,..., *by the use of a suture to retain in apposition the edges of the wound.*" This was **the first** time a suture was used in cataract surgery. His suture was a "single strand only of the finest glover's silk." Although in principle intended for the corneal section, Williams first placed this suture in the limbal conjunctiva. He wrote in 1869, "...at present I am disposed to extend the corneal flap at its apex a little way into the conjunctiva, so as to allow of the placing of the suture in this membrane, where it is more easily inserted than through the tougher corneal tissue."

KJA-110269

16th Annual Congress

Ophthalmological Society of Pakistan

(In combination with "KAROPHTH" '92)

Pearl Continental Hotel, Karachi

November 24 (Tuesday) - 26 (Thursday), 1992

The theme of the 16th Congress has been chosen to be "OCULAR INFECTIONS". It is hoped that this meetng will provide an excellent opportunity to both the practising as well as the trainee ophthalmologists to exchange and share their views and experiences about this and other topics of current interest in ophthalmology.

Besides titled guest lectures, there will be panel discussions and free papers on topics related to the theme.

Karachi is a cosmopolitan, port city of Pakistan, with diverse cultures and people. There are things to see and places to visit. Glittering shopping arcades and tall plazas add to its beautiful skyline. Lovely and popular beaches are an added attraction. The weather in November is usually warm and dry in the day and pleasant at night, with temperature ranging between 15°C to 25°C. Karachi is served by an international airport with frequent flights to upcountry and to all the destinations around the world. *-K. Sharif-ul-Hasan (Chairman) & Ziauddin A. Shaikh (Secretary)*

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❒ ABSTRACT FORM:

Figure 1

Bilateral Upper Eyelid Coloboma and Median Groove of the Nose

Muhammad Humayun, F.P.A.M.S. and Akhtar J. Khan, F.C.Ophth

ABSTRACT: Colobomata of the eyelid are well-recognized and are usually unilateral. Bilateral eyelid coloboma is relatively rare. A six-month old male baby had large colobomata of both upper eyelids and a deep furrow at the tip of nose. The patient had no other facial or systemic abnormalities. Although coloboma was of the same size on both sides, only the right cornea showed xerosis and opacification secondary to exposure. The symmetrical eyelid colobomata and the central furrow in the tip of nose suggest that deformity developed due to a mechanical factor, probably from pressure caused by amniotic bands. (Pakistan Journal of Ophthalmology 8:87,97, October, 1992.)

Figure 1 shows large portions of upper eyelid missing on both sides. There are no eyelashes in the irregular margin of the coloboma. Also present is cloudiness and scarring of the right cornea, giving rise to a wider irregular corneal light reflex. Also clearly visible is a deep vertical furrow in the center of the tip of baby's nose. No other facial malformation is present. This is a case of bilateral congenital coloboma of the upper eyelid with a groove of the tip of nose.

Congenital colobomata of the eyelid usually involve the upper eyelid and unilateral involvement is not uncommon. Bilateral upper eyelid coloboma is reported to be rare.[1] The colobomata of the lower eyelid are less common than those of the upper eyelid, and usually are a part of another craniofacial malformation, such as mandibulo-facial dysostosis. Although a congenital deformity, eyelid coloboma is not a hereditary disorder. However, a few familial cases are on record.[2]

The defect may vary in size, shape, and extent of structural involvement.[2] The defect is usually complete, but in rare situations only tarsal plate is absent. The edges of colobomatous portion are round and have no cilia. Coloboma may occasionally be filled with a fibrous bridge.

Usually, eyelid colobomas are not accompanied by any systemic malformation. Other ocular abnormalities that have been reported in association with lid coloboma include dermoid or dermolipoma (most common), conjunctival chondroma, corneal opacities, malformation of the caruncle, anterior polar cataract, dislocation of lens, mesodermal strands in the anterior chamber, deficiency of abduction, choroidal coloboma, etc.[2] The facial anomalies that have been seen with eyelid colomoba are supernumerary auricle, agenesis of the ear, deformities of palate and nose, absence of ethmoid and maxillary sinuses, etc. More rarely hydrocephalus, hemicephaly, anencephaly, syndactyly, ventral hernia, etc. may be seen.[2] Cleft lip and palate are a rare association of eyelid coloboma.[3]

With relatively smaller lid colobomata cosmesis is the only concern. However, with larger defects exposure of the cornea may lead to serious consequences, such as xerosis, keratitis, corneal opacities, etc.

Pathogenesis of eyelid coloboma is fully know, but probably has a multiple basis. Two most popular theories, both of which may be accurate for different types of colobomata, are (1) constrictive effect of amniotic strands at the embryologic development stage of the eyelids and (2) localized failure of formation or premature breaking down of the lid-folds. It is possible that eyelid colobomata accompanied by other facial malformations are caused by amniotic constrictive bands, and the more simple notches with absence of eyelashes are due to the defects of lid-fold. Because the differentiation of the cilia and other marginal structures takes place only during the period of adhesion of lid-folds.[2]

Management of the congenital eyelid colobomata is surgical repair on the principles of repair of any similar secondary defects of the eyelid.

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Figure 2

Basal Cell Carcinoma of the Eyelid Mimicking Chronic Meibomianitis

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

ABSTRACT: A 76-year-old man complained of chronic redness and irritation of inside of his left lower eyelid. The flat circumscribed inflammation involving the margin and conjunctival surface of the eyelid, initially diagnosed as chronic meibomianitis, responded to topical corticosteroid-antibiotic drops and hot compresses. Three recurrences necessitated excisional biopsy of the lesion, because of the suspicion of a sebaceous adenocarcinoma arising from the meibomian glands. The histopathological studies revealed the lesion to be a basal cell carcinoma, which fortunately had been totally excised. No recurrence has occurred during a two-year follow-up. (Pakistan Journal of Ophthalmology 8:88,98, October, 1992.)

Figure 2 shows a grayish lesion of the left lower eyelid of a 76-year-old man. The lesion is flat, is surrounded by inflammation, extends posteriorly on the conjunctival side, and does not involve the skin other than at the lid margin. The eyelashes in this area are absent because the patient pulled them out, thinking they were the cause of irritation. Chronic meibomianitis was the initial diagnosis, and it responded to topical corticosteroid-antibiotic drops and hot compresses. However, within a week of discontinuation of treatment the inflammation reappeared. After three such recurrences, a suspicion of lesion being a sebaceous carcinoma of meibomian gland origin arose. This made it necessary to perform a wide full-thickness excisional biopsy, which consisted of removal of over one third of the eyelid. Histopathological studies were most interesting in that the lesion turned out to be neither chronic meibomianitis nor a sebaceous carcinoma, but a basal cell carcinoma mimicking these lesions. Fortunately, the tumor had been totally and adequately excised. The patient has remained recurrence free during a follow-up of two years.

Because basal cell carcinoma as a rule does not metastasize, this knowledge causes procrastination in physicians to treat it aggressively. Some dermatologists take the lesion lightly, and treat it with such modalities as cryoapplication, curettage, etc. Such attitude and approaches are most unsatisfactory in case of basal cell carcinomas of the eyelid, for once the tumor extends, which it can do without any outward signs, exentration of the whole orbit, including the perfectly healthy and normally functioning globe, becomes essential to save the patient's life.[1] In a series of 273 patients with basal cell carcinoma of the eyelid, eight patients required orbital exentration. Despite this, four of these patients developed recurrence in the exentrated orbit, with eventual death of one.[2] This renders it important to confirm early the diagnosis of basal cell carcinoma and to treat it most efficiently.

Basal cell carcinoma makes up nearly 90% of all the tumors of the eyelid,[3] and it can present, both clinically and histologically, in many different ways, mimicking many other benign, and at times cancerous, lesions. In the present case, basal cell carcinoma clinically appeared similar to chronic meibomianitis or sebaceous adenocarcinoma of the meibomian gland, which is known to occasionally present as an intractable inflammatory lesion.[5]

The case reported here was extending posteriorly only on the conjunctival surface, and if left unexcised, could have involved the globe, with consequent dire outcome. It appears wise to include basal cell carcinoma in the differential diagnosis of recurrent inflammatory lesions of the eyelid.

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* Funded by the Pakistan Academy of Medical Sciences.

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Book Reviews

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

INTRAOCULAR TUMORS. A TEXT AND ATLAS, 1992, by Jerry A. Shields and Carol L. Shields. W. B. Saunders Company, Harcourt Brace Jovanovich, Inc., the Curtis Center, Independence Square West, Philadelphia, Pennsylvania 19106. Hardcover, 539 full-sized pages plus 31-page index, profusely illustrated with black and white figures, Price US $150.00.

In 1983, Jerry Shields wrote *Diagnosis and Management of Intraocular Tumors*, which instantly became a major contribution in the field of ocular oncology. Because of its substance, clarity in writing, and clinical orientation, the book gained immense popularity among practicing ophthalmologists as well as trainees, and the publisher quickly ran out of copies to sell. To achieve this noteworthy success, the author, who received his training under today's giants of ophthalmic pathology Lorenz Zimmerman and Richard Green, made full use of his extensive experience and remarkable abilities of observation and explication. Now Shields and his wife Carol, the first couple of ocular oncology, have done it again, and better, with *Intraocular Tumors. A Text and Atlas.*

In recent years, medical publishing has mushroomed with an astonishing speed, and all sorts of texts are coming out on every imaginable professional topic. Thanks to modern technology, each new arrival outdoes the previous in printing and style. The real worth of a medical publication, however, does not depend just on style. It has to have substance to be of any appreciable value to its readers. Drawing from their 17-year experience of managing many thousands of ocular tumor cases at the famous Wills Eye Hospital of Philadelphia, the authors have added an enormous amount of substance to their exquisitely styled *Intraocular Tumors. A Text and Atlas.*

The contents of the book are divided into 28 chapters, and the titles of these chapters give a good general idea of its immense scope. They are Anatomic Considerations; Diagnostic Approaches to Intraocular Tumors; General Principles of Management; Introduction to Melanocytic Tumors of the Uvea; Melanocytic Tumors of the Iris Stroma; Choroidal Nevus; Melanocytoma; Posterior Uveal Melanoma: Clinical and Pathologic Features; Differential Diagnosis of Posterior Uveal Melanoma; Diagnostic Approaches to Posterior Uveal Melanoma; Management of Posterior Uveal Melanoma; Metastatic Tumors to the Intraocular Structures; Vascular Tumors of the Uvea; Osseous Tumors of the Uvea; Myogenic Tumors of the Uvea; Neurogenic Tumors of the Uvea; Fibrous and Histiocytic Tumors; Retinoblastoma: Clinical and Pathologic Features; Genetics of Retinoblastoma; Differential Diagnosis of Retinoblastoma; Diagnositc Approaches to Retinoblastoma; Management and Prognosis of Retinoblastoma; Vascular Tumors of the Retina and Optic Disc; Glial Tumors of the Retina and Optic Disc; Tumors and Related Lesions of the Pigment Epithelium; Tumors of the Nonpigmented Ciliary Epithelium; Intraocular Lymphoid Tumors and Leukemias; and Systemic Hamartomatoses ("Phakomatoses"). A very detailed and extensive index that spans across 31 pages is another very useful feature.

Writing style and the print size are readily conducive to effortless and extended reading. The discussion of subjects is concise without loss of the significants, scholarly without being overly technical and bombostic, and practical without loss of options. Most ophthalmologists do not pursue a full-time practice of ocular oncology, and, hence, their greatest interest in this subject lies in the diagnostics. Although, the quality of material is superior and classy throughout the book, Chapters 2, 6, 7, 9, and 10 containing discussions on diagnosis are exceptionally good and full of practical pointers. Information such as CT scanning having "no distinct advantage over ultrasonography in the size estimation and differential diagnosis of intraocular tumors," the inability of MRI "to depict changes in bone or intraocular calcium, thus limiting its use in the diagnosis of choroidal osteoma and retinoblastoma," the outlining of technical steps of the fine-needle biopsy, the table on genetic counseling to retinoblastoma families, the authors' suggestions of mail and telephone (or fax) consultations, etc. will be of special value to Pakistani ophthalmologists.

The text is illustrated with original photographs even in the case of the rarer entities. The illustrations throughout are stunning in quality of their content and reproduction, and those in Chapter 18 on retinoblastoma, Chapter 23 on vascular tumors, and Chapter 25 on lesions of pigment epithelium are perhaps the best that have ever been published. However, there are some illustration, particularly the photomicrographs, which are not as sharp as they might have been. Also, there are a few discrepencies, such as omitting or mislabelling of vitreoretinal face as sclera in the caption of Figure 2-5 C of a normal A scan on page 17.

The quality of printing, paper, and overall get-up of *Intraocular Tumors. A Text and Atlas* testifies to the well-established and well-deserved reputation of its publisher W. B. Saunders Company.

This book is of most benefit to the practicing ophthalmologists and those in ophthalmic training. Nonetheless, the scope of *Intraocular Tumors* goes even beyond the field of ophthalmology. As Zimmerman says in his Foreword, this book will "prove very helpful to all ophthalmologists and to

many other physicians, especially pathologists, oncologists, radiologists, and radiation therapists." It is enthusiastically recommended to all ophthalmologists and at least should be on the shelves of libraries of all the medical institutions of Pakistan, right alongside Shields' *Diagnosis and Management of Orbital Tumors.* ❐

AGE RELATED MACULAR DEGENERATION: PRINCIPLES AND PRACTICE, 1992, by G. Robert Hampton and Philip T. Nelsen. Raven Press Ltd., 1185 Avenue of the Americas, New York, New York 10036. Hardcover, 290 pages plus a 9-page index, illustrated with black and white figures and 16 color plates. Price US$ 80.00

To write about a topic as poorly understood, as therapeutically disappointing, and as devastating for the afflicted as age related macular degeneration is a very tough task. Nonetheless, in desparate situation as this even an iota of positive information goes a long way in averting that hope-depriving pronouncement of "Nothing can be done." Editors of this monograph deserve praise for collecting in one place more than just an iota of currently available positive, though by no fault of theirs still far from being problem-solving, information about this age-old old age disorder.

They have brought together, in addition to themselves contributing material, 12 experts in the field and, most shrewdly, a patient of age related macular degeneration to write for this book.

The contents of the book are divided into 12 chapters on Epidemiology of AMD; pathology of AMD; Pathophysiology of AMD; Office Evaluation; Fluorescein Angiography and Fundus Photography; Clinical Presentations of AMD; Medical Treatment of AMD; Laser Treatment of AMD; Surgical Management of AMD; Low-Vision Evaluation; Resources for Patients with AMD; and the last chapter, The Patient's Viewpoint by Nikolai, Stevenson, President, Association of Macular Diseases, New York, New York. In this chapter the author gives a most insightful and moving firsthand account of a patient's psychovisual viewpoint on macular degeneration, furnishing compelling reasons why a physician must go beyond his technical know-how to help his macular degeneration patients. On behalf of all those struck by this scourge of aging, the author thus pleads eloquently for our understanding: "To the extent that we find our eyesight impaired, so also are our spirits....As our eyesight grows dim, there also comes a great loss of self-esteem....Men feel diminished in every sense that it means to be man. Women feel diminished equally in all that it is to be feminine." Then falling back on faith and fortitude inherent in man's nature, he uplifts the reader from this depression, "As black as it is at times, it will eventually wear off." This chapter, Chapter 10 on low vision, and Chapter 11 on resource information are the most practical from the patient's perspective. For the ophthalmogist, the whole book is full of concisely and lucidly written very useful information. The material is well up to date, commenting even on the surgical removal of subretinal neovascular membranes, subsensory transplantation of pigment epithelium by autologous pedicle or by cultured pigment epithelial cells, medical treatment with broad-spectrum anti-oxidants, etc. The chapter on fluorescein angiography by Mr. Hay, a very experienced senior ophthalmic photographer, is also most informative and practical.

This book, perhaps the best treatise on macular degeneration, is highly recommended. ❐

OPTICS AND REFRACTION. A USER-FRIENDLY GUIDE (Volume 1 of Textbook of Ophthalmology, edited by Steven M. Podos and Myron Yanoff),1992, by David Miller. J B Lippincott Company, East Washington Square, Philadelphia, PA 19105, USA. Hardcover, 268 full-sized pages, index, illustrated mostly in color. Price US$ 85.00

Optics is the oldest branch of ophthalmology and the number of books written on this subject is, indeed, huge. This book, however, is as unique in style as it is in title. The word "user-friendly" in its subtitle clearly conveys the intent of the author in this age of the computer. Moreover, the advent of lasers and their ever increasing application in experimental, diagnostic, and therapeutic aspects of ophthalmology calls for a new text that also discusses optics related to them.

Speaking on extracapsular cataract extraction at a meeting of the Ophthalmological Society of Pakistan, Miller once remarked, "A surgeon does not have to prove his manhood by aspiration of every last cortical fiber." He is a scholar who always places emphasis on the practical, and this passion for practicality is also the hallmark of *Optics and Refraction. A User-Friendly Guide*. Instead of detailing every intricate aspect of the optical principles, the author has devoted his energy to their practical applications in the clinical practice. His writing is easy to read, amusing, and very instructive, which is a great plus for a treatise on a subject that most students find boring and are glad to forget once in actual practice. To maintain reader's interest he employs illustrations and vignettes from his own clinical experience, history, commercial entertainment, sports, nature, and even Russian *matryoshka* playing dolls in one figure.

The contents of the book are divided into 14 chapters titled The Nature of Light, Visible Light, Physical Optics for the Clinician, Light Damage to the Eye, Lasers, Light Units, Optics of the Normal Eye, Epidemiology of Refractive Errors, Subjective Testing of Refraction, Spectacle Lenses, Contact Lenses, Optics of Intraocular Implants, Optics of Corneal Refractive Surgery, and Ophthalmic Instruments. The book is extremely enjoyable and full of highly useful information. The printing and presentation of material is also right up there with the best. Want to learn ophthalmic optics effortlessly? Get this book. -*KJA*

Abstracts from Elsewhere

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

Ophthalmic Surgery

CORNEAL DECOMPENSATION AFTER ARGON LASER IRIDECTOMY - A DELAYED COMPLICATION, S Jeng, JS Lee, SCM Huang. The authors report six eyes in six patients in which corneal decompensation developed 18 or more months after argon laser iridectomy (ALI). In addition to the level of laser energy used, other risk factors included performing ALI during an attack, diabetes, and a cornea damaged by glaucomatous attack. The interval between the ALI and corneal decompensation ranged from 18 months to 3 1/2 years. *(Ophthalmic Surgery. 1991;22:565-569) Reprint requests should be addressed to Shyun Jeng, MD, Department of Ophthalmology, Chang Gung Memorial Hospital, 199, Tun Hwa North Rd, Taipei, Taiwan.*

TISSUE PLASMINOGEN ACTIVATING FACTOR ASSISTED REMOVAL OF SUBRETINAL HEMORRHAGE, GA Peyman, NC Nelson, W Alturki, KJ Blinder, CL Paris, UR Desai, CA Harper, III. The authors used tissue plasminogen activator (tPA) to aid in the surgical evacuation of subretinal hemorrhages. Subretinal hemorrhage secondary to a ruptured retinal macroaneurysm was treated in two patients. The surgical technique involved using a micropipette to fashion a small retinotomy through which tPA was injected into the subretinal space and through which the dissolved clot was removed. Visual acuity improved from counts fingers to 20/50 in one patient and from counts fingers to 20/70 in the other. Three additional patients, with massive subretinal hemorrhages secondary to age-related macular degeneration, were similarly treated. In one, visual acuity improved from counts fingers to 20/400; in two others, visual acuity was stabilized; in the first patient, at 20/300, and in the second patient at 20/400. The use of tPA minimizes surgical manipulation of the sensory retina and greatly reduces the size of the retinotomy required for evacuation of subretinal blood. *(Ophthalmic Surgery. 1991;22:575-582) Reprint requests should be addressed to Gholam A. Peyman, MD, LSU Eye Center, 2020 Gravier St, Suite B, New Orleans, LA 70112-2234.*

CYANOACRYLATE TEMPORARY TARSORRHAPHY IN THE MANAGEMENT OF CORNEAL EPITHELIAL DEFECTS, ED Donnenfeld, HD Perry, DB Nelson. The authors noted that cyanoacrylate tarsorrhaphy is an easily administered, painless technique for the temporary management of corneal epithelial defects. They have used the technique in 17 patients to treat persistent epithelial defects and exposure keratitis, as well as following epikeratophakia, allowing the tarsorrhaphy to remain in place for 1 to 15 days (mean, 5.7 days). Eleven of the 17 patients required only one application of cyanoacrylate; five had additional cyanoacrylate applied at the time of the original tarsorrhaphy to produce more extensive lid closure; and one required additional cyanoacrylate on day 3 to produce more extensive lid apposition. *(Ophthalmic Surgery. 1991;22:591-593) Reprint requests should be addressed to Eric D. Donnenfeld, MD, Lions Eye Bank for Long Island at North Shore University Hospital, 300 Community Drive, Manhasset, NY 11030.*

PERIBULBAR ANESTHESIA FOR THE REPAIR OF ORBITAL FLOOR FRACTURES, GM Kezirian, FD Hill, FJ Hill. The authors studied four patients that underwent successful repair of an isolated orbital floor fracture under local anesthesia. The surgical approach was by anterior-inferior orbitotomy, with placement of a Nylamid plate (S Jackson Inc, Washington, DC). The anesthetic technique used was a peribulbar and infratrochlear nerve block with local supplementation. Digital control of the globe was maintained during the peribulbar injection to prevent ocular perforation. We conclude that local anesthetic for this procedure in carefully selected cases is safe and efficacious, avoiding the morbidity of a general anesthetic. *(Ophthalmic Surgery. 1991;22:601-605) Reprint requests should be addressed to Guy M. Kezirian, MD, Southern Eye Center, 1420 South 28th Avenue, Hattiesburg, MS 39402.*

COMMON-SENSE DETERMINATION OF INTRAOCULAR LENS POWER, RC Drews. The author discusses the art of using A-scan measurements and IOL power calculations to achieve patient satisfaction following cataract surgery. *(Ophthalmic Surgery. 1991;22:632-637) Reprint requests should be addressed to Robert C. Drews, MD, 211 North Meramec Ave, Clayton, MO 63105.*

ARGON LASER PRETREATMENT 4 TO 6 WEEKS BEFORE Nd:YAG LASER

IRIDOTOMY, BW Fleck, E Wright, C McGlynn. The authors show that argon laser pretreatment followed by Nd:YAG laser iridotomy 4 to 6 weeks later was performed in the right eye of 10 patients. Primary Nd:YAG laser iridotomy was performed in the left eye. Significantly more Nd:YAG laser energy was needed to produce an iridotomy in pretreated eyes (P<.001). Pretreated eyes developed a significantly larger pigment epithelium defect around the iridotomy site and a greater degree of pigmentation of the inferior part of the trabecular meshwork 6 months following treatment. Argon laser pretreatment followed by Nd:YAG laser iridotomy 4 to 6 weeks later appears to offer no advantages over primary Nd:YAG laser iridotomy. *(Ophthalmic Surgery. 1991;22:644-649) Reprint requests should be addressed to BW Fleck, MBChB, FRCS, Department of Ophthalmology, Royal Infirmary, Edinburgh EH3 9HA, Scotland.*

POSTOPERATIVE COMPLICATIONS AND VISUAL LOSS FOLLOWING MOLTENO IMPLANTATION, DG Lotufo. The author conducted a retrospective review of 16 initial, consecutive cases of Molteno implantation with at least 6 months of follow up showed that all eyes developed either or both early-onset (12 eyes) or late-onset (7 eyes) complications. The early-onset complications, which included choroidal effusions and flat anterior chambers, tended to resolve without difficulty. By contrast, the late-onset complications, which included 4 implant extrusions, 2 vitreous hemorrhages, 1 persistent hyphema, 1 cystoid macular edema, 1 opacified vitreous face, and 1 tractional detachment with fibrous ingrowth, tended to herald poor visual prognoses. Implant removal was required in three cases. Overall, vision improved in 3 eyes (18.8%), remained unchanged in 3 (18.8%), and deteriorated two or more lines in 10 (62.4%). In 3 eyes vision deteriorated to no light perception; 2 of them became phthisical. These complications often occurred despite successful control of intraocular pressure (<23 mm Hg). The relatively high complication rates in this series as compared with previously reported ones probably reflects a combination of factors not necessarily related to the Molteno surgery; primarily, the patients in this small series may have had more severe disease and more prior surgeries than those in other such series. *(Ophthalmic Surgery. 1991;22:650-656) Reprint requests should be addressed to David G. Lotufo, MD, 491 Rantoul Street, Beverly, MA 01915.*

LASER TREATMENT OF SUBFOVEOLAR CHOROIDAL NEOVASCULAR MEMBRANES, JS Daubert, L El-choufi, RF Stephens. The authors prospectively studied the safety and efficacy of subfoveolar laser treatment of choroidal neovascular membranes (CNVM) in 29 eyes. With one to four treatments, all CNVMs were successfully eradicated. Central visual acuity improved in 31% and stabilized in 69%. Vision did not deteriorate in any of the eyes. In appropriately selected eyes, subfoveolar treatment appears safe and effective in halting the exudative response and minimizing scotoma size, thus facilitating the use of low-vision aids. *(Ophthalmic Surgery. 1991;22:665-669) Reprint requests should be addressed to Robert F. Stephens, MD, 6410 Rockledge Drive, Suite 312, Bethesda, MD 20817.*

HEMORRHAGIC CHOROIDAL DETACHMENT WITH ANTERIOR VITREORETINAL ADHESIONS, WR Freeman, TE Schneiderman, RN Weinreb, G Baerveldt. The authors presented three cases of large intraoperative or postoperative hemorrhagic choroidal detachment with subsequent adherence of the retina to anterior segment structures. Surgical management involved bimanual vitrectomy through anterior sclerotomy sites and dissection within the anterior segment. Successful retinal reattachment was achieved in two of these cases (18-months' follow up). In the third case, the retina remained attached for 4 months but then redetached. *(Ophthalmic Surgery. 1991;22:670-675) Reprint requests should be addressed to William R. Freeman, MD, Department of Ophthalmology, University of California, San Diego, M-018, La Jolla, CA 92093.*

CORTEX AT THE 12 O'CLOCK POSITION AND THE ROLE OF PERIPHERAL IRIS OPENING, JJ Alpar. The author notes that performing a peripheral iridectomy is a safe and effective means of atraumatically removing cortex at the 12 o'clock position. It prevents pupillary block as well as adhesions between the iris and capsule. Also, it serves to position the anterior capsular flap and the superior edge of the intraocular lens. *(Ophthalmic Surgery. 1991;22:712-715) Reprint requests should be addressed to John J. Alpar, MD, St Luke Eye Institute, 5311 West 9th Avenue, Amarillo, TX 79106-4161.*

LAMELLAR CORNEAL AUTOGRAFT FOR CORNEAL PERFORATION, S Lam, CJ Rapuano, JH Krachmer, BL Lam. The authors discuss a corneal perforation developed in the right eye of a 46-year-old man after removal of a corneal foreign body. Two attempts to seal the perforation with cyanoacrylate glue failed. The patient subsequently underwent lamellar corneal autograft, which successfully closed the perforation. To the best of our knowledge, this is the first report of repairing a corneal perforation with lamellar corneal autograft. *(Ophthalmic Surgery. 1991;22:716-717) Reprint requests should be addressed to Jay H. Krachmer, MD, Department of Ophthalmology, University of Iowa Hospitals and Clinics, Iowa City, IA 52242.*

THE EFFECTS OF POSTOPERATIVE CORTICOSTERIODS ON TRABECULECTOMY AND THE CLINICAL

COURSE OF GLAUCOMA: FIVE-YEAR FOLLOW-UP STUDY, SM Roth, GL Spaeth, RJ Starita, EM Birbillis, WC Steinmann. The authors' randomized, prospective study on 68 eyes of 54 patients with progressive, uncontrolled, noninflammatory open-angle glaucoma showed that eyes that received topical prednisolone 1% had a lower intraocular pressure (IOP) 18 months following trabeculectomy than the eyes that received no prednisolone. The addition of systemic prednisone had no definite further effect. In the present study, they reevaluated 58 eyes of 45 of these patients 5 years after the time of initial surgery. The number of cases lost to follow up was similar in the steroid and the nonsteroid-treated groups. Mean IOP of the steroid-treated patients was 14.5 ± 1.8 mm Hg, and of the nonsteroid-treated patients, 19.3 ± 2.1 mm Hg. Visual field, optic disc, and IOP were stabilized in 94% of the steroid-treated cases and in 43% of the nonsteroid-treated cases. *(Ophthalmic Surgery. 1991;22:724-729) Reprint requests should be addressed to George L. Spaeth, MD, Wills Eye Hospital, Thomas Jefferson Medical College, Ninth and Walnut Streets, Philadelphia, PA 19107.*

MODIFIED VITRECTOMY FOR IMPENDING MACULAR HOLES, RB Chambers, FH Davidorf, P Gresak, WC Stief. The authors reported a consecutive series of 13 eyes (11 patients) treated with pars plana vitrectomy, in which surgical manipulation of the prefoveal layer of cortical vitreous was avoided, for stage I (eight eyes) and stage II (five eyes) macular hole formation. Average follow up was 8.1 months (range, 2 to 13 months). There was no significant improvement in vision in the patients with stage II macular holes; however, vision in these patients stabilized and did not fall below 20/400. Visual acuity improved in seven of the eight patients with stage I holes. The results for both these groups achieved by our modified vitrectomy, which is relatively easy to perform and involves minimal intraoperative manipulation of the fovea, are consistent with those obtained by methods involving more aggressive cortical vitreous stripping of the fovea. *(Ophthalmic Surgery. 1991;22:730-733) Reprint requests should be addressed to Robert B. Chambers, DO, The Ohio State University Department of Ophthalmology, 456 West 10th Avenue, Columbus, OH 43210.*

SURFACE REACTION ON SILICONE TUBES USED IN THE TREATMENT OF NASOLACRIMAL DRAINAGE SYSTEM OBSTRUCTION, AL Ruby, GS Lissner, R O'Grady. The authors studied silicone tubes removed from patients who underwent intubation of the nasolacrimal system for acquired or congenital obstruction to determine the cellular reaction on the tubes and to assess the relationship between the length of intubation and the cellular response. Twenty-one tubes were available for analysis. Length of intubation varied from 39 to 415 days; patient ages varied from 10 months to 75 years. All patients had undergone dacryocystorhinostomy or closed intubation of the nasolacrimal system. No patient had clinical signs of infection at the time of tube removal. All tubes were mounted on glass slides and stained with hematoxylin and eosin. The reactions seen, together with the location and type of cells present, were graded by a masked observer. There were varying numbers of inflammatory cells, predominantly polymorphonuclear leukocytes. As the length of intubation increased, the number of inflammatory cells also increased. The proximal portion of the tubing showed the least amount of cellular reaction at all lengths of intubation. *(Ophthalmic Surgery. 1991;22:745-748) Reprint requests should be addressed to Gary S. Lissner, MD, Northwestern University Medical School, 303 E Chicago Ave, Chicago, IL 60611.*

SCLERAL FIXATION OF POSTERIOR CHAMBER INTRAOCULAR LENS IMPLANTS COMBINED WITH VITRECTOMY, MA Friedberg, DK Berler. The authors discuss selected patients undergoing pars plana vitrectomy and lensectomy may be ideal candidates technique for implanting such lenses, a technique designed to avoid the problems of suture exposure, lens rotation, and infection. *(Ophthalmic Surgery. 1992;23:17-21) Reprint requests should be addressed to Mark A. Friedberg, MD, 70 East Front Street, Red Bank, NJ 07701.*

Nd:YAG LASER TRABECULO-PUNCTURE IN ANGLE-RECESSION GLAUCOMA, S Melamed, I Ashkenazi, I Gutman, M Blumenthal. The authors performed Nd:YAG laser trabeculopuncture (YLT) in 12 eyes of 12 patients with angle-recession glaucoma. Confluent, 1-clock-hour trabeculotomy was attempted in all eyes. The calculated average laser energy was 181 ± 86 mJ. Where possible, the midtrabecular meshwork was treated, preferably at the superior half. After a mean follow up of 12.0 ± 5.6 months, intraocular pressure (IOP) was controlled (≤19 mm Hg) in five eyes (41.7%). YLT was associated with blood reflux during or after treatment in all successfully treated eyes. In eyes that failed, blood reflux could be detected in only two of seven eyes (28.6%). YLT failed to control IOP in all five eyes that had angle-recession for 360°.

Following YLT, IOP rose in two eyes (16.6%), minimal hyphema occurred in one eye, and temporary flare and cells developed in the anterior chamber in all eyes. Six eyes (50%) required glaucoma surgery (four had trabeculectomy and two had Molteno implant surgery).

They recommend YLT only for selected cases of uncontrolled angle-recession glaucoma in which at least part of the trabecular meshwork by gonioscopy appears to maintain its anatomical structure,

permitting penetration into Schlemm's canal. *(Ophthalmic Surgery. 1992;23:31-35) Reprint requests should be addressed to Shlomo Melamed, MD Goldschleger Eye Institute, Chaim Sheba Medical Center, Tel Hashomer 52621, Israel.*

TRABECULODIALYSIS FOR INFLAMMATORY GLAUCOMA: A REVIEW OF 25 CASES, RD Williams, HD Hoskins, RN Shaffer. The authors reviewed the results following trabeculodialysis in 25 eyes of 22 patients with secondary glaucoma due to chronic anterior uveitis. After 1 year, intraocular pressure (IOP) was uncontrolled (>21 mm Hg) in 11 eyes (44%). Trabeculodialysis controlled IOP (<21 mm Hg) in 14 eyes (56%), with an average follow up of 52 months (range, 12 to 151 months). Sixteen eyes (64%) were aphakic, but did no worse than the phakic eyes. One eye developed a subchoroidal hemorrhage 3 days postoperatively which required drainage. No other serious complications were encountered. Trabeculodialysis is a safe procedure which can achieve pressure control in these difficult eyes. *(Ophthalmic Surgery. 1992;23:36-37) Reprint requests should be addressed to The Foundation for Glaucoma research, 490 Post Street, Suite 830, San Francisco, CA 94102.*

SURGICALLY-INDUCED ASTIGMATISM IN COMBINED ECCE WITH FILTERING PROCEDURES COMPARED TO ECCE ALONE, NT Choplin, JF Monroe. The authors conclude that extracapsular cataract extraction with implantation of a posterior chamber lens combined with filtering surgery (glaucoma triple procedure) is frequently employed in the comanagement of cataract and glaucoma. Nineteen triple procedures with a minimum of six months follow up were compared to 19 cases of extracapsular cataract extraction with lens implant matched for age, sex, and surgeon with regard to surgically induced astigmatism as determined by vector analysis. Follow up averaged 10 months for the triple group and 14 months for the controls. There was no statistically significant difference in preoperative astigmatism between the two groups nor in the mean number of sutures cut.

Postoperatively, the keratometric cylinder averaged 2.55 $\pm$ 1.54 diopters for the cases and 1.20 $\pm$ 1.11 D for the controls; the difference of 1.36 D was statistically significant (P = .004). The postoperative refractive cylinder was 2.34 $\pm$ 1.54 D for the cases and 1.29 $\pm$ 1.07 D for the controls; the difference of 1.05 D was statistically significant (P = .017). With regard to surgically-induced astigmatism, vector analysis showed that the cases averaged 2.18 $\pm$ 1.25 D and the controls 1.23 $\pm$ 0.81 D; the difference of 0.95 D was statistically significant (P = .006). When analyzed for change along the vertical meridian, the cases averaged 1.12 $\pm$ 1.57 D surgically-induced against-the-rule astigmatism, as compared with 0.30 $\pm$ 1.16 D for the controls (difference, 0.83 D; P = .062). The glaucoma triple procedures induced approximately 1.00 D more cylinder than the controls. *(Ophthalmic Surgery. 1992;23:81-84) Reprint requests should be addressed to CDR Neil T. Choplin, MC, USN, c/o Clinical Investigation Department, Naval Hospital, San Diego, CA 92134-5000.*

VISUAL CORRECTION FOLLOWING PENETRATING KERATOPLASTY, WE Smiddy, TR Hamburg, GP Kracher, WJ Stark. The authors state postoperative visual correction following penetrating keratoplasty usually includes spectacles, but for some patients optimal vision may be obtained using contact lenses. We studied 126 eyes of 101 patients undergoing penetrating keratoplasty to determine the frequency of postoperative contact-lens use, its clinical association, its effect on the risk of corneal graft rejection, and its potential effects on topical medications. A total of 20 patients (16%) wore contact lenses postoperatively for maximal optical correction. Among eyes with good macular potential, 17 of 63 (27%) wore contact lenses. Contact-lens wear did not preclude the use of chronic postoperative topical medications, nor did it increase the risk of corneal graft rejection. We conclude that contact lenses may be useful for optimizing vision after penetrating keratoplasty, especially when macular potential is good. *(Ophthalmic Surgery. 1992;23:90-93) Reprint requests should be addressed to Walter J. Stark, MD, Wilmer Ophthlamological Institute, The Johns Hopkins Hospital, 600 N. Wolfe Street, Maumenee Building 327, Baltimore, MD 21205.*

ANTERIOR CAPSULAR OPACIFICATION AFTER ENDOCAPSULAR CATARACT SURGERY, T Hara, N Azuma, K Chifa, Y Ueda, T Hara. The authors note the central parts of the opacified anterior capsules of nine eyes of nine patients after endocapsular phacoemulsification followed by posterior chamber intraocular lens implantation were removed after an average postoperative period of 25 months and examined by light and electron microscopy. The opacified materials were judged to be collagen. Transmission electron microscopy revealed fibers 50 to 60 nm in diameter, with approximately 65-nanometer periodic bands in five of the nine eyes. Most remaining cells showed multilayered proliferation and were rich in cytoplasmic microtubules and surface dendrites. These results indicate that postoperative anterior capsular opacification is composed of fibroblast-like cells, presumably transformed from lens epithelial cells and collagen. *(Ophthalmic Surgery. 1992;94-98) Reprint requests should be addressed to Tsutomu Hara, MD, Hara Eye Hospital, Nishi 1-1-11, Utsunomiya 320, Japan.*

INFLAMMATION AFTER CATARACT SURGERY IN CHILDREN, NA Jameson, WV Good, CS Hoyt. The authors reviewed the records of 32 consecutive children (43 eyes) who

underwent lensectomy/vitrectomy between January 1988 and August 1990 at the Medical Center of the University of California at San Francisco, to study the incidence and characteristics of clinically significant postoperative inflammation (CSPI). No eyes of patients 18 months old or younger (22 eyes) developed CSPI; nine of 21 eyes of older patinets did develop CSPI. Other ocular abnormalities (microphthalmos, persistent hyperplastic primary vitreous, retinopathy of prematurity, and Axenfeld's syndrome) and systemic syndromes did not influence the incidence of CSPI.

Prolonged inflammation delayed refractive and amblyopia therapy but did not affect final visual acutiy. The absence of CSPI in younger patients may be related to the general immaturity of their immune system and a resultant weak inflammatory response, or to their specific immunologic tolerance to lens crystallins. *(Ophthalmic Surgery. 1992;23:99-102) Reprint requests should be addressed to William V. Good, MD, A 704, 400 Parnassus, San Francisco, CA 94131.*

BIFOCAL VERSUS MONOFOCAL INTROCULAR LENSES IN BILATERAL PSEUDOPHAKIA, A Scialdone, M Merighi, A Bertuzzi, R Brancato. The authors recorded that after a mean follow up of 19 months, the visual characteristics of eyes with bifocal diffractive intraocular lenses (IOLs) ("bifocals") in on eye were compared with those of fellow eyes with monofocal IOLs ("monofocals") in 29 bilateral pseudophakic patients. All of the eyes had a distance-corrected acuity of 0.6 or more, but 24.1%a of the bifocals and 48.3% of the monofocals had an acuity of 1.00. Near acuity with distance correction was J2 or more in 93.1% of the bifocals and in 17.4% of the monofocals (without correction: 79.3% and 41.4%, respectively). In 55.2% of the bifocals and 20.7% of the monofocals, the combined uncorrected acuity was 0.5 or more for distance and J2 or more for near. Fogging revealed a similar depth of focus in the monofocals and a similar distance focus in the bifocals. The bifocals had two peaks of acuity but no "plateau" between them. The eye with the monofocal IOL was preferred by 37.9% and the eye with the bifocal IOL by 10.3%. Vision in no eye was rated "poor". Visual distrubances were more frequent in the bifocals. No glasses were prescribed for 20.7% of all of these patients; 65.5% required bifocal glasses; 44.8% managed most of daytime without glasses. *(Ophthalmic Surgery. 1992;23:161-165) Reprint requests should be addressed to A. Scialdone, MD, Clinica Oculistica Universita' di Milano, Istituto Scientifico HS, Raffaele via Olgettina 60, 20132 Milano, Italy.*

MONOCULAR TRAUMATIC CATARACT, EXTRAOCULAR MUSCLE DEVIATION, AND INTRAOCULAR LENS IMPLANTATION, JJ Alpar. The author reports seven patients with monocular traumatic cataract who had either preinjury or postinjury extraocular muscle deviation. All but one were managed with cataract extraction and intraocular lens implantation, without muscle surgery. If muscle surgery is required in such cases, recommends that it be delayed until at least a year after the cataract and lens implantation surgery. *(Ophthalmic Surgery. 1992;23:166-169) Reprint requests should be addressed to John J. Alpar, MD, St Luke Eye Institute, 5311 West 9th Avenue, Amarillo, TX 79106-4161.*

EXPERIMENTAL COMPARISON OF LASER AND CRYOSURGICAL CILIA DESTRUCTION, MD Gossman, JR Brightwell, AC Huntington, C Newton, R Yung, S Eggler. The authors compared cryosurgery with the argon and carbon dioxide lasers in a rabbit model to evaluate the permanence of eyelash destruction as well as the gross and histologic effects on the eyelid. Each modality was equally effective in preventing eyelash regrowth. Cryosurgery and the carbon dioxide laser produced the greatest acute soft tissue swelling; the carbon dioxide laser produced the most pronounced gross eyelid alterations. The argon laser produced minimal eyelid tissue change. Long-term histologic tissue alterations were not striking and were confined to eyelids treated with cryosurgery and the carbon dioxide laser. We conclude that, of the two lasers, the argon is the best suited to the clinical treatment of trichiasis: it is widely available, more precise in limiting contiguous tissue destruction when delivered through a slit lamp, and is safer for use near the eye. *(Ophthalmic Surgery. 1992;23:179-182) Reprint requests should be addressed to M. Douglas Gossman, MD, Department of Ophthalmology, University of Louisville School of Medicine, 301 E. Muhammad Ali Blvd, Louisville, KY 40202.*

COMPRESSION SUTURES AND PENETRATING CORNEAL TRAUMA, KA Buzard. The authors described a simple technique involving additional compression sutures and the use of a subjective operating keratometer for use in managing excessive astigmatism following suturing for penetrating corneal trauma. By minimizing "sutures in" astigmatism following wound closure, this technique can hasten visual rehabilitation. *(Ophthalmic Surgery. 1992;23:246-252) Reprint requests should be addressed to Kurt A. Buzard, MD, FACS, 2575 Lindell Road, Las Vegas, NV 89102.*

SIMULTANEOUS LATERAL, ANTERIOR, AND POSTERIOR (SLAP) LOWER-LID BLEPHAROPLASTY, PJ Weber, JC Popp, AE Wulc. The authors report a hybrid procedures for correcting the aging lower eyelid transconjunctival blepharoplasty, skin blepharoplasty, skin-muscle blepharoplasty - that maximizes the strengths of these procedures while minimizing their shortcomings. Our procedure, a simultaneous lateral, anterior, and posterior blepharoplasty, simultaneously

attacks the lateral canthal angle, the anterior lamella, and the posterior lamella of the eyelid. *(Ophthalmic Surgery. 1992;260-264) Reprint requests should be addressed to Allan E. Wulc, MD, FACS, Scheie Eye Institute, University of Pennsylvania, Myrin Circle, 51 N 39th Street, Philadelphia, PA 19104.*

TEN-YEAR FOLLOW UP COMPARING ANTERIOR AND POSTERIOR CHAMBER INTRAOCULAR LENS IMPLANTS, JE Downing. The authors compare results achieved in eyes following a single surgeon's first 200 procedures consisting of intracapsular cataract extraction and implantation of a Choyce-Tennant anterior chamber lens (AC-IOL) (1977 to 1980) with those achieved following the same surgeon's first 200 procedures consisting of extracapsular cataract extraction and implantation of a posterior chamber intraocular lens (PC-IOL) (1980 to 1982). For the AC-IOL eyes, follow up ranged from 11.1 to 14.2 years (mean, 12.0 years); for the PC-IOL eyes, from 9.5 to 10.8 years (mean, 10.0 years).

The AC-IOL eyes had many early problems: pupillary block (7%), iritis (15%), and secondary glaucoma (8%). Four percent developed corneal edema, 1.5% vitritis, and 2% localized iris holes under the lens. Ectropion uveae appeared in 8.5%, indicating some ongoing inflammation. One and one-half percent of these lenses were removed or exchanged. Seventy-nine and one-half percent of these eyes had 20/40 or better vision at 10 years; 4% had visual loss along with corneal edema or vitritis, apparently related to the AC-IOLs.

The PC-IOL eyes had comparatively few lens-related complications: 1% corneal edema, 1.5% iritis, 1% vititis, and 2% secondary glaucoma. Some localized trapping of the pupil occurred in 8%. One percent of the PC-IOLs were removed, and 1% decentered, requiring McCannell sutures. Final visual acuity at 10 years was 20/40 or better in 77.5%. None of the PC-IOL eyes had decreased vision related to the lens implant. *(Ophthalmic Surgery. 1992;23:308-315) Reprint requests should be addressed to John E. Downing, MD, 1403 Andrea Circle, Box 20340, Bowling Green, KY 42102.*

PERIPHERAL ANTERIOR SYNECHIAE FORMATION WITH ANTERIOR CHAMBER INTRAOCULAR LENSES, SG Smith, E Holland, J Peterson. The authors evaluated a cross-sectional study, 88 eyes with anterior chamber intraocular lenses (AC-IOLs) by goniophotography by one masked observer for the presence of peripheral anterior synechiae (PAS) which were strongly correlated with the lens being oversized (P<.001). However, differences in haptic style or lens rigidity were not associated with the presence of PAS. *(Ophthalmic Surgery. 1992;23:316-319) Send reprint requests to S. Gregory Smith, MD, 1700 Shallcross Avenue, Suite 2, Wilmington, DE 19806.*

DISRUPTION OF THE BLOOD-AQUEOUS BARRIER BY RESIDUAL LENS EPITHELIAL CELLS AFTER INTRA-OCULAR LENS IMPLANTATION, O Nishi, K Nishi. The authors performed a clinical study to confirm whether and how residual lens epithelial cells (LECs) participate in postoperative pseudophakic inflammation, including fibrin reaction. Twenty-six eyes of 13 patients with bilateral cataracts were treated by phacoemulsification and posterior chamber intraocular lens (PC-IOL) implantation. In the eye from which LECs had not been removed, the aqueous flare was measured with a laser flare-cell meter. Flare decreased from an initial peak, increasing again to form a flare spike when LECs came into contact with the PC-IOL and began to undergo fibrous proliferation at 6 to 14 days after surgery. The spike was evidence that the blood-aqueous barrier had been disrupted again. Fibrin reaction developed in two eyes. In the other eye of each pair, from which LECs had been removed by ultrasound aspiration, neither a flare spike nor fibrous proliferation was noted. We conclude that residual LECs break down the blood-aqueous barrier as they proliferate and are involved in postoperative pseudophakic inflammation. *(Ophthalmic Surgery. 1992;23:325-329) Reprint requests should be addressed to Okihiro Nishi, MD, Nishi Eye Hospital, 4-14-26, Nakamichi, Higashinari-ku, Osaka 537, Japan.*

COMPLICATIONS OF SECONDARY SURGICAL CAPSULOTOMY IN PSEUDO-PHAKIC AND APHAKIC EYES, PAM Leonard, BJ Klevering, RJW de Keizer. The authors conducted a retrospective study was conducted to analyze the complications of surgical capsulotomy in 587 eyes--51 aphakic and 536 pseudophakic. Transient or permanent complications occurred in 20 (3.4%). One eye was seriously damaged by perforation during retrobulbar anesthesia, and another eye was lost due to endophthalmitis. Endophthalmitis developed in two other eyes, but it readily resolved with medication. Two eyes had markedly elevated intraocular pressure (IOP) (>35 mm Hg), which was associated with the presence viscoelastic material in one eye; in the other eye, elevated IOP was the result of vitreous blocking of the pupillary aperture. Retinal detachments developed in nine patients (eight of whom, a significant number (P = .006), were males). Apart from the eyes in which endophthalmitis developed all were markedly quiet after the procedure, and pressure elevation was not significant. *(Ophthalmic Surgery. 1992;23;330-335) Reprint requests should be adressed to Paul A.M. Leonard, M.D., Ph.D, Department of Ophthalmology, University Hospital Rijnsburgerweg 10, 2333 AA Leiden, The Netherlands.*

A SURGICAL METHOD TO REPAIR LEAKING FILTERING BLEBS, DJ O'Connor, CS Tressler, J Caprioli. The authors described a surgical revision of a chronically-

thinned filtering bleb with a leak at the limbus. After surgical excision of the scarred cystic conjunctiva and Tenon's fascia surrounding the leaking bleb, relatively uninvolved conjunctiva and Tenon's fascia are mobilized with the help of a large relaxing incision in the superior fornix and sutured over the area of filtration. We have used this technique successfully in five cases to provide fresh tissue to repair the bleb leak and restore adequate filtration. *(Ophthalmic Surgery. 1992;23:336-338) Reprint requests should be addressed to Joseph Caprioli, MD, Department of Ophthalmology and Visual Science, 330 Cedar Street, New Haven, CT 06510.*

INTRAOCULAR PRESSURE LEVEL IN GLAUCOMATOUS AND NONGLAUCOMATOUS EYES AFTER COMPLICATED CATARACT SURGERY AND IMPLANTATION OF AN AC-IOL, M Bergman, L Laatikainen. The authors note the effects of a semiflexible, one-piece, open-loop anterior-chamber intraocular lens (AC-IOL) implanted after intracapsular or extracapsular cataract extraction complicated by posterior-capsular or zonular rupture on intraocular pressure (IOP) level and the control of previous glaucoma were studied in 48 eyes with primary implantation and in 10 eyes with secondary implantation had exfoliation syndrome; anterior vitrectomy was performed in 60.4%.

An immediate pressure rise (IOP $\geq$ 30 mm Hg) was observed in 29.3% of the eyes. The long-term IOP level (median follow up, 21.5 months) was $\leq$ 20 mm Hg in 83.7% and between 21 and 29 mm Hg in the remaining 16.3%. In three of the nine glaucomatous eyes, the medication had to be increased; in the remainng six, the IOP could be controlled with the previous or reduced medication or with none at all. In three out of the 49 (6.1%) nonglaucomatous eyes, glaucoma medication was started during the follow up. All of these eyes had exfoliation syndrome and two of the fellow eyes had similar IOPs and were receiving similar medication.

The results indicate that the semiflexible, openloop AC-IOL has little effect on IOP and seems to be a safe alternative, even in glaucomatous eyes, if a posterior chamber lens cannot be used. *(Ophthalmic Surgery. 1992;23:378-382) Reprint requests should be addressed to Mervi Bergman, MD, Department of Ophthalmology, University Hospital of Oulu, SF-90220 Oulu, Finland.*

DIRECT SCLERAL FIXATION OF POSTERIOR CHAMBER INTRAOCULAR LENSES USING A SPECIAL NEEDLE-HOLDER, RB Vajpayee, SK Angra, S Sandramouli, R Rewari. The authors report a modified technique of direct scleral fixation of a posterior chamber intraocular lens (PC-IOL) using a specially designed intraocular needle-holder. The procedure was carried out in three eyes with posttraumatic subluxated cataracts; one with aphakic bullous keratopathy and with an accidental posterior capsular rent, and one with a superior zonulodialysis. The needle-holder greatly facilitated the procedure, enabling us to place the PC-IOL precisely in the ciliary sulcus with no subsequent decentration. This method avoids iris fixation and provides more secure scleral fixation of the PC-IOL. *(Ophthalmic Surgery. 1992;23:383-387) Reprint requests should be addressed to Rasik B. Vajpayee, MD, Dr Rajendra Prasad Centre for Ophthalmic Sciences, All India Institute of Medical Sciences, Ansari Nagar, New Delhi-110029, India.*

AN EPIDEMIOLOGIC AND PATHOLOGIC STUDY OF GLOBES ENUCLEATED FOLLOWING TRAUMA, SK Freitag, RC Eagle, Jr., EA Jaeger, ES Dunn, JB Jeffers. The authors examined demographic, clinical, and histopathologic factors in 24 traumatically ruptured globes that were enucleated at Wills Eye Hospital during a 2-year period. The majority of these injuries occurred in a violent assault setting with a blunt mechanism, during the evening and early morning hours, and in the fall and winter months. Most patients were black males, and 67% were substance abusers. Clinically, the initial visual acuity in 96% of the eyes was light perception or worse. Five of the eyes were enucleated primarily. Gross examination of the gloves revealed that 92% of the wounds involved the sclera, 83% of the eyes had hyphema, and 71% of the lacerations were longer than 10 mm. Histopathologic examination demonstrated that the majority of eyes had fragmented or missing lenses, disrupted ciliary bodies, and detached choroids. Ninety-six percent of the retinas were detached. There was one case of acute endophthalmitis. *(Ophthalmic Surgery. 1992;23:409-413) Reprint requests should be addressed to Edward A. Jaeger, MD, Department of Medical Education, Wlls Eye Hospital, 9th and Walnut Streets, Philadelphia, PA 19107.*

PERMANENT BLINDNESS FOLLOWING RETROBULBAR HEMORRHAGE AFTER PERIBULBAR ANESTHESIA FOR CATARACT SURGERY, T Puustjarvi, S Purhonen. The authors present a case in which a modified peribulbar anesthesia, administered with a 24-gauge (0.55 x 25 mm) sharp, disposable needle, induced an orbital hemorrhage, resulting in complete and permanent loss of vision. To our knowledge, this is the first report of severe complications following a peribulbar block. *(Ophthalmic Surgery. 1992;23:450-452) Reprint requests should be addressed to Tuomo Puustjarvi, MD, Department of Ophthalmology, Kuopio University Hospital, SF 70210 Kuopio, Finland.*

EXTRUSION OF ENUCLEATION IMPLANTS: TREATMENT WITH SECONDARY IMPLANTS AND AUTOGENOUS TEMPORALIS FASCIA OR FASCIA LATA

PATCH GRAFTS, EO Wiggs, BB Becker. The authors performed one autogenous fascia lata graft and 11 autogenous temporalis fascia grafts in eight patients with extrusion of an orbital enucleation implant and in four patients with a bulging implant who could not wear a prosthesis. Excluding one patient with inadequate follow up, 10 of 11 patients (91%) successfully retained their implant. One patient had severe conjunctivitis followed by anterior migration of his implant 2 1/2 years after grafting, necessitating replacement of the implant. They conclude that autogenous temporalis fascia patch grafting is an effective treatment for orbital enucleation implant extrusion or a bulging implant. *(Ophthalmic Surgery. 1992;23:472-476) Reprint requests should be addressed to Eugene O. Wiggs, MD, 1825 Gilpin Street, Denver, Co 80218.*

FORMING AND TEACHING TRUE KNOTS FOR STRABISMUS SURGERY, JL Mims III. The author described a system for ensuring the formation of true knots in the locking bites in strabismus surgery. He also presents a method for teaching this system to residents that makes use of a piece of cotton or nylon rope, a cotton mop refill, and the end of a garden rake. *(Ophthalmic Surgery. 1992;23:477-481) Reprint requests should be addressed to James L. Mims III, MD, Suite 511, 311 Camden, San Antonio, TX 78215.*

A PROSPECTIVE, RANDOMIZED CONTROLLED COMPARISON OF RETROBULBAR AND GENERAL ANESTHESIA FOR STRABISMUS SURGERY, KP Cheng, CE Larson, AW Biglan, JA D'Antonio. The authors conducted a prospective, randomized controlled study (n=95) to compare the morbidity and length of hospital stay associated with retrobulbar neuromuscular blockade (LA) with that associated with general anesthesia (GA) for monocular strabismus surgery in adult patients. A scoring system was developed to assess postoperative nausea and vomiting, pain, level of consciousness, oral intake, and activity while in the hospital and for the first 3 postoperative days. There was no significant difference in the postoperative nausea and vomiting associated with the two anesthetic techniques. Both techniques provided excellent anesthesia for monocular strabismus surgery. *(Ophthalmic Surgery 23:585-590, 1992.) Reprint requests should be addressed to Kenneth P. Cheng, MD, 3518 Fifth Ave, Pittsburgh, PA 15213.*

INDIRECT OPHTHALMOSCOPE ARGON LASER TREATMENT OF RETINOBLASTOMA, JJ Augsburger, CB Faulkner. The authors describe their use of an indirect ophthalmoscope argno laser for the treatment of selected retinoblastomas. The essential aspect of the technique is the creation, using the "continuous" exposure setting, of a confluent white laser burn completely around the tumor base. This procedure results in the prompt regression of most tumors, although several sessions, 1 to 4 weeks apart, are usually necessary for all but the smallest lesions. This method of laser treatment is applicable to retinoblastoma tumors located anywhere in the ocular fundus, including ones adjacent to the ora serrata. *(Ophthalmic Surgery. 1992, 23:591-593) Reprint requests should be addressed to James J. Augsburger, MD, Wills Eye Hospital, 9th & Walnut Sts, Philadelphia, PA 19107.*

FELLOW EYES IN IDIOPATHIC MACULAR HOLE CASES, J Akiba, A Kakehashi, CW Arzabe, CL Trempe. The authors retrospectively studied the fellow eyes in 84 cases of unilateral idiopathic macular hole to determine prognoses and risk factors for this disorder. On initial examination, 15 of 84 eyes (18%) had a macular cystic lesion (group 1), 23 (27%) had a yellow spot in the fovea (group 2), and 46 (55%) had a normal macula (group 3). Of the 84 eyes, 58 (69%) had posterior vitreous attachment. During a mean follow up of 39 months, macular hole developed in 8 of 15 eyes (53%) in group 1, and in 6 of 23 eyes (26%) in group 2. However, a macular hole did not develop in eyes with posterior vitreous separation or a normal macula. Although the risk of developing a macular hole may have been overestimated in our study, posterior vitreous attachment and macular abnormalities may be important in predicting macular hole formation in the fellow eyes in idiopathic macular hole cases. *(Ophthalmic Surgery. 1992, 23:594-597) Reprint requests should be addressed to Clement L. Trempe, MD, c/o Library, Schepens Eye Research Insititute, 20 Staniford Street, Boston, MA 02114.*

ORBITAL DECOMPRESSION FOR GRAVES' DISEASE: EXPOSURE THROUGH A MODIFIED BLEPHAROPLASTY INCISION, JH Antoszyk, N Tucker, F Codere. The authors note a "transorbital" three-wall decompression through a modified blepharoplasty incision was used to treat 19 orbits for either cosmetic disfigurement or optic neuropathy. In the 14 orbits with disfigurement, surgical retroplacement averaged 5.2 mm; vision improved to 20/40 or better in four of five ees with optic neuropathy. Complications attributed to the surgery included: acquired strabismus (two transient, one permanent) and infraorbital hypesthesia (one transient, one permanent). This tehcniuqe's advantages are: 1) a single incision with wide exposure, 2) a low indence of permanent strabismus, 3) a lateral orbital rim and canthal tendon preservation, and 4) a large reduction in proptosis. *(Ophthalmic Surgery. 1992, 23:516-521) Reprint requests to Francois Codere, MD, Royal Victoria Hospital, Room E4.54, 687 Pine Avenue West, Montreal, Quebec, Canada, H3A 1A1.*

Primary Subject Index
(Volume 8, 1992)

-❐-

Abstract Index
(Volume 8, 1992)

-❐-

Author Index

 ❐

Scholarship Schedules:

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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 Qur'an 6:105

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