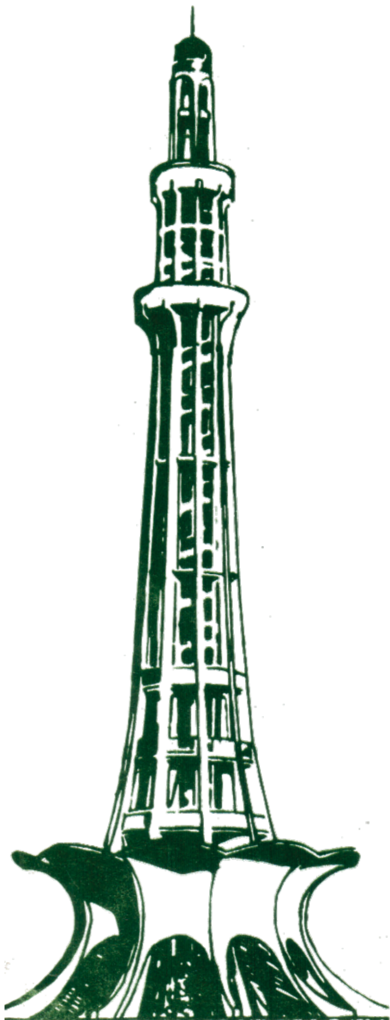
معجلہ طب العیون پاکستان

PAKISTAN JOURNAL OF OPHTHALMOLOGY

THE OFFICIAL JOURNAL OF THE OPHTHALMOLOGICAL SOCIETY OF PAKISTAN

VOL. 4 NO. 4 OCTOBER 1988 PUBLISHED QUARTERLY



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ISSN 0886-3067

BISMILLAHIR-RAHMANIR-RAHEEM

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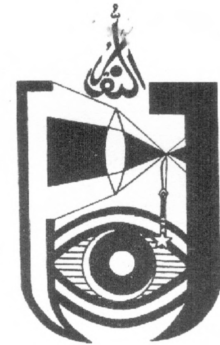

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Vol. 4 **No. 4** **October, 1988** صفر ۱۴۰۹ء

ISSN 0886-3067

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PAKISTAN (INLAND ONLY):
238 Jinnah Colony
Faisalabad, Pakistan

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Publisher: Khalid J. Awan, M.D., F.P.A.M.S.
Sponsor: Pakistan Academy of Medical Sciences
Manuscripts: Send manuscripts and all correspondence related to them to Khalid J. Awan, M.D., F.P.A.M.S. Editor, Pakistan Journal of Ophthalmology, 1921 Park Avenue, S.W. Norton, Virginia 24273 U.S.A.
Subscription: Non-members. Pakistan R. 400.00 per year; United States, $50.00 per year; Elsewhere U.S. $60.00 per year by surface mail and $98.00 by air mail. Single copies: Pakistan Rs. 150; Elsewhere U.S. $15. Send subscription with check or money order to Pakistan Journal of Ophthalmology, 1921 Park Avenue, S.W. Norton, Virginia 24273 U.S.A.

Replacement Issues-Policy: All requests for replacement of copies lost in the mail must be received within ninety (90) days of the last month the issue was published. After this period, a charge of $10.00 per copy will be made, provided the copies are available.
Address changes: POSTMASTER please send address change to Pakistan Journal of Ophthalmology, 1921 Park Avenue, S.W. Norton, Virginia 24273 U.S.A.

Published quarterly in January, April, July and October.

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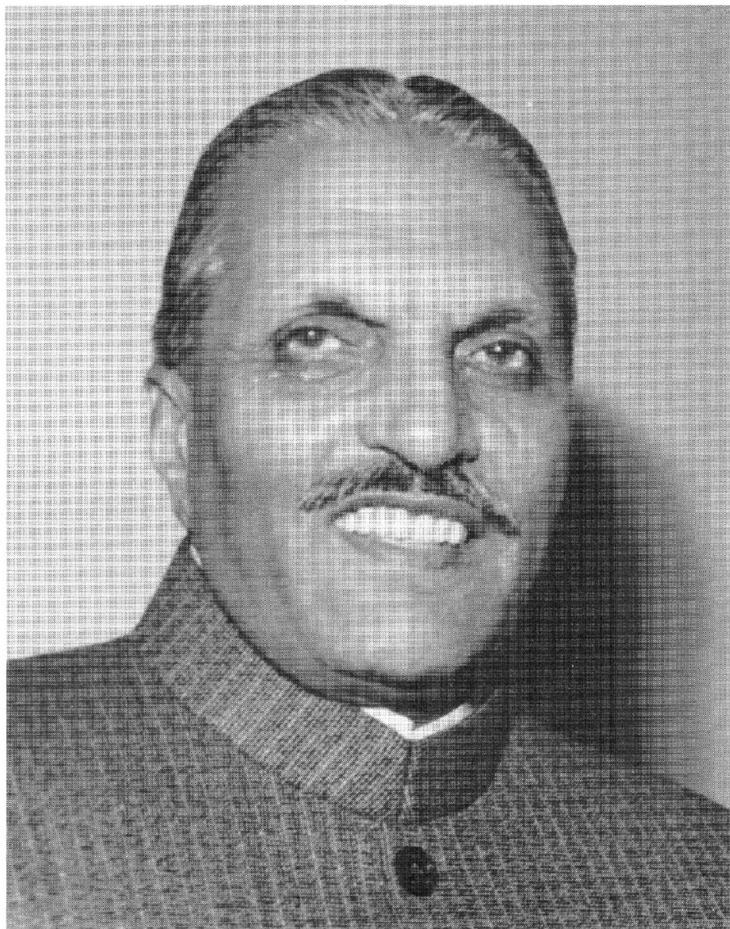
A Panegyric: In Honor of The Patron

Khalid J. Awan, FPAMS



President Gen. Mohammad Zia-ul-Haq *Shaheed*
(1924-1988)

A bulcky transport plane, one of the world's safest, steadily rose above the thinly distributed trees. Without a trace of warning, it spewed out a cloud of black smoke, then vanished. All a few farmers in the nearby fields saw was a huge mass of blaze which quickly faded into the air with a petrifying blast. What these dazed field workers of Bahawalpur had witnessed on that fateful August 17, 1988 was the incredible crash of the Presidential Hercules C-130. It stunned the nation, and covered the whole country with a heavy shroud of sorrow. The cruel contretemps claimed the lives of President Mohammad Zia-ul-Haq and his many prominent companions.* *Inna-lillahe-wa-inna-elaihe-rajioon!*

It is said that those who truly love and obey God, are granted by Him a prescience of their approaching departure from this world. After the Convocation 87 of the Pakistan Academy of Medical Sciences in December, 1987, Mr. President asked me to meet with

*Following is the full list of those who died in the crash: General Mohammad Zia-ul-Haq, the President, General Akhtar Abdul Rehman Khan, Chairman JCSC, Let Gen. Mian Mohammad Sharif Nasir, Maj. Gen. Abdus Sami, Maj. Gen. Mohammad Hussain Awan, Brig. Najeeb Ahmed, Military Secretary, Brig. Moin Ud Din Khawaja, Brig. Siddique Salik, Brig. Mohammad Latif, Brig. Abdul Majid, Col. Safdar Mahmood, Sqn. Ldr. Rahat Mujeeb Saddiqui, Adc to the President, Capt. Zihid Naib, Subedar Mohammad Shafiq, Wg. Cdr. Mashhood, Sqn. Ldr. Zulfiqar, Flt. Lt. Sajid, Flt. Lt. Asmat, CWO Duraiz, Chf Tech. Rafiq, Snr. Tech. Firdous, Snr. Tech. Habib, Snr. Tech. Manzar, Snr. Tech. Azhar, Snr. Tech. Aziz,Snr. Tech. Rashid, Jnr. Tech. Shafqat, Mr. Arnold L. Raphel, US Ambassador and Brig. Herbert Wassom of United States.

Reprint request to Khalid J. Awan, FPAMS, 1921 Park Ave., S.W., Norton, VA 24273

Figure 2 (Awan): President Zia Shaheed was very pleased on seeing the first issue of The Journal, and promised his continued support for its progress. Standing is the founding editor of The Journal, Dr. Awan.

Figure 3 (Awan): Praying for President *Shaheed* at his final resting place are from L to R Dr. Anwar Ujager (a Christian), Prof. Raja Mumtaz, Founder OSP, Prof. Murad Ali Khan, President, OSP, and Prof. Mohammad Daud Khan, Secretary, OSP.

him at the President's House in Rawalpindi. The meeting lasted an unusually long time and he commented and advised in detail on many aspects of the Academy activities. Near the end of the meeting he very calmly remarked, "You will have my full support as long as I am here. How the Academy is perceived by others *when I am not around* will depend on its merits and strength, and its cooperation with other organizations. To achieve it, you must work hard on things I have mentioned." I realized with surprise that in numerous meetings we had over several years, he had never alluded to any possibility of his not being around. He is contemplating on leaving the political scene at the end of his present term, I thought. Little did I, a man wrapped in worldly worries, know that this man of God had heard the trumpets of Almighty's herald, summoning him for his imminent meeting with his Maker.

Mohammad Zia-ul-Haq *Shaheed* was born on Tuesday, August 12, 1924 (*Moherrum* 10th). His father, Mohammad Akabr Ali, a God-fearing man himself, always emphasized the importance of character and faith in Allah to his children. Young Zia never missed his *Salat* even when a child. He was in the fifth grade when he first fasted throughout the *Holy Ramazan*, and thereafter never missed it in his life. The leadership manifested early in life in Zia *Shaheed*. He was class monitor, prayer *imam*, and leader of his Boy Scouts troop. As the most self-effacing leader of our nation, he exhibited unwavering faith in Allah, intelligence in ideas, intrepidity in action, and probity in purpose. That his concern for the Muslims and compassion for all people was veritable is affirmed by the fact that not a single relation of his benefited in any way from his 11-year reign. Dr.S.C. Gupta, a prominent ophthalmologist from India, called President Zia *Shaheed* "one of the best leaders/generals of this subcontinent in particular and of the world in general," and further wrote, "He not only sailed the destiny of your country successfully to peace, prosperity and stability but also allowed the statesmanship of highest order. He happened to be one of those who successfully face the difficult time and hostile atmosphere without deviating from their principles, ideology and integrity." US Secretary of State, George Schultz called him "a great freedom fighter." It was because of the enormous respect he had among the Muslims of the world that his funeral prayers were held right in the Holy Ka'ba, Makka, the first Muslim to be so honored in last 12 centuries.

Although Pakistan made great progress in all fields under his leadership, medical profession and health care systems enjoyed such special attention and generosity that he became the "Patron Saint of Pakistan Medicine." Particularly, ophthalmology in Pakistan will remain forever indebted to him. He granted ophthalmology a status of an independent specialty, allowed customs duty-free import of all ophthalmic equipment, provided expense accounts for speakers at international conferences, granted permission and funds for three ophthalmology institutes, instituted President's Gold Medals to recognize exceptional performances, and helped in establishing of this JOURNAL through the cooperation of the Pakistan Academy of Medical Sciences (Figure 2). With his demise (Figure 3), the country has lost a true leader, ophthalmology has lost an irreplacable benefactor, and I have lost a caring friend.

Rural Eye Surgery Experience of a Non-Governmental Organization (NGO) In Pakistan

Mahmud A. Shah, F.P.A.M.S.
Munir A. Memon, D.O.M.S.

ABSTRACT: We discuss the problem of curable blindness in Pakistan, and present our experience with a Non-Government Organization (NGO) by adopting a fundamentally different approach to ensure quality care in eye surgery, free of cost to the patient, in Pakistani villages. A three tier program, which is being implemented in some villages for the last three years, was followed in order to: a) increase the number of cataract extractions by operating in selected villages for six months, and thereafter by construction of small hospitals which operate throughout the year; b) ensure a high standard of safety by the use of fully equipped air-conditioned mobile and static operation theaters manned by permanently employed and adequately qualified and experienced surgical and ancillary staff, whose quality care through adoption of recognized techniques and proper closure of operation wounds allows immediate ambulation of the patient, and provides a basis for the future day-care surgery; and c) establish a referral system with a "Base Hospital" for complicated cases. (Pakistan Journal of Ophthalmology 4:111-115, October, 1988.)

Of the estimated 42 million blind people in the world, 17 million are sightless due to cataract in both eyes. These are the curable blind whose sight can be, and should be, restored by the removal of cataract. However, currently available facilities for such operations are so inadequate to cope with such a huge number of the blind that only 10% of them are able to have their sight restored.[1] Unfortunately, the number of untreated blind is ever-growing due to increase in age-related cataracts as a result of increased life span from improved modern preventive and curative measures. There consequently is an ever-increasing backlog of the blind with operable cataracts the world over.

Although more acute in developing countries, the problem is by no means limited there. In 1986, Wilson[2] reported that there were 7,000 people on the blind register of the United Kingdom who could probably get their eyesight restored by a cataract operation.

In different countries, various methods have been employed to solve the backlog problem through periodic increase in government/municipal hospital beds, mobile dispensaries, temporary satellite hospitals and seasonal eye camps, etc. The operations in these camps are usually performed in large numbers (100 or more a day), and in addition to the doctors, the operations are also performed by the trained auxiliaries. The duration of an eye camp at any one location is usually a week to a fortnight.

The exact number of the curable blind in Pakistan is unknown. Nonetheless, widespread eye camp experiences appear to indicate that there are approximately four million blind in Pakistan, of which probably one million could be cured by surgical measures.[3] The severe lack of sufficient number of eye specialists makes this goal unachievable at present. The situation is further deteriorated by the fact that 70% to 80% of ophthalmologists in Pakistan, as in other developing countries, are in metropolitan practice, while 70% to 80% of the cases of the avoidable blindness reside in the rural areas.[4]

As a solution to the problem of the curable blind, the seasonal eye camps have been in vogue in Pakistan since her independence in 1947. In our work, we have adopted a plan that is fundamentally different from the seasonal eyecamp approach. We present here our experience of three years of working in a Non-Government Organization (NGO).

From the Layton Rahmatullah Benevolent Trust Charity Eye Hospital, Korangi (Karachi), Pakistan.
Reprint requests to Professor Mahmud A. Shah, F.P.A.M.S. 32/D/6, P.E.C.H.S., Karachi, Pakistan.

In 1985, a trust by the name of Layton Rahmatulla Benevolent Trust (LRBT) was established by two philanthropists, whose names the Trust bears. The object was to provide free blind relief work in remote areas of Pakistan, with a central office in Karachi and branches in each of the provinces. With the passage of time, donations from various organizations and individuals, from Pakistan and abroad, and several sizeable donations from the Pakistan Government's Zakt Fund* have been of immense help. The Royal Commonwealth Society for the Blind,[5] which is actively engaged in sight restoring programmes throughout the world also donated handsomely.

*Zakat is a religious assessment, obligatory on well-to-do Muslims, which is collected by State, and utilized for certain specific social purposes, including the medical treatment of the needy.

Materials and Methods

A village (Tando Bago, population 12,000) was initially selected for cataract-blind work. Tando Bago can be reached from Karachi by a four-wheel drive vehicle in about four hours. At the start, senior ophthalmic surgeons from Karachi offered their honorary services once a week. Later, a number of appropriately qualified doctors, who had satisfactorily completed their house jobs and trained for another year under a competent eye surgeon, were appointed permanently. The staff which along with a doctor constituted a team included: one Operation Room Technician; one Laboratory Assistant; and one Dispenser. Routinely, our planned activity begins at the selected site with a reconnaissance of the area to assess any available facilities. A locally fabricted Mobile Hospital Unit (30' 0" x 9' 0") fully equipped with air-conditioned operation theater, laboratory, dispensary and x-ray room (Figure 1) is then hauled to the site. Each unit has its own electric generator, which comes on in the absence or failure of the local power supply system. It is usually for the village people or their committee to offer residential accommodations to the medical and ancillary staff. The patients are kept in large tents, unless some building is made available by the village committee to function as wards. This, in fact, happens in the majority of situations. Each team operates at a place for a minimum period of six months. Everything connected with the operation is made available at the site.

The main operative technique adopted by our surgeons is cryoextraction. Usually, the wound is closed with seven stitches, and occasionally preplaced track sutures are employed.[6] The patients walk to their beds after surgery, but as a concession to traditional prejudices, they are kept in ward beds for 36 to 48 hours. Hopefully, with public education it may become possible to discharge them earlier. As every step of the operation has to be executed with meticulous attention, normally each surgeon operates on 40 to 50 cases per week.

It is gratifying to note that in almost all of the villages, where the teams have worked for six months or more, the village councils invariably request us to extend our stay. This has encouraged us to construct small permanent standardized hospitals, usually of 18 beds, with fully equipped air-conditioned operation theaters and all other required facilities including residential accommodation for all the medical staff. These hospitals work throughout the year. Sometimes, the land for these hospitals is donated by the local philanthropists, and at other times it has to be bought. One such hospital is functioning at Tando Bago, and another is under construction at Gambat. There are two other similar hospitals in rented accommodations, one at Tando Adam and another at Lahore. We plan an increase in the number of such small permanent hospitals, all to be constructed to a standard design.

Villagers, like city dwellers, are equally liable to suffer from serious blinding conditions of the posterior segment of the eye and from injuries. This sometimes requires procedures not possible in the above described peripheral mobile or static units. Little attention appears to have been paid to this aspect of ocular surgery in rural settings. Hence, the serious blinding conditions and injuries do not receive the attention they deserve. As the Trust does not wish to limit its horizon to only one type (cataract) of blindness, it was considered expedient to have a "Base Hospital," capable of handling serious problems referred from the peripheral units. Such a hospital (LRBT Free Eye Hospital) has been constructed at Korangi (Karachi). It is capable of sophisticated intra- and extra-ocular procedures. It is staffed by nine permanent qualified ophthalmologists, operation theater and laboratory technicians, nursing staff, and other required personnel. It also has a team of very highly skilled consultant staff who provide their services honorarily.

The Base Hospital is now rapidly developing so that it can shoulder its other essential responsibilities i.e. to operate as a teaching and research hospital.

On the former activity, the hospital has a large library-cum-conference room situated immediately over the operation theaters. It has closed circuit television so that students can watch surgical operations while they are in progress and converse with the operating surgeon. On the latter aspect (research), the hospital has two laboratories, and the research work has already been undertaken in co-operation with the University of London, who had a team of four ophthalmologists working in the latter part of 1987 under the direction of

Dr. Sohrab Darougar, Professor of Virology at the Institute of Ophthalmology, the University of London.

Results

The number of patients examined, treated and those operated upon at various locations is given in Table 1 and Table 2.

Discussion

Awan,[8] Malik,[11] and others[9,10] have made constructive critical remarks about the seasonal eye camps on the grounds of inadequate training of the staff entrusted to perform eye surgery, lack of supervision and failure of follow-ups. According to Malik,[11] non-observance of basic surgical principles have

Table 1
The Layton Rahmatulla Benevolent Trust
Patients Treated From November 15, 1985 to July 31, 1988

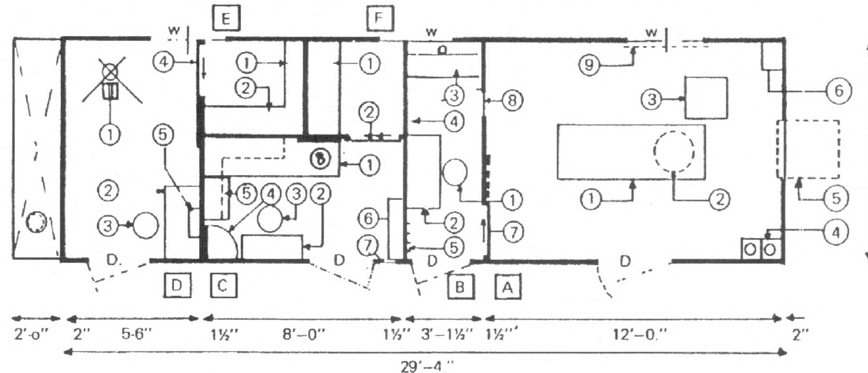
	Field Hosp. T/Bago a.	Mobile Hosp. Ver. b.	Mobile Hosp. T/Adam c.	Basic Hosp. Korangi d.	MALC Gwadar Turbat	Eye Camp Karachi	ENT surgery	Lahore e.	Gambat f	Total
1) Eye patients treated	20,800	3,103	17,586	81,402	2,111	803	-	15,427	4,639	145,925
2) Eye surgeries performed	1,775	318	1,212	4,553	361	-	-	2,146	238	10,601
TOTAL:	22,575	3,421	18,798	85,955	2,472	80	-	17,573	4,929	156,526

Table 2
The Layton Rahmatulla Benevolent Trust
Statement showing number of eye surgeries performed during the period 1st January 1987 to 31st July 1988

Fortnight ending Day-Mth-Yr.	Field Hosp. T/Bago	Korangi Hosp.	Mobile Hosp. T/Adam	City Hosp. Lahore	Field Hosp. Gambat	MALC, Baluchistan	Total
15.01.87	26	67	-	-	-	-	93
31.01.87	32	58	-	-	-	-	90
15.02.87	29	71	38	-	-	-	138
28.02.87	30	85	38	-	-	-	153
16.03.87	41	102	42	-	-	-	185
31.03.87	30	90	53	-	-	-	173
15.04.87	31	117	55	-	-	-	203
30.04.87	20	83	40	-	-	-	143
15.05.87	20	115	35	-	-	-	170
30.05.87	14	58	41	4	-	-	117
15.06.87	20	74	25	13	-	-	132
30.06.87	20	82	46	31	-	-	117
15.07.87	22	78	37	30	-	-	167
30.07.87	40	94	48	55	-	-	237
15.08.87	29	68	9	50	-	-	156
31.08.87	39	86	51	50	-	-	226
15.09.87	26	83	13	63	-	-	185
30.09.87	19	75	25	72	-	-	191
15.10.87	30	157	51	118	-	-	356
31.10.87	37	121	30	106	-	-	294
15.11.87	18	109	45	66	-	-	238
30.11.87	33	112	21	87	-	-	253
15.12.87	36	93	31	91	-	-	251
31.12.87	25	100	41	77	-	-	243
15.01.88	31	110	31	88	-	-	260
31.01.88	45	149	41	157	-	-	392
15.02.88	34	156	37	121	-	-	348
28.02.88	29	162	36	94	-	-	321
15.03.88	38	174	30	102	-	-	344
31.03.88	36	186	32	112	10	-	376
15.04.88	34	199	24	80	35	-	372
30.04.88	32	135	33	90	20	-	310
15.05.88	17	115	27	78	17	-	254
30.05.88	11	87	15	48	13	-	174
15.06.88	20	119	31	59	33	-	262
30.06.88	10	154	27	82	44	-	317
15.07.88	15	180	24	62	29	158	486
30.07.88	15	177	6	60	35	-	293
TOTALS	1,034	4,281	1,209	2,146	236	158	9,064

THE LAYTON RAHMATULLA BENEVOLENT TRUST

PLAN OF MOBILE EYE CARE AND TUBERCULOSIS HOSPITAL UNIT
ON SCALE : ¼" = 1' - 0"   DRAWN BY : ALI AKBAR.



A OPERATION THEATRE. 12x8'-8"

1 OPERATION TABLE
2 SURGEONS' ADJUSTABLE LIGHT
3 INSTRUMENT TABLE
4 OXYGEN GAS CYLINDERS.
5 24000. BTU AIR CONDITIONER
6 220 VOLTS STABILIZER.
7 SLIDING DOOR.
8 GLAZED WINDOW.
9 VENETIAN BLIND.

○ OPEN STORAGE SPACE

B SURGEONS' PREPERATION ROOM 3'-1½" x 8'-8"

1 REVOLVING STOOL.
2 FOLDING TABLE
3 WASH DOWN SLUICE.
4 MIRROR.
5 HANGERS.

E DARK ROOM. 4'-0"x3"-6."

2 SHELF.
1 TABLE.

C DISPENSARY LABORATORY. 8'-0" x 5'-0".

1 TABLE WITH DRAWER UNDER.
2 MEDICINE PREPERATION SHELF.
3 REVOLVING STOOL.
4 WASH BASIN & MIRROR.
5 FOLDING SHELF
6 MEDICINE RACK.
7 DELIVERY WINDOW.
8 'L' SHAPED SHELVES.

D EXTERNAL DOORS.

D X-RAY ROOM. 5'-6"x8'-8".

1 X-RAY MACHINE.
2 FOLDING TABLE.
3 REVOLVING STOOL
4 SLIDING DOOR
5 X-RAYVIEWER

F STORE. 3'-10½ x 3'-6"

1 FIVE SHELVES.
2 SLIDING DOOR.

NOTE : EXAMINATION ROOM, IN SEPARATE PREFAB STRUCTURE, 10'-4" x 9'-4". WAITING ROOMS, 18'-0" x 18'-0", MALE & FEMALE IN CANVAS MARQUEES.

Figure (Shah and Memon): The floor plan for the air conditioned operating unit.

sometimes resulted in wholesale loss of eyes in these camps (400 eyes in one camp). A failure rate of nearly 50% after cataract operations was mentioned by Memon.[12] Efforts have, however, been made recently to take remedial measures to approximate the surgical conditions in the eye camps, as much as is possible, to those in hospitals. To this end, detailed guidelines have been formulated.[13] However, no amount of attention to the usual surgical principles can obviate certain inherent factors in our villages, which tend to nullify efforts at asepsis. There is no answer, for instance, to dust (in essentially a desert area, coupled with three years of drought), or to swarms of flies, both *Muscae domesticus* as well as, particularly in villages, *Muscae sorbens*. Work of any aspired quality and safety is, therefore, not possible under these conditions. Although "quality must be judged according to local criteria, rather than rigid international standards,"[14] it is obvious that this dictum cannot apply to eye surgery as the eye is completely defenseless against pathogens whatever the local criteria. Indeed there appears to be a strong case, in view of nutritional, environmental, traditional and ignorance factors, for all criteria for asepsis to be more rigid in rural areas than elsewhere. Hence, the necessity to fabricate mobile air-conditioned fully equipped operation theaters, equipped for surgery of the anterior segment of the eye and which can be brought to any selected village, thus attaining and maintaining a standard of asepsis not otherwise possible under the circumstances. The interior of such an operation theater (of which seven have so far been built locally) is given in Figure 1.

With the stay of a team in each location for a minimum of six months, we can monitor the results of our efforts. Moreover, this brings maximum number of patients, from adjoining villages, who by our prolonged stay come to know of our presence. Once the quality of our operation becomes known, patients come from far off places. The farthest distance from which the patients have reported, from villages without any organized transport facilities, is usually 100 kilometers. In some cases, the patients have travelled from locations much farther than that.

Provision of an air-conditioned operation theater with a complete team does not appear to greatly affect the overall expense of running a camp. Cost-effectiveness of our program compares favorably with the cost of a cataract operation elsewhere. Thus, in Africa, cost of an operation is about US $23, in Latin America US $33 and in India US $15 (about Rs.200).[15] Although our surgery is carried out in air-conditioned operation theater and uses techniques not

usually employed in village surgery, our average cost works out to be Rs 200.00 per case.

Table 3 shows the maximum and minimum temperatures (in one of the areas of operation in Hyderabad district) and Table 2 the number of operations per week. It will be noted that with the provision of satisfactory operation facilities, or small hospitals as proposed by Vayes,[18] work can go on throughout the year despite the inclement weather.

Table 3
Temperature (1987)

Month	Minimum	Maximum
January	12.5°C	25.2°C
February	13.3°C	33.1°C
March	20.0°C	35.0°C
April	22.0°C	38.0°C
May	26.0°C	41.0°C
June	28.0°C	43.0°C
July	29.0°C	47.0°C
August	26.0°C	39.0°C
September	27.0°C	40.0°C
October	20.0°C	32.0°C
November	10.0°C	32.0°C
December	9.0°C	29.0°C

In any program, such as the one detailed above, field supervision is of the utmost importance. In our case, there is a continuous contact between LRBT Central Office and the field establishments. In addition to the usual reports and statistics, there are repeated visits by the senior members of the staff and trustees to various centers. Senior Medical Officers or Assistant Senior Medical Officers visit each center every week to consult, train, and monitor the work and to perform the more complicated surgery.

Future Plans

As Kupfer[16] emphasized, efforts to "increase the efficiency and reduce the cost of performing large number of operations, without sacrificing high standards of safety" will have to continue. There are no technical impediments to the introduction of day care surgery. To that end, education of patients to rid them of their traditional prejudices is required, and efforts in this direction will also continue wherever we have our permanent presence in villages. We hope to devote, pari passu, with our curative programmes, attention to the problems in the field of prevention of eye diseases, including ocular health education. Our work, so far, is a segment of a comprehensive program which in addition to the above has to address itself to epidemiological research followed, hopefully, by creation of "cataract free villages" somewhat on the lines of "cataract free zones" in Peru and Brazil.[17]

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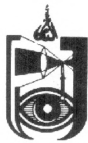
Acknowledgements

We wish to thank the Chairman, LRBT (Mr. Graham Layton, OBE) and the staff in the Central Office for help during the preparation of this paper. We are indebted to the honorary consultants (Prof. Hasan, FRCS, Mr. Malik, FRCS, Dr. Akram Khan, FRCS, and Dr. Wania, FACS) for useful discussions. Willing co-operation from the resident medical and house staff is also acknowledged.

The Layton Rahmatulla Benevolent Trust
Honorary Consultants & Medical Staff

a) Honorary Consultants: Dr. Akram Khan, MBBS; D.O; FRCS, Formerly Registrat, Victoria Royal Eye Infirmary, Dublin (Thursday); Prof. M.M. Hasan, MBBS; FCPS; FRCS, Retired Principal & Professor of Eye Diseases, Dow Medical College, Karachi (Sunday & Tuesday); Mr. M.H. Malik, MBBS; FRCS, Formerly Chief Clinical Assistant & Senior Registrar, Moorfields Eye Hospital, London (Wednesday); Prof. M.A. Shah, TI; MS; FCPS; FACS, Retired Principal & Professor of Eye Diseases, Dow Medical College, Karachi (Monday & Thursday); Dr. J.H. Wania, MBBS, DO, FACS, Honorary Clinical Lecturer, The Aga Khan Medical University, Karachi (Saturday); Dr. (Mrs.) Akram Khan, Diploma in Orthopitics, Formerly Orthoptician, Moorfields Eye Hospital, London (Thursday); Dr. Lajpat Roy, MBBS; DTCD; MRCP, Medical Supdt. & Administrator, Parsi General Hospital, Karachi. **b) Fulltime Paid Doctors:** Dr. Munir A. Memon, MBBS; DOMS, Senior Medical Officer; Dr. Waqar A. Pathan, MBBS; DOMS, Asstt. Senior Medical Officer; Dr. Ashok Kumar, MBBS, Resident Medical Officer I (Korangi); Dr. M. Athar Qureshi, MBBS; MCPS, Resident Medical Officer II (Korangi); Dr. Shaukat Raza Khan, MBBS; MRCS, Medical Officer (Korangi); Dr. Asif Girach, MBBS, Medical Offidcer (Korangi); Dr. Saeed Pathan, MBBS, Medical Officer (Korangi); Dr. Majid Ali, MBBS, Trainee Medical Officer (Tando Bago); Dr. Iqbal Rasheed, MBBS, Resident Medical Officer (Tando Adam); Dr. Haroon Rashid, MBBS, Resident Medical Officer (Korangi); Dr. Aijaz Memon, MBBS, Resident Medical Officer (Gambat); Dr. Nazir Ahmed Malik, MBBS; DOMS; FICS, Ophthalmic Surgeon (Lahore); Dr. Shabnam Haider, MBBS, Resident Medical Officer (Lahore); Dr. Mobin Dar, MBBS, Medical Officer (Lahore); Dr. Pervez A. Siddiqui, MBBS; DOMS, Resident Medical Officer (Korangi); and Dr. Abdul Qayum Memon, MBBS, Trainee Medical Officer (Korangi).



Camera Clinicals

In this section of The Journal, photographic documentation of interesting and challenging observations are presented to the readers. They should make their diagnoses from the given information and compare these with the expositions given on page 122. -Editor.

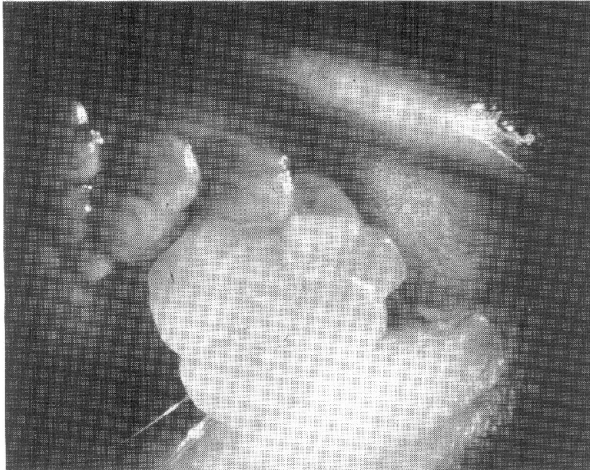


Figure 1

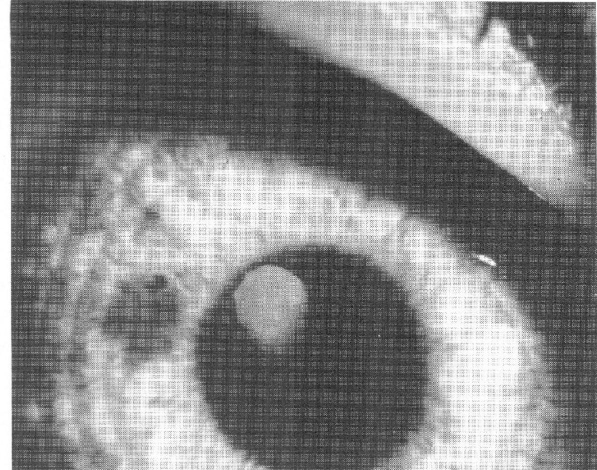


Figure 2

Figures 1 and 2: A 7-year-old boy with multiple environmental allergies and non-seasonal chronic ropy discharge from both eyes developed marked tearing and irritation of the eyes. The visual acuity was 20/30 (6/9) with a very small refractive error in each eye. Itching was a prominent symptom for which he had been using fluoromethalone 0.1% (FML) drops for one year. Mild ptosis and erythema of preseptal skin were present. The corneas showed 1-1.5 mm neovascularization superiorly, without Trantas spots. The conjunctiva had the findings shown in Figure 1. The right cornea had a 3x4 mm superficial lesion (Figure 2) which did not stain with fluorescein. Scattered pinpoint areas of roughening were noted on biomicroscopy of the corneas. Initial treatment consisted of prednisolone acetate 1% (Pred Forte) and cromolyn sodium solution, USP (Opticrom 4%). Although this treatment was effective in ameliorating the patient's symptoms and clinical changes, and led to near disappearance of the corneal changes, it did not totally eradicate the condition. After successful treatment of several recurrences in a year, the patient is using cromolyn sodium solution, USP (Opticrom 4%) chronically.

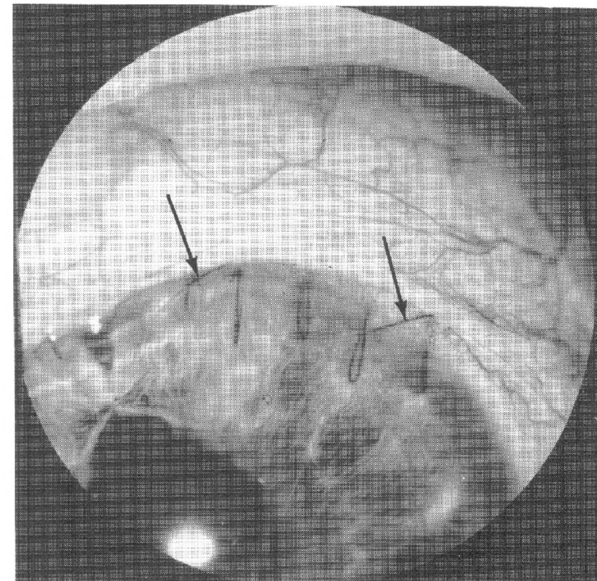


Figure 3

Figure 3: A 68-year-old woman had successful extracapsular cataract extraction with posterior chamber intraocular lens implantation. A year later, she developed rhegmatogenous retinal detachment, which was repaired with encircling scleral buckle at a nearby university center. The retinal surgery was successful, but the patient developed chronic irritation of the eye with edema of the conjunctiva that was limited to the superior limbus. Treatment with various topical medicines was only temporarily helpful. Finally, the findings shown in the Figure 3 (arrows) were noticed and a successful lasting treatment instituted.

Microbial Induced Exacerbation in Chronic Atopic Conjunctivitis

O.P. van Bijsterveld, M.D.

ABSTRACT: Chronic atopic conjunctivitis is essentially a perennial allergic inflammatory reaction. There are a number of ways, both immunological and non-immunological, by which microorganisms can cause degranulation of the mast cells which leads to an exacerbation of the atopic reaction. As often only a small number of bacteria are isolated in these cases, their pathogenic role in exciting such exacerbations may be overlooked. Therefore, in unexplained increases in inflammatory reaction in chronic atopic conjunctivitis, a short term local antibiotic therapy, preferably with a broad spectrum antibiotic, such as gentamicin may be beneficial. (Pakistan Journal of Ophthalmology, 4:117-118, October, 1988.)

Chronic atopic conjunctivitis develops when an allergenic stimulus persists either because the antigen is present throughout the year, or because the patient is sensitized to a great variety of allergens present during various seasons. It cannot be overemphasized that chronic atopic conjunctivitis is essentially a perennial inflammatory reaction.

Mast Cells and Their Role

The symptoms and signs of chronic atopic conjunctivitis are the result of degranulation of the mast cells. No matter in which way the mast cells are induced to degranulate, the release of pre-formed or newly synthesized mediators of inflammation is the basis of all atopic reactions. The classic stimulus for degranulation is the cross-linking of IgE receptors in the mast cell membrane, by means of an antigen binding to its specific IgE antibody attached to the receptor. It is now recognized that there are at least two subpopulations of mast cells, the mucosal mast cells and the connective tissue mast cell.[1] They differ anatomically in that the mucosal mast cell is a smaller cell and contains fewer granules. There are also differences in histochemistry, development and reaction to various mast cell stabilizers.[2] In order to be therapeutically effective in atopic disease the drug should be able to stabilize the mucosal mast cell, as this is the cell that plays the most important role in the release of vaso-active amines.[3-5] The connective tissue mast cell, a larger cell with many granules, is most likely involved in the regulation of the microcirculation in atopic disease.

From The Royal Dutch Eye Clinic, F.C. Dondersstraat 65, 3572 JE Utrecht, The Netherlands.
Reprint requests to Dr. Bijsterveld at the above address.
Presented at the 11th Congress of the Ophthalmological Society of Pakistan, February 18-20, 1988, Peshawar.

Signs, Symptoms and a Histopathological Correlation

The conjunctiva in chronic atopic conjunctivitis is edematous and swollen but smooth in appearance, in contrast to spring catarrh in which it shows the presence of papillae and/or a gelatinous swelling at the limbus with or without the presence of Trantas's spots. The most characteristic aspect of the conjunctiva is the livid hyperemia. The eyes are usually wet and there is conjunctival eosinophilia. A very important symptom is itching.

The edematous and swollen conjunctiva is the result of vascular leakage as a consequence of the release of vaso-active amines liberated after degranulation of the mastocytes. This can be easily demonstrated by the "blueing" of the tissue after intravenous injection of Evans blue and subsequent local injection of substances like histamine.

It is exclusively the venous microcirculation that shows vasodilatation and leakage, and this can be demonstrated by the vascular labelling technique. In vascular labelling, the India ink is injected intravenously. If substances like histamine are locally injected, the carbon particles escape through the gaps caused by the contraction of the endothelial cells as a result of the effect of this vaso-active substance.

The particles, however, cannot pass the basement membrane. As soon as the effect wears off, the gaps between the endothelial cells close, and the carbon particles become trapped between the endothelial cells and the basement membrane, giving rise to a "tattoo" of carbon particles. It appears that in atopic inflammatory reaction, the vasodilatation and extravasation takes place on the venous side of the microcirculation and this explains the peculiar bluish,

milky color of the conjunctiva. An eosinophilic chemotactic substance is present in the granules and is released when the mast cell is degranulating. This explains the presence of eosinophilic cells in the conjunctival secretions in atopic conjunctivitis.

Treatment

Chronic atopic conjunctivitis can be controlled by mast cell stabilizers. Those agents capable of stabilizing the mucosal mast cells are therapeutically more effective. In our series, in only 5% of the cases, additional local corticosteroids were required. Mast cell stabilizers have a little or no effect in spring catarrh, in which therapeutic results are achieved only with local steroids. The role of mast cell stabilizers in vernal disease is to reduce the steroid dosage by substitution.

Bacterial Infection and Contamination

Bacterial superinfection sometimes occurs as a complication in chronic atopic conjunctivitis and is associated with mucopurulent discharge, brick-redness of the conjunctiva, and a sensation of burning and grittiness. Such a manifest infection is easy to diagnose and specific treatment can be instituted after isolation, identification and sensitivity determination.

Small numbers of microorganisms may also cause problems, but here the diagnosis may be difficult as some microbiologists tend to disregard minimal bacterial growth as a cause of inflammatory reaction. By acting as an allergen, even few bacteria can induce an exacerbation of the atopic reaction. In this respect it is important to remember that chronic atopic conjunctivitis is essentially a perennial allergic reaction, and with any inflammatory exacerbation one has to consider the possibility of bacterial contamination. By reacting with the target cell membrane, the bacterial cell wall can trigger the release of vasoactive-amines by way of the classic IgE mediated reaction.[6] To demonstrate this mechanism in any particular case, one can use the RAST (radio-allergosorbent test).[7] In this method, the disc with the insolubilized bacterial antigen is incubated with the patient's serum. The disc is then washed and incubated with isotopically labelled anti-human IgE and the amount of absorbed IgE is counted in a radioactive counter. The higher the count remaining on the disc, the greater the serum level of antibody.

In chronic staphylococcal blepharitis where there is a constant exposure to this microorganism, degranulation may be medicated by IgE.[8] In such a case the antigen-antibody complex activates the complement system, and the complement C_{3a} and C_{5a} fractions can degranulate the mast cell. It is possible to modify the RAST (radio-allergo-sorbent test) test procedure so that an isotopically labelled anti-IgG can be used, thereby detecting and measuring IgG specific antibodies. However, the potential for "non specific" binding and "false positives" is much greater.

When a pronounced exacerbation of the atopic reaction is observed that is associated with the presence of Gram-negative bacteria such as *Haemophilus, Pseudomonas, Klebsiella, Proteus* and other coliform bacteria. Some of these reactions are caused by endotoxins, an integral component of the outer membrane of Gram-negative bacteria. Bacterial endotoxins can activate the complement system by the alternate pathway, whereby also the C_{3a} and C_{5a} fractions are formed that are capable of causing mast cell degranulation. There is also evidence for a non-immunological lectin mediated exacerbation of the atopic reaction.[6,9] Lectins are glycoproteins, also present on the surface of bacteria, which bind to and interact with carbohydrates on the cell membrane, and so cause histamine release.

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Present Aspects of Radial Keratotomy

Akira Momose, MD

ABSTRACT: On the basis of his considerable experience as a radial keratotomy surgeon, the author comments on selection of patients, four-incision radial keratotomy, endothelial cell loss in radial keratotomy, factors relating to the effects of radial keratotomy and computer programs, medical control of the effect, reoperation, contact lens fitting after radial keratotomy, astigmatism surgery, and radial keratotomy of the future. (Pakistan Journal of Ophthalmology, 4:119-121, 1988.)

Selection of Patients

In the last few years, we have achieved various advancements in radial keratotomy. Statistically speaking, patients with -2.0 to -6.0 diopters of myopia achieve the best results.[1] Myopes of up to -8.0 diopters may also be included in this category, if their age is over 40 years. In my own series, myopes of up to -3 diopters have achieved 20/20 (6/6) or better unaided vision with a slight overcorrection in the majority of the cases. A small amount of gradual hypermetropinization occures in a very limited number of cases, usually after age 35. In younger patients, this trend is not seen. Even if it occurs, it can be overcome by the stronger accommodation in younger patients Hence, if a patient requires 20/20 (6/6) vision without corrective lenses for his professional need, such as education in aviation, slight overcorrection is necessary, though it may lead to a premature presbyopia. Patients with -3 to -6 diopters of myopia have achieved unaided vision ranging from 20/60 (6/18) to 20/15 (9/6).

In terms of refraction, the average outcome for the first group has been 0.5 diopters of hypermetropia, whereas 1 to 2 diopters of myopia has remained in many patients in the second group. For normal everyday functions, this much residual myopia is rather convenient.

In cases having more than -8 diopters of myopia, radial keratotomy can reduce but not totally eliminate the refractive error. In this category, you have to select for surgery only those patients who cannot tolerate spectacles or contact lenses including anisometropic cases, and aim to reduce their myopia to a level where spectacles of much lower and tolerable powers may be prescribed for them. Many of my patients fall into this category, and they are happy with their new glasses. Successful contact lens wearers are not candidates for radial keratotomy, unless they for some compelling reason discontinue the use of contact lenses.

Four-incision Radial Keratotomy

In patients with less than -3 diopters of myopia, 4-incision radial keratotomy is preferred nowadays, because if the surgey is not sufficiently effective or the myopia progresses afterward, reoperation can be easily performed to place four additional incisions between the primary incisions. Six-incision radial keratotomy also is preferred by some surgeons.

Endothelial Cell Loss in Radial Keratotomy

A few years ago, there was much concern over endothelial cell loss in radial keratotomy.[2,3] As a matter of fact, however, radial keratotomy causes a lesser loss of the endothelial cells when compared to some of the other surgical procedures. In my data, only 3.8% loss of the cells occurred in radial keratotomy performed with a diamond or sapphire knife. Even in the razor blade incision cases done in the earliest days of the surgery, the cell loss was no more than 5.6% in 1,000 eyes.

Long term contact lens wear (hard, soft daily wear and extended wear) has been shown to cause morphological[4,5] (polymegathism, pleomorphism) and functional changes[6] in endothelium, and has been suspected to cause endothelial cell loss.[7] We examined 21 eyes with more than 10 years of hard contact lens wear. Two eyes showed endothelial cell density between 1500 and 2000 and two other eyes showed cell density between 1000 and 1500. Soft contact lenses are particularly dangerous, but hard contact lenses are not

From the Institute of Clinical Ophthalmology, Kiryu, Gunma, Japan.
Reprint requests to Akira Momose, M.D., Institute of Clinical Ophthalmology 1-100, Umeda, Kiryu, Gunma, Japan 376-06.
Presented at the 11th Congress of the Ophthalmological Society of Pakistan, February 18-20, 1988, Peshawar.

safe either. Soft contact lenses also can induce vascularization into the cornea, and they have now replaced trachoma as the main cause of pannus in Japan, where trachomas has been eradicated. Moreover, contact lenses are often responsible for corneal ulceration resulting in a marked decrease of visual acuity. Thus viewed, in my opinion radial keratotomy is safer than contact lenses.

Factors Relating to the Effects of Radial Keratotomy and Computer Programs

The outcome of radial keratotomy does not depend only on the size of the central optical zone and the number and depth of the incisions. The patient's age, sex, intraocular pressure, keratometry readings and corneal diameter also are important determinants of the effect of surgery. Various mathematical formulas and computer programs are now available which are supposed to help the surgeon obain the desired results, such as:[8]

$$N = \frac{R}{0.011 \times T - 0.333 \times D + 1.267}$$

N = Number of corneal incisions
R = Clinical refraction
T = Age of patient
D = Diameter of central optical zone

There are, however, so many discrepancies among such formulas and programs that they are often incompatible with one another. This is because each formula or program assumes the use of its author's particular techniques and instruments. In actuality, surgical techniques and instrumentation are different with each surgeon, and so are the results obtained. Everything considered, I would advise against buying an expensive computer program but to get instead one of the mathematical formulas and modify it according to one's own experience. We can roughly estimate the amount of visual improvement on the basis of our experience that probable myopia reduction is 3 diopters with 4 incisions, 4.5 diopters with 8 incisions, and 5.5 to 6.0 diopters with 16 incisions, where the patient is a 30-year-old male and the diameter of the central optical zone is 3.0 mm. If the patient is 10 years younger or older, the anticipated effect is respectively reduced or increased by 0.75 diopters. Up to age 40, the effect in female patients is 0.5 diopters less than in males. A higher intraocular pressure produces more effect, and so does a larger cornea.

Medical Control of the Effect

The effect of radial keratotomy can be controlled by medication. If the intraocular pressure is raised with intensive topical corticosteroids and thus the wound healing retarded, it results in an increased effect of the surgery. Therefore, if overcorrection on refraction at one postoperative week is not more than 1.5 diopters in a patient under 35, and 1.0 diopter in an older patient, medication may be started. An additional correction of one diopter or so may be achieved medically. Medical control is sometimes necessary, because the effect of over correction regresses between 1 week to 3 months after radial keratotomy.

Reoperation

The effect of reoperation will be extremely limited if the primary incisions are deep enough. If they are shallow, reoperation with the proper incision depth will be effective. In case of four more incisions to the four primary incisions, the added effect will be 30% of the first correction. An addition of 8 new incisions to the 8 primary incisions will also increase the effect by only 30%. The reoperations must be done on the virgin area of the cornea in between the previous incisions; otherwise, the result may be mere creation of scars.

Astigmatism Surgery

One of the other recent topics in keratorefractive surgery is correction of astigmatism. With R or L cuts, small amounts of corneal astigmatism can be corrected. T-cuts and their modifications can correct much larger amounts of astigmatism. From a half diopter to eight diopters of astigmatism can be corrected with various types of incision techniques[9]

Contact Lens Fitting after Radial Keratotomy

If the patient can tolerate contact lenses, radial keratotomy is not necessary as a rule. However, if it happens that a contact lens becomes a necessity after radial keratotomy, one must remember that K-readings after the surgery will not serve as a guide for determining the base curve of the contact lenses. The central protion of the cornea is flattened after radial keratotomy. In such a case, a hard aspherical contact lense with a flatter base curve in the center and a steeper base curve in the periphery would be needed or, alternatively, a small hole in the center of ordinary contact lenses for venting the air bubble would be required. In this situation, the hard lenses are preferable because the soft contact lenses may cause vascularization along the incision lines in the cornea.

Radial Keratotomy of the Future

Radial keratotomy is a simple, yet extermely precise surgery. I think that some day in the future this surgery will come to be performed by a robot surgeon, so that we humans will only need to sit by and watch it work. Such a robot will probably be programmed to work with a diamond knife or an excimer laser with greater precision than we are capable of at present.

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Scholarship Schedules

Pakistan Academy of Medical Sciences

Convocation 1988 and Conference on "Hospitals in Pakistan" December 22, 1988 at Karachi

The Pakistan Academy of Medical Sciences will hold its Convocation 1988 on December 22, 1988 at 10 a.m. at **The Agha Khan University in Karachi. President of the Islamic Republic of Pakistan,** will deliver the Convocation 1988 address.

The **PAMS Convocation 1988** will be followed by a **Conference on "Hospitals in Pakistan."** There will be a reading of the **Pakistan Academy of Medical Sciences Oration** by a very eminent scientist before the discussions on Hospitals in Pakistan. The **PAMS Oration** carries the distinction of the title of **PAMS Professor** for the lecturer. There will be no other reading or presentation of papers during the conference discussions. However, all the participants will be given copies of all the written papers that are received by the Chairman of the Organizing Committee. All interested scholars are invited to send their papers before **November 15, 1988**, to the addresses given with this announcement.

Pakistan Academy of Medical Sciences Junior Award and Gold Medal is given annually to a Pakistani professional holding the position of Assistant Professor or under in any of the medical and biomedical fields for writing the most outstanding original research paper during the previous year. The PAMS Junior Award and Gold Medal are intended to stimulate interest in research and writing. In addition to a Gold Medal, the recipient is awarded a bursary of Rs. 10,000.00. A committee of experts appointed by The Academy evaluates the entries and decides on the most deserving paper. All interested are invited to submit their entries to **Professor Najib Khan, FPAMS,** before **September 30, 1988.**

Address: Professor Najib Khan, FPAMS
Chairman, Organizing Committee, PAMS Convocation 1988
Said Clinic
I.I. Chundrigar Road
Karachi, Pakistan Tel: 214841

(Figures 1 and 2)

Corneal Vernal Plaque

Patricia W. Smith, M.D. and Bruce T. Carter, M.D.

ABSTRACT: A 7-year-old boy with vernal conjunctivitis developed the uncommon corneal vernal plaque in his right eye. It responded to treatment with cromolyn sodium 4% drops with interspersed use of pulsed topical prednisolone acetate 1%. (Pakistan Journal of Ophthalmology 4:116, 122, October, 1988.) **Send inquiries to Patricia W. Smith, M.D., Department of Ophthalmology, University of Virginia, Box 475, Charlottesville, Virginia 22908.**

Vernal plaque is an uncommon corneal lesion of vernal conjunctivitis. It appears as a late complication of chronic vernal disease during an acute exacerbation, usually in children. It appears to be a lamellar collection of fibrin and mucus in a shallow corneal ulcer, but histochemical staining reactions for mucous glycoproteins are absent.[1]

Vernal keratoconjunctivitis (VKC), a self-limited (4-6 years) disease, is an IgE-mediated type I hypersentivity and a variant of atopic reaction. The most prominent symptom of intense itching may also be accompanied by photophobia, foreign-body sensation, burning and lacrimation. The characteristic clinical feature is marked cobblestone papillary hyperplasia of the conjunctiva, which in some cases may lead to such increase in weight of the eyelids as to cause mechanical ptosis.[2] The punctate keratopathy and vascularization of the superior cornea, white cystlike accumulations of eosinophils (Trantas's dots or Horner's points) in the conjunctiva near the limbus, typical superficial ulcerations in the upper cornea, the uncommon vernal plaques and even rarer atopic cataract are other clinical manifestations.[2] The disease is usually divided into palpebral, limbal and mixed forms.

Confusion with chronic atopic keratoconjunctivitis (AKC) or trachoma may result from the absence of classic features.[2,3] VKC and AKC are probably extremes of the clinical spectrum of the same basic atopic disorder. Nonetheless, AKC, unlike VKC, causes conjunctival scarring, affects lower tarsal conjunctiva, causes deeper and more frequent corneal vascularization, has a more watery discharge, has fewer eosinophils and no free eosinophilic granules, rarely shows Trantas's dots and corneal ulcers, responds better to antihistamines and vasoconstrictors, and has signs of atopic dermatitis elsewhere in the body. Trachoma causes scarring, follocular hyperplasia, Herbert's pits, and has no eosinophils in conjunctival scrapings.[3] It should also be remembered that exacerbations in VKC or AKC may at times be bacteria-induced, necessitating a course of topical antibiotics.[4] Colder climate, air conditioning, cold compresses and patching are helpful in VKC. The best drug therapy for VKC and vernal plaques is cromolyn sodium or disodium cromoglycate (DSCG) 4% solution q.i.d. with periodic, short term use of corticosteroids only for more severe recurrences.

References

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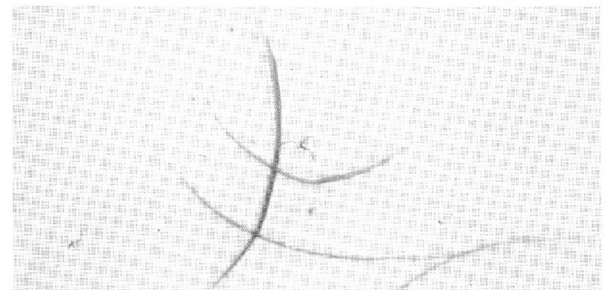
2. Smolin, G, and O'Connor, GR: Ocular Immunology. Boston, Little, Brown and Company, 1986. pp 157-171.
3. Awan, KJ: Vernal keratoconjunctivitis-Care, keratoconus and other complications. Pak J Ophthalmol 2:109, 1986.
4. van Bijsterveld, OP: Microbial induced exacerbation in chronic atopic conjunctivitis. Pak J Ophthalmol 4:117, 1988.

Conjunctivitis due to Trapped Cilia

(Figure 3)

ABSTRACT: Swelling of chronic conjunctival inflammation following retinal detachment surgery concealed the trapped cilia in the conjunctival incision. Conjunctivitis, which failed to respond to all other treatment, disappeared after the detection and removal of the offending cilia. (Pakistan Journal of Ophthalmology 4:116, 122, October, 1988.) **Inquiries to Khalid J. Awan, FPAMS, 1921 Park Avenue, SW, Norton, Virignia 24273.**

Lose eyelashes (Figure) trapped in the conjunctival incision may be responsible for intractable



postoperative inflammation. These offending cilia may only be detected by a careful slit lamp examination. A cleaner conjunctival incision and its meticulous closure may prevent this complication.

Say: Are the blind and the seeing man equal, or are the darkness and the light equal?
Holy Quran 13:16

Editorial

Role of International Non-Governmental Organizations and Eye Health in Developing Countries

Alan W. Johns

It should be a sobering thought for those of us who work in this field, that people of many nationalities have been promoting interest in the prevention of blindness for well over one hundred years - the first Society for the Prevention of Blindness was established in London in 1882 and, of course, the International Agency for the Prevention of Blindness, the IAPB, is the successor to the International Association of the same name, founded in the Netherlands in 1929.

The titles are impressive, but are the objectives of these organizations being met? In the case of the IAPB we know today, it is fair to say that in many countries it has played a crucial role in creating the climate of opinion in which it is politically possible for Governments to operate. Within that climate one would include the support given to the development of the WHO Programme for the Prevention of Blindness; the creation of substantially increased funding - from governments' readjustment of their priorities - from bilateral aid and from national fund-raising; the dissemination of information through congresses of ophthalmologists such as the 11th Congress of the Ophthalmological Society of Pakistan, and the nurturing of international non-governmental organizations such as the Royal Commonwealth Society for the Blind.

The latest manifestation of the IAPB's work is the establishment of the Consultative Group of Non-Governmental Organizations to the WHO Programme in Prevention of Blindness - the Group that is designed to support all measures concerning the prevention of blindness and to complement the work of the WHO Programme Advisory Group.

This group includes the main international NGOs, Christoffel Blindenmission from West Germany, FORESIGHT from Australia, Helen Keller International, The International Eye Foundation and the SEVA Foundation from the United States, Operation Eye Sight Universal from Canada and the Royal Commonwealth Society for the Blind from the United Kingdom. They now collectively expend over 30 million dollars annually on eye care programmes in developing countries and by way of example, the Indian National Eye Care Programme in which, through National NGOs and in collaboration with the Government of India, RCSB will be spending some two million dollars this year.

They have come to employ professional cadres of health personnel as well as administrators to assist the promotion, planning and monitoring of the implementation of the programmes we support. Their activities extend from the single intervention strategy, such as a mobile eye unit attached to a non-government hospital, to multi-sectoral intervention in National Eye Care Programmes in which we have often committed ourselves to underwriting parts of the programme for upwards of five years. Increasingly the trend is towards the latter.

They have met on an annual basis since 1982 to discuss their work and to plan co-ordinated approaches to expanding it. They have encouraged the utmost co-operation between their Field Staffs and the result is a number of large eye care programmes in which sometimes as many as three of them pool their resources, relying on the lead organization in the particular country to administer their intervention. The nearest example of that to Pakistan lies in Bangladesh where for the past nine years, FORESIGHT and RCSB have supported a programme for training doctors and ophthalmic paramedical personnel for work in eye hospitals and eye camps.

The hidden side of this picture is that of acquiring funds to support such programmes. These organizations do this each in their own way from a variety of sources and it is a process which continually sharpens the professional approach and, of course, encourages the most careful husbanding of the

Based on a presentation made at the 11th Congress of the Ophthalmological Society of Pakistan, Peshawar, February 18-20, 1988.

Reprint request to Alan W. Johns, Executive Director, Royal Commonwealth Society for the Blind, Commonwealth House, Haywards Heath, West Sussex RH 16 3AZ, U.K.

available resources. Joint funding from government aid is a growing area for the Royal Commonwealth Society for the Blind. For example, it is currently meeting the total costs of a training programme in Southern/Central Africa for ophthalmic assistants drawn from eight countries in which the British Government is co-funding RCSB for a five year period to the extent of just under half a million dollars.

In summary then, the IAPB, assisted by the growing element of collaboration between international NGOs just described has succeeded in promoting an effective, valuable measure of collaboration between governments, national and international NGOs and the WHO. In some fifty countries, the product of that collaboration is to be seen in the presence of national committees employing primary eye care programmes as the main strategy for preventing blindness.

It is a sobering thought among the mass of data available that the estimated number of blind people is not being reduced significantly - despite increased collaboration, funding and improved technology, there yet remains to be broken the link between blindness and population growth.

The updated estimates of world blindness produced by the WHO in 1987 showed that there are between 27 and 35 million blind people in the world with a visual acuity of less than 3/60 and 41 to 52 million with a visual acuity of less than 6/60. From the available data it is noted that a 1981 estimate of blindness in Pakistan gave a prevalence rate of 2.4%, resulting in a total of 1,447, 400 people with a visual acuity of less than 1/60 - in which cataract, trachoma, infections and corneal scarring accounted for 85%. And that was in 1981!

According to data available in the Far Eastern Economic Review of Asia for 1987, Pakistan's general population in 1986 was 101.9 million and that the average growth rate between 1978 and 1985 was 2.8%. If, as in India, the number of people over the age of 60 is estimated to double within the next 20 years, the backlog of cataract alone, which formed 60% of all blindness in 1981, will constitute an acute social and economic problem for the sighted in the community, without regard to the misery of so many elderly blind people.

The question is - are the Pakistani Ophthalmologists as the predominating influence in eye care going to let that happen? In the nine years I have worked for RCSB, I have been privileged to witness the work of different organizations and of ophthalmologists in Pakistan who are really determined to reduce the above mentioned prevalence rate. But Pakistan is a vast country, its needs are many and their efforts have to be co-ordinated in a total rethink on how to improve the eye health of Pakistan's peoples.

Last November, at a WHO Inter-Country Workshop in Thailand, Professor Barrie Jones talked about the approach to community ophthalmology. Many were struck by the powerful, "no hold barred" manner in which he put the subject across to his fellow ophthalmologists - defining community ophthalmology as that "applied to eliminating avoidable blindness and improving the eye health of communities" and avoidable blindness as "blindness that could be either prevented or cured within the constraint of resources that could reasonably be made available for that purpose."

He went on to identify four basic requirements for community ophthalmology to work:

Firstly, how essential it was that selected skills of basic ophthalmology should be available to all those in need of them wherever they lived - requiring the training and utilizing of all relevant categories of manpower - not just the training of ophthalmologists.

Secondly, community ophthalmology had to be closely integrated with the primary health care system of a country and to develop and remain in close integration with the academic and referral centers for ophthalmology.

Thirdly, the services of community ophthalmology had to deliver an appropriate balance of preventive and curative measures aimed at the main blinding and disabling eye disease burden in the community - as defined by epidemiologically sound methods.

Fourthly, the resources had to be allocated and distributed according to epidemiologically determined priorities based on the geographic distribution of people, disease burden and service deficits.

The Consultative Group of NGOs have had a film made to illustrate the concepts of a national eye care programme based on that of Kenya's. Kenya has one of the best national eye care programmes in Africa, evolved over 20 years but with rapid growth over the past 5 years. Despite the differences that exist between Africa and Asia, the concepts portrayed in this film are applicable to many developing countries. In fact it is RCSB's intention to produce a similar film based on an Asian country eye care programme, possibly that of Thailand's where many of the elements of community ophthalmology described by Professor Jones exist - within the constraints of the country's health budget.

How encouraging it would be to IAPB, to the international and national NGOs and to the WHO programme to find that the 11th Congress of the Ophthalmological Society of Pakistan marked the start of the rethink just mentioned above–an approach to

community ophthalmology within a co-ordinated national programme–a very long haul but it has some promising beginnings and certainly the approach rests with Pakistan's elite ophthalmic practitioners–who have the influence with decision takers and with all those individuals and organizations who can find resources to support it. The Ophthalmological Society of Pakistan, aware of the fullest details of an approach to community ophthalmology, could speak as one voice in a matter of national importance for the eye health of all communities of Pakistan.

An Encomium

Mohammad Safdar Ali ("Safdar"), M.D.

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

After every few days, the telephone would ring at the end of the day. "Maulvi Jee, let me tell you a funny story," a familiar voice would say to me in a most affectionate and pleasant tone." Suddenly, a grin would appear on my weary face, and I would feel as if I have never heard of a word called work. The funny story always turned out to be one of the scholarly anecdotes from the writings of one of the past literary giants of Persian, Arabic, or Urdu. From July 18, 1988, suddenly my telephone stopped ringing. That is the day on which our scholarly and loving storyteller left us forever to be in the company of the Friend he loved more than he loved anyone else. Safdar's demise was an enviable one: he died of sudden heart attack during Hajj, right in the shade of the Holy Ka'ba. He was buried right there, in the burial place all Muslims desire to be buried at but very few are chosen by Allah for this honor. Safdar's rock-like faith in Allah, unlimited compassion without discrimination for people, and unparalleled devotion to friends made him a natural choice of His. Inna lillahe wa inna elaihe rajioon.

The decease of Safdar has also taken away from us the Urdu Editor of The Journal. I doubt we shall ever find another of his wit, his scholarship, and his passion for knowledge about man and his Maker. He had an unbelievable craving for classical literature of Urdu, Persian, and Arabic. His house was full of rare manuscripts, many of these he had xerographed from ancient handwritten copies found only in a few famous libraries of the world. He was happiest and most excited whenever he succeeded in his untiring search for some rare book. In fact, the first thing he did after saying his prayer in Ka'ba on his arrival in Makka was to go to a nearby bookstore and buy five rare books. He was engaged in reading one of these books when the fatal heart attack struck.

Mohammad Safdar Ali ("Safdar") (1941-1988)

Safdar was born on August 17, 1941. He did his M.B., B.S. from Nishtar Medical College, Multan, with me, in 1964. He was unusually adept at communicating with people of any age, interest, or education, yet he picked his friends most carefully. It was undoubtedly Allah's blessing upon me that he considered me his friend. I got so used to him that I still miss him deeply. I am sure all his friends feel an unbearable loss, and will never get over it. He leaves behind his wife, Naheed, and sons, Ahmad and Hussain. Our prayers and love go to them, and shall always. May Allah grant Safdar's soul the best place in heaven. He shall always live here in our hearts.

Critiques

Book Reviews

Edited by Khalid J. Awan, FPAMS

OCULAR PATHOLOGY: A Color Atlas. By Myron Yanoff and Ben S. Fine. New York, Gower Medical Publishing, 1988. Hardcover, multiple color illustrations on each page, 248 pages, index. Price US $79.50.

Because staining vividly outlines various tissues in actual histopathologic sections, the authors believe their printed representations should also be viewed in color. They have succeeded, with commendable cooperation of the publisher, in producing an excellent color atlas with highly selective and beautiful illustrations, as a companion to their previously well-received **Ocular Pathology: A Text and Atlas**, which is also profusely illustrated but with black and white figures.

The book is impressively printed on excellent quality paper. The illustrations are of the highest quality and the writing is lucid and concise, things one would naturally expect from teachers like Yanoff and Fine. In many places, the histologic sections are further elucidated by line drawings with extensive labeling. The tables containing differential diagnostic and clinical information on various entities are generously interspersed throughout the text. The book is divided into 18 chapters on Basic Principles of Pathology, Congenital Anomalies, Nongranulomatous Inflammation, Granulomatous Inflammation, Surgical and Nonsurgical Trauma, Lids and Lacrimal Drainage System, Conjunctiva, Cornea and Sclera, Uvea, Lens, Retina, Vitreous, Optic Nerve, Orbit, Diabetes Mellitus, Glaucoma, Ocular Melanotic Tumors, and Retinoblastoma and Pseudoglioma. Each chapter is followed by a list of selective important references.

The authors have splendidly fulfilled their aim of giving any student of ophthalmic pathology a concise, interesting, and informative book on the subject. I was much impressed by the quality of illustrations and the brevity of writing, which make this book attractive even for a leisurely learning. I strongly recommend that this book be made a part of curriculum for the ophthalmic students and trainees in Pakistan.

INTRAOCULAR LENS; COMPLICATIONS AND THEIR MANAGEMENT. By S. Gregory Smith and Richard L. Lindstrom. Thorofare, Slack Incorporated, 1988. Hardcover, 208 pages, indexed, illustrated with black and white figures and seven color plates. Price US $60.00.

The authors of this book are experienced surgeons in extracapsular cataract surgical techniques and intraocular lens implantation. The book is based on their personal experience and the reports in the current literature. The publisher has done a very satisfactory job of printing on high quality paper. The figures in the color plates are also of good quality.

The text is divided into chapters on Cornea, Corneal Scleral Junction, Anterior Chamber, Trabecular Meshwork (Glaucoma), Iris, Ciliary Body, Posterior Chamber IOLs, Posterior Capsule, Vitreous, Retina, Cystoid Macular Edema, Optic Nerve, Pain, Glare, Decreased Visual Acuity, and Intraocular Lens Removal and Exchange. This unconventional mixture of text division based on anatomy and ailment perhaps was thought by authors to be more practical in a clinical setup. The problems discussed range from the common posterior capsular opacification or cystoid macular edema to the rare ghost cell glaucoma or pseudomigraine. Each chapter is followed by a list of most up to date references.

Although most recommendations in this book are accepted and followed by many other experts in the field of anterior segment surgery, there ar some statements that may not receive a universal support. For instance many would take exception to the claim that in eyes saved after expulsive hemorrhage "the visual acuity is often poor;" also, "10 mg" propranolol hydrochloride (Inderal) for migraine, as recommended by the authors, is insufficient. (According to the manufacturer, the "usual effective dose range is 160-240 mg per day.) The book is, nonetheless, useful for those interested in intraocular lens implantation.

RETINAL DYSTROPHIES AND DEGENERATIONS. Edited by David A. Newsome. New York, Raven Press, 1988. Hardcover, large-sized 382 text pages, indexed, illustrated (many in color). Price US$110.00.

With the help of 19 highly respected experts, the Editor has produced this commendable text on the topic which has till now attracted , despite an explosion in the ophthalmic publishing, very little attention from the ophthalmic writes. Because of so many subtle variations in the characteristics of many types of retinal dystrophies, the rarity of many others, the complexity of diagnostic methods and the scarcity of therapeutic measures for retinal degenerative disorders, a majority of ophthalmologists remains uninterested in this aspect of ophthalmology. The significance of *Retinal Dystrophies and Degenerations* lies in the fact that the lucid manner in which it delineates these disorders is bound to generate interest in them by

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enhancing their understanding among ophthalmologists. Newsome is to be thanked for it.

The book is divided into two parts. The five chapters of the first section deal with clinical and laboratory methods of retinal evaluation. The clear descriptions of posterior segment biomicroscopy, ophthalmoscopy, fundus photography, fluorescein angiography, video ophthalmoscopy, methods of measuring ocular blood flow, perimetry, color vision evaluation, psychophysics and retinal threshold measurement, electroretinography, the visual evoked response, retinal densitometry, computerized tomography, magnetic resonance imaging, and genetic counseling and antenatal diagnosis are provided. These chapters on diagnostic procedures and their application are a worthwhile reading for every ophthalmologist.

The remaining 16 chapters in the book are devoted to Hereditary Vitreoretinal Degenerations, Dominantly Inherited Drusen, Juvenile Hereditary Macular Dystrophies, Fundus Flavimaculatus, Retinitis Pigmentosa, Usher's Syndrome, and Other Pigmentary Retinopathies, Pigment Epithelial Dystrophies, Cone Degeneration ("Bull's-Eye Dystrophies") and Color Vision Defects, Pathologic Progressive Myopia, Angioid Streaks and Bruch's Membrane Degenerations, Choroideremia and Other Choroidal Atrophies, Peripheral Retinal Degenerations, Albinism, Retinal Dystrophies Associated with Storage Diseases, Toxic and Nutritional Retinopathies, Retinopathy of Prematurity, and Ocular Toxoplasmosis. The last entity is included perhaps for its clinical resemblance to degenerative disorders of the retina. Each chapter is based on numerous important and up to date publications, the full list of which is given at the end of each chapter.

There are here and there some duplications in material and figures and also an unevenness in writing. Nonetheless, this book is a significant addition to the ophthalmic literature. Those interested in retinal dystrophic and degenerative disorders should read it to stay abreast with the modern developments in the diagnostic and therapeutic aspects of this field.

CATARACT SURGERY: Perspectives From OPHTHALMIC SURGERY. Edited by George. W. Weinstein and George L. Spaeth. Thorofare, Slack Incorporated., 1987. Paperback, 130 pages, author index. Price US $35.00.

This book is composed of abstracts of 325 papers on cataract surgery published in the **Ophthalmic Surgery** during the period of 1970 to 1985 and comments by the Editors on each paper. Two of the interesting conclusions drawn by the Editors after reading these articles were that: (1) "More advances in cataract surgery have come from private practitioners than from academic circles," and (2) "Only a few ophthalmologists have any substantial knowledge about how to design a clinical research study." One of the suggestions they make to overcome the latter is to include this topic in the educational curricula of teaching and training centers.

The book is divided into 14 chapters on Visual Function and Cataract, Indications for Surgery, Anesthesia, Incision and Closure, Instrumentation and Technique, Intraocular versus Extracapsular Extraction, Phacoemulsification and Aspiration, Intraocular Lens Design, Intraocular Lens Implantation, Complications of Cataract Surgery, Keratoplasty and Cataract, Shortened Hospitalization and Outpatient Surgery, and Retrospectives and Perspectives. Although full titles of all papers are given under each category, a subject index is missing, a definite drawback in the usefulness of this book.

The comments of the Editors make the reading more objective and definitely more useful. However, there are places where it appears that these comments are made without regard to the premise and limitations of the related papers. This attitude might distract the reader from the actual conclusions drawn by some authors, but is not detrimental to the overall worth of the book, which is a significant and interesting source of information on the developments and advances in cataract surgery during the past fifteen years. I found it interesting, and recommend its reading by all cataract surgeons.

CURRENT NEURO-OPHTHALMOLOGY, Volume 1. Edited by Simmon Lessel, and J.T. van Dalen, Chicago, Year Book Medical Publishers, Inc., 1988. Hardcover, pocketbook-sized 370 pages, a few chapters illustrated, indexed. Price US $64.00.

Because a busy clinician cannot possibly remain conversant with the large number of articles published, particularly in the field of neuro-ophthalmology, the Editors and the publisher felt the need for a periodic volume of critical reviews of various topics in neuro-ophthalmology based on the publications of preceding two years. This publication, planned to be a biennial series, will indeed be very useful for any reader interested in updating his knowledge. The publication is intended for ophthalmologists, neurologists, neurosurgeons, radiologists, pediatricians and internists, who see patients with neuro-ophthalmic disorders.

The present volume is divided into six parts on The Visual System, The Ocular Motor System, The Pupil, The Orbit, Ocular Manifestitations of Neurological Disease, and Diagnostic Methods. A total of 27

authors contributed to the present volume. One very useful feature is the extensive list of very current references with each chapter. The contents are concise and to the point. All of the chapters contain much useful information, but the chapters on optic neuritis, the pupil, myasthenia gravis, stroke, migraine, and neuroradiology impressed me more. It is a very rewarding reading, but the book's cost may prove prohibitive for the Pakistani readers.

A COLOUR ATLAS OF OPTIC DISC ABNORMALITIES. By Erna E. Kritzinger and Heather M. Beaumont. London, Wolfe Medical Publications Ltd., and Chicago, Year Book Medical Publishers, 1987. Hardcover, color illustrations on each page, 118 pages, indexed. Price US $27.00.

This beautiful atlas is intended for "those engaged in postgraduate studies in ophthalmology, internal medicine, peadiatrics, or neurology, also general practitioners and opticians." A helpful and new feature is a two-page differential "Diagnostic Key" which lists various disorders and the of page numbers on which they are discussed for any particular ophthalmoscopic appearance of the optic disc. The contents are arranged in nine chapters on The Optic Disc, Non-Progressive Congenital Abnormalities, Vascular Abnormalities, Optic Neuritis and Optic Neuropathy, Atrophic Abnormalities, Papilledema and Pseudopapilledma, Tumors and Tumor-like Conditions, Inflammatory Disorders, and Other Peripapillary Abnormalities. Each entity is discussed under headings of ophthalmoscopy, supplementary findings, associated systemics findings, and differential diagnosis. Although not exhaustive, the book has quite a bit of useful information. The superb quality of color figures definitely entitles it to be one of the excellent teaching tools on optic disc diseases for the trainees in the above mentioned fields.

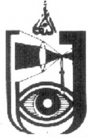
ACTA XXV CONCILIUM OPHTHALMOLOGICUM, Volumes 1 and 2. Proceedings of the XXVth International Congress of Ophthalmology held in Rome, Italy, May 4-10, 1986. Edited by F. Blodi, R. Brancato, G. Cristini, F. d'Ermo, I. Esente, A. Musini, B. Philipson, F. Pintucci, F. Ponte, and G. Scuderi. Milan, Kugler Publications & Ghedini Editore, 1988. Distributed for Pakistan by Kugler Publications, P.O. Box 516, 1180 AM Amstelveen, The Netherlands, and for the US and Canada by Kugler Publications, Berkeley, California. Hardcover, 2,807 pages, Illustrated, author index. Price US $475.00

The editors and the publisher deserve our praise and thanks for doing such an excellent job of producing these proceedings of a meeting of such huge magnitude. These proceedings will serve as a profitable remembrance for those who were fortunate to attend the XXVth International Congress of Ophthalmology at Rome, and provide an insight into the meeting to those who could not. It is a fact that anyone who is interested in learning about the progress of ophthalmology in various parts of the world must not miss the meetings of the International Congress of Ophthalmology. (The next (XXVIth) meeting is scheduled to be held on March 18-24, 1990, in Singapore.)

Over 12 hundred authors from all corners of the world have contributed to the Acta, which is divided into two weighty tomes of over 1,400 pages each. The Volume 1 (1,465 pages) opens with 41 pages of the usual ceremonial greetings, addresses, citations for various prestigious awards and an address in Italian by his Holiness, the Pope, titled "To Help Man to See the Wonderfulness of Creations Means to Help Him to Discover in Himself His Creator." The scientific papers in this volume are divided into nine parts on Immunology; Technical Advances; Basic Research; New Methods of Examination; Anatomy, Physiology, Genetics; History, Social Ophthalmology, Epidemiology; Optics, Refraction, Contact Lens; Intraocular Inflammation, Ocular Tumors; and Adnexa, Cornea, Anterior Segment. Also a separate section in this volume contains proceedings of a "Symposium of International Study Committee for Teaching and Post Graduate Continuing Education in Ophthalmology." There are 279 papers in all in Volume 1. The Volume II (1,402 pages) includes nine pages of the Author Index and 271 scientific papers grouped under the topics of Eye Movements, Strabismus, Amblyopia; Glaucoma; Uvea; Neuro-Ophthalmology; Orbital-Lacrimal-Plastic Surgery, Trauma; Pediatric Ophthalmology; Retina, Macula, Vitreous; Medical Therapy; The Eye and the Systemic Disorders; Alternative Medicine in Ophthalmology; and Varia/Miscellaneous. The usefulness and international appeal of the Acta is enhanced by the fact that all of the articles in it are in English.

Printing and paper are excellent. The editors and publishers have done a monumental and lasting service to the profession. The Acta deserves to be on the shelves of all the medical, ophthalmic in particular, libraries the world over.

I urge the chairmen of the ophthalmology departments of all the medical colleges and teaching institutions in Pakistan to acquire the Acta for their departmental libraries. In addition to allowing a very informative look into the modern international ophthalmic scene, it will prove stimulating to the trainees and teaching staff alike. *—A-ur-R*



Abstracts from Elsewhere

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

AMA Archives of Ophthalmology

(Chicago)

INTRAOCULAR PRESSURE FOLLOWING PANRETINAL PHOTOCOAGULATION FOR DIABETIC RETINOPATHY. DIABETIC RETINOPATHY REPORT NO. 11. SC Kaufman, FL Ferris III, M Swartz. Diabetic Retinopathy Study Research Group. The authors analyzed data collected during the first five years after randomization in the Diabetic Retinopathy Study to determine the effect of panretinal photocoagulation on intraocular pressure (IOP). At each follow-up visit, median IOP was identical for the treated and untreated eyes. Mean IOP rose slightly in each group. The proportion of untreated eyes with IOP above 30 mm Hg at two consecutive visits was twice that of the treated eyes (2% vs 1%). These data show that panretinal photocoagulation reduces the risk of subsequent intraocular hypertension, apparently by preventing the development of neovascular glaucoma. *(Arch Ophthalmol 105: 807-809, June, 1987.) Reprint requests to the Biometry and Epidemiology Program, Bldg 31, Room 6A10, National Eye Institute, Bethesda, MD 20892 (Dr. Kaufman.)*

TREATMENT OF NEONATAL CONJUNCTIVITIS. I. Sandstrom. The author evaluated the effect of different treatment regimens on clinical and microbiologic cures of neonatal conjunctivitis during a 32-day observation period. In 84 infants with mild to moderate conjunctivitis and no signs of dacryocystitis, clinical cures were achieved in more than 50% of the cases with lid hygiene only. *Staphylococcus aureus* was the most common organism (48%) isolated from these infants. *Chlamydia trachomatis* could not be isolated from eyes with mild to moderate conjunctivitis. Forty-four infants with severe conjunctivitis, with or without dacryocystitis, were randomly assigned to treatment with either topical chloramphenicol or oral erythromycin for 14 days. *Chlamydia trachomatis* was isolated from 19 (43%) of these infants. All infants with chlamydial conjunctivitis who were treated with 25 mg/kg of oral erythromycin ethylsuccinate twice daily for 14 days were clinically and microbiologically cured. In contrast, all treatment of chlamydial conjunctivitis with topical chloramphenicol failed clinically as well as microbiologically. Dacryocystitis was a common complication in neonatal conjunctivitis (17%). The clinical failures in neonatal nonchlamydial conjunctivitis were asociated with persistent obstruction of the nasolacrimal duct. *(Arch Ophthalmol 105:925-928, July, 1987) Reprint requests to Department of Ophthalmology, Karolinska Institute, Sodersjukhuset, Box 38100, S-100 64 Stockholm, Sweden (Dr. Sandstrom.)*

ERYTHROCYTE SEDIMENTATION RATE AND ITS RELATIONSHIP TO HEMATOCRIT IN GIANT CELL ARTERITIS. DM Jacobson, TL Slamovits. The authors separated 24 patients with biopsy-proved giant cell arteritis into three groups based on erythrocyte sedimentation rates (ESRs) at clinical presentation: low, 1 to 40 mm/h; high, 41 to 80 mm/h; and very high, greater than 80 mm/h. The presence of anemia in the very high ESR group compared with the low ESR group was the only statistically identified difference. There was a high degree of inverse correlation between ESR and hematocrit in the subject population. No difference in ischemic ocular complications among the three groups was noted. These findings emphasize that the diagnosis of giant cell arteritis should be made predominantly on clinical suspicion with less reliance on the ESR as a diagnostic criterion. Furthermore, the degree of ESR elevation does not predict which patients are at increased risk for the development of ocular complications. Finally, the ESR may not reliably indicate active disease in patients wtih normal hematocrit values. *(Arch Ophthalmol 105: 965-967, July, 1987.) Reprint requests to Department of Neurology, Marshfield Clinic, 1000 N Oak Ave., Marshfield, WI 54449 (Dr. Jacobson).*

WHERE IS THE GRAY LINE? AE Wulc, RM Dryden, T Khatchaturian. The gray line is a well-known surgical landmark used in the repair of lacerations involving the lid margin, but no description of any deep or superficial anatomic counterpart of the gray line has been described. The authors examined block resections of 51 eyelids histologically following localization of the gray line. The visualized gray line was consistently seen to correspond histologically to the most superficial portion of the obricularis muscle known as the muscle of Riolan. They comment on changes in gray line morphology with lid movement, and advance a hypothesis to explain its "gray" color. *(Arch Ophthalmol 105: 1092-1098, August, 1987.) Reprint requests to Eye Plastics/Orbital Service, Scheie Eye Institute, Department of Ophthalmology, University of Pennsylvania, 51 N 39th St., Philadelphia, PA 19104 (Dr. Wulc).*

SECONDARY SURGICAL MANAGEMENT OF EXPULSIVE CHOROIDAL HEMORRHAGE. FH Lambrou, Jr., TA Meredith, HJ Kaplan. The authors managed eight cases of expulsive hemorrhage with herniation of intraocular contents with secondary procedures after initial operative closure of the eye. Two eyes with giant retinal tears and clear vitreous were treated with photocoagulation alone; each regained 20/200 visual acuity. Vitreous hemorrhage, traction retinal detachment, or rhegmatogenous retinal detachment with an indication for surgery in six eyes. Vitrectomy, choroidal drainage with simultaneous intraocular infusion, and scleral buckling restored useful vision in two eyes. In cases without vitreous hemorrhage or retinal detachment, conservative management may yield good results, while intraocular surgery may salvage useful vision in more complicated cases. *(Arch Ophthalmol 105:1195-1198, September, 1987.) Reprint requests to Emory Eye Center, 1327 Clifton Rd NE, Atlanta, GA 30322 (Dr. Meredith).*

LASER POWER AND POSTOPERATIVE INTRAOCULAR PRESSURE INCREASE IN ARGON LASER TRABECULOPLASTY. HJ Rouhiainen, ME Terasvirta, EJ Tuovinen. The authors performed argon laser trabeculoplasty on 45 open angle glaucoma patients with three different laser power levels (0.5, 0.7, and 0.9 W). They evaluated the influence of the treatment variables on the postoperative intraocular pressure (IOP) increase. The only statistically significant correlation they found was with the laser power. Most (75% [6/8]) of the serious IOP increases ($\geq$ 10 mm Hg) were in the high-power group, and the average postoperative IOP increase was also greatest in this group. *(Arch Ophthalmol 105:1352-1354, October, 1987.) Reprint requests to Eye Department, University Central Hospital, 70210 Kuopio, Finland (Dr. Rouhiainen.)*

INTRAOCULAR PRESSURE BY NONCONTACT TONOMETRY WITH AND WITHOUT SOFT CONTACT LENSES. MS Insler, RG Robbins. The authors compared the intraocular pressure of 43 eyes (23 patients) with and without soft contact lenses. Two measurements were taken on each eye while the patients were wearing their soft contact lenses, and then immediately after the lenses were removed. Intraocular pressure measurements were taken by noncontact tonometry. The results showed tha thte power of the contact lens was a significant predictor of the change in intraocular pressure. In addition, when the 43 eyes were broken down into two groups, those with hyperopic lenses and those with myopic lenses, the difference in intraocular pressure was significantly larger for the group with hyperopic lenses than for the group with hyperopic lenses than for the group with myopic lenses. *(Arch Ophthalmol 105:1358-1359, October, 1987.) Reprint requests to LSU Eye Center, 2020 Gravier St., New Orleans, LA 70112 (Dr. Insler).*

REDUCTION OF PHENYLEPHRINE DROP SIZE IN INFANTS ACHIEVES EQUAL DILATION WITH DECREASED SYSTEMIC ABSORPTION. MG Lynch, RH Brown, SM Goode, RD Schoenwald, D Chien. The authors studied the effect of reducing eye drop size on the efficacy and systemic absorption of topical 2.5% phenylephrine hydrochloride in neonates and infants. Eleven neonates received an 8-uL drop volume (commercial size) in the fellow eye. Mean pupillary dilation at 60 minuted was equivalent (4.86 mm vs 4.57 mm) for both eyes, respectively. The plasma phenylephrine level was determined for the two drop sizes in a second group of infants. Eight infants received an 8-uL drop volume in both eyes, while nine infants received a 30-uL drop volume in both eyes. The mean phenylephrine level at ten minutes was 0.9 ng/mL for the 8-uL drop group and 1.9 ng/mL for the 30 uL drop group. In neonates and infants, reducing the drop volume of topical phenylephrine may improve the risk-benefit ratio. *(Arch Ophthalmol 105:1364-1365 October, 1987.) Reprint requests to Department of Ophthalmology, University of Texas Health Science Center, 5323 Harry Hines Blvd., Dallas, TX 75235 (Dr. Lynch)>*

THE RAPID DETECTION OF *ACANTHAMOEBA* IN PARAFFIN-EMBEDDED SECTION OF CORNEAL TISSUE WITH CALCOFLUOR WHITE. RE Silvany, MW Luckenbach, MB Moore. Acanthamoeba keratitis is a difficult diagnosis to make with routine stains and cultures. Gram's, Giemsa, and hematoxylin-eosin stains do not differentially stain Acanthamoeba, making the detection of organisms difficult. Trophozoite and cyst forms in paraffin-embedded corneal tissue sections can be rapidly and differentially stained with calcofluor white. Under the fluorescence microscope, the trophozoites are bright red-orange, and cyst cell walls fluoresce bright apple-green with red-orange cytoplasm. Retrospective identification can be made by destaining hematoxylin-eosin-stained sections. Digestng background corneal tissue with trypsin or collagenase and hyaluronidase solutions helps to more readily identify trophozoites. *(Arch Ophthalmol 105:1366-1367, October, 1987.) Reprint requests to the Department of Ophthalmology, University of Texas Health Science Center at Dallas, Southwestern*

Medical School, 5323 Harry Hines Blvd, Dallas, TX 75235-9057 (Mr. Silvany).

COMPLICATIONS OF CLEAR LENS EXTRACTION IN AXIAL MYOPIA. A Rodriguez, E Gutierrez, G Alvira. Clear lens extraction is used to compenste axial myopia. It is becoming controversial because of the danger of complications. The authors retrospectively reviewed the postoperative complications in 33 eyes of 20 patients who underwent clear lens extraction at other institutions between 1966 and 1984. Twelve patients (60%) had motility disturbances. Eight (24%) of 33 eyes suffered secondary glaucoma; ten (30%), retinal detachment; 12 (36%) lens remnants in the pupillary space; and six (18%), blindness caused by clear lens extraction or by additional surgery performed by us while attempting to improve a poor prognosis. Clear lens extraction appears to be contraindicated in the young, in those with axial diameters greater than 29 mm, and in those presenting with peripheral chorioretinal degeneration. Moreover, clear lens extraction does not avoid the progression of myopia at the posterior segment. The authors suggest the use of safer, noninvasive, reversible alternatives. *(Arch Ophthalmol 105:1522-1523, November, 1987.) Reprint requests to Calle 98, No. 21-53, Bogota, DE, Colombia (Dr. Rodriguez.)*

CONTROL OF CORNEAL ASTIGMATISM FOLLOWING CATARACT EXTRACTION BY SELECTIVE SUTURE CUTTING. JW Kronish, RK Forster. The authors evaluated the ability of selective suture cutting to reduce postoperative corneal astigmatism in 75 eyes of 68 patients who underwent extracapsular cataract extraction with posterior chamber intraocular lens implantation. Keratometric and refractive measurements were obtained before and at selected intervals (3, 6, 10, 26, and 52 weeks) after surgery. The number of sutures cut during the sixth week after surgery was based on the degree of astigmatism (0.00 to 2.00 diopters (D), no sutures cut; 2.25 to 3.00 D, one suture cut; 3.25 to 4.00 D, two sutures cut; $\geq$ 4.25 D, three sutures cut). Our analysis demonstrated the following: (1) a spontaneous reduction of 0.5 D in surgically induced astigmatism in eyes without suture cutting, (2) an additional reduction of 1.2 D in postoperative astigmatism for each suture cut, and (3) attainment of 75% to 93% of the total effect of suture cutting within four weeks. The final astigmatism one year after surgery had increased by a mean of 0.9 D, exhibited predominantly with-the-rule properties, and showed no significant difference among the four groups of patients. Vector analysis revealed that only small shifts in the axis of astigmatism occurred after suture cutting. A strong correlation between the keratometric and subjective refractive measurements during all postoperative examinations indicated that corneal astigmatism is primarliy responsible for postoperative astigmatism. *(Arch Ophthalmol 105:1650-1655, December, 1987.) Reprint requests to Department of Ophthalmology, Bascom Palmer Eye Institute, University of Miami School of Medicine, PO Box 016880, Miami, FL 33101 (Dr. Forster).*

FOVEAL NEOVASCULARIZATION IN DIABETIC RETINOPATHY. BC Joondeph, HC Joondeph, TP Flood. The authors examined seven eyes of seven patients with long-standing insulin-dependent diabetes mellitus who had unilateral foveal retinal neovascularization. The neovascularization originated from the perifoveal capillaries and demonstrated typical leakage on fluorescein angiography. Usually, retinal neovascularization in diabetes mellitus almost always occurs at the optic disc and/or near the major nasal and temporal vascular arcades, sparing the foveal area. *(Arch Ophthalmol 105:1672-1675, December, 1987.) Reprint requests to 22151 Moross Rd, Suite G-30, Detroit, MI 48236 (Dr. H. Joondeph).*

PREVALENCE OF GOOD VISUAL ACUITY FOLLOWING SURGERY FOR CONGENITAL UNILATERAL CATARACT. EE Birch, DR Stager. The authors examined the prevalence of good visual acuity following surgery for congenital unilateral cataract in a group of patients seen between 1980 and 1986. Overall, 53% of patients obtained linear distance acuities of 20/80 or better by 3 to 7 years of age. The best outcomes followed surgery during the first two months of life, prompt lens fitting, aggressive occlusion therapy, and regular follow-up. Nonetheless, aphakic eyes did not achieve a visual acuity of 20/20 in the sample. Prospective "preferential-looking" data demonstrated a failure of aphakic eyes to keep pace with the normal developmental course after 18 months of age. Poor visual outcomes following late surgery appear to be due primarily to the development of amblyopia during the first months of life, which may aggravate compliance problems and further deteriorate prospects of visual rehabilitation. *(Arch Ophthalmol 105:40-43, January, 1988). Reprint requests to Retina Foundation of the Southwest, Presbyterian Medical Center, 8230 Walnut Hill Lane, Suite 414, Dallas, TX 75231 (Dr. Birch).*

UREMIC OPTIC NEUROPATHY. DL Knox, AM Hanneken, FC Hollows, NR Miller, HL Schick, Jr., WL Gonzales. In six patients with severe renal disease manifested by uremia, anemia, and (in four patients) moderately or

severely elevated blood pressure. Vision loss progressing over several days, reduced pupil reactions to light, and swollen optic nerves were the clinical features. In two patients pale edema of the optic nerve head extended into the macula. One patient with renal transplant rejection was in the early phases of cryptococcal meningitis that went undiagnosed for two weeks. Medical management with hemodialysis was followed by improvement of vision in four patients. In one patient, resumption of oral corticosteroid therapy was followed by improvement in vision. The patient whose vision improved the most rapidly was managed by prompt use of both dialysis and oral corticosteroid therapy. The patient with cryptococcal meningitis did not recover vision. *(Arch Ophthalmol , 106:50-54, January, 1988.) Reprint requests to The Wilmer Institute, The Johns Hopkins Hospital, Baltimore, MD 21205 (Dr. Knox).*

CLINICAL SIGNS AND MEDICAL THERAPY OF EARLY *ACANTHAMOEBA* KERATITIS. TD Lindquist, NA Sher, DJ Doughman. The authors treated three patients who developed a dendritiform epithelial pattern seen early in the course of Acanthamoeba keratitis that likely represents epithelial infection by Acanthamoeba before any stromal involvement. In these three cases, the early diagnosis of Acanthamoeba keratitis coupled with wide epithelial debridement and medical therapy proved effective in eradicting the protozoan. In two additional cases, Acanthamoeba keratitis was not diagnosed until significant stromal involvement was present. Medical therapy was effective in eradicting the organism in one case, although penetrating keratoplasty was necessary for visual rehabilitation. In the other case, medical therapy was ineffective, as corneal perforation resulted and Acanthamoeba cysts were demonstrated by fluorescent staining in the host corneal button. *(Arch Ophthalmol 106:73-77, January, 1988) Reprint requests to Department of Ophthalmology, RJ-10, University of Washington. Seattle, WA 98195 (Dr. Lindquist).*

SURGICAL RESULTS IN IRIDO-CORNEAL ENDOTHELIAL SYNDROME. M Kidd, J Hetherington, S Magee. The authors reviewed the charts of 83 patients with iridocorneal endothelial (ICE) syndrome. Forty-two eyes of 42 patients had had filtering surgery, 37 of whom had had a trabeculectomy to reduce uncontrolled intraocular pressure. Twenty-four of these trabeculectomy patients required a second surgery, and 8 required a third surgery. The results are presented using a survival analysis. The success rates at one year of follow-up for the first, second, and third trabeculectomies were 64%, 79%, and 63%, respectively. Patients subclassified as having Chandler's syndrome, essential iris atrophy, and Cogan-Reese syndrome responded with approximately the same success rate within the first two years following their first surgery. The success reates for repeated surgeries are comparable with those of initial surgery in patients with primary open angle glaucoma. On the basis of this study, further surgery is recommended despite initial failure in this group of difficult patients. *(Arch Ophthalmol 106:199-201, February, 1988.) Reprint requests to the Foundation for Glaucoma Research, 490 Post St. Suite 1042, San Francisco, CA 94102 (Dr. Hetherington).*

EXCIMER LASER KERATECTOMY FOR MYOPIA WITH A ROTATING-SLIT DELIVERY SYSTEM. KD Hanna, JC Chastang, Y Pouliquen, G Renard, L Asfar, GO Waring III. The authors performed argon fluoride excimer laser (193-nm) superficial keratectomy for myopia on human donor eyes and on a resected corneal disc. The laser beam was shaped by a rotating slit to produce a circular ablation 7.5 mm in diameter, with a mathematically defined profile to correct myopia. The fluence at the surface of the cornea was 200 mJ/cm^2; the laser was fired at 20 Hz. Each 4.5-mJ laser pulse etched a 0.17-um deep image of the slit in the cornea. Since the slit moved (0.03 Hz), each successive pulse etched an area adjacent to the previous one, reducing damage from repetitive pulses striking the same area. The slit scanned the cornea many times and the summation of these individual ablations produced the smooth myopic ablation profile, as shown by computerized keratographs and light and electron microscopy. *(Arch Ophthalmol 106:245-250, February, 1988). Reprint requests to IBM Scientific Center, 36 av R Poincare, 75116 Paris, France (Dr. Hanna).*

MULTICENTER TRAIL OF CRYOTHER-APY FOR RETINOPATHY OF PREMATU-RITY. PRELIMINARY RESULTS. CRYOTHERAPY FOR RETINOPATHY OF PREMATURITY COOPERATIVE GROUP. The authors report the preliminary three-month outcome of a multi-center randomized trial of cryotherapy for treatment of retinopathy of prematurity (ROP). Transscleral cryotherapy to the avascular retina was applied in one randomly selected eye when there was threshold disease (defined as five or more contiguous or eight cumulative 30^0 sectors [clock hours] of stage 3 ROP in zone 1 or 2 in the presence of "plus" disease). An unfavorable outcome was defined as posterior retinal detachment, retinal fold involving the macula, or retrolental tissue. At this writing, 172 infants had been examined three months after randomization. An unfavorable outcome was

significantly less frequent in the eyes undergoing cryotherapy (21.8%) compared with the untreated eyes (43%). While the surgery was stressful, no unexpected complications occurred during or following treatment. These data support the efficacy of cryotherapy in reducing by approximately one half the risk of unfavorable retinal outcome from threshold ROP. *(Arch Ophthalmol 106:471-479, April, 1988). Reprint requests to CRYO-ROP Study Headquarters, Oregon Health Sciences University, Department of Ophthalmology, L467, 3181 SW Sam Jackson Park Rd, Portland, OR 97201 (Earl A. Palmer, MD).*

TWO-YEAR RESULTS OF REOPERATIONS FOR RADIAL KERATOTOMY. H Sawelson, RG Marks. The authors compared the two-year results of 320 radial keratotomy surgeries that did not result in reoperations with those of 67 cases that had reoperations. Follow-up was 76% for cases not reoperated and 79% for reoperated cases. Eyes that had reoperations averaged 2.2 diopters more initial myopia than eyes that did not have reoperations, and they averaged 43% myopia correction in the first surgery vs 84% for eyes that did not require reoperations; the reoperation corrected an additional 47% of residual myopia, for an overall 70% correction of myopia in the two surgeries. These results indicated that twice the desired effect of correction should be attempted in a reoperation to achieve the desired result. *(Arch Ophthalmol 106:497-501, April, 1988.) Reprint requests to 1450 S Miami Ave., Suite 202, Miami, FL 33130 (Dr. Sawelson).*

COMBINED EXCISION AND DRAINAGE WITH INTRALESIONAL CORTICOSTEROID INJECTION IN THE TREATMENT OF CHRONIC CHALAZIA. GA Epstein, AM Putterman. The authors surgically excised 146 chronic chalazia either with or without intraleslonal corticosteroid injections. Our results showed an 89% cure rate (79/88) for those chalazia surgically excised compared with a 96.6% cure rate (56/58) for those excised and treated with intralesional steroids as well. They treated an additional 149 chalazia using the combined technique of excision and steroidal injection for a total cure rate of 97.6% (202/207). Although complications were minimal for both groups, there appeared to be less edema and inflammation in the patients receiving the combined treatment. *(Arch Ophthalmol 106:514-516, April, 1988). Reprint requests to 111 N Wabash Ave., Suite 1722, Chicago, IL 60602 (Dr. Putterman).*

OPERATING MICROSCOPE-INDUCED RETINAL PHOTOTOXICITY DURING PARS PLANA VITRECTOMY. HR McDonald, MJ Harris. The authors treated two cases of retinal phototoxic damage created by the coaxial illumination of the operating microscope during vitrectomy surgery. These lesions were probably created at the end of the vitrectomy procedure, after intraocular manipulation had ceased. This critical period, while the sclerotomy sites were being closed, was estimated to last no longer than ten to 15 minutes. They recommend that the cornea be shielded during sclerotomy closure at the conclusion of those vitrectomy procedures with a clear liquid media and clear crystalline lens or pseudophakos. *(Arch Ophthalmol 106:521-523, April, 1988). Reprint requests to One Daniel Burnham Court, Suite 210, San Francisco, CA 94109 (Dr. McDonald).*

PROGRESSION OF NONPROLIFERATIVE DIABETIC RETINOPATHY FOLLOWING CATARACT EXTRACTION. GJ Jaffe, TC Burton. The authors saw eight patients who experienced progression of nonproliferative diabetic retinopathy following cataract extraction with placement of a posterior chamber intraocular lens, and in two patients, surgery was complicated by vitreous loss. In each case the retinopathy progressed to a severe exudative form of diabetic macular edema, characterized by diffuse retinal thickening and fluorescein leakage with increased dot and blot hemorrhages and lipid deposition. In all patients, clinically significant macular edema developed in the eye that had been operated on, and six patients received laser photocoagulation for this condition. Final visual acuity was worse than preoperative visual acuity in six of eight patients, and it was unchanged in two of six patients. No patient achieved a visual acuity better than 20/50. The fellow eyes, which were not operated on, remained stable during the follow-up period. *(Arch Ophthalmol 106:745-749, June, 1988.) Reprint requests to The Eye Institute, Medical College of Wisconsin, 8700 W. Wisconsin Ave, Milwaukee, WI 53226 (Dr. Burton).*

SURGICAL MANAGEMENT OF PREMACULAR FIBROPLASIA. LS Poliner, RJ Olk, MG Grand, RF Escoffery, E Okun, I Boniuk. The authors studied the results of pars plana vitrectomy and membrane peeling for premacular fibroplasia in 88 eyes of 86 patients for a minimum follow-up of 12 months. Premacular fibroplasia was idiopathic in 61 eyes (69%) and postdetachment in 27 eyes (31%). Visual symptoms of blurring and metamorphopsia were reduced in 75 (85%) study eyes at the end of the follow-up period. Poor visual outcome was significantly related to preoperative cystoid macular edema and prolonged duration of visual blurring. Posterior retinal breaks occurred n three eyes (5%) with idiopathic premacular

fibroplasia and five eyes (19%) with postdetachment. Cataract progression occurred in 35 eyes (48%) at 12 months of follow-up and 49 eyes (68%) at 24 months of follow-up, reflecting an incidence of cataract formation that has not been previously reported after limited vitrectomy and membrane peeling. *(Arch Ophthalmol 106:761-764, June, 1988). Reprint requests to Retina Consultants Ltd., Sutie 17413 East Pavilion, 4949 Barnes Hospital Plaza, St. Louis, MO 63110 (Dr. Olk).*

HOSPITALIZATION REQUIREMENTS AFTER VITREORETINAL SURGERY. RD Isernhagen, RG Michels, BM Glaser, S de Bustros, C Enger. The authors prospectively studied 200 patients undergoing vitreoretinal surgery to determine the postoperative hospitalization requirements and to analyze preoperative and intraoperative factors that influence the need for inpatient care. Fifty-two percent of the patients had postoperative events that were best treated in an inpatient setting. Forty-four patients (22%) had pain requiring intramuscular injections five or more hours following surgery, 35 patients (18%) had nausea requiring intramuscular medications five or more hours following surgery, 30 patients (15%) required physician consultation for medical illness five hours or more following surgery, and 41 patients (20%) required more than one postoperative day of hospitalization because of ocular abnormalities. They conclude that although vitreoretinal surgery can sometimes be performed on an ambulatory basis, most cases require hospitalization for optimum care. *(Arch Ophthalmol 106:767-770, June, 1988) Reprint requests to Maumenee 127, The Johns Hopkins Hospital, 600 N Wolfe St., Baltimore, MD 21205 (Dr. Michels).*

SELECTION OF CONTROLS FOR CLINICAL RESEARCH STUDIES IN OPHTHALMOLOGY. BS Hawkins. In this article, the author reviews epidemiologic principles for selection of controls for retrospective (case-control) and prospective (cohort) studies. Two related studies, a case-control study in which multiple control groups were employed and a 15-year cohort study of all cases and controls, provided an opportunity to compare controls selected at random from an ophthalmology practice with controls selected at random from the general population. Participation rates were higher among office patients selected for study, both in the case-control study and in the cohort study. In the cohort study, office controls were more likely to lose visual acuity and to develop new degenerative eye conditions. These differences between control groups selected from two different sources emphasize the need for careful evaluation of potential groups of controls with respect to biases that each may bring to interpretation of clinical research findings. *(Arch Ophthalmol 106:835-840, June, 1988) Reprint requests to Wilmer Clinical Trials and Biometry, 550 N Broadway, Ninth Floor, Baltimore, MD 21205 (Ms Hawkins).*

REEVALUTATION OF CORNEAL COMPLICATIONS AFTER CLOSED VITRECTOMY. H Chung, FI Tolentino, VN Cajita, J Acosta, MF Refojo. The authors analyzed corneal complications after closed vitrectomy in patients treated by the same surgeon from January 1980 through December 1986. Of 428 eyes (400 patients), 64 (15%) had corneal complications, 58 (13.6%) had epithelial defects, and 12 (2.8%) had corenal edema. Among 206 diabetic eyes, 41 (19.9%) had corneal complications. Of 222 non-diabetic eyes, only 23 (10.4%) showed complications. Diabetes, intraoperative lensectomy, and history of vitreous surgery were related significantly to the occurrence of all corneal complications. When compared with a previous study, improved preoperative surgical preparation and intraoperative technique to minimize corneal trauma accounted for significant decrease in these complications in the present series. *(Arch Ophthalmol 106:916-919, July, 1988). Reprint requests to Library, Eye Research Institute, 20 Staniford St., Boston, MA 02114.*

PSEUDORETRACTION OF THE EYELID IN THYROID-ASSOCIATED ORBITOPATHY. RS Gonnering. The authors saw two patients with previously stable thyroid-associated orbitopathy with the fairly sudden onset of apparent upper eyelid retraction in their nondominant eye, accompanied by asymmetry of the eyebrows, with elevation on the side without the eyelid retraction. No other signs of worsening of the orbitopathy were present, and instillation of 2.5% phenylephrine hydrochloride in the contralateral, dominant eye relieved the eyelid retraction and normalized the eyebrow position. At surgery, both patients were found to have levator aponeurogenic ptosis in the eyelid that appeared to be "normal". This occurrence is explained by Hering's law and should be considered in planning surgery to reestablish palpebral fissure symmetry in such patients. *(Arch Ophthalmol 1106:1078-1080, August, 1988). Reprint requests to 22600 N Mayfair Rd, Milwaukee, WI 53226 (Dr. Gonnering).*

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OPHTHALMOLOGICAL SOCIETY OF PAKISTAN

XII Congress at Karachi
February 23-25, 1989

The XII Congress of the Ophthalmological Soceity of Pakistan will be held on **February 23-25, 1989 in Karachi.** Speakers and participants are cordially invited from all parts of the world. Anyone interested in making a presentation should send the abstract(s) of his paper(s) to the **Chairman, Organizing Committee, Dr. Jamshed H. Wania, F.A.C.S.** The program of the XII Congress into following sections:

(1) **Pediatric Ophthalmology:** **a.** Genetically transmitted diseases and parental counselling; **b.** Strabismus and its Management; **c.** Management of Congenital Cataracts.

(2) **Neuro-Ophthalmology:** a. Diagnosis and Medical Therapy of Neuro-Ophthalmic Disorders; **b.** Role of an Ophthalmologist in assisting Neurosurgical Department with specific reference to "CAT SCANNING."

(3) **Lacrimal Drainage System:** **a.** Problems in Children; **b.** Problems in Adults; **c.** Recent Trends in Surgical Approach.

(4) **Management of Diabetic Ophthalmic Problems.**

(5) **Toxicity of Ophthalmic Drugs.**

(6) **Principles of Ultrasonography and its Ophthalmic Applications.**

In addition to these topic, free papers on Surgical and Medical Aspects of Ophthalmology will be welcome. Last Pre-Registrations date is December 31, 1988. For further details contact: **Dr. Jamshed H. Wania, F.A.C.S., Chairman, Organizing Committee, XII Congress, Room 1, Anklesaria Nursing Home, Karachi, Pakistan.**

Hong Kong Ophthalmological Society: Hong Kong Clinical Ophthalmological Symposium December 2-4, 1988

The Hong Kong Ophthalmological Society will sponsor the Hong Kong Clinical Ophthalmological Symposium, Dec. 2-4, 1988, in Hong Kong. For further information, write Patrick C.P. Ho, M.D., Chairman, c/o Secretariat Office, Exhibition and Convention Division, Room 810-814, Wing On Plaza, 62 Mody Road, Tsimshatsui East, Kowloon, Hong Kong.

XXVI International Congress of Ophthalmology March 18-24, 1990

The XXVI International Congress of Ophthalmology is scheduled for March 18-24, 1990, in Singapore. Arthur S.M. Lim, Singapore, is President of the Congress. For further information, write The Congress Secretariat, XXVI International Congress of Ophthalmology, c/o Department of Ophthalmology, National University Hospital, Lower Kent Ridge Rd., Singapore 0511.

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Ophthalmic "Pastpourri"

Earliest Recognition of Endothelial Function

As early as 1873, during his investigations on the interchange of liquid in the eye, Leber established that "the transparency of the cornea depends upon the integrity of the epithelium of Descement's membrane."

Leber, T. -1873

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Appreciation Acknowledgements

The following experts in their fields devoted their valuable time to review the manuscripts and provided most meritable help in the improvement of the standard and style of the material that was published in the FOURTH VOLUME of the Pakistan Journal of Ophthalmology (January 1988 to October 1988). Without their generous cooperation, the standard of The Journal could not have been maintained. We wish to express our deepest gratitude and indebtedness to them. -Editor.

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Frederick C. Blodi
Ali-ud-Din
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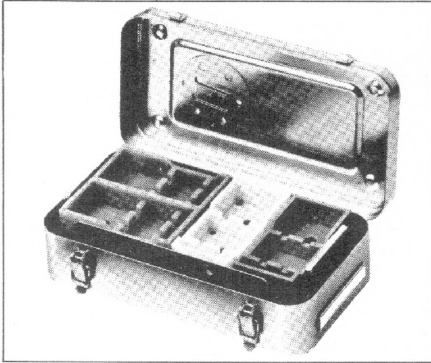

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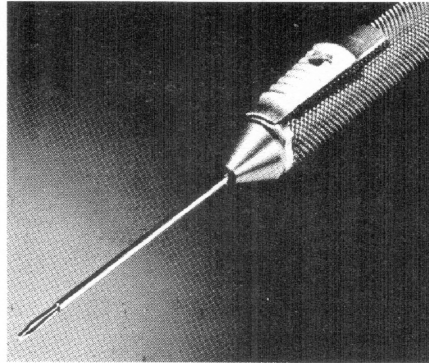

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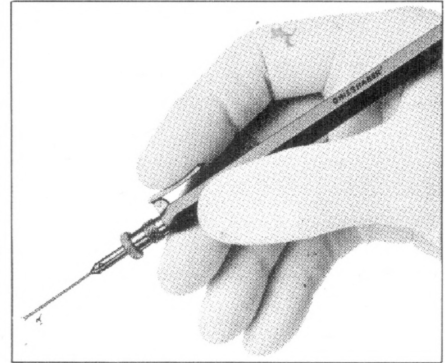

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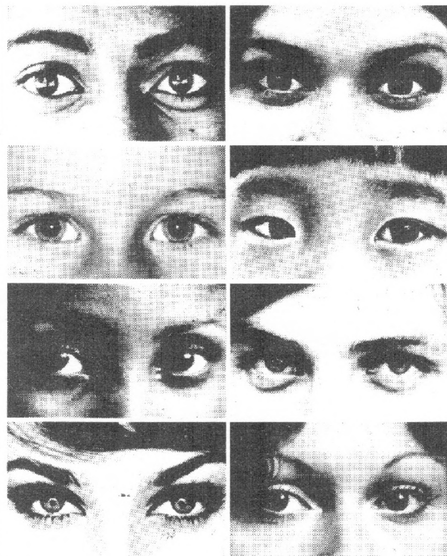

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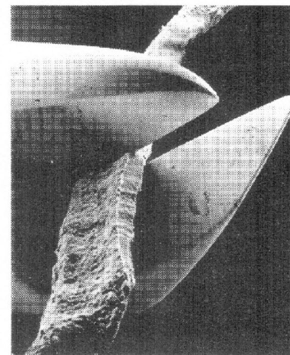

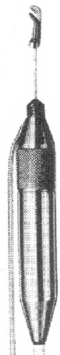

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