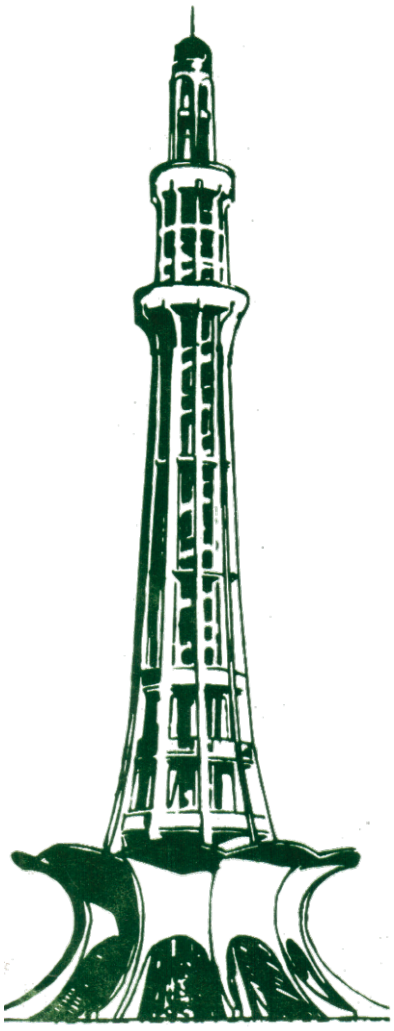
مجلہ طب العیون پاکستان

PAKISTAN JOURNAL OF OPHTHALMOLOGY

THE OFFICIAL JOURNAL OF THE OPHTHALMOLOGICAL SOCIETY OF PAKISTAN

VOL. 1 NO. 3 APRIL, 1985 PUBLISHED QUARTERLY



ISSN 0886-3067

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IN THE NAME OF ALLAH, THE BENEFICENT, THE MERCIFUL

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Volume 1 Number 3 April, 1985 شعبان ۱۴۰۵

ISSN-0377-7618

Contents

Publisher: Khalid J. Awan, M.D.

Manuscripts: Send manuscripts and all correspondence related to them to Khalid J. Awan, M.D., 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, $32.00 per year; Elsewhere U.S. $50.00 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.

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.

Publication and Editorial Staff:

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Typesetting: Lena Browning

Odds and Ends: Sohaib Awan, Musa Awan, and Maryam Awan.
Printed by: Norton Press, Inc., Norton, Va.

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PAKISTAN JOURNAL OF OPHTHALMOLOGY

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Original Article

Prevalence and Clinical Presentation of Retinoblastoma in the Northwest Frontier Province of Pakistan*

Zia-ul-Islam, F.R.C.S.

ABSTRACT: Retinoblastoma afflicted 86 children who visited the Eye Department of the Khyber Medical College, Peshawar, from 1978 to 1984. Of these, 62 were boys and 24 were girls. The youngest patient was a 9-month-old infant girl and the oldest was an 8-year-old boy. Bilateral to unilateral involvement ratio was 1:3. Proptosis or a fungating orbital mass was the most common presentation, occurring in 52 patients, followed by leukocoria in 33. Treatment included enucleation in 48 patients, irradiation alone in 26, and irradiation following enucleation in 15. Photocoagulation was tried in 3 patients. Author suggests that the incidence of retinoblastoma in the Northwest Frontier Province of Pakistan is higher than in the rest of the world. Most patients are brought to ophthalmologists at a more advanced stage of the disease. He stresses the need for a drive for public education and increased availability of sufficiently equipped treatment facilities with well trained medical staff throughout Pakistan. (Pak. J. Ophthalmol. 1: 111-122, 1985)

Retinoblastoma (still called glioma of the retina in some countries) is the commonest malignant intraocular tumor of the eye in infancy and childhood, and 90% of the cases are diagnosed before the age of 3.[1] The reported incidence varies between a high of one case in 14,000 births[2] to a low of one case in 34,000 births.[3] Although Reese[2] reported that 80% of cases of retinoblastoma were bilateral, the majority of authors place this figure at 30%.[1,2,4,5,6] Improved therapeutic methods have helped more patients to survive to the reproductive age. This appears to have also contributed to a higher incidence of retinoblastoma in areas of previously low incidence.[7] Although literature indicates no sex or race prevelance, the diffuse infilterating type of retinoblastoma is mostly seen in males.[5] In an overwhelming majority, the tumor appears sporadically. A small number of cases, which are usually bilateral, have family history. In familial cases the inheritance is autosomal dominant with an incomplete (about 60- to 90%) penetrance. The sporadic cases are mostly the result of a somatic mutation.

Unless the macula is involved, small retinoblastomas may go unnoticed. As the tumor grows, a peculiar white pupillary reflex called "Cat's Eye Reflex" or leukocoria develops. Leukocoria is the usual presenting sign of retinoblastoma.[4]

To learn about the prevalence of retinoblastoma and its modes of presentation in Pakistan, I conducted a study in our area of Northwest Frontier Province.

MATERIALS AND METHODS

The study was started in 1978, when a careful record of every patient of retinoblastoma seen in the Department of Ophthalmology of Khyber Teaching Hospital, Khyber Medical College, Peshawar, was kept for a future reference at the conclusion of the study. The study was concluded in 1984. A total of 86 cases of retinoblastoma were treated during this period (Table 2). As the followup of the cases was extremely poor due to a failure of parents to bring the children back for evaluation, the ultimate fate of most of these patient is not known. Hence, we concentrated on the analysis of

Accepted for publication March 11, 1985.

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* This study was partly funded by the Pakistan Academy of Medical Sciences.

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Table 1
Retinoblastoma in Northwest Frontier Province of Pakistan
(Total Cases 86)

Patient No.	Age	Sex	Geographic Area	Clinical Presentation	Duration In Years	Eye Involved	Treatment Given By Us
1	1 Yr.	F	Dil.K	Cat's Eye Reflex	2/12	Bilateral	Enucleation (L)
2	3 Yr.	M	Kabul	Proptosis	1/12	Right	Enucleation (R)
3	6 Yr.	M	Swat	Proptosis	5/12	Left	Enucleation (L) and Radiotherapy
4	3 Yr.	M	Pesh.	Proptosis	1 Yr.	Left	Enucleation and Radiotherapy
5	4 Yr.	M	D.I.K.	Proptosis	2/12	Bilateral	Enucleation (R) and Radiotherapy
6	4 Yr.	M	Pesh.	Proptosis	2/12	Left	Enucleation (L) and Radiotherapy
7	3½ Yr.	M	Swat	Fungating Mass	2/12	Left	Radiotherapy
8	3 Yr.	M	Gilgit	Proptosis	1 Yr.	Left	Enucleation
9	6 Yr.	M	Bannu	Uveitis/Complicated Cataract.	2/52	Right	Enucleation (R) Followed by Radiotherapy
10	4 Yr.	M	Bajawar	Fungating Mass	1/12	Left	Radiotherapy
11	4 Yr.	M	D.I.K.	Proptosis	20 days	Bilateral	Enucleation (R) 1 Year Ago
12	4 Yr.	M	D.I.K.	Recurrence	2/12	Bilateral	Radiotherapy
13	8 Yr.	M	Landi Kotal	Recurrence 1 Year After Enucleation	6/12	Right	Radiotherapy
14	4 Yr.	F	Bannu	Uveitis	2/12	Left	Enucleation
15	2 Yr.	M	Pesh.	Proptosis	4/12	Right	Enucleation
16	2 Yr.	F	Bannu	Cat's Eye Reflex	2½/12	Right	Enucleation
17	2 Yr.	M	Bannu	Uveitis/Complicated	6/12	Right	Died in Hospital
18	4 Yr.	F	Bannu	Fungating Mass	2/12	Right	Radiotherapy
19	1½ Yr.	M	RWP	Cat's Eye Reflex	R. 1/12 L. 6/12	Bilateral	Radiotherapy (R) Radiotherapy (L)
20	2 Yr.	M	Attock	Cat's Eye Reflex	2/52	Right	Enucleation (R)
21	6 Yr.	M	Bannu	Metastasis	10 days	Left	Enucleation followed by Radiotherapy
22	4 Yr.	M	Wanna	Proptosis	3/12	Left	Enucleation
23	2½ Yr.	F	Bannu	Proptosis	2/12	Left	Enucleation (L)
24	3 Yr.	M	Parachinar	Cat's Eye Reflex	3/12	Left	Enucleation followed by Radiotherapy
25	3½ Yr.	M	-do-	Recurrence	4/12	Left	Radiotherapy
26	1½ Yr.	M	Pesh.	Fungating Mass (R) Recurrence		Right	Radiotherapy
27	2½ Yr.	M	Chitral	Uveitis	6/12	Bilateral	Enucleation (L) Radiotherapy (R)
28	3 Yr.	M	Mardan	Cat's Eye Reflex	6/12	Bilateral	Bil. Enucleation
29	3 Yr.	F	Miran Shan	Proptosis Fungating Mass	4/12	Left	Enucleation (L) and Radiotherapy
30	3 Yr.	F	D.I.K.	L. Proptosis Recurrence	9/12	Bilateral	Enucleation (L) and Radiotherapy
31	2 Yr.	M	Bannu	L. Proptosis R. Fungating Mass	3/12	Bilateral	Radiotherapy
32	3½ Yr.	M	Landi Kotal	Uveitis/Proptosis	1 Yr.	Right	Enucleation (R)
33	4 Yr.	M	Pesh.	Recurrence	1 Yr.	Right	Enucleation (R) followed by Radiotherapy
34	4 Yr.	M	Pesh	Proptosis	6/12	Right	Enucleation (R) and Radiotherapy
35	4 Yr.	M	Pesh.	Recurrence	1/12	Right	Exentration
36	2 Yr.	M	Pesh.	Cat's Eye Reflex	2/12	Bilateral	Refused Enucleation Died in Hospital
37	3 Yr.	M	Miran Shah	Proptosis (L) Fungating Mass (R)	8/12	Bilateral	Enucleation
38	20 Mo.	M	Pesh.	Proptosis with Uveitis	3/12	Bilateral	Enucleation (R) Radiotherapy (L)
39	4 Yr.	M	Landi Kotal	Recurrence	6/12	Right	Radiotherapy
40	2 Yr.	M	Pesh.	Recurrence	6/12	Bilateral	Enucleation (R) Radiotherapy (L)
41	3 Yr.	F	Dir.	Fungating Mass	2/12	Left	Radiotherapy
42	2½ Yr.	M	Pesh.	Cat's Eye Reflex with Squints	6/12	Left	Enucleation (L)
43	8 Yr.	M	Mardan	Proptosis	3/12	Left	Enucleation (L)
44	4 Yr.	M	Parachinar	Cat's Eye Reflex (L) Proptosis (R)	5/12	Bilateral	Enucleation (R) Photocoagulation (L)

45	4 Yr.	F	Peshawar	Cat's Eye Reflex Proptosis	8/12	Right	Enucleation (R)
46	4 Yr.	M	Pesh.	Uveitis/Proptosis	5/12	Right	Enucleation (R)
47	3 Yr.	M	Mardan	Cat's Eye Reflex (R) Proptosis (L)	1 Yr.	Bilateral	Refused Surgery Died in Hospital
48	9/12 Yr.	F	Jamrud	Proptosis (R)	1/12	Right	Enucleation (R) and Radiotherapy
49	6 Yr.	M	Pesh	Recurrence	1/12	Right	Radiotherapy Expired
50	46 Yr.	F	Swat	Fungating Mass (L)	1 Yr.	Left	Radiotherapy
51	5 Yr.	M	Dir.	Proptosis (L)	1 Yr.	Left	Enucleation (L)
52	2 Yr.	M	Bannu	Cat's Eye Reflex (R)	1 Yr.	Right	Enucleation (R)
53	3 Yr.	M	Mianwali	Proptosis	2/12	Right	Radiotherapy followed by Enucleation
54	3½ Yr.	M	Dir	Fungating Mass (R)	3½/12	Right	Enucleation (R)
55	2 Yr.	F	Mardan	Proptosis (L)	8/12	Left	Enucleation (L) Radiotherapy
56	2 Yr.	M	Pesh	Fungating Mass (L) Cat's Eye Reflex (R)	1/12	Bilateral	Radiotherapy
57	2 Yr.	M	Pesh	Proptosis	4/12	Left	Enucleation (L)
58	2 Yr.	M	Pesh	Fungating Mass (R) Cat's Eye Reflex (L)	6/12	Bilateral	Radiotherapy
59	4 Yr.	M	Bannu	Proptosis	3/12	Right	Enucleation (R)
60	1½ Yr.	F	D.I.K.	Cat's Eye Reflex (L) Proptosis (R)	1 Year	Bilateral	Enucleation (R) Radiotherapy (L)
61	3 Yr.	F	Pesh	Proptosis	1/12	Right	Enucleation (R)
62	2½ Yr.	M	Pesh	Cat's Eye Reflex	3/12	Right	Enucleation (R)
63	4 Yr.	F	Bannu	Cat's Eye Reflex	3/12	Right (R)	Enucleation (R)
64	4 Yr.	M	Bannu	Recurrence	1 Yr.	Right	Radiotherapy
65	3 Yr.	F	Pesh	Cat's Eye Reflex (L) Proptosis (R)	5/12	Bilateral	Enucleation (R) Photocoagulation (L)
66	6 Yr.	M	Parachinar	Cat's Eye Reflex Proptosis	8/12 2/12	Right	Enucleation (R)
67	3 Yr.	M	Haripur	Cat's Eye Reflex with Uveitis	1 week	Right	Enucleation (R)
68	4 Yr.	M	Azad-Kashmir	Cat's Eye Reflex with Proptosis	1/12	Left	Enucleation (R) and Radiotherapy
69	3 Yr.	F	Bannu	R. Cat's Eye Reflex Proptosis L. Recurrence	1 Yr. 1/12	Bilateral	Photocoagulation (R) Radiotherapy (L)
70	4 Yr.	M	Mardan	Cat's Eye Reflex	5/12	Right	Enucleation (R)
71	1½ Yr.	M	Pesh	Cat's Eye Reflex	4/12	Left	Enucleation (L)
72	4 Yr.	F	Gilgit	Fungating Mass	2/12	Left	Radiotherapy (L)
73	4 Yr.	M	Mohammad Agency	Proptosis	1½ Yr.	Left	Enucleation Radiotherapy
74	2 Yr.	M	Kohistan	Cat's Eye Reflex Fungating Mass	3/12 1½/12	Left	
75	2 Yr.	M	Mardan	Cat's Eye Reflex Proptosis	3/12 2/12	Right	Enucleation (R)
76	4 Yr.	F	Bannu	Cat's Eye Reflex	2/12	Right	Enucleation (R)
77	1 Yr.	M	Mardan	Cat's Eye Reflex	4/12	Right	Enucleation (L)
78	4 Yr.	F	Mardan	Cat's Eye Reflex & Proptosis	1/12	Left	Enucleation (L)
79	2 Yr.	F	Pesh	Cat's Eye Reflex Proptosis	5/12 1/12	Left	Enucleation (L)
80	4 Yr.	F	Kohat	Cat's Eye Reflex	2/12	Right	Enucleation (R)
81	2 Yr.	M	Bannu	Cat's Eye Reflex (R)	1 Yr.	Right	Enucleation (R)
82	5 Yr.	F	Kohat	Recurrence	1¼ Yr.	Left	Radiotherapy
83	4½ Yr.	M	Orakzai	Proptosis	1 Yr.	Left	Radiotherapy (L)
84	2 Yr.	F	D.I.K.	Recurrence			Radiotherapy
85	3 Yr.	M	Orakzai Agency	Cat's Eye Reflex	1 Yr.	Right	Enucleation (R)
86	3 Yr.	M	Swat	Proptosis	2/12	Right	Enucleation (R)

prevalence, presentation, sex incidence, eyes involved, age of patient, duration of disease, area of residence, and therapeutic approach.

RESULTS

A synopsis of each patient's medical record is given in the Table 1. The distribution of cases according to area of residence followed no set pattern. Cat's eye pupillary reflex, the most common presenting sign of retinoblastoma, according to the literature, was seen in 33 patients. Fifty-six of the patients presented with either proptosis or with a fungating mass protruding from the orbit. Nearly 25% patients (20 out of 86) had both eyes involved. The annual average number of cases

seen in this relatively small area was 12.5. The sex and age distribution of cases is given in Table 2. It is interesting that none of the patients, except for three cases, was brought in for examination soon after the problem was noticed by the parents. The duration of the disease ranged from one month to as long as one year

Table 2
Retinoblastoma: Age and Sex Distribution
(Total Cases, 86)

Age in Years	Under 1	1-3	3-5	5-7	7-9	Total
Male	1	30	24	5	2	62
Female	2	12	10	0	0	24
Total	3	42	34	5	2	86

before medical care was sought (or was available). In 16 patients, the medical consultation was sought after one year. In 48 patients enucleation was performed; in 26, radiotherapy; in 3, photocoagulation; in 2, exentration; and in 3 no treatment. In 15 patients irradiation was given for recurrence following enucleation.

COMMENTS

The relative incidence of retinoblastoma in our country is higher than in the other parts of the world. Unfortunately, most of the patients are brought to ophthalmologists when the disease is very advanced. This is mainly due to poor public awareness and, partly, due to unavailability of properly trained specialists and sufficiently equipped treatment facilities throughout Pakistan.

DISCUSSION OF THE CURRENT STATUS OF RETINOBLASTOMA

Khalid J. Awan, M.D.

The history of retinoblastoma was that of misunderstanding and confusion until 1926, when Verhoeff suggested the term "retinoblastoma" for this tumor.[8] The first description of retinoblastoma was given by R. Hayes, a London surgeon, in 1765.[6] However, in 1864, it was named "glioma retinae" by Virchow[9] because of his erroneous impression that the tumor arose from the glial cells of the retina. Flexner,[10] in 1891, and Wintersteiner,[11] in 1897, described the now famous Flexner-Wintersteiner rosettes and named the tumor "neuroepithelioma retinae." Many other terms were also in use when The American Ophthalmological Society, accepting Verhoeff's recommendation, adopted: "That the term Retinoblastoma be hereafter used to designate the tumors heretofore designated as Glioma of the Retina, Gliosarcoma, Medullary Cancer of the Retina, Neuroepithelioma Retinae, Retinocytoma, etc." The term "retinoblastoma" did not gain an instant popularity, as is obvious by the fact that the American Journal of Ophthalmology continued indexing this tumor under "Glioma" for 20 years (from 1926 to 1946) following the decision of The American

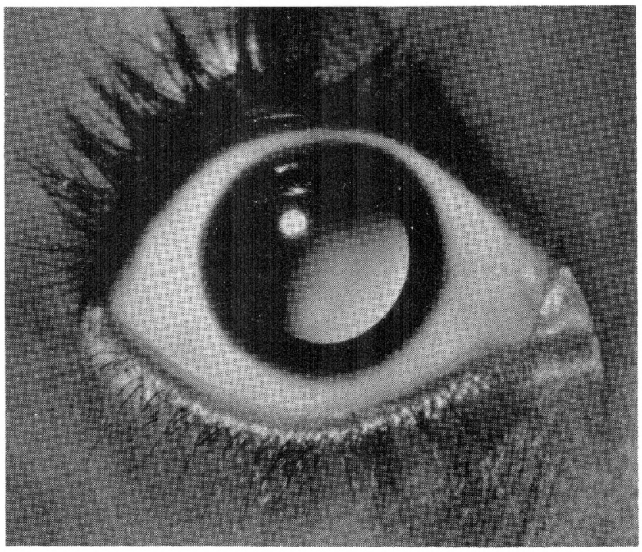

Figure 1A. (Awan): Right eye. Cat's eye pupillary reflex in retinoblastoma. No blood vessels are visible on this endophytic type of lesion.

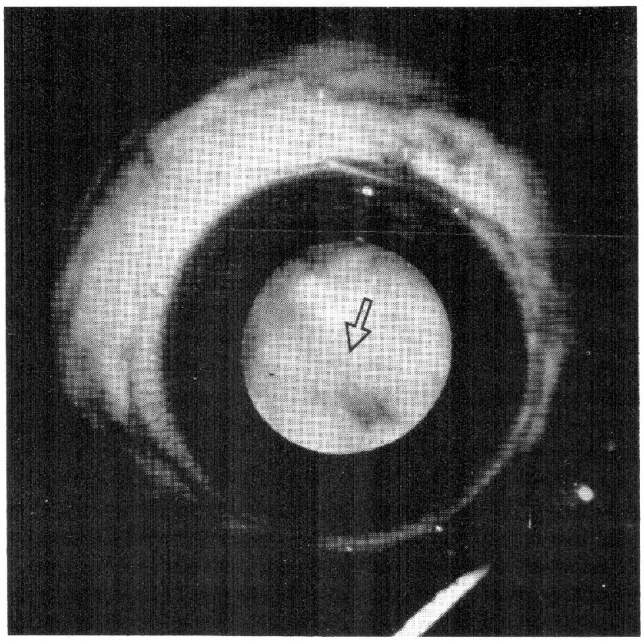

Figure 1B. (Awan): Leukocoria from retionblastoma. Note the blood vessels (arrow) in the detached retina that is being pushed forward by this exophytic tumor.

Ophthalmological Society, notwithstanding that Dr. Edward Jackson, the Editor of the journal, was a leading proponent of the term "retinoblastoma."[8] Many pathologists continue to classify the tumor into retinoblastoma, when it is composed of very undifferentiated cells; neuroepithelioma, when it has a large number of Flexner-Wintersteiner rosettes; and true glioma (astrocytoma).[12] The controversy that surrounded the origin of retinoblastoma was resolved in 1970, when it was demonstrated with electron microscopic studies that retinoblastomas are neuronal neoplasms rather than gliomas.[13, 14]

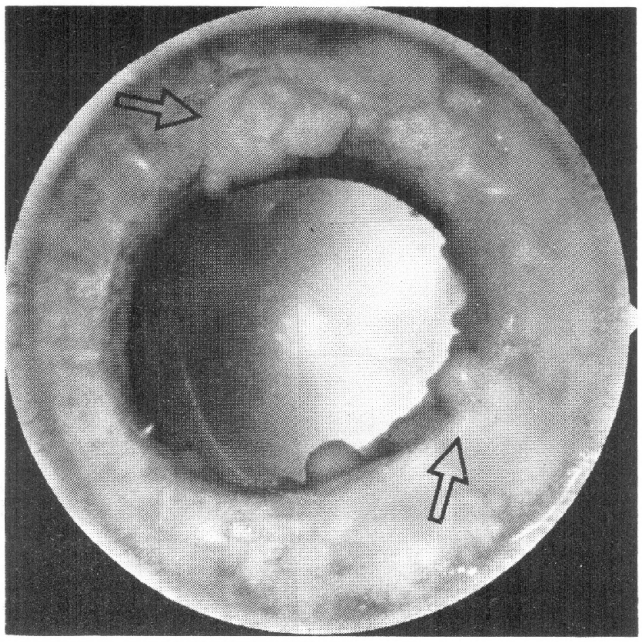

Figure 2. (Awan): Note the greyish iris nodules (arrows) of tumor seeding from an endophytic retinoblastoma. (From Shields, JA, and Augsburger, JJ: Current approaches to the diagnosis and management of retionblastoma. Survey of Ophthalmology 25:347-372. 1981. With permission of the author and the Survey.)

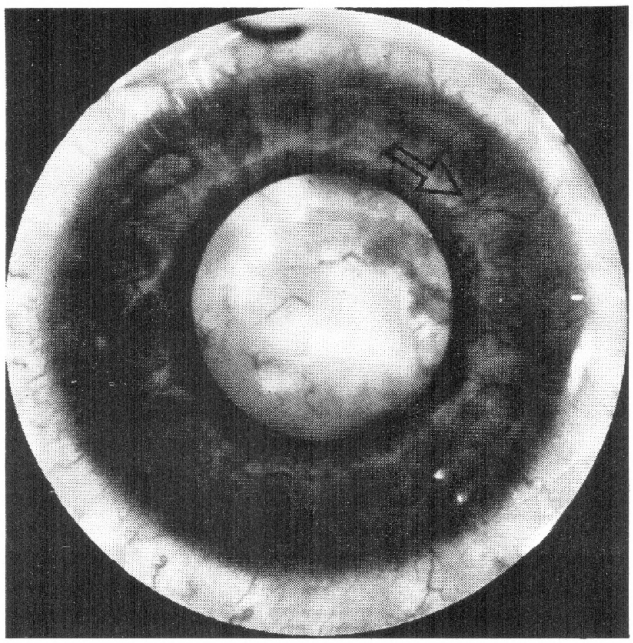

Figure 3. (Awan): Rubeosis iridis (arrow) in advanced retinoblastoma with secondary glaucoma. (From Shields, JA, and Augsburger, JJ: Current approaches to the diagnosis and management of retinoblastoma. Survey of Ophthalmology 25:347-372, 1981. With permission of the author and the Survey.)

CLINICAL FEATURES

The most common presentating sign, as mentioned in the literature, is a white pupil or leukocoria known as "cat's eye pupillary reflex" (Figure 1A and 1B). It is seen in about 60% of the patients.[4] This sign is noted when the tumor is still relatively small and when it has not extended beyond the vitreous cavity. It is important that people in Pakistan are made aware of its signifinance through public education. The eye with retinoblastoma is usually not red and is of normal size. In advanced stages the eye may become red due to inflammation from the necrotic tumor or secondary glaucoma. Strabismus may be the first presenting sign in 10- to 20% of the cases.[4] Hence, it is very important to dilate the pupils of young children with strabismus and perform indirect ophthalmoscopy. Glaucoma or loss of sight in a child under 4 should also alert the ophthalmologist to a possibility of retinoblastoma. In some cases the tumor may invade the anterior chamber as white foci of implantation growth on the iris (Figure 2). In Western countries, people seek medical advice very early; which in combination with ready availability of specialized medical care has made it extremely rare to see a child at the late stage of proptosis or an orbital fungating mass. The typical color of retinoblastoma is pale pink with cheesy white areas that appear like bumps. In the early stages when the tumor is small it may appear globular with many newly formed blood vessels on its surface and in its substance. The vitreous may contain tumor seeds varying from greyish white dustlike particles to large masses. About 1[15] to 1.8%[4] retinoblastomas undergo spontaneous regression. The features of a spontaneously regressed retinoblastoma are similar to the one successfully treated with irradiation. They include chalky white nodules with pigment clumping in the vicinity of a mass that appears sclerosed.[15] Because in some cases a strong hereditary factor may play a role, it is important to carefully investigate the family history.

Many unusual presentations of retinoblastoma include orbital cellulitis, spontaneous hyphema, heterochromia irides, granulomatous uveitis, endophthalmitis, and rubeosis iridis (Figure 3). It is safer to include retinoblastoma in the differential diagnosis when a child under 4 presents with any unusual ocular manifestation.

Ultrasonography is a very valuable adjunct in the diagnosis of retinoblastoma. The B-scan ultrasonogram shows numerous highly reflective focal echoes throughout the vitreous cavity in a diffuse tumor, and a well-delineated margin, acoustic solidity, and a more marked orbital attenuation in nodular tumors. The calcium foci within the tumor may be demonstrated by lowering the sensitivity (Figures 4 and 5). A scan shows high intensity internal reflections throughout the vitreous cavity in a diffuse tumor, and a high intensity initial spike from the anterior surface of the tumor in addition to high intesity internal reflectivity in a nodular tumor (Figure 6).[15]

X-rays of the orbit may demonstrate the calcium deposits in the tumor. However, the advent of ultrasonography and computerized tomography (CT scan) have replaced simple radiography (Figure 7). Nonetheless, radiography still has a place in Pakistan as a diagnostic tool. It must be kept in mind that other conditions that simulate retinoblastoma may also develop calcification. Hence, calcification has been found in advanced Coats's disease and nematode

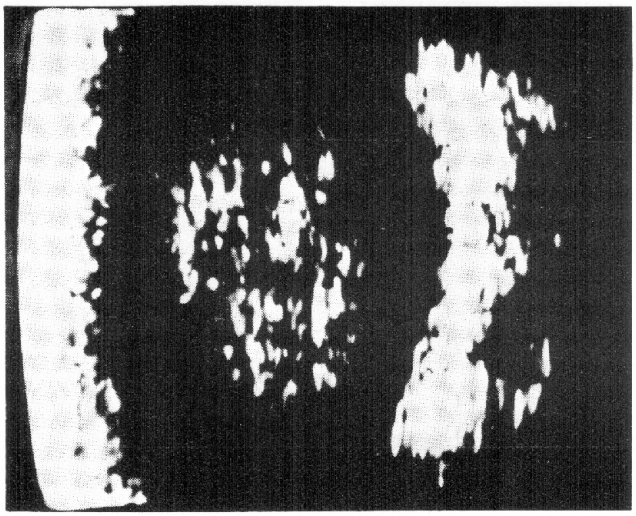

Figure 4. (Awan): Contact B-scan ultrasonograph of a diffuse retinoblastoma at 80 decibles. Note the highly reflective echoes within this lesion, suggestive of calcium deposits. (From Shields, JJ, and Augsburger, JJ: Current approaches to the diagnosis and management of retionblastoma. Surv. Ophthalmol. 25:347-372, 1981. With permission of the authors and the Survey.)

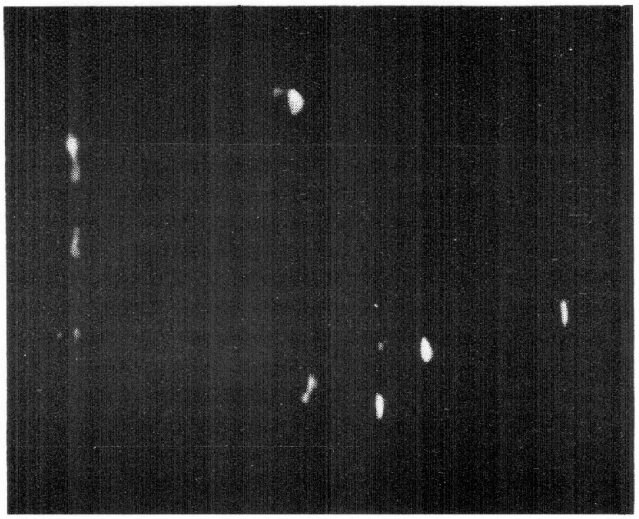

Figure 5. (Awan): Same eye as in Figure 4. When sensitivity if lowered to 40 decibles, the soft tissue echoes disappear leaving behind highly reflective echoes from calcium deposits. (From Shields, JA, and Augsburger, JJ: Current approaches to the diagnosis and management of retinoblastoma. Survey of Ophthalmology 25:347-372, 1981. With permission of the author and the Survey.)

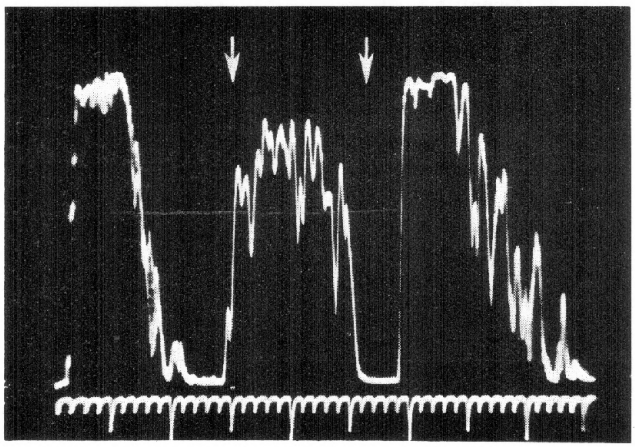

Figure 6. (Awan): An A-scan ultrasonograph. Note the high internal reflectivity within the retinoblastoma. The arrow to the left represents the anterior border of the tumor. The arrow on the right shows the dampening of echoes from the basal portion of the tumor. (From Shields, JA, and Augsburger, JJ: Current approaches to the diagnosis and management of retinoblastoma. Surv. Ophthalmol. 25:347-372, 1981. With permission of the author and the Survey.)

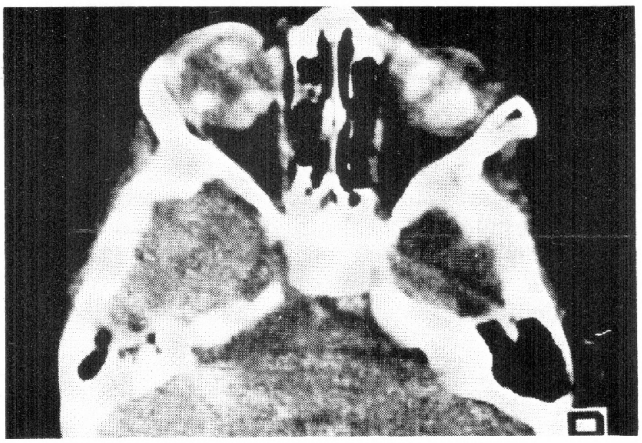

Figure 7. (Awan): A computerized tomograph (CT scan) of bilateral retinoblastoma. Note the three tumors in the left eye; two in the right. (From Shields JA, and Augsburger, JJ: Current approaches in the diagnosis and management of retinoblastoma. Surv. Ophthalmol. 25:347-372, 1981. With permission of the author and the Survey.) (Compliments of Dr. Anna Meadow to original authors).

endophthalmitis.[15] A CT scan, though helpful in the detection of some retinoblastomas, is too expensive, particularly when equally useful information may be obtained by more practical ultrasonography. The CT scan is, however, very useful in the detection of optic nerve involvement and extension of the tumor to the brain.

Fluorescein angiography is difficult to perform on children unless they are under general anesthesia. This technique may be helpful in demonstrating vascularity and viability of the tumor (Figures 8, 9 and 10). However, it is not essential for making a diagnosis of retinoblastoma.

DIFFERIENTAL DIAGNOSIS

Some authors have listed as many as 30 conditions that may be confused with retinoblastoma.[15] The most important among these are given in Table 3. Most of the conditions that are confused with retinoblastoma, called "pseudogliomas" or "pseudoretinoblastomas," have leukocoria as one of their clinical features; hence, the differential diagnosis of retinoblastoma is essentially a careful evaluation of leukocoria.

NEMATODE ENDOPHITHALMITIS OR LARVAL GRANULOMATOSIS (Figure 10): In one study, 26% of the patients suspected of having retinoblastoma had nematode endophthalmitis or ocular toxocariasis; 20% had persistent hyperplastic primary vitreous; 16% had Coats's disease; 8% had colobomas; 7% had cataracts; 5% had retinal detachment; 4% had retinopathy of prematurity (ROP or RLF); 4% had vitreous hemorrhage; and 10% had (one each) congenital retinoschisis, morning glory optic disc, myelinated nerve fibers, anterior uveitis of juvenile rheumatoid arthritis, peripheral uveitis, orbital cellulitis,

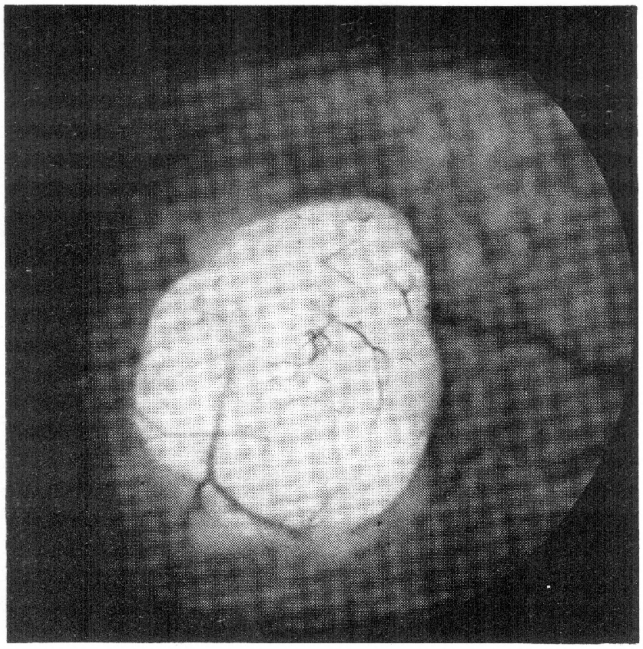

Figure 8. (Awan): Fundus photograph of a small retinoblastoma. Note the dilated irregular blood vessels on the surface of the tumor. (From Shields, JA, and Augsburger, JJ: Current approaches to the diagnosis and management of retinoblastoma. Survey of Ophthalmology 25:347-372, 1981. With permission of the author and the Survey.)

Table 3
Differential Diagnosis of Leukocoria*

1. Retinoblastoma
2. Nematode Endophthalmitis
3. Retinopathy of Prematurity (Retrolental Fibroplasia)
4. Persistent Hyperplastic Primary Vitreous
5. Coats's Disease
6. Cataracts (Traumatic or Congenital)
7. Chorioretinal Colobomas
8. Massive Myelinated Nerve Fibers
9. Retinal Dysplasia
10. Retinal Astrocytoma
11. Congenital Retinal Folds
12. Inflammatory Chorioretinal Scars
13. Congenital Retinoschisis or Retinal Detachment
14. Norrie's Disease

* For a more exhaustive listing, see Shields, JA, and Augsburger, JJ: Current Approaches to the diagnosis and management of retinoblastoma. Surv. Ophthalmol. 25:347-371, 1981.

astrocytoma, and choroidal hemangioma.[15] Wilder[16] first identified that larvae could cause a type of endophthalmitis that was often mistaken for retinoblastoma. Nichols[17] showed that these larvae were those of *Toxocara canis.* Ashton[18] described solitary retinal whitish tumors of dense scar tissue that formed when nematode larvae invaded the retina from the choroid. The ocular cysticercus cellulosae may also give a clinical picture that resembles *Toxcocara* granulomatosis and may be mistaken for retinoblastoma. The history of the child's association with puppies or dirt-eating and evidence of worms in the child or the animal are helpful clues. Enzyme-linked immunosorbent assay (ELISA) test done on serum or aqueous humor is positive in over 90% of patients with *toxocara* larval endopthalmitis and negative in retionblastoma.

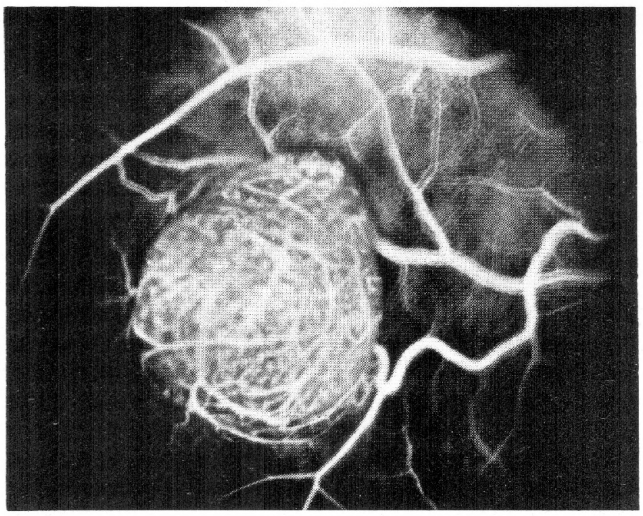

Figure 9. (Awan): Fluorescein angiograph of the tumor in Figure 8. Note a large number of capillaries and great vascularity. (From Shields, JA, and Augsburger, JJ: Current approaches to the diagnosis and management of retinoblastoma. Survey of Opthalmol. 25:347-372, 1981. With permission of the author and the Survey).

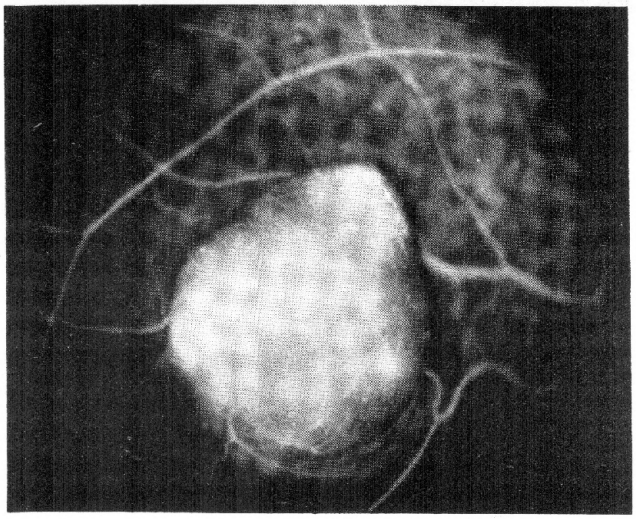

Figure 10. (Awan): Fluorescein angiograph of eye in Figure 8. Note the leakage of dye from the vessles within the tumor. (From Shields JA, and Augsburger, JJ: Current approaches to the diagnosis and management of retinoblastoma. Surv. Ophthalmol. 25:347-372, 1981. With permission of the author and the Survey).

RETROLENTAL FIBROPLASIA (RETINOPATHY OF PREMATURITY (Figure 12): It is easily identified from the history of prematurity and oxygen administration after birth. The lesion is bilateral and develops in eyes that are to some degree microphthalmic. Elongated ciliary processes at the periphery of the white mass are a feature that is never seen in retinoblastoma.[2] In RLF (ROP), the elongation of ciliary processes results from the pull of contracting scar tissue on the ciliary processes; whereas, in the persistent hyperplastic primary vitreous the ciliary processes are themselves abnormally long.

PERSISTENT HYPERPLASTIC PRIMARY VITREOUS (Figure 13): In a majority of cases this condition is unilateral and is recognized in full-term infants immediately after birth due to leukocoria. The long

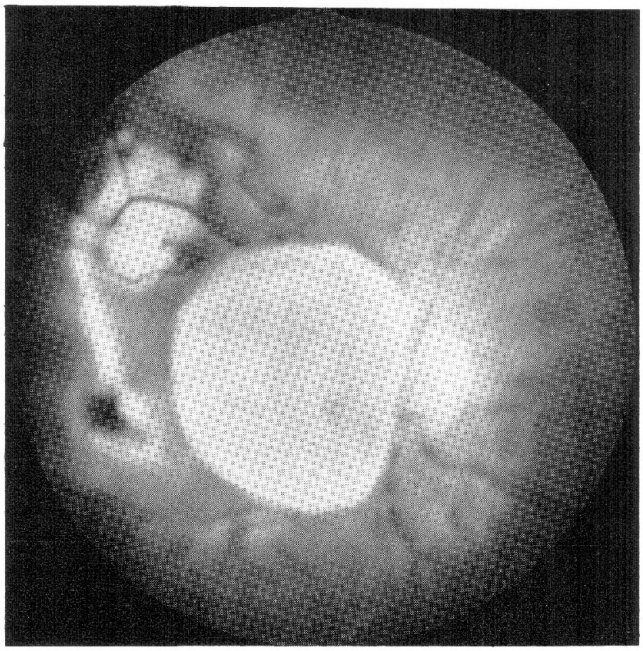

Figure 11. (Awan): Right eye. Nematode endophthalmitis (laraval granulomatosis) in a 6-year-old boy. The patient had "cat's eye reflex". The clinical features closely resemble the one reported by Ashton.[18]

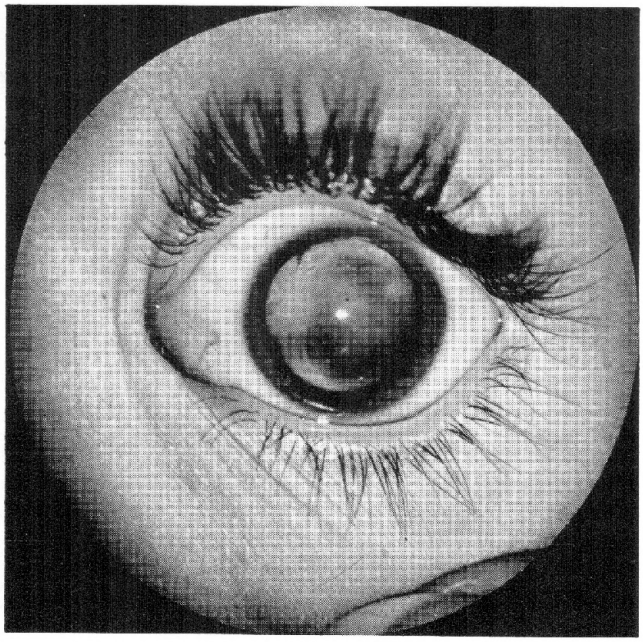

Figure 12. (Awan): Left eye. The child had bilateral retrolental fibroplasia (retinopathy of prematurity). History and the clinical features were typical for RLF (ROP).

ciliary processes at the periphery of the white retrolental mass may be helpful in diagnosis. These eyes are usually lost in childhood due to various complications. In rare instances, the eye with uncomplicated persistent hyperplastic primary vitreous may survive into adulthood.[19]

COATS'S DISEASE (RETINAL TELANGIECTASIS WITH EXUDATION) (Figure 14): Coats' first described this entity in 1908 as a form of "retinal disease with massive exudation."[20] In some of his cases no vascular telangiectatic abnormalities were present. The term Coats' disease is also applied to Leber's miliary aneurysms and to Reese's retinal telangiectasis. The disease is mostly unilateral and is mainly seen in young males. However, disease does occur in females, in adults, and in bilateral form. In children it appears to develop from heavy exudation in the subretinal spaces from retinal vascular abnormalities; whereas the adult form is associated with uveitis and hyperlipemia. The typical "light bulb" or "grape cluster" telangiectatic vascular abnormalities of the retina are seen. However, in some cases they might be located in areas not easily observable, and in many instances only fluorescein angiography may uncover these vascular abnormalities. The disease may remain stationary or may progress to total retinal detachment with a greenish hue of the retina due to massive subretinal hemorrhages.

Other conditions that may be confused with retinoblastoma include cataract, (congenital or traumatic) (Figure 15), chorioretinal colobomas (Figure 16), massive myelinated nerve fibers (Figure 17), retinal gliosis, large chorioretinal scars (Figure 18), retinal astrocytoma (Figure 19), retinal folds, trisomy 13-15 Norrie's disease, incontinentia pigmenti, metastatic endophthalmitis, congenital retinoschisis, and others.

HISTOPATHOLOGY

The histopathology of retinobastoma has been extensively studied and reported on.[2,5,6,10-15,21] Retinoblastoma presents three patterns of growth: (1) Exophytic type grows from the external nuclear layer and invades the subretinal space, pushing the retina in front of it, causing an extensive detachment of this structure. (2) Endophytic type arises from the inner layers of the neural retina and grows directly into the vitreous with seeding into it, in the anterior chamber, and on the iris. The retina remains attached and lies behind the tumor, and is difficult to see when the tumor is large. (3) Diffuse infliterating type is a rare variety that originates from the periphery of the retina. The retina is replaced and becomes slightly thickened. Usually no mass is seen, but continued discharge of malignant cells into the vitreous cavity and anterior chamber. The aspirate of hypopyon shows only malignant cells and no inflammatory cells. This variety of retinoblastoma is mostly seen in boys of 6-11 years old.

Macroscopically, the tumor is easy to identify. When the enucleated globe is sectioned, the tumor has the characteristics and typical appearance of chalky white, friable mass with yellowish-white areas of necrosis and dense foci of calcium deposits. The tumor may contain pink to brown areas of hemorrhage. A fine honeycomb appearance is characteristic.

Microscopically, retinoblastomas are intensely cellular tumors with very little supporting tissue, but a large number of blood vessels. Under lower

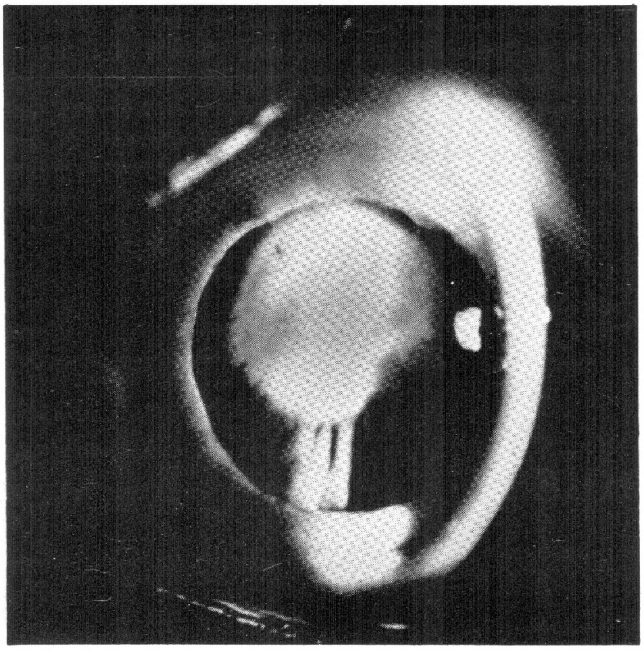

Figure 13. (Awan): Left eye. Persistent hyperplastic primary vitreous. A slit lamp photograph showing white scar tissue in pupillary area and the elongated ciliary processes. Other eye had normal vision.

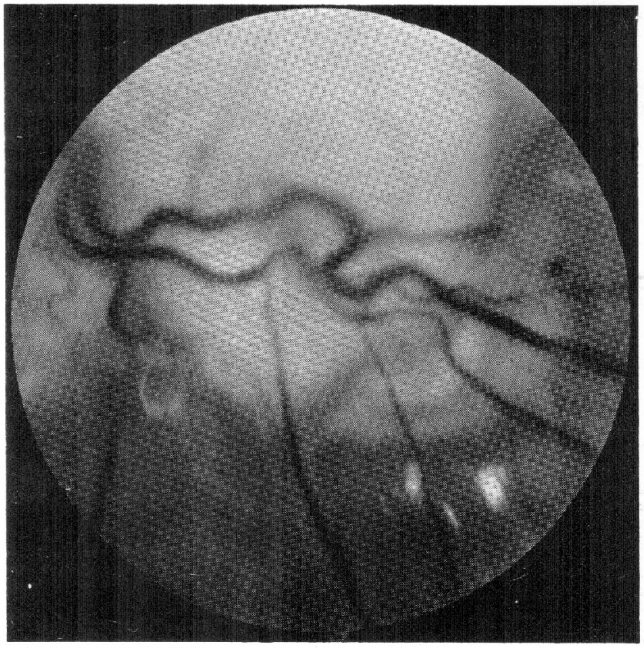

Figure 14. (Awan): Coats's disease in a 7-year-old boy. The condition was unilateral and there were typical vascular abnormalities in the retina further away from the lesion.

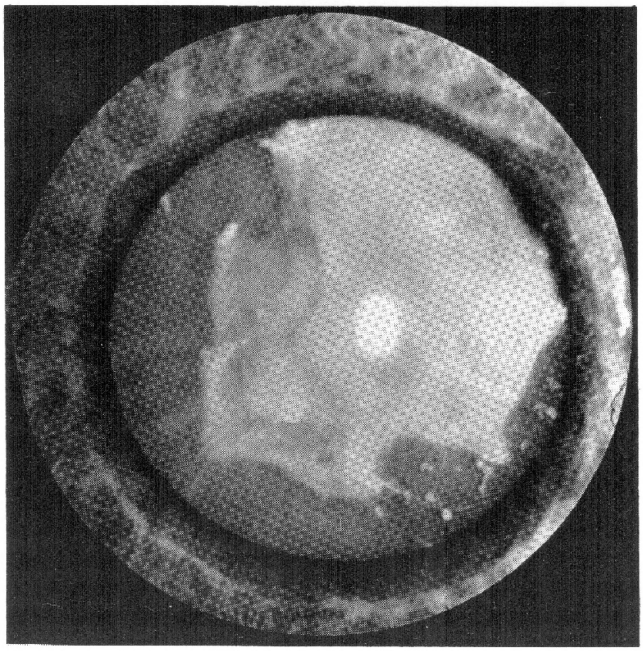

Figure 15.(Awan): A traumatic cataract in the right eye of a 5-year-old boy who was hit in the eye with a rock at age 3. Leukocoria like this may also result from a congenital cataract.

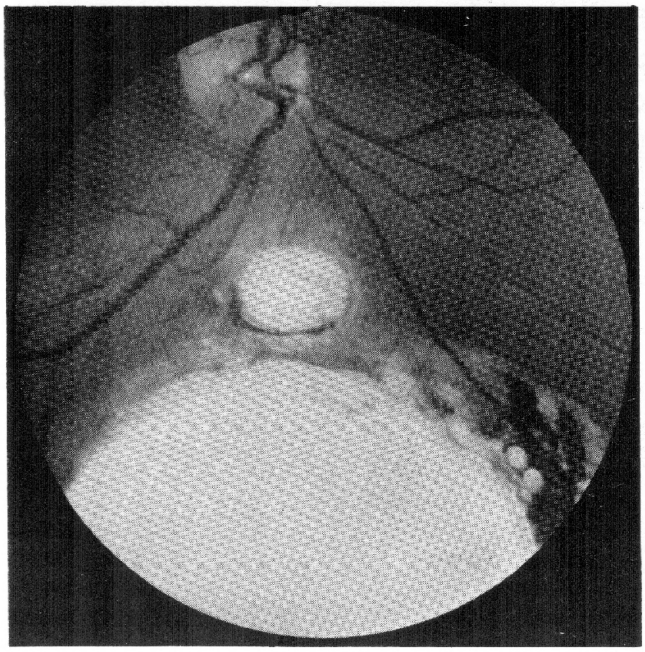

Figure 16. (Awan): Right eye. Typical large chorioretinal coloboma in an 8-year-old girl with "cat's eye reflex."

magnification, the tumor is made up of basophilic masses with eosinophilic areas of necrosis, which in turn may contain intensely basophilic foci of calcification. Cytologic picture depends on the degree of differentiation. The highly anaplastic tumor consists of small to medium-sized round cells with large hyperchromic nuclei and very little cytoplasm. There are a large number of mitotic figures. The more differentiated retinoblastomas show some evidence of the tumor's failed attempt at photoreceptor formation. The (Figure 20A) cells may lie in circles around clear central lumens called Flexner-Wintersteiner rosettes.[10,11] The central cavity of the rosette is demarcated by a fine limiting membrane, a finding that is considered *sine qua non* of the retinoblastomas.[5] This feature is more

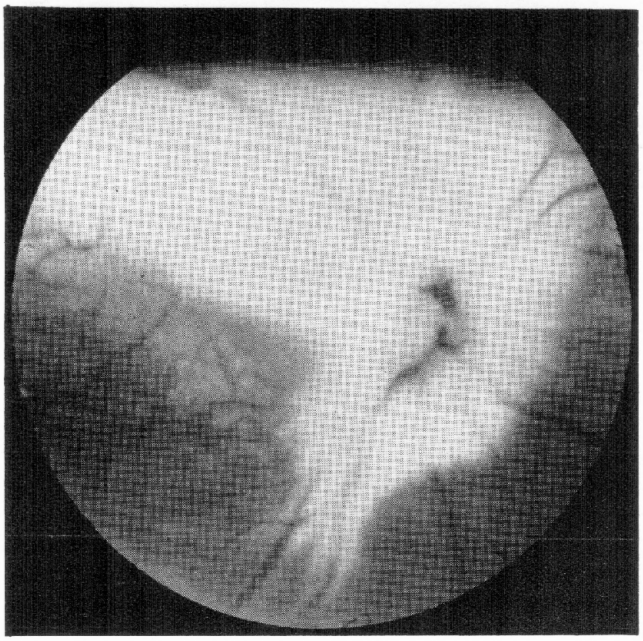

Figure 17. (Awan): Right eye. Massive myelinated nerve fibers in a 4-year-old boy that caused "cat's eye reflex" that caused concern in parents. The vision was also low in this eye.

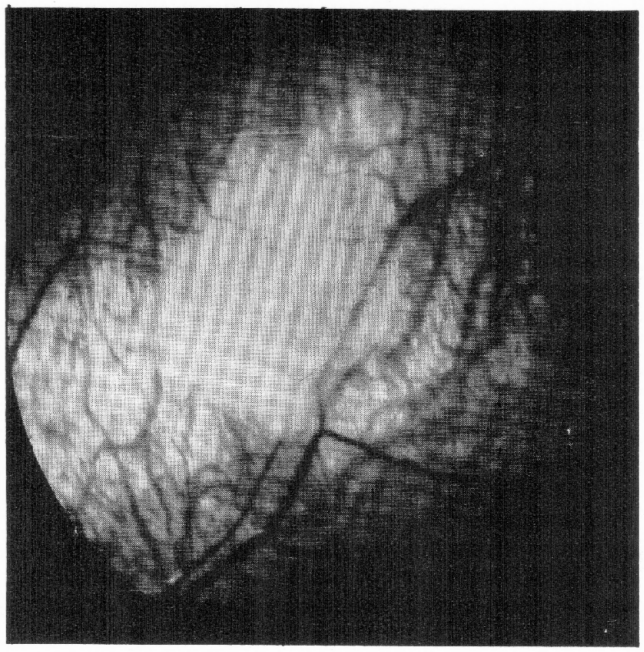

Figure 19. (Awan): Retinal astrocytoma in a 6-year-old girl with proven tuberous sclerosis. In the absence of other features of tuberous sclerois these astrocytomas may be difficult to differentiate from small retinoblastoma

characteristic of neuroepitheliomatous retinoblastomas. A confusing term "pseudorosette' has been applied to describe cells that merely encircle one of the nutrient vessels of the tumor, and are usually seen in the areas of necrosis. In some tumors, cells form long cell processes which project through a fenestrated membrane into an extracellular space, producing structures resembling elements of the photoreceptor cell. Because these cell processes fan out from the

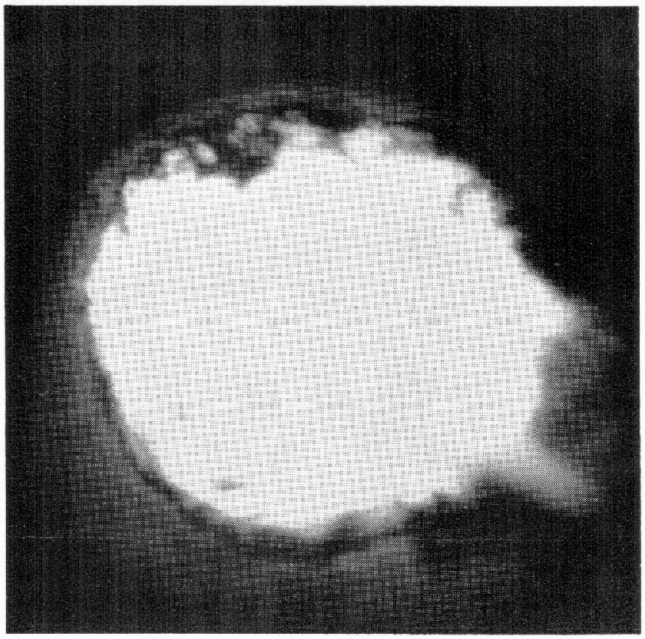

Figure 18. (Awan): A large chorioretinal scar giving rise to leukocoria.

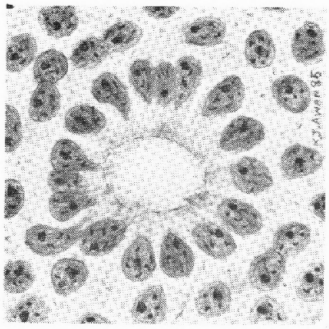

Figure 20A. (Awan): A Flexner-Wintersteiner rosette. It is a major feature of neuroepitheliomatous retinoblastomas and indicates differentiation.

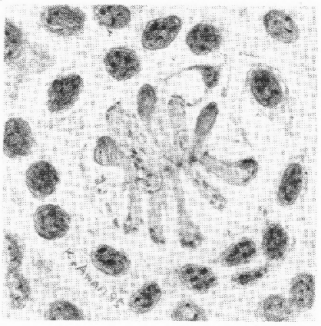

Figure 20B. (Awan): A Fleurette. It is a feature of highest differentiation in retinoblastoma. Tumors entirely made up of fleurettes are almost benign.

fenestrated membrane like a small bouquet of flowers, they have been named "Fleurettes."[13,14] (Figure 20B). These attempts at differentiation indicate a decreased anaplasticity of the tumor and a better prognosis for the patient.

The degree of differentiation in retinoblastomas is greatly variable from patient to patient, a fact that is of highest importance in determining the prognosis. For many years, the French have used the term "retinocytoma" for the most highly differentiated tumors, the ones with large numbers of Flexner-Wintersteiner rosettes and "fleurettes."[22] Fluerettes represent an even higher differentiation than the

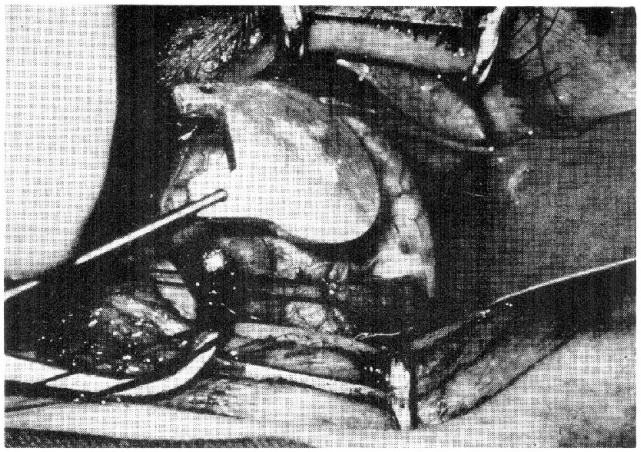

Figure 21. (Awan): Cobalt plaque irradiation may be used for retinoblastomas that are 6mm to 15mm in diameter on A-scan ultrasonography, and are located more than 3mm away from the optic disc and fovea. Here the cobalt plaque is being sutured to sclera. (From Shields, JA, and Augsburger, JJ: Current approaches to the diagnosis and management of retinoblastoma. Surv. Ophthalmol. 25:347-372, 1981. With permission from the author and the Survey.)

Flexner-Wintersteiner rosettes. Recently, a group of American writers emphasized that term "retinocytoma" should be restricted to those tumors that are composed entirely of fluerettes.[23] A clinical counterpart of retinocytoma has been described under the name "retinoma" by some authors.[24] The "retinoma" is clinically characterized by a small, translucent, often partially calcified tumor with still patent feeding vessels and pigmentary changes in or around it in an eye with clear media and no retinal detachment.

Retinoblastomas grow along the optic nerve to invade the brain. However, extension to the other eye via the optic chiasm does not occur. In bilateral cases, and in an eye with multiple lesions, the tumor arises from the separate primary foci. When the choroid becomes involved, blood-borne metastases may frequently result in skull and other bones; less often the viscera and the muscles become involved. A direct extension to the orbit and its bony structures also occurs.

THERAPEUTIC APPROACHES

PUBLIC EDUCATION AND GENETIC COUNSELLING: It is very important that public education about the early signs and the late consequences of retinoblastoma be carried out at a large scale in Pakistan. This will bring the patients to physicians early, with resultant better prognosis. Also, research and therapeutic ophthalmologic centers with adequately trained staff are direly needed. Genetic counselling is an importnat aspect of the overall management of retinoblastoma. Healthy parents with one affected child have a chance of 6% to have another affected child. If two siblings are affected, this risk rises to 50%. Almost all bilateral cases are due to genetic mutation, and any survivor has a 50% chance of transmitting the gene to his children. A detailed information about genetic aspects of this cancer will help the parents and the child, if he survives to the reproductive age, to determine proper family planning.

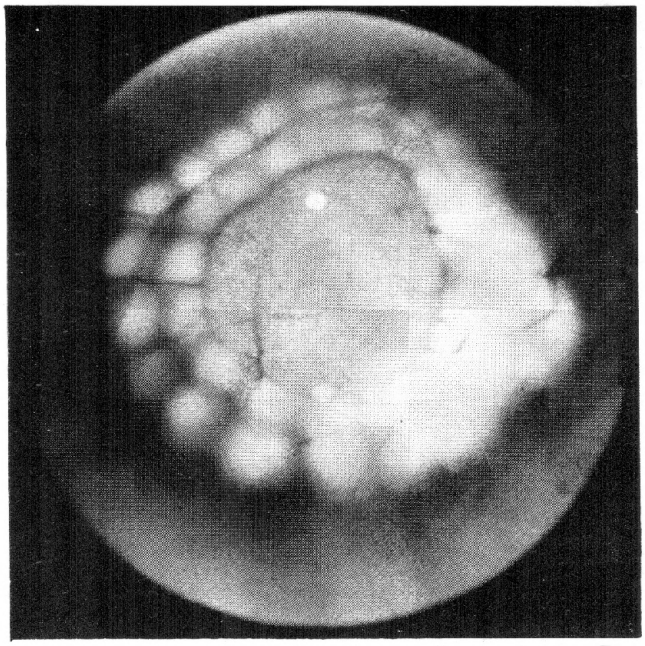

Figure 22. (Awan): Photocoagulation of retinoblastoma shown in Figure8. Two rows of Xenon photocoagulation spots surround the tumor. (From Shields, JA, and Augsburger, JJ: Current approaches to the diagnosis and management of retinoblastoma. Surv. Ophthalmol. 25:347-372, 1981. With permission from the author and the Survey.)

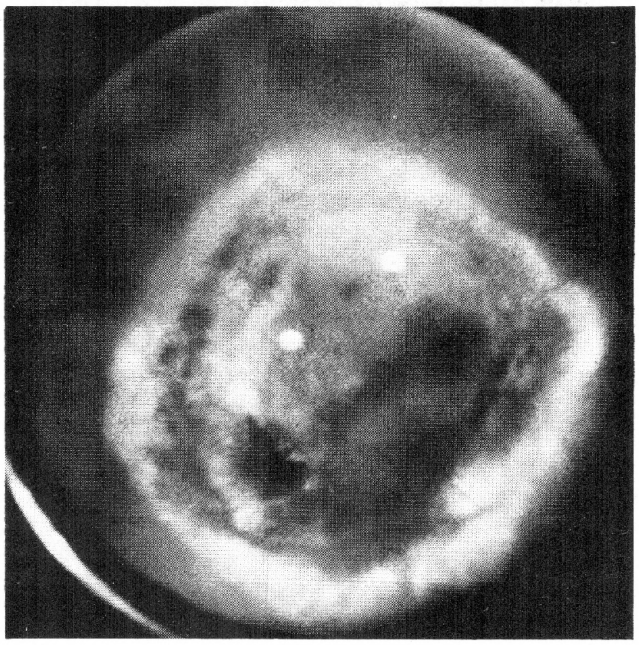

Figure 23. (Awan): Same eye as in Figure 21. Three months following Xenon photocoagulation the tumor has regressed. (From Shields, JA, and Augsburger, JJ: Current approaches to the diagnosis and management of retinoblastoma. Surv. Ophthalmol. 25:347-372, 1981. With permission from the author and the Survey.)

ENUCLEATION: Enucleation still remains the best approach to a unilateral retinoblastoma in Pakistan. In Western countries, other modalities are used to save the eye if the tumor is small and the vision is not badly affected. All blind eyes with a suspected retinoblastoma

should be enucleated without unnecessary delay. It is important that a long section of the optic nerve be obtained whenever enucleation is performed. The sectioned end of the optic nerve must be carefully evaluated at the operating table, and if possible, a pathologist's opinion sought before the surgery is concluded. In bilateral cases, the eye with more advanced disease should be removed. However, if both eyes are blind, both of them should be removed to save patient's life. Some authorities believe that enucleation is unnecessary in most cases.[20] This may be practical in countries where modern therapeutic modalities are easily available, and where followup of patients is merely a matter of routine. However, under the current circumstances it is not applicable in Pakistan.

IRRADIATION: Retinoblastomas are highly radiosensitive tumors. This fact and the tremendous improvement in the radiotherapeutics has made external irradiation a strong alternative to enucleation. In many carefully selected cases it is the treatment of choice. In the United States a linear accelerator technique utilizing gamma rays via an anterior and/or lateral portal is employed. About 4,000 rads in divided doses in three weeks is regarded as optimum.[25] Some authorities use a cobalt beam unit to irradiate the whole eye.[20] The regression of the tumor is judged by a shrinking white cottage cheese-like calcified mass with pigmentary changes at the border, or a translucent, pinkish mass like the flesh of a fish. Both of these appearances may be seen simulanteously.[21] It is, however, very difficult to say absolutely that there are no viable cells left behind in a treated lesion. Complications include cataract, radiation retinopathy, dry-eye syndrome, orbital fat atrophy with enophthalmos, optic atrophy, and, many years later, the irradiation induced malignancies. The irradiation of a localized retinblastoma may be achieved by an episcleral suturing of a radioactive cobalt plaque that is removed after 4,000 rads have been delivered (Figure 21).[15]

PHOTOCOAGULATION AND CRYOTHERAPY: Xenon arc photocoagulation and cryotherapy have been found reasonably effective in the treatment of small and well circumscribed retinoblastomas. In photocoagulation, one or two rows of burns strong enough to close the blood vessels in the retina surrounding the tumor are used (Figures 22 and 23). In cryotherapy, the freezing is done to a degree that the tumor and the retina around it become white. A triple freeze-thaw technique is used.[15] There are no major complications from these methods of treatment, but retinal hemorrhages, and chorioretinal neovascularization may develop.

CHEMOTHERAPY: It should be carried out in conjunction with a pediatrician who has some experience in the use of chemotherapeutic drugs. Chemotherapy is, of course, needed in the treatment of recurrent or metastatic disease. Cyclophosphamide 30 mg/kg and vincristine 0.05 mg/kg are given intravenously every three weeks for one year.

In many cases, a combination of all the methods of treatment described above may be needed to properly control the tumor spread.

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Acknowledgement

Thanks are due to Khalid J. Awan, M.D. whose guidance and help was instrumental in the preparation of this paper.

Original Research

Giant Cells Attached to Vitreous Structures: in association with recurrent hemorrhaging

J. Reimer Wolter, M.D.

ABSTRACT: Macrophage action in recurrent minor vitreous hemorrhage may lead to the formation of rather persistent vitreous giant cells. These typically contain hemosiderin and lipid remnants of phagocytosed blood and they are attached to and encapsulated by condensed vitreous structures. To demonstrate the principles of the cytopathology of this reactive process under typical conditions is the purpose of this paper. (Pak. J. Ophthalmol. 1: 123-126, 1985)

INTRODUCTION

The functions of macrophages (blood monocytes) are essential for the clearing of optically obstructive hemorrhages from the normally clear fluid spaces of the inner eye.[1] It is the purpose of the present paper to demonstrate the formation of isolated giant cells in and on vitreous structures as part of this clearing process in a typical case of slight, but recurrent intraocular bleeding.

Case Report

This 24-year-old white female has a history of total blindness in her right eye since birth. Her left eye is normal. Combined congenital cataract and glaucoma were diagnosed in her early childhood. The patient was told by her parents that several operations were done on the right eye at that time to control the glaucoma. The operations were successful and the blind eye caused no significant difficulties. However, a change in the situation occurred about two years ago. The blind right eye spontaneously developed an episode of pain, redness, and irritation. The discomfort eased after a week or two, but following that first disturbance the patient has had similar episodes of redness and pain every few months. The last episode started about two weeks before the patient was seen in this Department.

The examination on April 10, 1984 revealed blindness in the right eye and vision of 20/15 and J O in the left. Exotropia and hypotropia in the right eye were associated with enlargement of the horizontal corneal diameter to 13,5 mm. Scarred breaks of Descemet's membrane, peripheral anterior synechiae, and a dense cataract were seen in the right eye with the slit lamp. The intraocular pressure was 27 mm Hg. No view of deeper parts of the right eye was possible. The patient was using Timoptic .5% bid and Pilocarpine 2% tid - and she had already tried other glaucoma drops

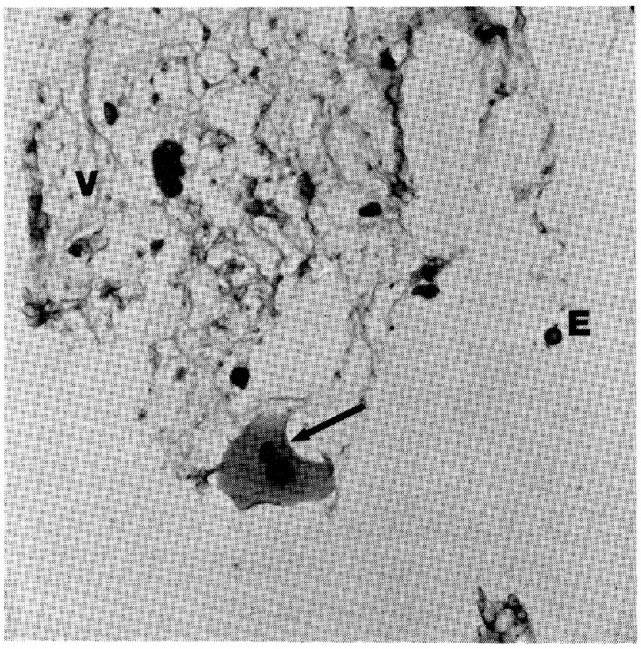

Figure 1. (Wolter): Coarse vitreous structures (V) with more or less degenerated erythrocytes (E) and a large macrophage containing a well preserved erythrocyte in its protoplasm (arrow). - Paraffin section, H and E stain, X 300.

Accepted for publication February 13, 1985.

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Supported by the Research to Prevent Blindness, Inc. New York, N.Y.

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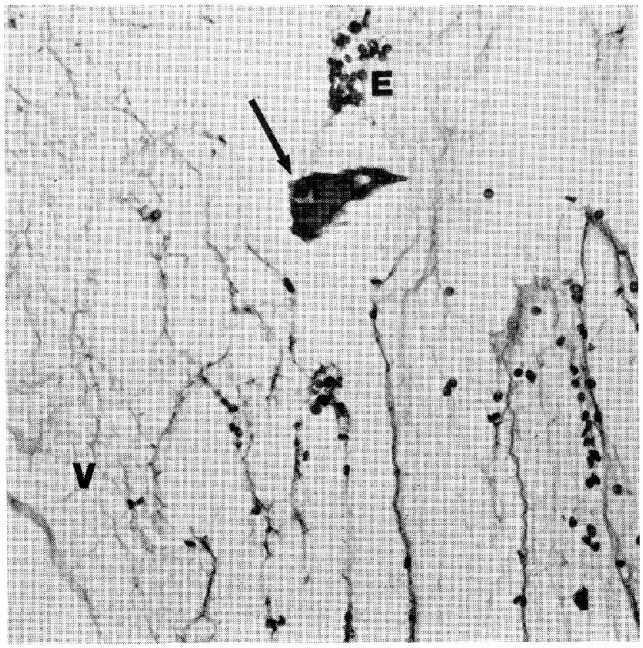

Figure 2. (Wolter): Coarse vitreous structures (V) with diffuse erythrocytes (E) and free giant cell containing phagocytosed erythrocytes in its protoplasm (arrow). - Paraffin section, H and E stain. X 150.

without significant relief. Enucleation of the blind right eye was done under general anesthesia on May 1, 1984 and the eye was fixed in buffered 10% formalin.

The eye measured 33x26x26 mm and was opened in the horizontal plane. The anterior chamber was formed and the lens was represented by a dense white membrane. Posterior vitreous detachment was associated with vitreous retraction. The retracted vitreous was grossly clear.

Microscopic study showed the typical changes of corneal involvement in buphthalmus. The filtration angle was closed by scarring associated with peripheral anterior synechiae on one side and by congenital deformation on the other. The iris showed diffuse atrophic changes. The lens exhibited plaque-like massive fibrosis of the anterior lens epithelium and congenital malformation as well as early degeneration of lens fibers with spotty calcification. The ciliary body also exhibited irregular atrophic changes as well as some diffuse mononuclear infiltration, but there was no neovascularization. Spotty accumulations of blood were found on the inner surface of the pars plana of the ciliary body.

The retracted vitreous had rather coarse vitreous strands and contained thin layers of slight and irregular vitreous hemorrhage in the interspaces (Figs. 1-4). The posterior vitreous face was very well preserved (Figs. 3 and 6). Single macrophages were seen occasionally (Fig. 1) in the retracted vitreous along with blood remnants and preserved erythrocytes. Some of the macrophages were enlarged and contained blood remnants: lipid spaces and hemosiderin. Others exhibited in their protoplasm whole and rather well preserved phagocytosed erythrocytes (Fig. 1).

Giant cell formations were found as isolated units in and on this retracted vitreous. They were of two types: active free-floating formations of irregular shape with diffuse distribution of their nuclei in the center of areas with vitreous hemorrhage (Fig. 2) and more inactive giant cells of round shape attached to vitreous structures or peripheral retinal surface (Figs. 3-6). Well developed giant cells of round shape were attached to peripheral portions of the posterior surface of the detached and retracted vitreous (Figs. 3-5). These giant cells had several rows of nuclei on the outer aspect of their protoplasmic pool. They contained lipid spaces as well as hemosiderin and typically had no nuclei on their inner aspect towards the vitreous body. The outer vitreous membrane was interrupted in the region of the fully developed giant cells. But small giant cells were seen on the outer surface of a continuous outer

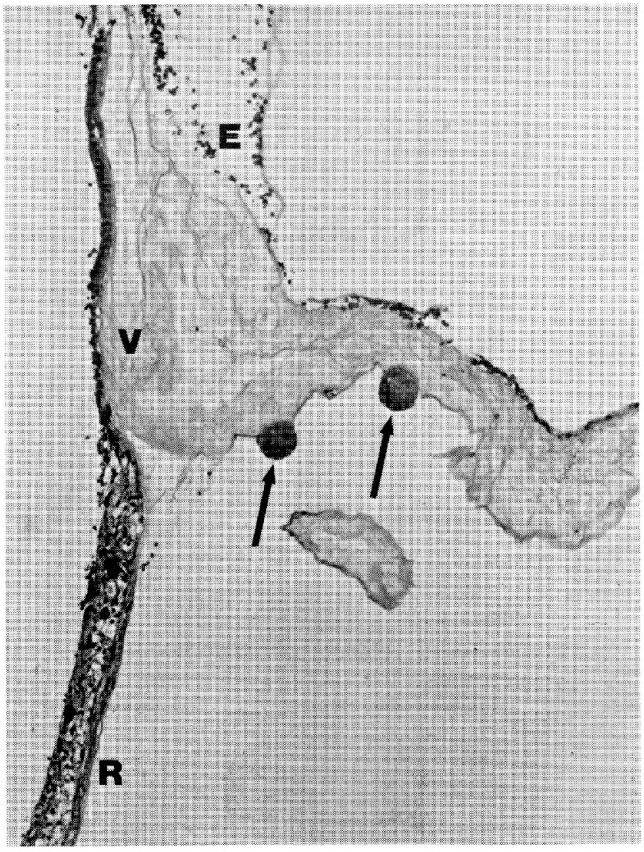

Figure 3. (Wolter): Vitreous base (V), peripheral retina (R), erythrocytes in vitreous (E), and two sessile giant cells (arrows) incorporated in detached outer vitreous face. - Paraffin section, H and E stain. X 90.

vitreous face (Fig. 5). Larger giant cells with hemosiderin and lipid spaces in their protoplasm were also attached to the surface of the peripheral retina (Fig. 6). The nuclei in the giant cells on the retinal surface were, as a rule, of a rather irregular distribution in the giant cell protoplasm (Fig. 6).

The retina exhibited the advanced atrophy of its inner layers that is typical for a late stage of glaucoma. This was associated with deep glaucomatous cupping and atrophy of the optic nerve. Pigment epithelium and choroid were unremarkable. The sclera exhibited diffuse thinning. A pathological diagnosis of buphthalmus caused by incomplete development of the anterior chamber angle associated with congenital cataract was made. Vitreous retraction and slight vitreous hemorrhage were considered part of the secondary changes found in this eye.

DISCUSSION

The present case was selected for this demonstration because of the clinical history of a limited amount of recurrent bleeding into its otherwise undisturbed vitreous with a relatively simple resulting pathological situation. It is assumed that each episode of clinically observed pain and irritation was associated with a limited vitreous bleeding. This assumption is supported by pathological facts, but it cannot be proved. The hemorrhages were limited to the vitreous space and did not involve the anterior chamber. Mild chronic cyclitis and a shrinking vitreous were associated. A thin layer of blood was accumulated on the pars plana

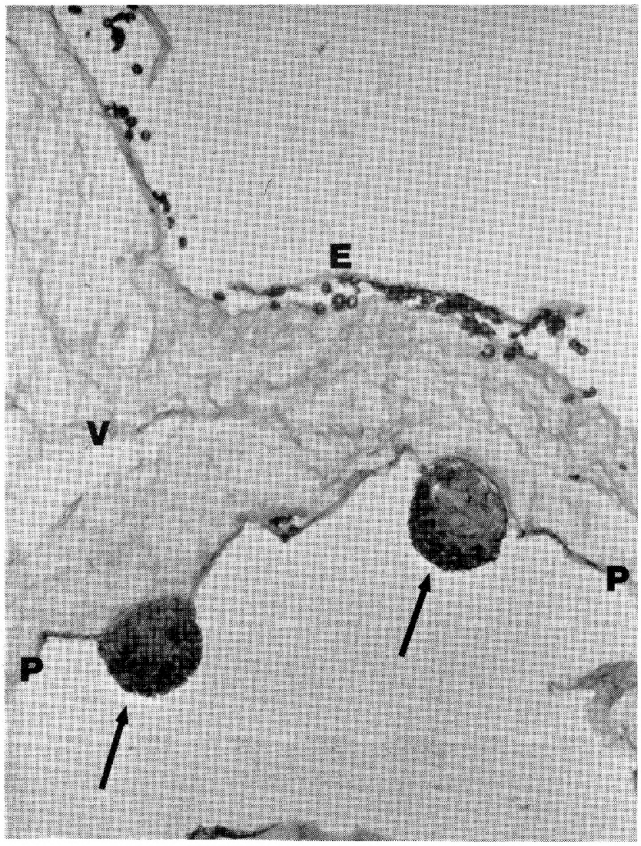

Figure 4. (Wolter): Higher power of giant cells (arrows) seen in posterior vitreous face (P) in Fig. 3. V: vitreous, E: erythrocytes - Paraffin section, H and E stain, X 300.

of the ciliary body - not on the retina. Preretinal scarring or neovascularisation were not found.

Small and recurrent hemorrhages into the vitreous space or into the anterior chamber of the eye - also sometimes known as microhemorrhages[2] -are common in situations with chronic inflammation, scarring, degeneration, and irritation of adjacent ocular structures. Rubbing of lens implants on parts of the iris has been used as an explanation for these hemorrhages after lens implantation,[3] and a so-called visual white-out due to bleeding into the fluid spaces next to lens implants is a relatively common associated clinical occurrance. Small amounts of blood in these fluid spaces do not cause much trouble and clear without difficulties, when they occur once or only a few times at large intervals. Repeated bleeding even of small amounts, however, can result in a complicated and chronic reactive process of clinical significance.

Blood monocytes are attracted by the continuous presence of blood in the vitreous - probably by the way of diffusing blood degeneration products. They leave blood vessels of iris, ciliary body, or retina, turn into free-moving macrophages, and enter the vitreous space.[1] By the way of phagocytosis these macrophages remove blood and blood remnants from the vitreous and deliver these to the vicinity of superficial vessels on the inner surface of the ocular wall.[4] Re-phagocytosis of the substance liberated by degenerating debris-filled macrophages is common in this process.[4] Liquified remnants, finally, reach the blood stream and are removed. Some blood remnants, however, cannot easily be changed into water soluable substances by the macrophages: lipids and hemosiderin, for example. In cases with a history of continuous vitreous bleeding, free floating giant cells form and serve as storage units for those substances that cause difficulties for the digestive abilities of macrophages.

Giant cells of macrophage origin form either by fusion of free-moving macrophages. Or they develop by nuclear division within one protoplasmatic pool.[5] Both of these processes can be combined and additional macrophages can move in and out of the giant cell protoplasm without becoming part of the common protoplasmatic pool.[5] The impression is that macrophages can deliver undigestible substances to giant cells.[6] Resembling foreign body giant cells in structure and function, giant cells with the poorly digestible substances in their protoplasm may stay around in the vitreous for long periods of time.

It is well known that "the presence of blood exerts severe destructive effects on the gel structure of the vitreous" and that this "includes liquifaction and formation of prominent bands."[7,8] The fact that giant

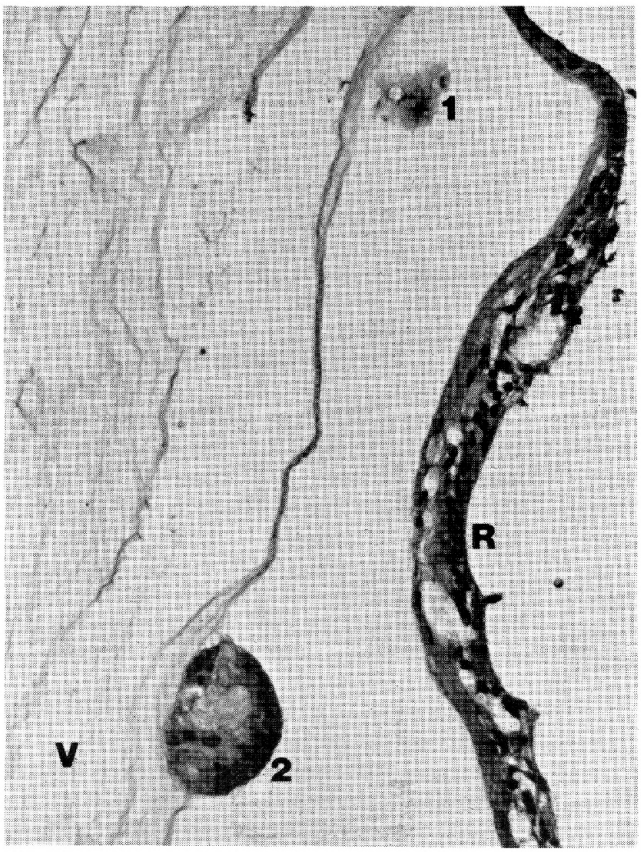

Figure 5. (Wolter): Free giant cell with blood remnants (1) in space between detached vitreous (V) and peripheral retina (R). Larger giant cell (2) as part of detached posterior vitreous face. - Paraffin section, H and E stain, X 300.

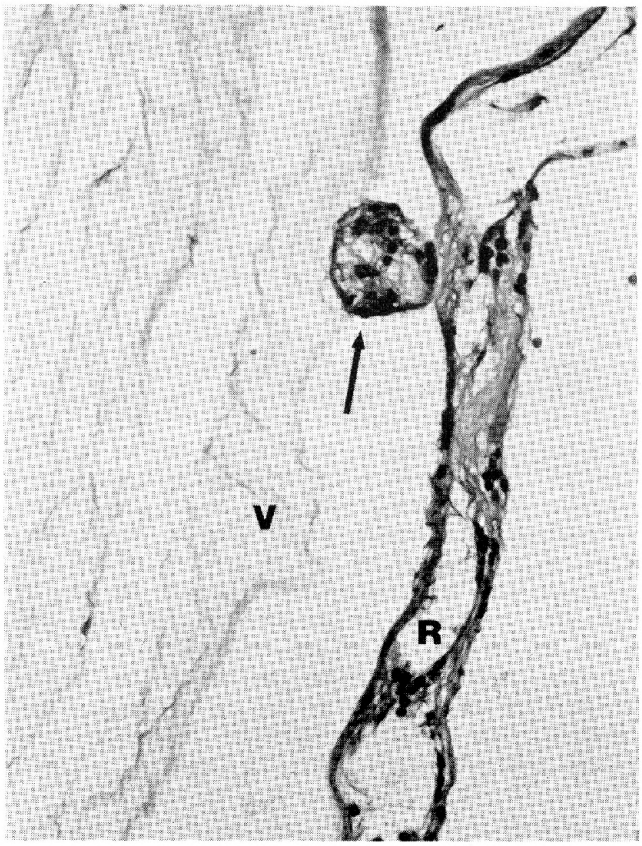

Figure 6. (Wolter): Larger giant cell with blood remnants (arrow) attached to peripheral retina (R) and posterior vitreous face (V). - Paraffin section, H and E stain, X 300.

cells with blood remnants may become encapsulated and turn out to be rather permanent components of these prominent vitreous bands as well as of the detached posterior vitreous face may be a new observation in the present case. The difference between new-formed active giant cells in contrast to inactive old giant cells with a capsule of vitreous origin is quite distinct.

Some of us thought that free-moving macrophages in the vitreous have to wait for the break-down of erythrocytes, before they can phagocytose their debris. Review of histological sections of eyes with vitreous hemorrhages, however, has revealed evidence for the presence of phagocytosed erythrocytes in macrophages in many cases. Sessile macrophages on lens implants, furthermore, exhibit an accelerated potential for phagocytosing whole erythrocytes under clinical and experimental conditions.[9,10] But it has also been shown, in some cases, that erythrocytes can be present in the vitreous for long periods of time in some cases and that they can come close to completing their normal life time in the vitreous without being phagocytosed.[11]

The present case report serves as an example to show that free-moving macrophages in the human vitreous are able to phagocytose whole erythrocytes - even in situations with only very slight bleeding. It also allows for the demonstration of free giant cells taking part in the digestion process of phagocytosed erythrocytes as well as sessile giant cells containing blood remnants presenting as firmly encapsulated long-term components of condensed vitreal or retinal structures. All of these details are important not only for a complete understanding of basic intraocular cytopathology, but also for consideration in all intraocular tissue engineering that involves the vitreous.

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Ophthalmic "Past-Pourri"

Sympathetic Ophthalmitis - Cause and Prevention

"It is not necessary to remove the exciting eyeball, if by exsection of a piece of the optic nerve we can remove the bridge by which the inflammatory process may travel from the injured eye to the non-injured eye. I claim that a neurectomy (optic) properly performed is a better protective than enucleation."

Professor C. Schweigger of Berlin
ON RESECTION OF THE OPTIC NERVE. Arch. Ophthalmol. 14:223, 1885

Camera Clinicals

Edited by: Khalid J. Awan, M.D.

In this section of the Journal, photographic documentations of interesting and challenging observations will be presented to the readers. They should make their diagnoses from the given information and compare these with the ***expositions*** *given on page 147 — Editor.*

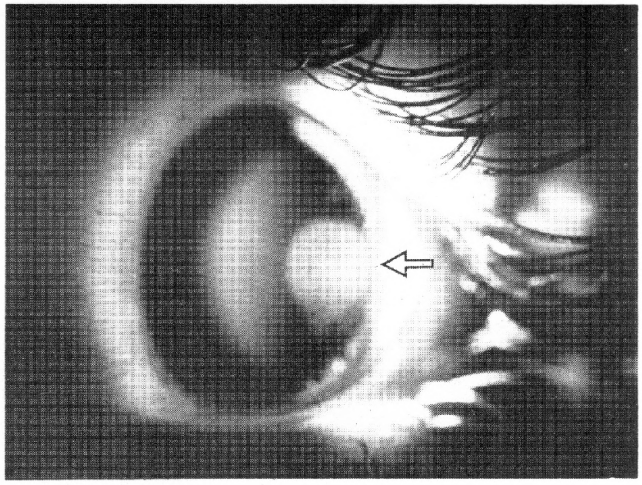
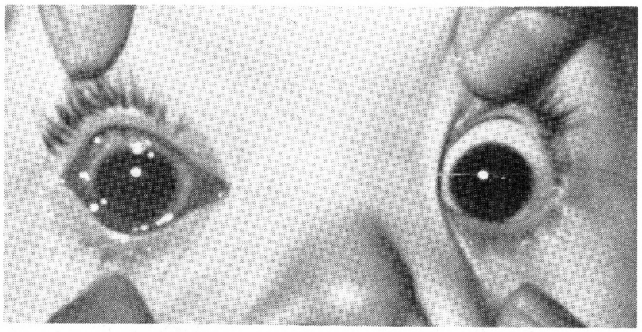


Figure 1 (Awan)



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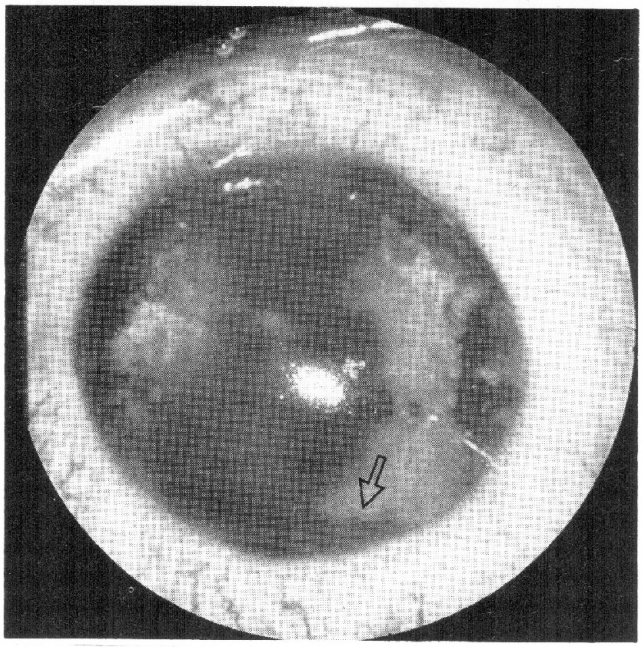


Figure 4 (Awan)

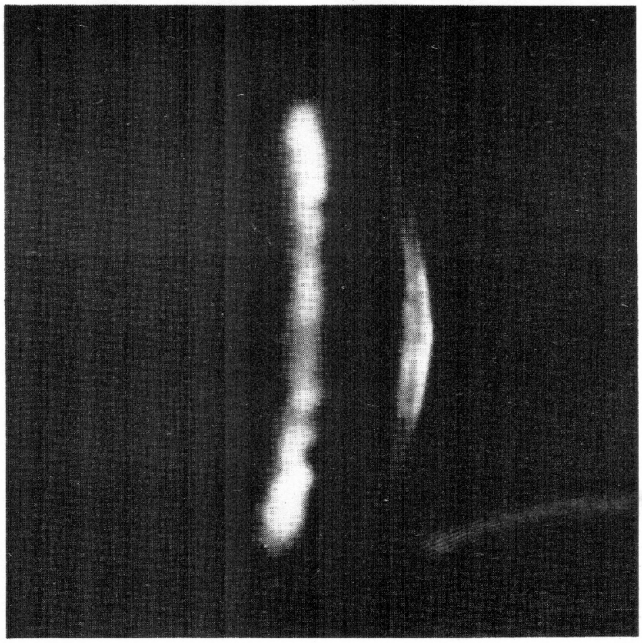
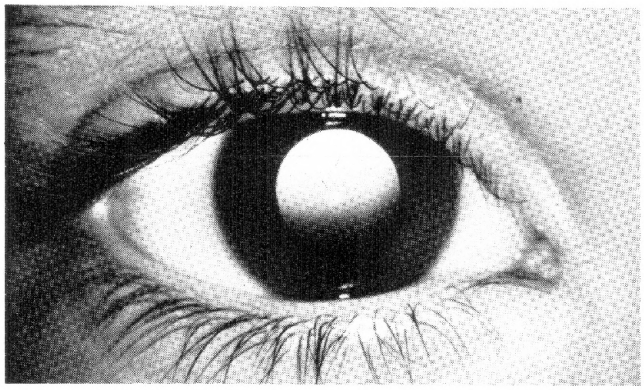


Figure 2 (Awan)

A 9-year old boy developed photophobia and some dimness of vision in the right eye 3 weeks after an attack of chickenpox. Visual acuity was: 6/12 (20/40), right eye, 6/6 (20/20), left eye. The right eye showed slight redness of conjunctiva. There was a rounded greyish spot in the center of cornea. On slitlamp examination, a sharply circumscribed, rounded, greyish opacity was noted in the central cornea (Figure 1. Arrow). The cornea in the region of opacity was so greatly swollen that it projected into the anterior chamber (Figure 2). The swelling of the cornea and the infiltration were strictly limited to the area of opacity. A tiny irregular horizontal break in the epithelium of the involved area was also present. There was no detectible reaction in the anterior chamber. The sharp demarcation of the swollen part of cornea from the surrounding normal tissue was so dramatic that the inflammed portion appeared like a plug of thicker tissue in a circular hole in the cornea. No other abnormality was found in either eye.

A 22-month old boy developed a painful red right eye (Figure 3). On examination, the right anterior chamber was full of blood mixed with dirty white material that obscured the pupil and iris details (Figure 4). The intraocular pressure was over 50 mm Hg in the right eye. A diagnosis of endophthalmitis with hyphema was made. Following a conjunctival culture, local and intravenous antibiotic therapy and acetazolamide (Diamox) were started. The culture and smear were negative after 48 hours, and the inflammation of the eye did not improve. Because of spontaneous hyphema, a diagnosis of juvenile



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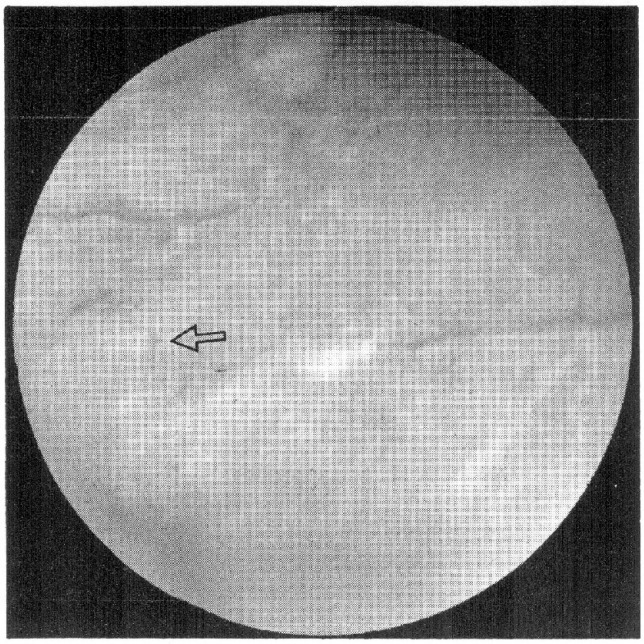

Figure 7 (Awan)

xanthogranuloma or retinoblastoma was entertained. An aspirate of the anterior chamber was declared negative for any malignant cells by the hospital pathologist, who suggested that another tapping of the anterior chamber and an iris biopsy be submitted. These too were negative for malignancy and juvenile xanthogranuloma. The histopathology slides were submitted to the Department of Ophthalmic Pathology, Armed Forces Institute of Pathology, Washington, D.C. for their opinion.

A 4-year-old healthy boy developed exotropia and "Cat's Eye Reflex" of the right eye when one year old. (Figure 5). The eye examination showed that his vision was reduced to counting fingers at two feet in the right eye and 20/20 in the left. Ophthalmoscopy through a dilated pupil revealed two large elevated white masses with large retinal vessels coursing over them. One of the masses was involving the macular area and had a few whitish shiny rounded masses around it (Figure 6). The other larger lesion involved the inferior retina and had a small hemorrhage near its

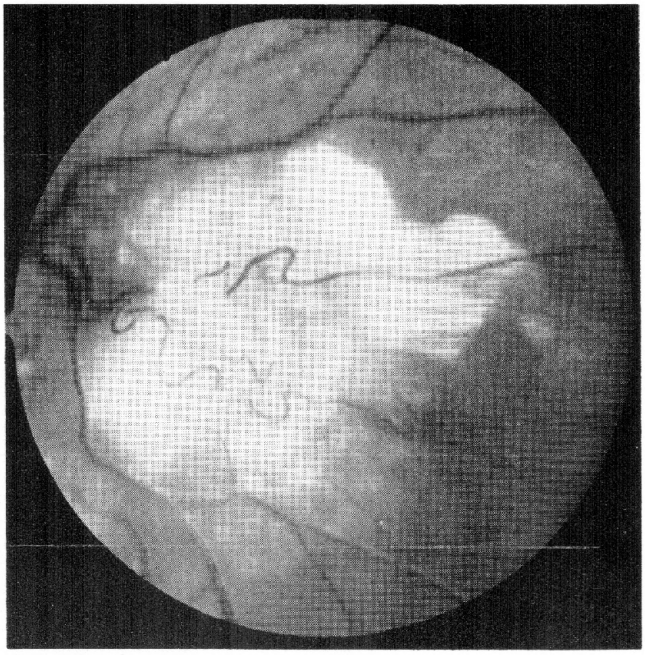

Figure 6 (Awan)

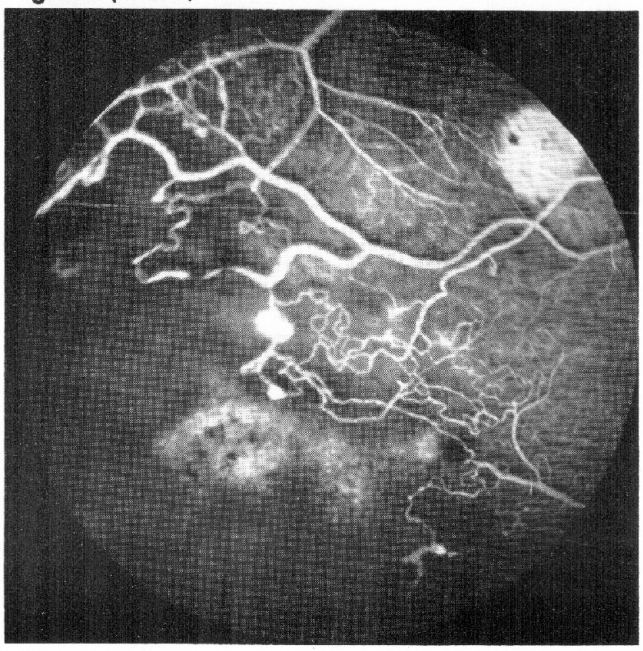

Figure 8 (Awan)

temporal edge. No vascular abnormalities were noted in the retina. The left eye was completely normal. Radiologic and other laboratory studies were negative. Ultrasonography confirmed the elevated masses, but showed no other abnormality. An examination under general anesthesia showed an area of dilated vessels with sheathing and several aneurysmal dialtations in the far temporal periphery of the retina without any adjacent exudation (Figure 7). On fluorescein angiography these localized vascular changes were found to be bordering an area of avascularity and non-perfusion (Figure 8). A slow and leakage were noted in these abnormal vessels.

Original Article

Toddler's Eye-Smoking Syndrome (TESS)*

Khalid J. Awan, M.D.**

ABSTRACT: Toddler's eye-smoking syndrome (TESS) characterizes the burns of ocular tissues by the lit ends of cigarettes. Typically, the situation arises when a toddler unexpectedly darts towards and jabs his eye into the lit cigarette in the hand of an unattentive smoker, usually a mother or a grandmother. Though usually of a low morbidity, such burns have caused permanent loss of sight in rare instances. Exceptionally, child abuse may be involved. A public and physician awareness about TESS is important for the prevention of these injuries. (Pak. J. Ophthalmol. 1: 129-132, 1985)

Burns of the ocular tissues may result from chemical agents, radiation, or direct thermal contact. Contact thermal burns from hot flying objects such as matchheads, boiling water, spattering cooking oils, molten metals and glass, solder, and direct flames have been recorded.[1] Recently, contact thermal burns from electric curling irons were reported.[2,3]

Although burns of the cornea from lit cigarettes had been previously mentioned,[4] I first drew attention to this problem in a major medical publication.[5] Typically, such burns occur when an unattended toddler in the company of adult smokers darts toward an unattentive smoker, usually a mother or a grandmother, and jabs his eye into the lit cigarette. I have seen several more cases of this toddler's eye-smoking syndrome since the publication of my first report. The purpose of this paper is to describe some of these cases with photographic documentation.

Case Reports

Case 1. A 2-year-old female toddler accompanied her mother to a party at a friend's house. After the meal, the adults got together to chat. The toddler was left on her own. The mother lit a cigarette to smoke. A few minutes later, she became so involved in the conversation that she forgot the lit cigarette in her hand, which rested on her knee. The toddler darted toward the mother and jabbed her left eye into the cigarette.

On examination, the burn involved both eyelids, the nasal conjunctiva and the peripheral nasal cornea (Figure 1). Treatment with topical antibiotics cleared the eye in six days and no residual damaged remained.

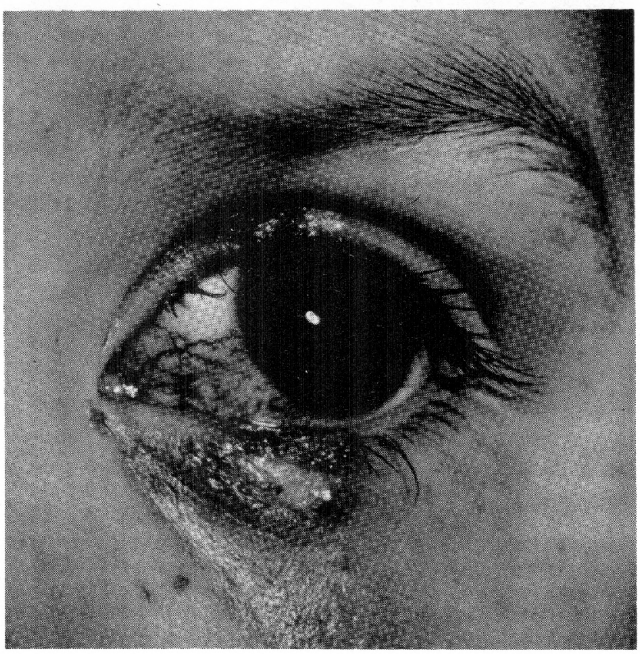

Figure 1. (Awan): Case 1. Left eye. Lids and conjunctival involvement in cigarette burn.

Case 2. A 3-year-old male toddler was brought for an eye checkup

Accepted for publication on December 20, 1985.

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* This study was funded by the Pakistan Academy of Medical Sciences.

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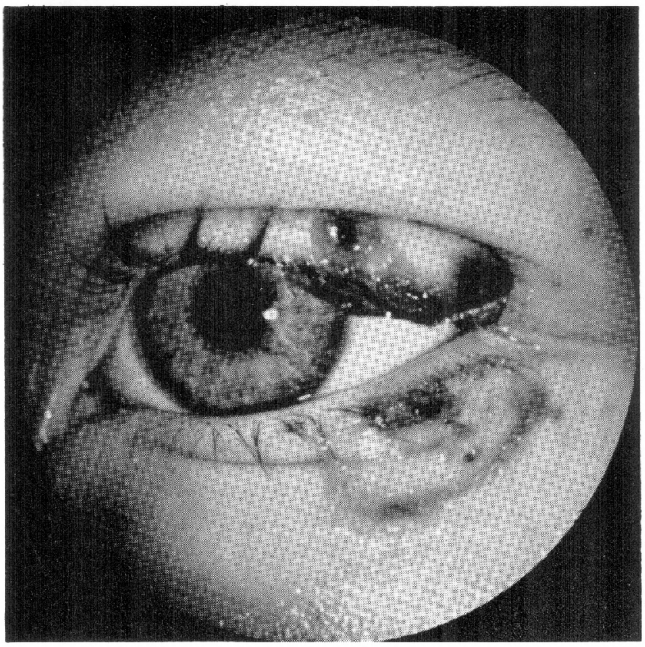

Figure 2. (Awan): Case 2. Left eye. Cigarette thermal burns of both lids.

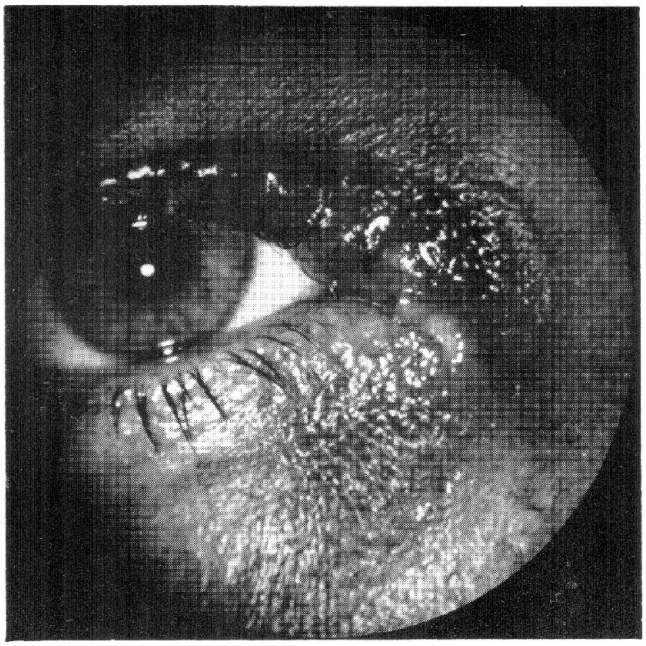

Figure 3. (Awan): Case 3. Right eye. Note the punctual burns.

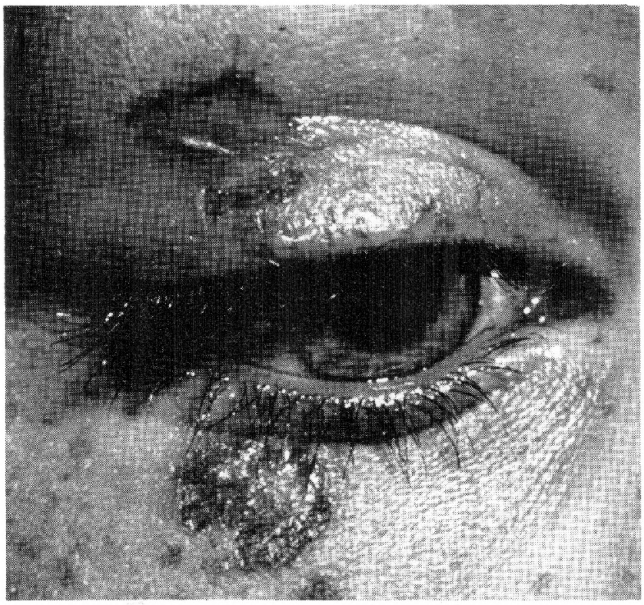

Figure 4. (Awan): Case 4. Left eye. Child abuse cigarette burns of both eyelids. The step-father became annoyed with the child and jabbed his lit cigarette in her eye.

after having burnt his left eye with his grandmother's lit cigarette. The grandmother, left to babysit for him while his parents were out, was smoking a cigarette and watching television while the toddler was sitting on the floor playing with his toys. A few minutes later, when the grandmother was absorbed in the television show, the toddler got up and darted toward her, jabbing his eye into her lit cigarette.

The eye examination showed burning of both eyelids (Figure 2). The recovery was total after five days of daily application of antibiotic eye ointment.

Case 3. A 2-year-old female toddler was traveling in a car with her parents. The child was sitting in the front with her mother, and the grandmother was in the back seat, smoking a cigarette. Soon the toddler decided to go in the back seat. The grandmother tried to assist the child and reached for her, forgetting that she had a lit cigarette in her hand. She jabbed the right eye of the child with the cigarette.

Examination showed that the burn involved the medial canthus with reactionary edema of the lower puntum (Figure 3). Following the use of local antibiotics, recovery was complete.

Case 4. A 4-year-old female child was brought in with a history of "picking up the lit cigarette of step-father and jabbing her eye with it." When the child was asked why she did that, she shook her head. On closer questioning, the mother told that the child had disturbed her step-father by crying. He asked her to shut up, and when the child did not do so, the step-father jabbed his cigarette in her right eye. Both lids were burnt, but no other structure was involved (Figure 4). Local use of antibiotic ointment for a few days resulted in complete healing.

Case 5. A 3-year-old boy was brought in with a history of his mother accidentally poking his left eye with her cigarette. She had washed the child's eye at home with some kind of eyewash. The accident had happened about three hours before arriving at my clinic. The mother was very worried about the intense redness that had developed in the eye.

The examination showed a loss of epithelium of the cornea in a large area that stained with fluorescein (Figure 5).

The eye was patched with antibiotic ophthalmic ointment for 24 hours, following which local drops were employed. In three days the cornea completely epithelialized without any residual affects.

Case 6. A 23-year-old woman came in complaining of blurred vision. The examination showed an area of superficial corneal scarring in the central area (Figure 6). When asked about past injury to the eye, she told that when she was about five, she accidentally discovered her older brother, who was nine at that time, smoking behind the house. When she threatened to expose his smoking to their father, he "out of spite" jabbed her in the eye with a lit cigarette. Her eye had remained red and had developed a discharge for many days after the above incident, and she had never seen as well out of it as the other eye.

Case 7. A 19-year old man came in with a history of having been hit in the right eye with a splattered lit end of a match stick that he had struck to light a cigarette. Examination showed a central small burn of the cornea (Figure 7). After debridement, an epithelial defect remained. On examination of the fundus, a most interesting finding was noted: there was present a small papillary hemorrhage

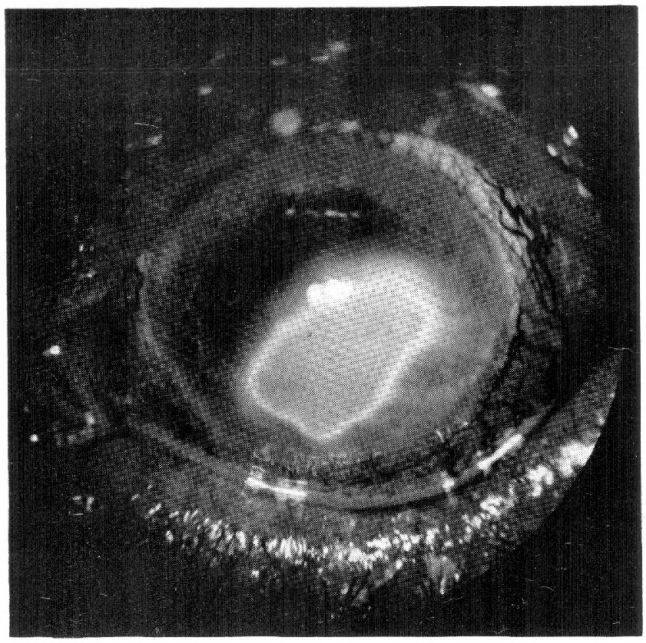

Figure 5. (Awan): Case 5. Left eye. Fluorescein staining of the corneal cigarette burn.

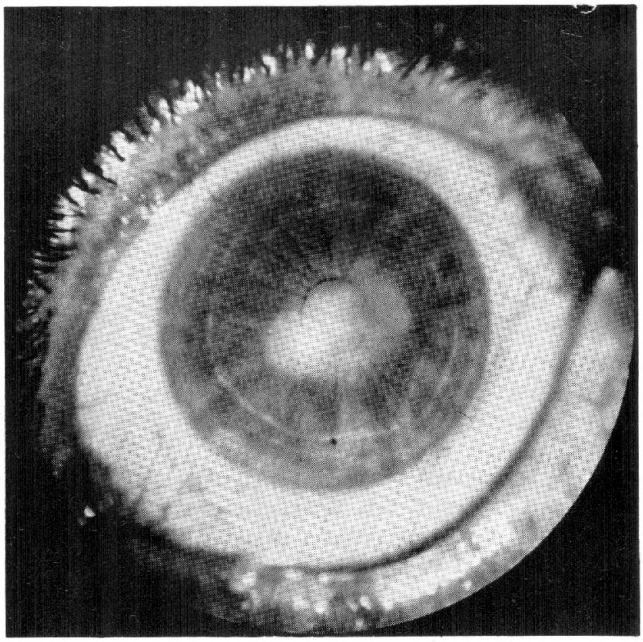

Figure 6. (Awan): Case 6. Right eye. Note a superficial scar of the central cornea that resulted from a cigarette burn and the infection that followed it.

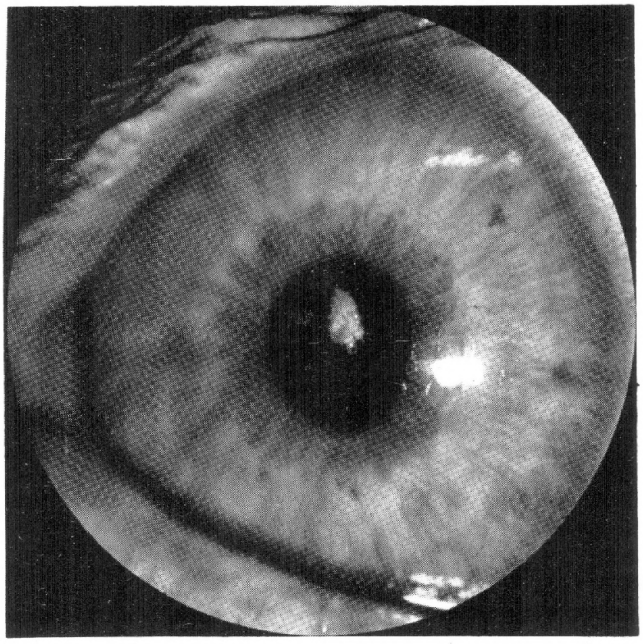

Figure 7. (Awan): Case 7. Right eye. Note the central small burn from the lit match head that flew into the eye.

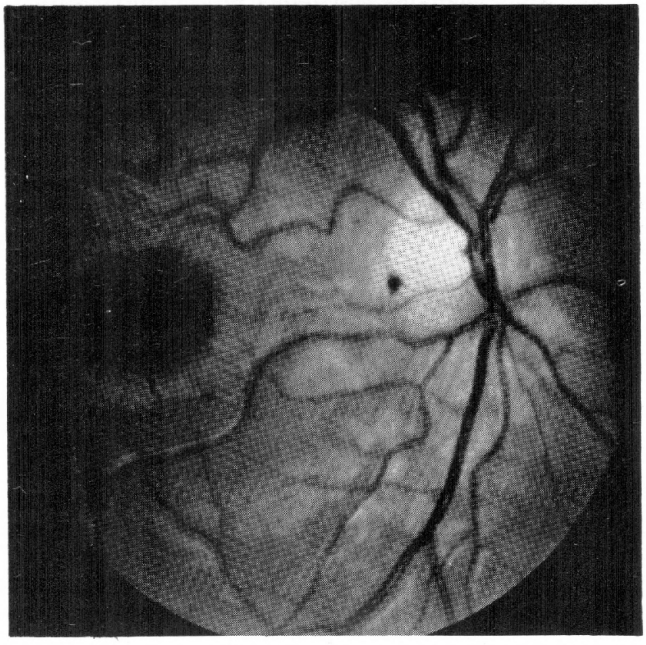

Figure 8. (Awan): Case 7. Same eye as in Figure 7. Note the papillary hemorrhage that probably resulted from the force wave that was set up in the aqueous humor and vitreous of the eye by the projectile force of the splattered end of the match.

at 9 o'clock (Figure 8). The corneal epithelial defect was treated with local antibiotic drops and no treatment was given for the papillary hemorrhage. Both findings completely resolved in a few days without any aftereffects.

COMMENTS

It is amazing that eye injuries from cigarette burns have received so little attention in professional as well as in lay literature. Fortunately, these injuries usually do not result in serious consequences, but their potential threat to sight must not be ignored. Case 6 did lose sight from this injury. This loss of sight was perhaps more on account of the infection that followed than on the basis of the initial corneal burn.

The matter of eye burns from cigarette in children is serious enough to warrant a much wider awareness on the part of the public and the physicians. In toddlers, the circumstances, the involvement of one of the

parents or grandparents, and the consequences of the injury are so consistent that it justifiably can be considered a syndrome. To better identify this problem, I suggest the term TESS – toddler's eye smoking syndrome.

Eye burns from lit cigarettes are a very common injury. In fact, according to Data Analysis on Vision Problems in the U.S. by the National Society to Prevent Blindness, it is the commonest eye injury "among the very youngest (under 5)."[6] Why it has not received wider attention from the public and the medical profession is perhaps because of the little visual impairment it causes.

An aspect of TESS that must be emphasized is the possible involvement of child abuse. In Case 4 and in Case 6, abuse was the clear motive. It is important that the physicians who are called upon to take care of these patients must not forget the possibility of child abuse. It might be of help to examine the whole body of the child to discover any skin burns from cigarettes. Also, a colleague who had just listened to my paper on TESS at the Annual Meeting of the Virginia Society of Ophthalmology, told me that another circumstance under which cigarette burns of the eye can happen in infants is when a mother holds her lit cigarette in her mouth while changing the diaper of the baby.[7] Either the hot ashes can fall in the eyes of the baby, or mother may inadvertently jab the child's eye while bending over him. Since first learning about this, I have seen one such case.

Finally, the interesting phenomenon of the papillary hemorrhage in the Case 7 was either caused by a current of force set in the humors of eye by the projectile motion of the flying broken piece of matchstick, or by the sudden reflex forceful rubbing of the eye by the patient. This very unusual happening must not be regarded as a frequent feature of TESS.

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Ophthalmic "Past-Pourri"

Treatment of Basal Cell Carcinoma

NOW:

"Recently, cryosurgery has been utilized for basal cell carcinoma of the eyelids."

Richard L. Anderson
In
"Current Ocular Therapy" - 1984

THEN:

"The (carbon-dioxide) snow collected was rammed hard into a suitable shape, and could then be held in cotton-wool by the surgeon, and applied to the desired part... ten to fifteen seconds sufficed, and the lid allowed to thaw before it was replaced... In rodent ulcers the raised edges should be attacked rather than the base of the ulcer... and the rodent ulcers were most successfully treated... it cured rodent ulcers when the bone was not involved."

Dr. Leonard J.C. Mitchell of Melbourne
In
"Use of Carbon-Dioxide Snow in Ophthalmic Work"
Presented at the 1912 Meeting of the
Ophthalmological Section of the British
Medical Association
1-41-95

Management of Ocular Involvement In Erythema Multiforme

A Case Report

Pervez Rasul, M.D.*

ABSTRACT: The author describes immediate day-to-day and long-term management of severe ocular involvement in erythema multiforme (Stevens-Johnson type) in a man of 74. The patient developed it following an oral intake of trimethoprim - sulfamethoxazole (Septra DS) for ten days. Conjunctival complications required surgical lysis of recurrent symblepharon on three occasions and fitting of a symblepharon ring for one month. A corneal epithelial defect in the left eye required a therapeutic soft contact lens for one year to heal, with subsequent superficial vascularization. Epilation and cryotherapy were employed for trichiasis. (Pak. J. Ophthalmol 1: 133-135, 1985)

Erythema multiforme, a self-limited disorder, is characterized by a maculopapular rash, vesicles, and bullae formation of the skin and mucous membranes. It begins abruptly with fever and malaise, either spontaneously or following the ingestion of drugs, usually sulfonamides. Herpes simplex or mycoplasms infections, radiation therapy, malignancy and collagen vasculitis have also been implicated. The incidence is highest in the first three decades and in males,[1] but no age is immune. Patients may die from dehydration, malnutrition due to stomatitis, kidney failure or secondary infections.

The disorder was first described by Hebra[2] in 1866, but has been unjustifiably termed Stevens-Johnson syndrome[3] when the eyes are severely involved. Mild involvement of the eyes clears up spontaneously, but severe cases, which are fortunately not very common, may result in loss of sight and continued ocular discomfort.

The purpose of this paper is to describe severe ocular involvement in erythema multiforme and its day-to-day and long-term management in a 74-year-old man.

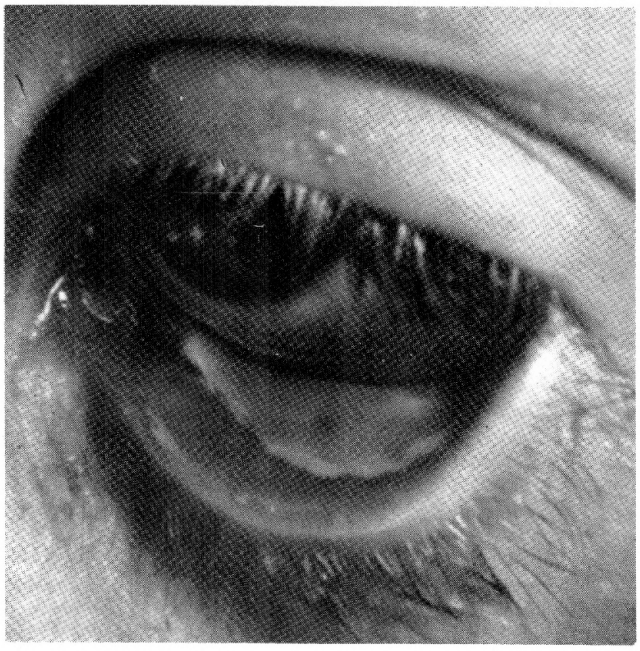

Figure 1. (Rasul): Left eye. Pseudomembranous conjunctivitis with membrane formation in the inferior cul de sac in a patient with erythema multiforme. (Courtesy of Khalid J. Awan, M.D.).

Case Report

A 74-year-old man had congested, swollen eyes and chills for two days. He had been orally taking a combination of trimethoprim and sulfamethoxazole (Septra DS) b.i.d. following a prostatectomy for

Accepted for publication February 7, 1985.

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benign hypertrophy. The examination of eyes showed the vision to be 20/40 (6/12) in each eye. The lids and the conjunctiva were swollen and red.

The day after his visit, the patient developed fever, severe stomatitis and generalized maculopapular rash with bullae formation. During the next four weeks his condition worsened, with the development of lung congestion, respiratory failure, and extensive ulceration of the skin from ruptured bullae. He was placed under intensive care and needed a tracheostomy with a respirator. He received intravenous feedings, along with intravenous antibiotics and corticosteroids. Oral Nystatin (Mycostatin) was given to treat candidiasis.

The eyes became very congested with pseudomembranous conjunctivitis (Figure 1) and a tendency toward symblepharon formation. They required daily irrigation and removal of inflammatory adhesions. On three occasions, the separating of lids and globe required surgical intervention. To do this, the eyes were anesthetized by a topical instillation of 0.5% tetracaine hydrochloride ophthalmic solution (Ophthaine Solution) and the adhesions were lysed with a blunt-tipped pair of scissors.

A donut-shaped transparent symblepharon ring (Figure 2) was cautiously fitted without pressure on the cornea, the conjunctiva or

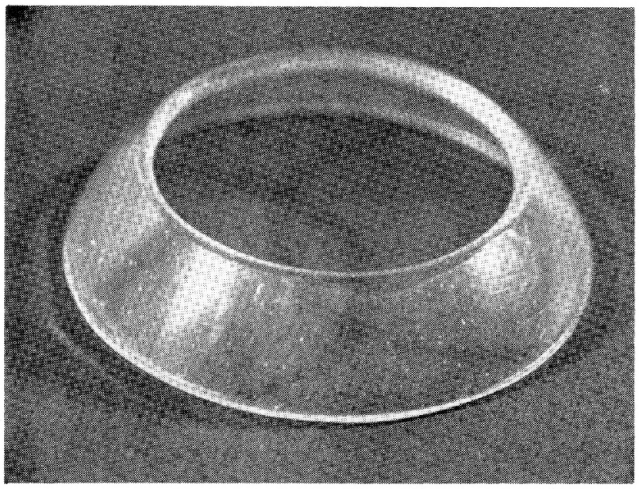

Figure 2. (Rasul): Donut-shaped soft symblepharon ring. The ring is made of polymethylmethacrylate (PMMA).

the fornices. It was removed at weekly intervals for cleaning and refitting. The symblepharon ring was kept in th eye for one month. This prevented further adhesions between the lids and the globes.

The lower lid ectropion, however, led to exposure keratitis in both eyes. This required copious applications of antibiotic ophthalmic ointment q.i.d. and cycloplegic drops b.i.d. At night, the eyes were covered with wet sterile gauze in addition to the application of a sterile eye ointment.

After one month, the general condition of the patient started improving rapidly; the tracheostomy and the respirator were discontinued. However, the eyes showed much slower recovery and remained very congested with some ectropion of the lower lids.

As soon as his general condition allowed, the patient was discharged from the hospital and followed in the office. At the time of discharge, his vision was 20/60 (6/18) in the right eye and 20/80 (6/24) in the left eye. The hyperemic conjunctiva of the upper lids showed horizontal scarring and the left cornea was diffusely hazy with a central epithelial defect. This epithelial defect took one year to reepithelialize and required the use of a bandage soft contact lens (Bausch and Lomb, Plano I, thin, high water content). The bandage soft lens was removed at monthly intervals for cleaning.

Over the next year, the cicatricial stage continued and the patient showed a tendency to form symblepharon, which required surgical treatment in the office under topical anesthesia. Topical steroids, cycloplegics, antibiotics, and nightly lubricating ointment were

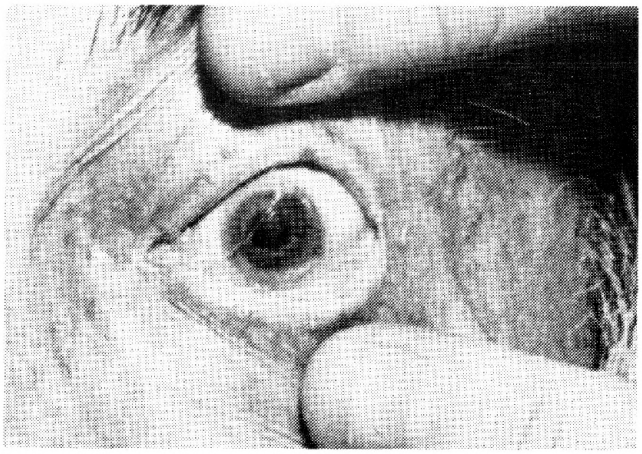

Figure 3. (Rasul): Left eye of the patient reported here, after recovery. Note extreme shallowness of the inferior fornix, symblepharon, and corneal haziness.

employed in the treatment.

The recurrent trichiasis was another annoying complication. It was treated by epilation for a single eyelash and cryotherapy for more. For cryotherapy, the lid was anesthetized with 1% Lidocaine solution (Xylocaine) injection. A cryoprobe with three mm diameter tip was used with a temperature of -40C.

The patient was checked monthly for two years and at three month intervals thereafter. On his last examination he still complained of dryness and a foreign body sensation, which responded to artificial tears. Conjunctiva appeared slightly hypermic and the left cornea showed marked superficial neovascularization and slight stromal haziness (Figure 3). The Schirmer's test showed a wetting of 5 mm in the right eye and 10 mm in the left eye after five minutes. There was a moderate cataract formation in both eyes, which may be partly responsible for the decreased visual acuity of 20/60 (6/18) in the right eye and 20/200 (6/60) in the left eye. An examination with ophthalmoscope did not show any abnormality in the ocular fundi.

COMMENTS

The disabling ocular complications of eye involvement in erythema multiforme are fortunately uncommon, and ophthalmologists in private practice only rarely come across patients who need intensive ocular therapy.

A rare experience with acute and long term care of an unusual case of severe ocular erythema multiforme in a 74-year-old man prompted this report.

Only the severe cases develop residual ocular complications. Symblepharon, eyelid deformities keratoconjunctivitis sicca, trichiasis, and corneal vascularization may be seen in these cases. Three patients out of 33 had corneal pannus in one report.[4] All of these patients were children.

Erythema multiforme with the above mentioned ocular complications in a man of 74 is very unusual. The appearance of erythema multiforme after the use of trimethoprim and sulfamethoxazole combination, the drug my patient used, was recently the topic of another case report.[5]

It is known that scarring of the conjunctiva and cornea may continue long after the acute phase is over. A close followup of the patients is important. Eyes involved in erythema multiforme are very prone

to develop all kinds of infections, some of which may quickly destroy the eye. Hence, use of antibiotics and frequent cleansing of the eyes is imperative.

The loss of goblet cells in the conjunctiva seriously interferes with the lubrication of the eyes. In the late stages of erythema multiforme, the use of punctal occlusion or a tarsorrhaphy to protect the cornea from drying may become necessary even when artificial tears are being used.[5]

Conjunctival membrane formation and symblepharon may be rapid.[4] There may develop corneal perforation in acute stage.[6] Symblepharon formation if not prevented leads to closure of upper and lower fornices resulting in loss of aqueous portion of tear film. There is also up to 95% loss of goblet cells.[7]. This results in poor tear film and marked keratitis sicca.

In cicatricial stage oral mucosa and skin heal completely. However, the ocular complications may lead to keratitis sicca with complete corneal opacification that poorly responds to keratoplasty. There is also trichiasis and keratinization of conjunctiva.

Although therapeutic soft contact lens may be of great value in the acute stages, it is of little help in the treatment of keratoconjunctivitis sicca.[1] In my patient, the use of a symblepharon ring for one month and of soft therapeutic contact lens for one year proved to be of appreciable help in the acute stages of the disease. Although the value of systemic and local corticosteroids remains unproven, a majority of ophthalmologists employs them in the management of ocular erythema multiforme.

In some patients, persistent anterior uveitis may require the use of atropine drops. Dark glasses for photophobia and, under some circumstances, tight fitting moisture chambers for keratoconjunuctivitis sicca may become necessary.

It is to be noted that some patients may have a relapse,[4] particularly when the drug that caused the first episode is used again.[5]

Finally, in one study HLA-BW44 antigen was found with increased frequency of 66.7% in 18 patients with Stevens-Johnson syndrome.[8] Normal control population had 20.4% of this antigen.

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Acknowledgement: Thanks are due to Khalid J. Awan, M.D. for his guidance in the preparation of this paper and allowing the use of Figure 1 from his collection.

Ophthalmic "Past-Pourri"

of Myopes and Myopodiorthotikons

One of the things necessary "to hinder the increase of myopia (is) persistent maintenance of a greater reading or working distance, by means of mechanical apparatus. Mechanical contrivances to maintain a proper object-distance are common enough, and date from the Myopodiorthotikon as invented by Berthold, to the latest arrangements of our age."

Professor Foerster, of Breslau
in "On the Influence of Concave
Glasses and Convergence of the
Ocular Axes in the Increase of Myopia"
– 1886
(1-15-414)

Brief Report

Honey as a Substitute For Healon® In Experimental Anterior Segment Surgery In Animals

Ahmad M. Mansour, M.D.*
and
Elias I. Traboulsi, M.D.*

ABSTRACT: Authors used honey as a substitute for sodium hyaluronate (Healon) in experimental surgery in animals. They injected honey at body temperature into the anterior chamber of rabbit eyes with successful results and no complications.(Pak. J. Ophthalmol. 1: 1985)

Sodium hyaluronate (Healon) has become an important adjunct in extracapsular cataract extraction with intraocular lens implantation. It maintains the anterior chamber and protects the endothelium. Healon is an expensive product and substitutes have been searched for. Methylcellulose was demonstrated to be such a safe substitute.[1]

The medicinal use of honey has been reported intermittently over the past 4,000 years.[2] We have used honey in experimental anterior segment surgery in rabbits with successful results.

Honey is a highly variable natural product depending on the climate, the season of the year, the floral type, the bee-keeping methods and the processing techniques.

The colour of honey varies from water white to dark amber; the pH (acidity) ranges from 3.4 to 6.1 and the viscosity changes from 21.4 poises at 102°F (39°C) to 600 poises at 56°F (13°C).[3] The viscosity of honey depends on the strain of bees, the method of collection, and the temperature of surroundings.

We have injected locally produced honey at body or room temperature into the anterior chamber of rabbit eyes, using an 18 guage needle. Honey maintained the anterior chamber better than Healon, which seeps out repeatedly during manipulation. However, honey is very difficult to irrigrate out of the anterior chamber. Also, honey contains many allergens.

Canine corneas have been adequately preserved in honey by Mohan and co-workers.[4]

We have placed a drop of honey on the anterior surface of the cornea during surgery and the cornea remained clear without the use of irrigating solution. We have also duplicated the experiment of Mohan et al on rabbit eyes. The corneas stored in honey remained clear for a period of three days.

We recommend the use of honey in experimental anterior segment surgery in animals.

From the Department of Ophthalmology, *Albert Einstein College of Medicine/Montefiore Medical Center (Dr. Mansour), and the American University of Beirut (Dr.Traboulsi).

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Scientific and Social Experiences at the 10th Congress of Asia-Pacific Academy of Ophthalmology in Delhi

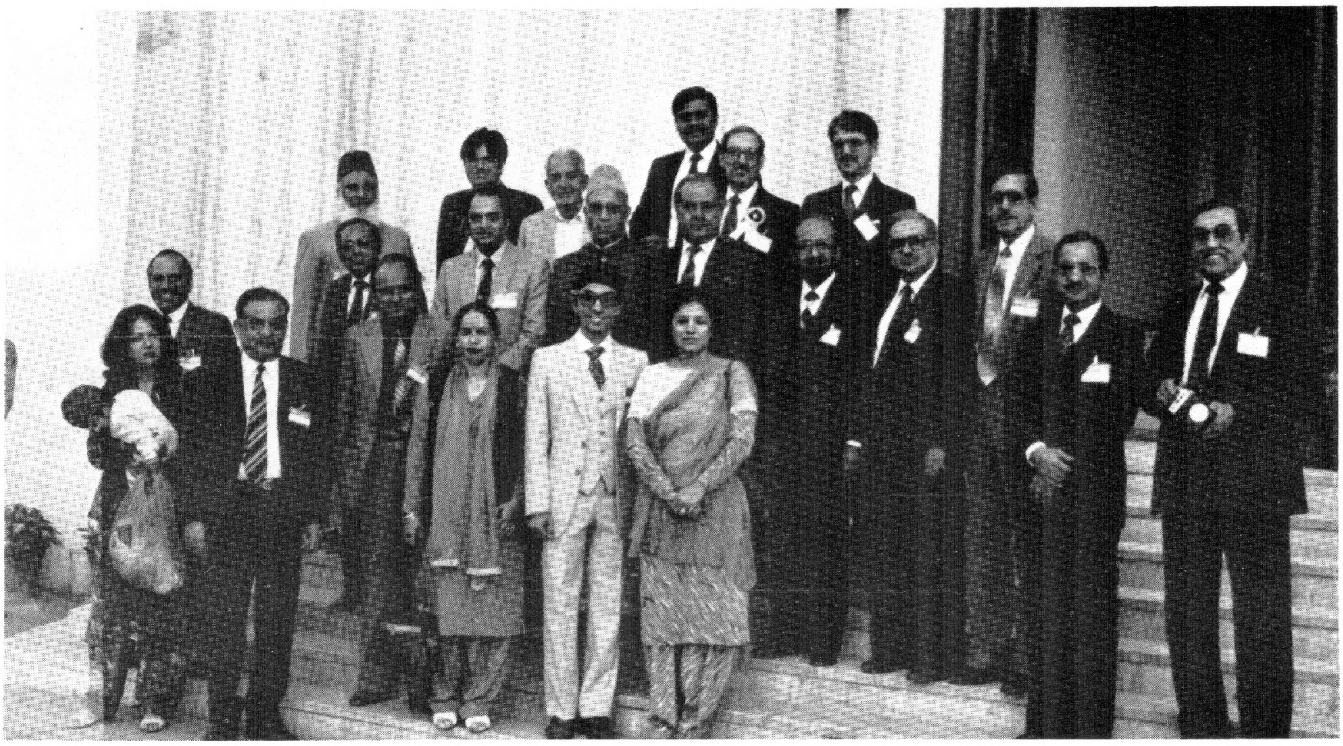


Figure 1. (Awan): Pakistani delegates at the steps of the front entrance of the Pakistani Embassy in Delhi.

I was attending the 8th Afro-Asian Congress of Ophthalmology in Lahore in March of 1983 when the General Secretary of the Asia-Pacific Academy invited me to present a paper at the 10th Congress of the Asia Pacific Academy of Ophthalmology in Delhi, in 1985. I had never been to India before, and thought it would be a good time to get two for the price of one. The 10th Congress was held January 31 through February 5 at the spacious Taj Palace Hotel. Dr. Muhammad Humayun and I arrived at the Delhi airport on the afternoon of Thursday, January 31. Although no representative of the Indian organizing committee was there, we fortunately found an agent of our travel agency who guided us through the customs procedures.

We had been cleared by the customs officers and had taken our baggage into the outside terminal, when it dawned on me that I had forgotten my travel itinerary at the customs counter. With a door guard's permission, I went in, picked up my envelope and headed straight out, but a customs officer stopped me, searched me from head to toe, and then demanded we bring our bags back from the exit terminal to be searched again. We had no choice but to bring back

our bags, open them, and go once more through the frustrating process of repacking. We had hardly come out when a porter grabbed hold of our bags and warned that to carry our own bags out of the airport was not permitted and the law required they be given to a porter. He handed us a charge slip and demanded 16 rupees. It was made out for four rupees, the law fully allowed charge for the number of our bags.

We had well in advance remitted the required US $200.00 to the Indian organizers of the meeting for confirmed hotel accommodations, on reaching the hotel we learned that there was no room reserved under our names. Fortunately, our explanation to a very sympathetic hotel manager got us one of the two rooms kept for emergency situations. While we were straightening out our room situation at the registration desk, someone removed part of our luggage from the nearby lobby. A very courteous and helpful security officer was called in. He reassured us, and after about an hours investigation reported that our bags were found in the hotel basement. How they got there was never known.

The next morning, Dr. Humayun made a very successful presentation of his paper, and we attended some quite interesting and useful papers by international speakers. At the lunch break, all the Pakistani delegates (Figure 1) got together and let each other know where they were staying. Professor Raja Mumtaz was heading the Pakistani delegates and Dr. Jamshed H. Wania was Pakistan's Regional Secretary of the Asia Pacific Academy of Ophthalmology. The following day I chaired a Retina Session and presented my two papers, which, to my delight were very well received and generated some stimulating discussions. As I was leaving the hall after my paper on the Angioid Streaks, a very pleasant Japanese gentleman stopped me and introduced himself as Professor Masashi Shimo-oku of Hyogo College of Medicine. He asked if I had ever done electrophysiologic studies on my patients with angioid streaks. Soon we were conversing at a more personal level. Later we joined for lunch. Dr. Humayun and Professor Lateef Chaudhary brought their lunch and sat next to us. I was pleased to learn that what brought Professor Shimo-oku to me in the first place was approval of papers on the Hypoplasia of the Optic Disc and the Congenital Anomalies of the Optic Disc which I had written in the mid seventies. I had then proposed that Ganglionic Neuroretinal Hypoplasia was a more appropriate term for Hypoplasia of the Optic Disc. Professor Shimo-oku informed me that his recently published electrophysiologic studies supported my view. It was a nice feeling to know that my work had received approval in Japan. (I later received from Professor Shimo-oku reprints of three papers in which he had referred to my previous publication. His papers were in Japanese, but I could recognize my name mentioned in English in them.) I gave one copy of the first issue of the Pakistan Journal of Ophthalmology and asked his opinion about it. After a quick check of the abstracts of the articles and other

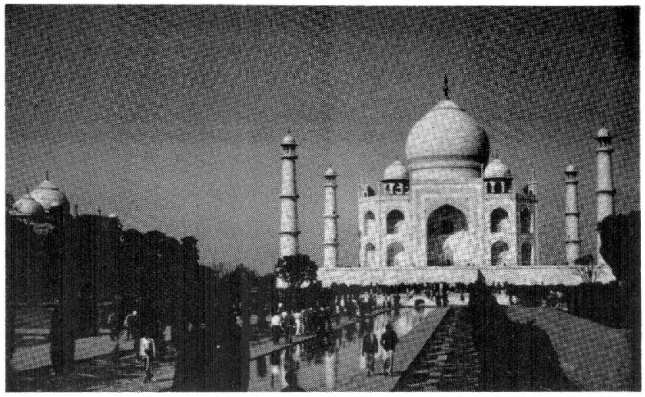


Figure 2. (Awan): The Taj. On the left of the Taj Mahal is a musjid. On the other side the Taj is flanked by another similar structure. In the foreground on the left is silhouette of Dr. Humayun.

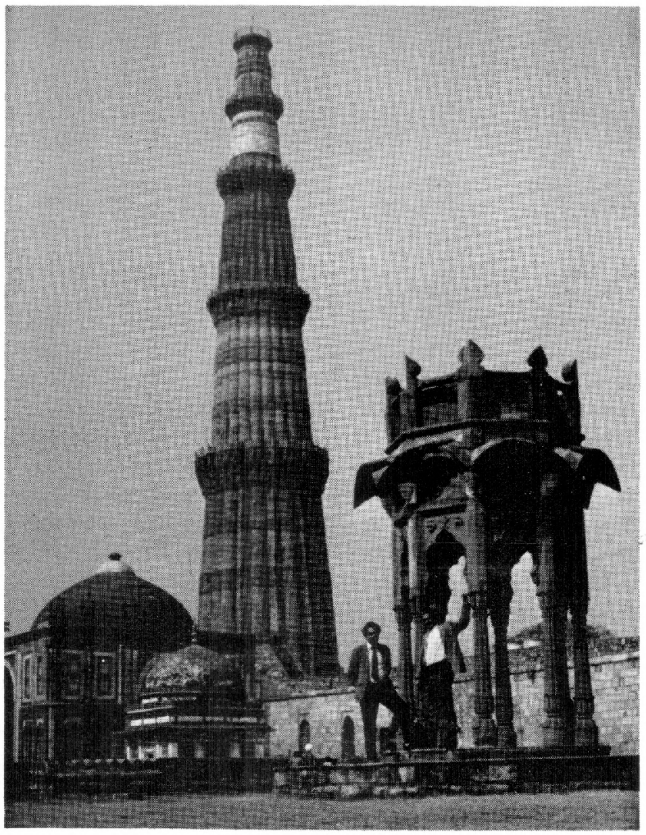


Figure 3. (Awan): The Qutub Minar in Delhi.

contents, he remarked that it was one of the best Journals he had recently come across. I had wanted to distribute the copies of the Pakistan Journal of Ophthalmology at the Delhi meeting. I thought it would be a nice opportunity to give our Journal an international exposure. However, I discarded the plan when Professor Raja for reasons unknown to me felt that we should not do so.

Other Pakistanis who chaired scientific sessions were Professor Mumtaz, Orbit and Adnexa; Dr. Wania, Myopia; Professor Muhammad Munir-ul-Haq,

Figure 4. (Awan): The sublimely beautiful Quranic engravings in the redstone of the Qutub Minar. Their dimensions, symmetry, and mastery of artwork is simply spellbinding.

Glaucoma; Dr. Akhtar J. Khan, Orbit and Adnexa; Dr. H. Alam, Cornea and Sclera; and Dr. H.S. Anklesaria, Diverse topics. Unfortunately, the Indian visa issuing authorities had singled out Pakistani delegates and restricted them to the city limits of Delhi, and they were not permitting them to go anywhere beyond that. This was in stark contrast to the policy of the Pakistani authorities during the 8th Aafro-Asian Congress of Ophthalmology in Lahore, when only a year before the Indians were granted visas to go anywhere in Pakistan. This was a cause for great disappointment to those Pakistanis who had hoped to visit the nearby Taj Mahal or other historical and religious monuments. After pulling many strings, Dr. Wania was able to take a few Pakistani delegates to see the Taj Mahal in a group. Dr. Humayun and I were lucky to get in touch with an Indian acquaintance who took us to visit Taj Mahal. We travelled on the Sher Shah Soori Highway, the Gran Truck Road built by that great Muslim Ruler. Our excitement on beholding the quintessential architectural beauty to The Great Taj (Figure 2) was dampened by the surprising lack of maintenance, security, and repairs at the site. Many irresponsible Indian visitors had defiled the outer walls by writing in ink or even etching their names in the marble. (One young Indian was politely stopped in the middle of this abominable act by a young sensitive Sikh boy, who asked the man what pleasure he got by ruining the beautiful walls.) Many of the broken glass panes in the window-works had not been replaced while the intact ones were so wretchedly filthy with dust that light could hardly shine through. Honeycombs were hanging from the outer arches and the honey mixed with dirt had disgustingly disfigured the marble. Chipped and broken marble in many places had received a very crude repair or no repair at all. This one of the Wonders of the World; a sublime tribute to the human capability; and one of the greatest sources of foreign exchange for India deserves more attention from the Indian authorities, even if it was built by Muslims. On our way back to Delhi, we made a short stop at the tomb of the great Mughal Emepror Akbar.

On reaching the hotel, we got a message that someone from Delhi was looking for us. To our delight it turned out to be an Indian Muslim who had spent some time with us in the United States several months before. He offered to take us to see Delhi, which we accepted with great excitement. Delhi is rivalled only by Lahore, Pakistan in its architectural splendor from the bygone days when Muslims ruled India. We started by visiting Qutub Minar and the adjoining historical places (Figures 3). Qutub Minar was built by Sultan Qutbuddin Aiabak and Sultan Shamsuddin Al Tamash in the 13th century. I had many times read about it since my childhood and seen its photographs many times, its magnificence was beyond all my imaginations and I was spellbound. No picture can capture the beauty that is when you actually see it. When I took my first glance, my eyes widened in utter mazement at the flawless majesty of its dimensions, its symmetry, and the Quranic engravings in its redstone (Figure 4). The historic background , the surrounding ruins, and beauty of the Minar brought back the memory of my visit to Alhambra, Granada, in Spain. Many other monuments are included in what is called the Qutub Minar Complex. Some militant Hindus are trying to distort history by falsely telling the tourists and incorrectly writing in tourist guides that despite the Quranic verses engraved in the stone,

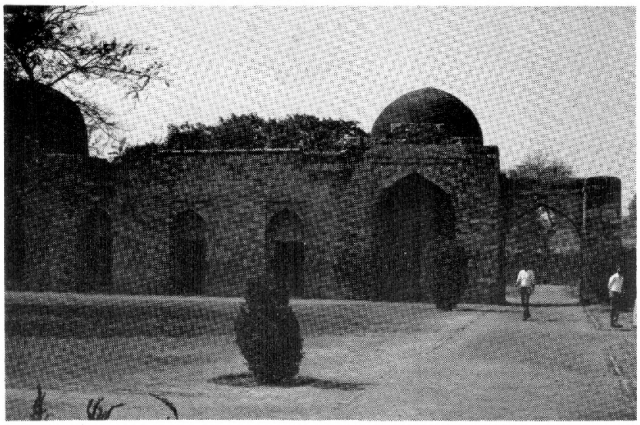


Figure 5. (Awan): A deserted building of a college constructed by Muslim Sultan Allauddin Khiljee for promoting education in India in the 13th century.

the Minar and other Muslim monuments were actually built by the Hindus. Not only with the Muslim monuments, but in other areas as well, attempts are being made to eradicate all that is Muslim.

Socially, the Muslims who were the richest and the most learned among the Indians, now hold the most menial positions and live in slums without any opportunity for education or advancement. This was apparent when we found only one Muslim ophthalmologists among the one thousand Indian ophthalmologists attending the APAO Congress. Only a few yards from the Qutub Minar, one can visit the roofless and devastated tomb of the great Muslim Emperor Alauddin Khiljee where animals roam and relieve themselves freely, making the burial site of such a mighty emperor a warning to the wise. A few yards away is the unoccupied building of one of the colleges established by this emperor to further education in India seven centuries ago (Figure 5).

Our tour of Delhi ended in the evening with a most unpleasant and potentially dangerous incident at the Great Jamia Musjid where we stopped for Salat-al-Maghrib. When the Muslims formed rows for prayer, a Hindu walked in and planted himself right in the center of the front row. A few Muslims requested him to move, and succeeded in coaxing him to leave the prayer area. Azan was called, and suddenly, the Hindu was again occupying a place in the center of the front row. Finally, two young Mulsims gently held his arms and took him to another part of the Musjid. We feared that if Hindu became beligerant, it could start another bloody riot and lead to the killing of hundreds of Muslims in India. It still saddens me whenever the memory of this incident flashes in my mind, and I pray to Allah about the plight of the Indian Muslims. I don't know how I would have reacted under such circumstances, but I admire those Muslims in the Musjid who handled the situation with such patience. I thank God Almighty for Pakistan.

One of the brighter moments of the Delhi visit was provided by Pakistan's Ambassador Humayun (Figure 6), who invited the Pakistani delegates to a late afternoon tea at the Pakistani Embassy. Dr. Wania

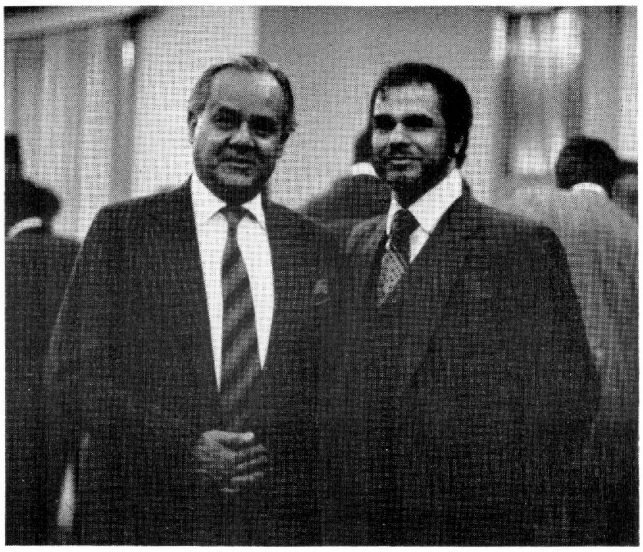


Figure 6. (Awan): Ambassador Humayun and Khalid J. Awan, Editor of the Pakistan Journal of Ophthalmology.

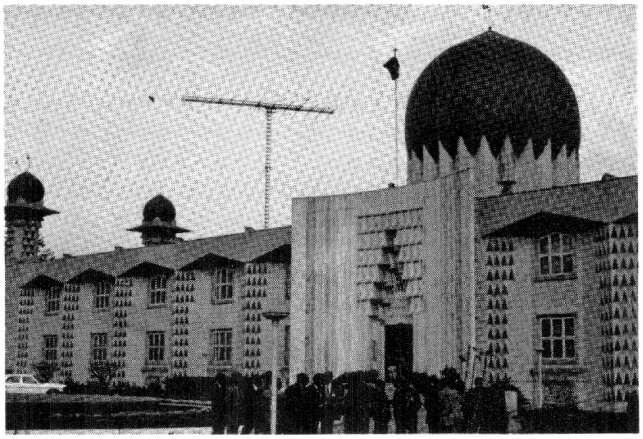


Figure 7. (Awan): The very impressive structure of the Pakistan Embassy building.

arranged for a coach to take us to the embassy. We were very thrilled to see the building of our Embassy that was really beautiful and spacious (Figure 7). Refreshing grassy lawns with carefully arranged flower patches surround the building. Everyone of us was impressed by a very cordial and genuinely hospitable reception by Ambassador Humayun. Surprisingly, we saw long lines of Indians in the visa section even after the sunset (Figure 8). We were told these lines of people are nothing unusual and, in fact, never end. Sometimes the work in the visa section goes on into the late hours of the night or even around the clock to accommodate all the applicants who seek visas to go to Pakistan.

We experienced another minor ordeal on the day of our departure. Our flight was to leave in the evening, so we planned to check out of the hotel early and use that day to shop in the bazars of Delhi. The cashier of the hotel at the check-out desk told us that he could not give us the credit for our deposit of $200.00 until

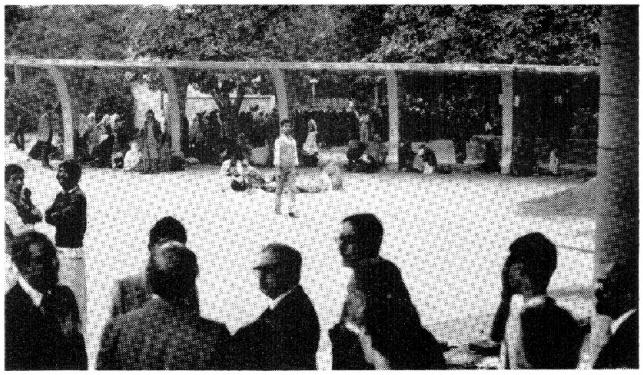


Figure 8. (Awan): The long lines of Indians seeking visas for Pakistan. It was already time of Slat-al-Maghrib (evening prayer). These lines never end, and work goes on in the visa section into the late hours of the night.

the Secretary General of the Indian Organizing Committee confirmed it. Apparently, the money had not been transferred to the hotel even after all the conference days. The Secretary or anyone who could act on his behalf could not be found. We were asked to stay in the lobby till the matter could be resolved. After several hours of waiting, the hotel cashier was able to talk to the Secretary, who confirmed our deposit, but by then it was too late for us to go shopping. We left straight for the airport.

Despite what some have said the scientific program of the Congress was well organized, and many of the papers presented at the various sessions were of excellent quality and highly useful. All presenters of the papers where required to hand the manuscripts of their papers to the "reporteur" of each program . We went prepared for it and handed our three manuscripts to related persons.* Symposia were held on Pars Plana Surgery, Management of Complications of Cataract Surgery and IOL Implantation, Corneal Infections, Primary Glaucoma and, Community Ophthalmology. The free paper presentations were divided into various sessions under Glaucoma, Cornea and Sclera, Lens, Vitreous, Retina, Orbit and Adnexa, Uveal Tract, Community Ophthalmology, and Diverse Topics. Updates on Contact Lenses, Myopia, Macula, and Orbital Afflictions were very informative, as were the Panel Discussion on the Iatrogenic Diseases of the Eye and Eales's Disease. Instruction Courses and Video Programs on many topics were available to those who were interested. Out of about 1,300 delegates attending the Congress, nearly 250 were from foreign countries. the highest foreign representation was from Japan with 35 delegates. As a scientific event and a learning opportunity, the 10th Congress of the Asia Pacific Academy of Ophthalmology at Delhi was a success. For those readers of the Pakistan Journal of Ophthalmology who could not attend this Congress, the abstracts of the presentations by the guest presenters are included in this issue in our Abstracts From Elsewhere Section.

Khalid J. Awan, M.D.

* A few weeks later, I received two letters from the Secretary General of the Indian Organizing Committee stating that they had none of the manuscripts of the three papers Dr. Humayun and I presented. That three manuscripts handed to three different individuals could become lost is interesting.

ہمارے دہلی کے قیام کے دوران ایک بہت ہی خوشگوار حوقعہ آیا۔ پاکستان کے سفیر جناب ہمایوں صاحب نے ساتھ پاکستانی خانہ گان کو بعد از دوپہر چائے کیلئے پاکستان کے سفارتخانہ میں مدعو کیا۔ پاکستانی سفارت خانہ کی عمارت انتہائی خوبصورت ہے۔ اس کے لان خوبصورت پھولوں سے سجے ہوئے ہیں اور احاطہ بھی کافی بڑا ہے۔ ایک بات جو بہت دلچسپ تھی وہ یہ تھی کہ ویزا اسیکشن میں لوگوں کی لمبی لمبی قطاریں بعد از غروب آفتاب خوجود تھیں۔ یہ سب ہندوستان کے لوگ تھے جو مختلف وجوہات کی بنا پر پاکستان جانے کے خواہاں تھے۔ ہمیں بتایا گیا کہ یہ قطاریں کبھی ختم ہونے پر نہیں آتیں اور کام بعض اوقات آدھی آدھی رات تک ہوتا رہتا ہے۔

سائنٹیفک پروگرام کے لحاظ سے ایشیا پیسیفک اکیڈیمی آف آپھلماولوجی کی دسویں کانگرس یقیناً کامیاب رہی۔ مختلف پروگراموں اور اجلاس کا انتظام بہت فنی بخش تھا۔ بہت مقالات کا معیار اچھا اور مفید تھا۔ سب سپیکرز پر دو شرائط عائد تھیں ایک یہ کہ قبل از بیان انہوں کانگرس کی جنس حزر دادا کی ہو اور دوسرے اپنے مقالہ کا مسودہ مترجمین کے حوالہ کر دیا ہو۔ میں نے اور ڈاکٹر ہمایوں نے اپنے تینوں مقالات کے مسودہ جات متعلقین کے حوالے کر دئے۔ کانگرس میں بہت سے مفید اور جدید خیالات کے عکاس پروگرام اور مجالس ان موضوعات پر پیش کئے گئے۔ پارس پلینا جراحی، سفید موتیا جراحی عدسۂ مصنوعہ جراحی، کارنیل الفنکشنز، گلاکوما موتیا، اور کیموٹیٹی آپتھلماولوجی۔ مقالے جو کہ کافی متاثر کن ہمیار کے تھے ان حفاظ میں پیش کئے گئے۔ گلاکوما موتیا، عدسۂ چشم، کارنیا اور سکلیرا، وٹریاس ریٹینا آربٹ اور ایڈنیکسا۔ یوویل ٹریکٹ، کمیونیٹی آپتھلماولوجی اور مختلف موضوعات۔

جدید ترین ضیادت کے اجلاس کانٹیکٹ لنز، عائی اوپیا مے کوگلا، اور دوری بیماریوں پر ہوئے۔ محفل مباحثہ کے موضوع ایلیز بیماری اور دوری بیماریاں تھیں۔ باہر سے تقریباً ۲۵۰ غانہ گان نے شرکت کی۔ ان میں سب سے بڑی تعداد ۳۵ جاپانی غانہ گان کی تھی۔ دہلی میں ایشیا پیسیفک اکیڈیمی آف آپتھلماولوجی کی دسویں کانگرس کامیابی سے ہوئی۔

خالد جاوید اعوان

ایک نیورو ریٹینل ہائی پوپلیزیا اور گینگلیئل انا ملیز آف آپٹک ڈسک (Ganglionic Neuroretinal Hypoplasia) اور (Congenital Anomalies of Optic Disc) پڑھے تھے۔ ان حقائق میں جن کی نے تجویز کیا تھا اس بیماری کو گینگ لی آف ہائی پوپلیزیا کے نام سے موسوم کرنا بہتر اور زیادہ مناسب ہوگا۔ پروفیسر شی حوا کو نے بتایا کہ اُن کی جدید الیکٹرو فزیالوجیک سٹڈیز جو کہ بعد میں شائع ہوئیں میرے اس خیال کی تائید کرتی ہیں۔ مجھے یہ جان کر خوشی ہوئی کہ میری ذہنی کاوش کو جاپان میں بھی سراہا گیا ہے۔ (پروفیسر شی حوا کو نے بعد میں اپنے شائع شدہ تین مقالات جو کہ جاپانی زبان میں تھے مجھے بھیجے۔ اُن میں میری تحریروں سے اقتباسات لیے گئے تھے۔ میں صرف اپنا نام جو کہ انگریزی رسم الخط میں تھا پڑھ سکتا تھا) میں نے پروفیسر شی حوا کو کو پاکستان جرنل آف آپتھلمالوجی کی ایک جلد دی جو انہوں بے حد سراہی۔ میرا ارادہ تھا کہ جرنل کانگریس میں اوروں کو بھی جرنل کی مشہوری کے لیے بانٹوں مگر کسی وجہ سے راجہ صاحب ایسا کرنا نہ چاہتے تھے۔

پاکستانی غائنہ گان میں سے پروفیسر راجہ ممتاز صاحب، ڈاکٹر ڈاینا صاحب، پروفیسر عزیز الحق صاحب، ڈاکٹر اختر جمال خان صاحب، ڈاکٹر اشفاق عالم صاحب اور ڈاکٹر انکل سارنیا صاحب نے مختلف اجلاس کی صدارت کی۔

ہندوستان کی حکومت نے ویزا دیتے وقت پاکستانی غائنہ گان پر یہ پابندی عائد کر دی تھی کہ وہ دہلی شہر کی حدود سے باہر نہیں جا سکتے۔ یہاں یہ امر خاص طور پر قابل ذکر ہے کہ جب تقریباً ایک سال قبل آٹھویں ایفرو ایشین کانگریس لاہور میں منعقد ہوئی تھی تو ہندوستانی غائنہ گان کو سارے پاکستان میں سفر کرنے کی کھلی اجازت تھی ہندوستان کی حکومت کا یہ فیصلہ ہمارے لئے بہت حوصلہ شکن تھا کیونکہ بہت سے پاکستانی تاج محل اور دیگر تاریخی اور مذہبی مقامات دیکھنے سے روک دئے گئے تھے۔ خاصی تگ و دو کے بعد ڈاکٹر داینا چند اصحاب کو گروپ کی شکل میں تاج محل دیکھنے جانے کی اجازت حاصل کر سکے۔

ہم نے تاج محل کو جانے کیلئے ہم نے شیر شاہ سوری ہائی وے پر سفر کیا۔ یہ عظیم الشان سڑک اسی عظیم حکمران تاجدار کی تعمیر کردہ ہے جس کے نام سے یہ موسوم ہے۔ فن تعمیر کے عظیم اور بے مثال شاہکار تاج محل کو دیکھ کر ہمارے دل بیٹھ گئے۔ کیونکہ اس کی دیکھ بھال، صفائی، اور محافظت کا کوئی اچھا انتظام نہیں تھا۔ بہت سے حفاظتی تعمیرات طلب تھے اور جگہ جگہ ہندو سیاحوں نے سنگ مرمر کی دیواروں پر اپنے نام لکھے ہوئے بلکہ کندہ تک کیے ہوئے تھے۔ جگہ جگہ شفاف شیشے کے ٹکڑے ٹوٹ چکے تھے اور باقی ماندہ اس قدر گرد آلود تھے کہ ان سے دوپہر کے وقت بھی روشنی نہ گزر سکتی تھی۔

باہر کی محرابوں پر شہر کی طرف سے چھتے لگا رکھے تھے جن میں سے شہد ٹپک ٹپک کر سنگ مرمر کی گرد آلود سلوں کو ناقابل بیان حد تک تباہ اور بدصورت بنا رہا تھا۔ یہاں بھی کوئی چیز ٹوٹ گئی تھی یا تو اس کی مرمت بالکل نہیں کی گئی تھی یا پھر بہت ہی گھٹیا کی گئی تھی۔ فن تعمیر کا یہ شاہکار اور اوج عہد ماضی کا عجوبہ روزگار ہندوستان کی حکومت سے کہیں بہتر سلوک اور دیکھ بھال کا حقدار ہے۔ اگرچہ اس کے حصار حکمران ہمارے کیوں نہ تھے۔

میرے خیال میں لاہور ہی ایک ایسا شہر ہے جو دہلی کے مقابلہ میں تاریخی اہمیت کا حامل ہے۔ یہ دونوں شہر صحیح معنوں میں اس علاقے میں حکمرانوں کے ماضی کے آئینہ دار ہیں ہم نے دہلی میں قطب مینار اور دیگر تاریخی مقامات کو دیکھا اور مزار نظام الدین اولیاء کی زیارت کی۔ اگرچہ میں نے بچپن میں قطب مینار کی تصاویر دیکھی تھیں اور اس کے متعلق پڑھتے آئے ہیں۔ لیکن اس کی اصلی شان و شوکت صرف دیکھنے سے تعلق رکھتی ہے۔ اس کی عمارت کا حجم، تناسب، تعمیر اور اس کے سرخ پتھر پر قرآنی آیات کی دل نشین سجاوٹ اور عمارتی دیکھ کر مجھے اندلس کے قصر الحمرا کی یاد آگئی۔ بعض متعصب ہندو تاریخی حقائق کو مسخ کر کے یہ ثابت کرنے کی کوشش میں ہیں کہ اس مینار دوسری عمارات کو ہندوؤں سے منسوب کر دیں۔ صرف مسلمانوں کی تاریخی عمارات ہی نہیں بلکہ اُن کے سارے تمدن کی بیخ کنی کی یہ ایک ادنیٰ مثال ہے۔ مسلمان جو کہ اس ملک کے متمول تعلیم یافتہ باشندے تھے اب سوسائٹی میں ادنیٰ سے ادنیٰ مقام دئے گئے ہیں اُن کی رہائشی شہروں کے کثیف ترین حصوں میں ہے یہاں تعلیم اور ترقی کے مواقع برائے نام ہی ہیں۔ اس حقیقت کا اس بات سے اندازہ لگایا جا سکتا ہے کہ کانگریس میں شرکت کرنے والے ایک ہزار ہندوستانی نمائندگان میں صرف دو مسلمان ہم کو ملے۔ بے شک پاکستان ہم پر ایمان کے بعد اللہ تعالیٰ کا سب سے بڑا احسان ہے۔

قطب مینار کے قریب ہی سلطان علاؤ الدین خلجی کی آخری آرام گاہ اس کس مپرسی کی حالت میں ہے کہ عبرت کا مقام ہے قریب ہی اس سلطان کے تعمیر کردہ کالج کی خانی عمارت اپنی ناگفتہ بہ حالت پر نوحہ کناں ہے۔

ہمارے دہلی میں قیام کے دوران ایک اور ناخوشگوار واقعہ پیش آیا۔ ہم جامع مسجد میں مغرب کی نماز پڑھنے گئے۔ جونہی اقامت کہی گئی ایک ہندو گھس کر صف اول میں ہمارے امام جان بن بیٹھا۔ اس نے دو دفعہ یہ حرکت کی۔ آخر دو بردار نوجوان اس مسجد کے کونے میں لے گئے تب جماعت شروع ہوئی۔ اگر مسلمان اس ہندو پر ذرا بھی سختی کرتے تو ہنگامہ برپا ہو جاتا جس کے بعد ہزاروں مسلمان سارے ہندوستان شہید کر دئے جاتے۔

دہلی میں ایشیا پیسیفک اکیڈمی آف آپتھلمالوجی کی دسویں کانگرس پر تبصرہ

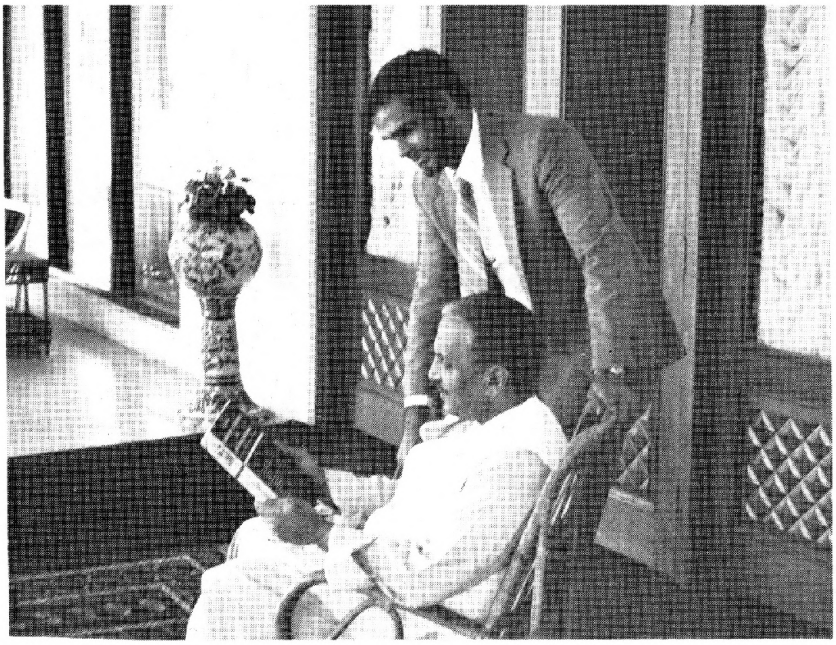
مارچ ۱۹۸۴ میں لاہور منعقد ہونے والی آٹھویں ایفرو ایشین کانگرس آف آپتھالمالوجی کے دوران ہندوستان کے ایشیا پیسیفک اکیڈمی کے جنرل سیکرٹری صاحب نے مجھے اس کی دسویں کانگرس میں مقالات پیش کرنے کی دعوت دی۔ یہ کانگرس ۱۹۸۵ میں دہلی میں منعقد ہونے والی تھی۔ اس سے پہلے مجھے ہندوستان جانے کا اتفاق نہیں ہوا تھا لہذا میں نے اس موقعہ کو غنیمت جان کر اُن کی دعوت قبول کر لی۔

میں اور ڈاکٹر ہمایوں ۳۱ جنوری ۱۹۸۵ جمعرات کو دہلی کے ہوائی اڈے پر پہنچے۔ اگرچہ وہاں پر کانگرس کے ہندوستانی منتظمین کا کوئی نمائندہ نہیں تھا، ہماری ملاقات اپنی ٹریول ایجنسی کے ایک ایجنٹ سے اتفاقاً ہو گئی جس کی وجہ سے ہمیں کسٹم کلیرنس میں کسی قدر آسانی ہو گئی۔ یونہی ہم اپنے سامان کے ساتھ باہر کے ٹرمینل میں پہنچے مجھے خیال آیا کہ میرے سفری کاغذات غلطی سے کسٹم آفیسر کے کونٹر پر رہ گئے ہیں لہذا میں نے چوکیدار سے اجازت لی اور اپنے کاغذات اٹھانے کیلئے دوبارہ اندر چلا گیا۔ وہ کاغذات مجھے مل گئے لیکن اس کے ساتھ ہی ایک کسٹم افسر بھی مل گیا۔ اُس نے میری سر سے پاؤں تک تلاشی لینے کے بعد فیصلہ صادر کیا کہ مجھے اپنا سارا سامان دوبارہ تلاشی کے لئے اندر لانا ہوگا۔ قہر درویش برجان درویش ہمیں چار و نار اپنا سامان ٹرمینل کے واپس لانا پڑا۔ اور اُس کی خوب تہہ و بالا کر کے تلاشی لی گئی۔ یونہی ہم نے اس بیزار کن لکڑ کوب سے خلاصی پائی ہمارا واسطہ ہوائی اڈے کے ایک نقلی سے پڑ گیا۔ جس نے ہمیں تعزیرات ہند کا حوالہ دے کر بتایا کہ غیر ملکیوں کیلئے اپنا سامان خود باہر لے جانا قانوناً منع ہے۔ لہذا ہمیں بہر صورت اُن نقلی صاحب کی خدمات حاصل کرنا ہونگی۔ اُس نے سامان اٹھا لیا اور سولہ روپے کا حطالبہ کیا۔ جاتے وقت اُس نے ایک رسید پکڑا دی۔ رسید پر لکھا تھا کہ مبلغ چار روپے وصول پائے۔

ہم نے ہندوستانی منتظمین کو دو سو ڈالر پہلے ہی ارسال کر دیئے تھے تاکہ ہماری رہائش کا بندوبست ہوٹل میں کیا جا سکے۔ ہوٹل پہنچنے پر معلوم ہوا کہ وہاں ہمارے نام پر ریزرویشن کی کوئی چیز موجود نہ تھی۔ ہم نے پریشانی میں ہوٹل کے منیجر صاحب کو صورت حال سے آگاہ کیا تو انہوں نے ازراہ نوازش ہمیں ایگزیکٹو قوٹا کے کمروں میں سے ایک کمرہ ہم کو مرحمت فرما دیا۔ رجسٹریشن ڈیسک سے فارغ ہو کر ہم نے پیچھے مڑ کر دیکھا تو ہمارا سامان غائب تھا۔ ہوٹل کے حاضر حافظت نے ایک گھنٹے کی تفتیش کے بعد ہمیں بتایا کہ ہمارا سامان ہوٹل کے تہہ خانے میں پڑا پایا گیا۔ ہمارا سامان تہہ خانے میں کیوں اور کیسے پہنچا ایک ایسا راز ہے جو کبھی حل نہ ہو سکا۔

اگلے دن دوپہر کے کھانے کے وقت پاکستانی نمائندگان ایک دوسرے سے ملے اور اپنی اپنی رہائش گاہ کے متعلق بتایا۔ پروفیسر راحیہ ممتاز صاحب پاکستانی نمائندگان کے سربراہ اور ڈاکٹر جمشید وانیا ایشیا پیسیفک اکیڈمی آف آپتھالمالوجی کے پاکستانی حلقہ کے سیکرٹری تھے۔ اگلے روز میں نے "امراض پردۂ اول" کے اجلاس (Retina Session) کی صدارت کی اور اپنے دو مقالات پڑھے۔ میری خوش قسمتی کہ سامعین نے اُن مقالات کو خوب سراہا اور میرے موضوعات "مقالات" ذیابیطس کی سوزش پردۂ اول" (Diabetic Retinopathy) اور "پردۂ اول کی رگ نما لکیریں" (Angioid Streaks) پر بہت مفید تبادلۂ خیالات ہوا۔ ڈاکٹر ہمایوں کا مقالہ "خوف پیش خون کا خورد بینی بہاؤ" (Microcirculation) بھی کامیاب ہوا۔ میرے مقالات کے بعد جاپان کے ڈاکٹر اوگو کاکے ایک پروفیسر شی حواکو نے مجھے ہال میں روک کر نہایت شستگی سے اپنا تعارف کرایا۔ دوران گفتگو انہوں نے مجھے پوچھا کہ آیا میں نے اپنے پردۂ اول کی رگ نما لکیروں کے مریضوں پر ایلکٹروفزیولوجیک جانچ ہے کی ہے۔ اسی دوران ڈاکٹر ہمایوں اور پروفیسر لطیف چوہدری بھی ہمارے ساتھ شریک ہو گئے۔ اور سب نے دوپہر کا کھانا اکٹھا کھایا۔ پروفیسر شی حواکو نے مجھے بتایا کہ سب سے پہلے وہ مجھ سے اُس وقت متعارف ہوئے جب اُنہوں نے تقریباً دس سال پہلے میرے مقالات بنام گینگلی

The First Issue, The First Executive, and The First Editor



President M. Zia-ul-Haq receives the First Issue of the Pakistan Journal of Ophthalmology from Dr. Khalid J. Awan, the Editor.

On April 22, 1985, Dr. Khalid J. Awan, the President of the Pakistan Academy of Medical Sciences, was invited to the President House, Rawalpindi to report on the latest activities of PAMS to General Muhammad Zia-ul-Haq, the President of Pakistan, the Patron of the Academy. As the Pakistan Academy of Medical Sciences has significantly assisted in the launching and the continued progress of the Pakistan Journal of Ophthalmology, Dr. Awan, who is also the first Editor of the *Journal,* presented the copies of the first and the second issues of Pakistan Journal of Ophthalmology to Mr. President. "Delighted" is how Mr. President expressed his feelings about this "progress" of medical sciences in Pakistan. He wrote:

"If this progress is due to a single person's efforts, then the credit goes to Dr. Khalid. Knowledge and education go hand in hand...I beseech the members for collective effort in seeking and spreading knowledge. May Allah guide you-Ameen."

M. Zia-ul-Haq
22 April 1985

President of Islamic
Republic of Pakistan

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

Retinoblastoma In Pakistan

In this issue, the lead article by Dr. Zia-ul-Islam suggests that Pakistan has one of the highest incidences of retinoblastoma in the world. It is to be remembered, however, that a racial difference in the incidence of retinoblastoma has been previously doubted.[1] This aspect of retinoblastoma in Pakistan requires further evaluation and documentation, and I urge Pakistani ophthalmologists to engage in clinical and laboratory research, on retinoblastoma and publish their findings.

We must see it as our moral, professional, and patriotic duty. We should take initiative in meeting this obligation before pressures from the public and the Government force us to do so.

Since the incidence of the uveal malignant melanoma is much lower among our people than among those in the Western nations,[2] a higher incidence of retinoblastoma makes it the most common ocular malignancy in Pakistan. Yet, there are no hard scientific data or analyses of retinoblastoma in Pakistan. No attempts have been made to establish any relationship between the high incidence of retinoblastoma and our socioeconomic conditions. There is no specified medical facility in Pakistan where patients with retinoblastoma could be referred not only for the most efficient available treatment but also to create a national center for information and investigation of this dreadful childhood affliction.

The stage of the disease at the time of diagnosis greatly influences the prognosis for retinoblastoma.[3] Hence, the five year survival rate reaches 90% when retinoblastoma is diagnosed and treated in the localized stage.[4] The Negro population of the United States experiences a mortality rate 2½ times higher than that of the white population because of the delay in diagnosis.[4] It is possible that this is related to the poorer socioeconomic conditions that prevent many Negroes from seeking medical care at the less threatening earlier stages of the disease.

The most common presenting sign of retinoblastoma in Western countries is leukocoria (Cat's Eye Pupillary Reflex), followed by strabismus.[3] A recent publication in a reputable ophthalmic journal claims that it is rare today for a child to present with "proptosis or hideous extraocular extension."[5] Out of Dr. Zia's 86 cases of retinoblastoma, an overwhelming majority of 52 presented with either proptosis or a fungating orbital mass. Obviously, this is mainly due to poor public awareness and perhaps also to the limited accessibility of medical care. It is much more important to educate the public about the early signs of retinoblastoma and its early treatment. I am convinced that if Pakistani ophthalmologists put some of their energies and time into preparing and publishing their reports about eye diseases in Pakistan, they could compel the media and the governmental agencies to provide public education projects about them.

A few years back, I visited a very popular privately owned eye hospital in Pakistan. A father brought a child with bilateral retinoblastoma. The tumor was filling the globe, but had not spread outside of the eyeball in either eye. The ophthalmologist saw the child and told the parents that nothing could be done. I wondered why he did not mention enucleation to the parents. His failure to do so reflected the extreme reluctance of the public to have bilateral enucleation, the financial inability of the parents to raise a blind child, and the limited number of institutions for the blind in Pakistan. I know that this extreme and isolated example of a departure from the professional codes of Pakistan's medical community was at least partially brought about by the economic and educational limitations of the public. The ophthalmologist in all his sincerity believed that he had made the best decision for the patient, the parents, and the public of Pakistan. We as physicians are, however, required not only to protect sight but also to save lives and to spare our patients all the agony we can. Retinoblastoma without a proper treatment can, depending on the stage of the disease, blind, kill, or cause great pain to the patient and his family. If nothing else, a bilateral case of retinoblastoma must at least receive a reasonable family counselling and the information about the future course of the disease. Educating our patients and the public is as important a professional responsibility as providing treatment. Elimination of ignorance can only alter the attitudes of the uniformed public for the better.

Retinoblastoma is highly radiosensitive tumor, a fact that makes irradiation an effective therapeutic modality in patients where surgical excision of the globe is not possible or is refused.[6] Photocoagulation is now considered to be the method of choice in treating selected cases with small lesions.[7] Cryopexy has also been successfully employed in destroying isolated lesions of up to 7 disc diameter and up to 10 diopter in elevation.[8] Any combination of these methods may be used in conjunction with or without systemic chemotherapy in patients with local recurrences and metastatic spread. Attempts must be made to make

these methods of the treatment of retinoblastoma available in Pakistan. Finally, I would like to emphasize another recently learned aspect of retinoblastoma: patients who survive this tumor have about a 15% higher chance of developing another unrelated cancer, which usually appears in the second or third decade of life.[9]

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Honey For Healon®

"Comes from within their (bees)
bodies a drink of varying colors,
wherein is healing for men."[1]

The use of honey for medicinal purposes is nothing new.[2] However, its application in ophthalmology as a substitute for Healon is definitely something new and appealing. Mansour and Trboulsi[3] report in this issue on its use in the anterior chamber of the eyes of rabbits without significant toxicity. Their brief report is merely an introduction to the possibility of honey becoming a safe substitute for Healon, a product that is too expensive to be affordable in Pakistan and in many other countries. Nonetheless, this report must not be regarded as a clear license for honey's use in human eyes. Not as yet.

There are several aspects of this matter in need of further investigation. How does honey affect the corneal endothelium and other intraocular structures? Is it safe to leave some residual honey in the eye if its irrigation is difficult and incomplete? I was told by Dr. Mansour that honey is difficult to irrigate out of the anterior chamber. How to render the honey colorless and less viscous? Are allergens in it free of risks? If not, how to eliminate them? How do the components of honey affect the growth of the pathogens? Even if all of these questions are resolved, there still remains the matter of scientifically controlled study in humans. I advise, as do the authors of this report, that our readers do not use honey in their patients' eyes until further research proves it safe for such an application. Some of the teaching institutions in Pakistan might like to undertake the research on the use of honey in the eyes of laboratory animals. It is an idea worth pursuing.

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President's Message

The President of the Ophthalmological Society of Pakistan addressed the following message to Dr. Khalid J. Awan, Editor, Pakistan Journal of Ophthalmology, and requested its publication in the Journal – Editor.

"Publication of the first and second issue of the Pakistan Journal of Ophthalmology is of an everlasting significance in the history of the Ophthalmological Society of Pakistan. I offer my best wishes, and congratulate you and the Editorial and Advisory Board. The arrangement of articles, the reproduction of photographs, and the error free printing on quality paper is commendable. It shows how much hard work and dedicated efforts have been put in by you. You should justifably be proud of this accomplishment."

Professor Sardar Ali Sheikh
President
Ophthalmological Society of Pakistan
and Professor of Ophthalmology
Nishtar Medical College
Multan, Pakistan
May 19, 1985

Indexing, Abstracting

All writers of scientific papers desire that their published works be preserved for the future retrieval. Hence, they prefer to submit their manuscripts to Journals that are included in the list of international indexing an abstracting organizations and their publications. Moreover, a paper published in a Journal that is included in these lists brings greater prestige to the authors. We are pleased that the Pakistan Journal of Ophthalmology is on the list of the following two international leaders of scientific abstracting and indexing:

1. Excerpta Medica, Amsterdam
2. Ophthalmic Literature, London

This development should encourage the authors to submit their manuscripts for consideration to the Pakistan Journal of Ophthalmology.

Khalid J. Awan

Reprint requests to Khalid J. Awan, M.D., 1921 Park Avenue, SW, Norton, Virginia, 24273 USA or 238-Jinnah Colony, Faisalabad, Pakistan.

Figures 1 & 2

Corneal Complications of Varicella

ABSTRACT: A 9-year old boy developed, three weeks following an attack of chickenpox, a sharply circumscribed stromal swelling of the central cornea. There was minimal generalized conjunctival redness, and the symptoms were limited to photophobia, mild discomfort, and dimness of the vision. A speedy spontaneous resolution left a superficial stromal opacity behind. The clinical appearance of the lesion and negative serum titers for antibodies against herpes simplex substantiated the diagnosis of corneal varicella. (Pak. J. Ophthalmol. 1: 127, 148, 1985)

Ocular complications of varicella (chickenpox) with the exception of cutaneous eruptions of the eyelids are uncommon; they include phlyctenular conjunctivitis,[1] transient or permanent extraocular muscle palsies,[2] internal ophthalmoplegia,[3] uveitis,[4] optic neuritis,[5] and marginal phlyctenular[6] or central interstitial keratitis.[7] The formation of complete cataracts in both eyes following an attack of chickenpox in a 3-year old child was reported by Robb.[8] Copenhaven[9] described an unusual retinopathy presumably due to chickenpox in a male child of 3½.

Keratitis complicating varicella usually assumes three forms. A typical pustule of the conjunctiva may occur at the limbus and implicate the peripheral cornea;[6] a superficial punctate keratitis may appear, but this is uncommon; or the cornea may directly become involved, which is considered most unusual.[6] Direct corneal lesions which tends to remain localized, resolves without serious effects on vision. Usually a nebular scar remains. However, a prominent scar with much impairment of vision has been mentioned in the literature.[10] In one case of very severe involvement of the cornea, the eye developed panuveitis which ended in phthisis bulbi.[11]

In 1936, Pickard[7] described the involvement of the cornea in a 10-year old boy. The patient developed varicella on January 21, 1935, and his right eye became irritable on Feburary 11. Pickard described the corneal lesion as "a central opacity, well defined, grey in colour, with slightly crenated edge, circular in outline and in diameter equal to a quarter of the cornea. The slit-lamp showed the cornea to be swollen in the region of the opacity, not bulging forward but towards the anterior chamber... the keratitis involved the whole thickness of the cornea." With the exception of mild redness of the conjunctiva and sluggish reaction of the pupil, the eye appeared. Initially, the vision was reduced to 6/24 (20/80), but after the resolution of keratitis in three months with only a small nebular opacity left behind, it returned to 6/5 (20/15). Pickard also cited another ease which somewhat resembled his own. In 1943, Rosenbaum[10] reported another case of direct corneal involvement in an adult.

A review of the reported cases of the corneal complications of varicella shows that (1) the corneal involvement occurs late in the course of disease (2); usually, a small and well demarcated area is affected (3); either there is no accompanying uveitis, or it is very mild and resolves quickly; and (4) in most instances the resolution is spontaneous with little effect on vision. All of these factors existed in the present case. Moreover, its striking resemblance to Pickard's case further supports the diagnosis of varicella keratitis.

Since an association between varicella and herpes simplex is not uncommon,[6] and because the keratitis due to varicella may be accompanied by corneal anesthesia,[6,10] a differentiation between herpetic and varicellar corneal lesions is necessary. Moreover, to complicate the matter of differentiation between these two lesions further, an atypical dendritic keratitis following varicellar infection may occur.[12] The characteristic clinical appearance of the corneal lesion, along with only a minimal injection of the conjunctiva, ocular pain, and negative serum titers for the antibodies against herpes simplex substantiate the diagnosis of varicellar keratitis.[12] In the present case the titer for serum antibodies against herpes simplex was negative in two blood specimens which were drawn two weeks apart. Another important reason to differentiate between the keratitis of herpetic and varicellar etiology is their drastically different management and prognosis.

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Figures 3 & 4

Biobsy Diagnosis of Retinoblastoma

ABSTRACT: A general pathologist missed the diagnosis of retinoblastoma after histopathologic studies first on the anterior chamber aspirate and then on the biopsy of iris nodules in a case of retinoblastoma. The tumor had invaded the anterior chamber, resulting in spontaneous hyphema, endophthalmitis, and secondary glaucoma. Author stresses that for best results biopsy specimens should be examined by someone trained in ophthalmic pathology. (Pak. J. Ophthalmol. 1:126, 127, 148, 1985)

Hyphema is an unusual presenting sign of retinoblastoma.[1,2] Only about one percent of the patients may spontaneously develop bleeding in the anterior chamber. It may ensue rubeosis iridis that may be caused by an angiogenic factor derived from the retinoblastoma itself or the anoxic non-neoplastic retina.[3,4] Secondary glaucoma may result from rubeosis, accumulation of tumor cells in the anterior chamber angle, anterior synechia from inflammation caused by necrosis in the tumor, or a pupillary block caused by anterior displacement of the iris-lens diaphragm.

It is interesting that on two occasions, a general pathologists failed to make the correct diagnosis from pathologic specimens of anterior chamber tap and biopsy of iris nodules. The ophthalmic pathologist, on the other hand, was able to render the correct diagnosis on reviewing the same slides. It appears that for the best possible results biopsy specimens should be examined by someone trained in ophthalmic pathology. Although it was reported that tumor had invaded choroid, and despite twice violation of the integrity of the globe before enulceation, the patient has remained free of metastatic disease 11 years after the enucleation.

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Figures 5, 6, 7, & 8

Coats's Disease

ABSTRACT: A 4-year-old boy had uniocular Coats's disease. Two large elevated greyish white lesions in the retina were not accompanied by any abnormalities in the nearby retinal vessels. However, examination under general anesthesia and fluorescein angiography revealed an area of aneurysmal retinal vascular abnormalities surrounding an area of non-perfusion far away from these white lesions in the temporal periphery. (Pak. J. Ophthalmol. 1:127, 147, 1985)

In 1908, George Coats[1] first described an entity with massive subretinal exudation and vascular abnormalities. The condition was later named Coats's disease. Despite a vast literature on it, the true nature of Coats's disease remains undetermined. In 1912, Leber[2] described what is known as Leber's miliary aneurysms of the retina and linked it to Coats's disease. In 1956, Reese[3] suggested that Coats's disease was due to congenital abnormalities of retinal vasculature that manifest themselves as telangiectasis. Currently, Coats's disease, Leber's miliary aneurysms of the retina, and Reese's retinal vascular telangiectasis are grouped under the term Coats's syndrome. The disease is mostly seen as a uniocular phenomenon in young males, but bilateral cases do occur and the condition has been reported in females and adults.[4,5] The idea of inflammation as the basis of Coats's disease in some patients, particularly adults, has been entertained by some.[6] In addition to causing loss of sight, Coats's diseas is a leading mimic of retinoblastoma. In some patients the vascular changes are not easily detectable, and are found in the peripheral retina much further away from the mounds of heavy exudation. Many a time, fluorescein angiography is needed to uncover them, as in the case reported here. The disease leads to total retinal detachment in a large number of cases, but in some patients it may not be progressive. Hence, a followup period of all cases is necessary to establishthe progressive nature of the disease before any treatment is given. It is to be recognized that in some patients the treatment may actually make the condition worse. Coats's disease is usually treated with Xenon arc photocoagulation or cryotherapy, and with scleral buckling if retinal detachment is present.[7] Some recent authors stress that Coats's disease may be controlled with aggressive treatment.[8] In some patients new lesions may appear in non-involved retina several years following the initial successful therapy. It is best to follow patients at 6-month intervals to discover new areas of activity.

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Book Review

OCULAR DIFFERENTIAL DIAGNOSIS. 3rd edition. By Frederick Hampton Roy, M.D., F.A.C.S., Lea & Febiger, Philadelphia, 1984, hardcover, 466 pages, index. Price US $30.00.

This is the latest edition of Roy's extremely popular book that first came on scene in 1972. It has not only been printed in English in many countries but also has been translated into several other languages. This updated third edition includes references right up to the eighties. At the start of the book a very helpful "How to use this book" is included. The book is divided into two sections. The first section is organized according to the symptoms of each ocular structure. Each symptom is accompanied by a subdivided list of various ocular maladies that may give rise to the symptom. In many places comparative features and steps for the differential diagnosis of the causative disorders are also included. This useful feature makes this book very valuable for ophthalmologists in training or in private practice. Each entry is followed by a list of up to date references.

The second much smaller section lists "General Signs and Symptoms," also in alphabetical order. Roy's Ocular Differential Diagnosis is indubitably one of the most useful and popular books in ophthalmology and I recommend it most enthusiastically.

-Khalid J. Awan, M.D.

OCULAR SYNDROMES AND SYSTEMIC DISEASES. By F. Hampton Roy, M.D., F.A.C.S., Grune & Stratton, Inc., New York, New York, 1985, hardcover, 379 pages. Price not listed.

Ophthalmology is a specialty with the widest application in medicine, and ophthalmologists are called on to render care to patients in all other specialties at one time or another. In the preface the author gives the best reason for writing a book for clinicians. He says that practicality "is the objective" and that the "book is designed for quick reference while the patient's eyes are being dilated or immediately following an examination." I have always pulled out one of the volumes of late Duke-Elder's System of Ophthalmology for this purpose; but Roy's book is much more handy and concise. One can quickly refresh one's memory about rare and long forgotten entities by glancing in this volume, and still later on consult Duke-Elder or Duane's Clinical Ophthalmology.

The book is divided into two parts. The first part contains concise descriptions of general, ocular, and clinical features of nearly 2,500 syndromes and systemic diseases. The second part is a sort of synopsis of Roy's other book reviewed in these pages. It has systemically important ocular findings listed in alphabetic order and with each finding, related systemic disorders are listed. The second part would be more helpful to a clinician if the systemic disorders were listed in order of frequency of association rather than alphabetical order. Some systemic disorders with two different names occupy two places in the same list; hence, Paget's disease of bone is listed twice under osteitis deformans and Paget's syndrome in the same list. The multiple names would have been less confusing for physicians still in training if alternative names were in parentheses, as in the first part of the book. In addition to some spelling mistakes, the book has a few factual errors: Ehlers-Danlos syndrome is described as "one of the three primary disorders of elastic tissue." I am sure these minor points will not detract from the great value of the book, particularly to an ophthalmologist or internist in training or one involved in clinical research. Moreover, the second edition of the book will probably remove these objections anyway. All enteries in the first part have a list of up to date references at the end.

The book is beautifully bound and has excellent printing. I recommend this book without reservations.

-Khalid J. Awan, M.D.

REAL TIME OPHTHALMIC ULTRASONOGRAPHY AND BIOMETRY: A Handbook of Clinical Diagnosis. By Richard S. Koplin, MD, Martin Gerstin, and Barton Hodes, MD, Slack Inc. Thorofare, N.J., 1985, spiral-bound softcover, 187 pages, $24.50.

This book should be read "early in the learning curve" by every ophthalmologist interested in the applications of ultrasound in the field of eye diseases. It will serve as a stimulating introduction, a practical guide, a basic atlas, and a clinical handbook for the selection of proper technique and for differential diagnosis.

Written with much enthusiasm and common sense by obviously gifted and experienced teachers, this book is excellent for complete reading and to "sit beside your ultrasound system for easy reference." It is recommended for both purposes.

— J. Reimer Wolter, M.D.

Books Received:

CURRENT OCULAR THERAPY. 2nd edition. By Frederick T. Fraunfelder, M.D., F. Hampton Roy, M.D., F.A.C.S., and S. Martha Meyer. W.B. Saunders Company, Philadelphia, 1984, hardcover.

10th Congress of the Asia-Pacific Academy of Ophthalmology

PRECURSOR SIGNS OF DIABETIC RETINOPATHY: SPLINTER HEMORRHAGES, PUPILLARY MYDRIASIS, AND "IRIDESCENT DOTS." **Khalid J. Awan, M.D.**. *Department of Ophthalmology, University of Virginia School of Medicine, Charlottesville, Virginia, U.S.A. and Awan Ophthalmology Clinic, Norton, Virginia, U.S.A.* Isolated splinter hemorrhages around the optic disc, degree of pharmacologic mydriasis, and newly described finding of iridescent dots at or near the beginning of the smallest ophthalmoscopically visible veins, were studied as diagnostic and the prognostic clinical indicators of diabetes mellitus. Nine apparently healthy persons under the age of 40, had splinter hemorrhages near their optic discs; six were found to have positive oral glucose tolerance test. Eleven patients over the age of fifty who had diabetes mellitus for over 20 years had good mydriasis (7 mm or over). No diabetic retinopathy or only two or three microaneurysm were seen in them. Author concludes that good mydriasis in longstanding diabetes is an indicator of absence of or slower progression of diabetic retinopathy. A poor dilation of pupil (6½ mm or less) in a diabetic is seen just before or in the established diabetic retinopathy. Author describes a finding of "iridescent dots" at the beginning of ophthalmoscopically visible small veins. Ten out of 14 patients who had these shiny dots but no other evidence of diabetic retinal change had positive oral glucose tolerance test. He suggests that the presence of such dots in the ocular fundus warrants testing for diabetes mellitus for its early diagnosis.

MICROHYPHEMA: CAUSES, COMPLICATIONS. **Khalid J. Awan, M.D., Norton, VA and Muhammad Humayun, F.R.C.S., Halifax, N.S.** *From the Department of Ophthalmology, University of Virginia School of Medicine, Charlottesville, Virginia and Awan Ophthalmology Clinic, Norton, Virginia (Dr. Awan), and Department of Ophthalmology, Dalhousie University, Halifax, Nova Scotia (Dr. Humayun).* Authors present an analysis of the 16 cases of microhyphema. Six of these had cataract surgery without IOL; three had pupillary IOL; one had anterior chamber IOL; two had trabeculectomy; one developed it after laser trabeculoplasty; one had a poorly managed old perforating limbal injury; and two had anomalous vascular tufts of the pupillary border. The complications related to microhyphema were transient episodes of blurry vision, blood deposits on the face of vitreous, repeated episodes of iridocyclitis, IOL intolerence, failure of filteration surgery, and secondary glaucoma.

NEW OBSERVATIONS ON ANGIOID STREAKS OF OCULAR FUNDUS. Khalid J. Awan, M.D. *From the Department of Ophthalmology, University of Virginia School of Medicine, Charlottesville, Virginia and Awan Ophthalmology Clinic, Norton, Virginia.* After a study of 27 consecutive cases of angioid streaks, author seriously questions the statement that 50% to 60% of patients with angioid streaks have pseudoxanthoma elasticum, particularly when the general incidence of 23 cases of angioid streaks in 10,000 patients is considered. He suggests that aging process itself is responsible for angioid streaks in a large number of patients, and that occurrence of streaks is not as rare over the age of 60 as is currently believed. He brings to attention the association of angioid streaks with Gilbert's disease and with local condition of ocular melanocytosis. Angioid streaks appeared very slowly over the period of ten years, in contrast to the current belief that they appear rapidly, in the eyes of two adult patients who had no streaks at the time of first examination.

CONGENITAL GLAUCOMA IN IRAN. Ali Aminlari. *Khalil Hospital, Shiraz, Iran.* Congenital glaucoma is rare and an ophthalmic resident has the opportunity to see two or three cases of congenital glaucoma during the training. The reported incidence of blindness due to this disease varies from 5% to 13.5% in different institutions for the blind. Approximately 60% to 70% of congenital glaucoma cases are bilateral, affecting predominately males. Most cases are sporadic and only 10% to 15% show a hereditary tendency with an autosomal recessive pattern. Although medical treatment has a temporary effect, the treatment of the disease is essentially surgical. Goniotomy proposed by Barkan, and trabeculotomy have been the most successful procedures for congenital glaucoma. The purpose of this presentation is to show the incidence, the way of presentation, and the effect of cyclocryotherapy, goniotomy and trabeculotomy for this type of glaucoma on 150 cases which have been seen, treated and followed since 1976 by the author.

TREATMENT BY ARGON LASER FOR GLAUCOMA (IRIDOTOMY, TRABECULOPLASTY AND TRANSPUPILLARY CYCLOPHOTOCOAGULATION). Kunihiko Fujita. *Department of Ophthalmology, Juntendo University, School of Medicine, 3-1-3-Hondo Bunkyo'ky, Tokyo, Japan.* In the present study, more than 100 patients with glaucoma

Abstracts From Elsewhere

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were treated by three different methods (iridotomy, trabeculoplasty and transpupillary cyclophotocoagulation). The argon laser (Nidek model 3500 in Japan) attached with Goldmann slit lamp was used. The results of three methods were shown as follows. (1) Laser iridotomy was performed for patients with angle closure glaucoma including attacking eye using by the Abraham's corneal contact lens. This procedure was done by two steps. The success rate was about 90%. (2) Laser trabeculoplasty was performed for patients with primary open angle glaucoma, capsular glaucoma and pigmentary glaucoma using the Goldmann three mirror and the new type of gonio contact lens designed by us. About 70% in primary open angle glaucoma, 75% in capsular glaucoma, 100% in pigmentary glaucoma were carried out successfully. (3) Transpupillary cyclophotocoagulation was done for glaucoma with dilated pupil in aphakic patients and acute attack of glaucoma by using a Goldmann three mirror lens.

THE CASE FOR A TWO STAGE VALVE IMPLANT SURGERY IN THE MANAGEMENT OF INTRACTABLE GLAUCOMA. Dr. Billson F.A. *Dept. of Clinical Ophthalmology University of Sydney.* The surgical aspects and rationals of two stage valve implant for intractable glaucoma are considered. The surgical technique is described. The cases reported include the experience with late stage buphthalmos, juvenile glaucoma, aphakic glaucoma and neovascular glaucomas. The possibility that the procedure may have value in end stage primary glaucomas is discussed. The results of using this procedure in 23 patients (29 eyes) including 9 patients under the age of 10 years suggests the procedure has considerable merit when conventional methods and surgical procedures such as trabeculectomy for glaucoma has failed.

RADIOTHERAPY FOR IDIOPATHIC INFLAMMATORY ORBITAL PSEUDOTUMOR. H. Yabe, C. Kimura and T. Hirakata. *Keio University, Tokyo, Japan.* Supervoltage radiotherapy was applied to fourteen patients with idiopathic inflammatory orbital pseudotumor. Among 45 cases diagnosed as inflammatory orbital pseudotumors during the period from Jan. 1974 to Dec. 1984, 14 cases for which surgical therapy or steroid therapy was not effective, or steroid therapy was effective, but which replapsed due to tapering in doses, or the therapy was unable to continue due to the side effects of steroid, were indicated for radiation therapy. Out of these 14 cases, 10 were diagnosed by pathological diagnosis, and 4, by clinical diagnosis. Their ages averaged 54 years. High energy (6 MeV) Linac X rays were mainly used in the total doses of 1,600 rad to 4,400 rad. The period of observation averaged 28 months. Thirteen cases responded favourably, as judged by reduced proptosis and disappearance of tumor mass, as demonstrated by Computed Tomography. However, in 2 cases, recurrence was observed after 5 and 27 months. These patients required further corticosteroid or additional radiotherapy. Only one case did not improve with radiotheraphy.

THE USE OF SUBPERIOSTEAL LIQUID SILICONE (RTV) IN ORBITAL RECONSTRUCTION. Amin Marwah Nasr and Walter Spohn. *Chief, Oculoplastic Surgery, Orbital Diseases and Ultrasonography, King Khalid Eye Specialist Hospital Riyadh, Saudi Arabia.* Most anophthalmic orbits undergo fat atrophy with time resulting in retracted sockets, sunken prostheses, and invariably superior sulcus deformities. These conditions require cosmetic surgical repair with professional special skills and techniques to obtain optimal results. Several procedures and different materials are widely used including dermal fat grafts, scleral tissue grafts, glassball implants and hard silicone plates. We have used liquid silicone, vulcanized at room temperature injected in the subperiosteal space after careful dissection and separation of periorbita from the underlying bony orbit. We present thirteen patients with subperiosteal liquid silicone (RTV) reconstructed orbits with adequate cosmetic and functional results. Although the post operative follow-up periods are not long enough, knowing the characteristics of silicone (inert with stable volume), the shrinkage potential and extrusion rate are minimal..

TREATMENT OF KERATOMYCOSIS WITH AUREOFUSCIN (A REPORT ON 40 CASES). Chen Ming Gao, Yuan Chin and Wang Guang Ming. *Ophthalmic Department, Ma-tang Hospital, Wuhu Anhui, the People's Republic of China.* Aureofuscin is an antifungal antibiotic found in China. That has revealed, in vitro or in animal experiments, its ability to inhibit many species of fungi. From Jan. 1975 till June 1984, we were applying Aureofuscin to the treatment of 40 cases with keratomycosis After a definite diagnosis, Aureofucin solution (0.1%) or ointment (1%) was administered to the patients. The dose of the former was once every half an hour, while that of the later once every two hours. In cases associated with iritis, atropine was given for mydriasis. The clinical symptoms would become alleviated after 3 or 5 days. The ulcers healed 15 or 20 days afterwards, with improvement of vision. Apart from Aureofuscin, other antibiotics or antivirals were added to 7 cases with a complication of bacterial or viral infection. There were 6 cases with chronic fungal dacryocystitis cured by giving Aurefuscin ointment. The cure rate of this case group amounts to 80%.

EXPERIENCE IN TREATMENT OF FLORID DIABETIC RETINOPATHY. U.M. Klemen, Christine Frey and F.H. Prskavec. *First Eye Department, University of Vienna Spitalg. 2, A-1090 Vienna, Austria, Europe.* A follow-up study on 47 diabetics suffered from florid retinopathy and controlled upto 10 years is presented. The different surgical techniques (photocoagulation, vitrectomy, membrane dissection, sceral resection and retinal detachment surgery) and their influence on the further development of the retinal

changes are described and discussed. In the majority of all cases a stop of the progression of the retinopathy could only be obtained after combined surgeries. Because of the different and fluctuating courses of the florid retinopathy it is difficult to recommend a general management of surgical treatment. Our observations showed the necessity to decide special individual surgical methods for each single patient according to the extent and the pre-and postoperative development of the retinal changes.

ANTIGLAUCOMATOUS CYCLECTOMY. Ulrich Demeler. *2800 Bremen, St. Jurgen-Street, Zentralkrankenhaus, Augenklinik Germany.* From 1974 up to 1984, 90 ciliary body excisions have been performed in a total of 73 eyes with different forms of secondary glaucoma. Sixteen eyes had been treated twice and one eye underwent 3 ciliary body excisions. In the majority, a secondary closed-angle glaucoma with aphakia was indicated for surgery. Most of the eyes have been operated on more than 4 other antiglaucomatous procedures before ciliary body excision was performed. The preoperative intraocular pressure ranged from 35mm Hg up to 60mm Hg. After a postoperative follow up of more than 6 months, 85% of the operated eyes showed a satisfying intraocular pressure. The intraoperative complications like vitreous loss and hemorrhages out of ciliary body vessels can be minimized by using a Flieringa ring, a paracentesis, and an extensive cauterization of the ciliary body.

A NEW PROCEDURE OF INVOLUTIONAL ENTROPION. Takeshi Naito, Yoshihiro Takagi and Hiroshi Shiota. *Department of Ophthalmology, tokushima University, Kuramoto-cho, Tokushima City 770, Japan.* After the incision of the skin, the preseptal muscle is separated from pretarsal muscle by an incision at the base of the tarsus and dissected free from the septum. The preseptal muscle is sutured to the septum with 5-0 Dexon and the septum is shortened by tightening the sutures. The excess skin is excised and the skin is closed with 7-0 silk. Results of procedure on ten cases are not only functionally but also cosmetically excellent. In addition to introducing this procedure, our test to decide the indication of our new procedure will be shown.

ORBITAL TUMOR. M. Munir-ul-Haq, King Edward Medical College, Lahore, Pakistan. Author discusses his personal experience with space occupying lesions of the orbit by presenting an analysis of 364 cases of orbital tumors he treated.

METHODS OF CORNEAL ENDOTHELIUM PROTECTION IN THE COURSE OF INTRAOCULAR SURGERY. Fyodorovna N. Korostelyova. *Moscow Research Institute of Eye Microsurgery Beskudnikovsky blvd. 59a 127486 Moscow, USSR.* The endothelium protection in cataract surgery with IOL implantation is extremely urgent. The present report presents methods for corneal endothelium protection in the course of cataract extraction and IOL implantation. The results of experiments on 80 rabbit eyes and 250 procedures in the clinic patients are given.

THE EFFECT OF BEFUNOLOL INTRAOCULAR PRESSURE IN OCULAR HYPERTENSION AND GLAUCOMA. Chul Hong. *Department of Ophthalmology, School of Medicine, Hanyang University, 17 Haengdang-dong, Sungdong-ku, Seoul 133, Korea.* The clinical efficacy of 0.5% and 1.0% solution of Befunolol, a newly developed B-blocker in Japan, in safely reducing intraocular pressure was investigated in 30 patients with ocular hypertension and glaucoma. The intraocular pressure, blood pressure, pulse rate and pupillary diameter were examined at least 3 months after instillation of Befunolol ophthalmic solution. Its effect on intraocular pressure is presented with the systemic and local adverse reactions.

STUDIES ON DACRYOCYSTITIS AND DECRYOCYSTORHINOSTOMY. Visooter Chayakul. *Department of Ophthalmology, Faculty of Medicine, Prince of Songkla U. Haadyai 90110, Thailand.* Studies on the etiologic agents of dacryocystitis are reported in 76 Thai patients. Pseudomonas aeruginosa, staph-coagulase positive, and streptococcus pneumoniae, were found more frequently. Dacryocystorhinostomy in 60 patients, performed by using a dental burr was successful in 95% patient with a followup periods of 3 to 36 months.

EPIDEMIOLOGY OF NUTRITIONAL BLINDNESS IN BANGLADESH. Md. Abdul Jalil and Nicholas Cohen. *19-E, Dhanmondi Residential Area, Road No. 6, Dhaka-5, Bangladesh.* Xerophthalmia is a major cause of childhood blindness in Bangladesh. Following 1972/73 WHO random survey, a national program of distribution of high potency vitamin A capsules (200,000 I.U.) to rural children aged 0-6 years every six months, was initiated in 1983 by Government of Bangladesh with the support of UNICEF. The target population at present is about 18 million. Xerophthalmia prevalence survey of Bangladesh has been conducted in 1982-83 by Helen Keller International Foundation and Government of Bangladesh and other agencies. Some of the epidemiological findings of the survery are as follows: (1) About 5% of the rural children under six years, numbering about 1 million, are suffering from some form of Xerophthalmia. (2) About 12,000 children of the surviving rural children become blind every year. (3) A geographical variation exists in the country, for non-corneal Xerophthalmia. (4) One in 10 of the children were moderately/severely malnourished. (5) The vitamin A capsule distribution coverage rate for the rural children was 45% in the years of the survey. (6) Rates for noncorneal and corneal Xerophthalmia are lower for rural children who have been given vitamin A capsules than those who have not been given.

REVIEW OF 5,000 INTRAOCULAR LENS IMPLANTATIONS. Akira Momose and Ren-Yuan

Chu. *Institute of Clinical Ophthalmology, 1-100 Umeda, Kiryu Gunma, Japan 376-06.* This presentation deals with 5,000 intraocular lens implantations performed in Institute of Clinical Ophthalmology at Kiryu, Japan, since 1975. With various types of the lens, 85 to 90% of the cases achieved vision of 1.0 (6/6) or better after two months of the surgery. However, some types of the lens were proved unsuitable to Japanese eyes. Since retinal complications are less frequent in Japanese eyes, iris-clip lenses or anterior chamber lenses were implanted after intracapsular extraction in most cases of senile cataract. Glass posterior chamber lens implantation after extracapsular extraction seemed to be suitable in young patients. In diabetic patients and patients having any retinal lesions, glass iris-clip lens was implanted for the benefit of panretinal photocoagulation or vitreo-retinal surgery after lens implantation. In glaucomatous eyes, posterior chamber lens seemed to be suitable in our experience. In lens implantation surgery, careful postoperative follow up and control of postoperative complications are very important to achieve a high success rate.

POSNER-SCHLOSSMAN UVEITIS, EFFECT OF CYCLOCRYOTHERAPY ON RECURRENCES. Romeo V. Fajardo. *Department of Ophthalmology, Philippine General Hospital, University of the Philippines, Taft Avenue, Manila, Philippines.* Six cases of unilateral recurrent anterior non-granulomatous uveitis with glaucoma, all in males with ages ranging from 22-40 years old at the time of the onset were seen in Uveitis Clinic. The patients noted hazy vision during attacks which disappeared in 1-3 weeks with or without treatment. Objectively, we noted during the attacks epithelial edema, 2-5 small round keratic precipitates and 1 + flare and cells in the aqueous. Phenylephrine 10% 3 times a day, topical steroids 5-6 times a day and diamox 3 times a day were given during the attack when seen in the clinic. Four of them were convinced to have cyclocryotherapy on the fifth year of the condition. It was done during the inactive stage. A 4mm cryoprobe with a temperature of 70% 80°C was applied at 8 equally spaced area for 1 minute each over the ciliary body transconjunctivally. A count on the recurrence rate 5 years before and 5 years after the therapy showed the following in the 4 cases; 7:2, 5:2, 5:1 and 3:0. The 2 cases without the cryotherapy continue to recur once a year.

PEDIATRIC EYE CONDITIONS IN A RESETTLEMENT AREA. R.V. Fajardo. *Department of Ophthalmology, Philippine General Hospital, University of the Philippines, Taft Avenue, Manila, Philippines.* A continuing study of children up to 12 years old in a resettlement area by the Department of Ophthalmology of the Manila Doctors Hospital showed that 53.6% had eye problems while only 5.8% came complaining of symptoms blamed by the patient or parent to an eye pathology. Blindness (3/60 or less) was noted in 0.46% while 1.4% of children had one or 2 eyes blind. The most common eye condtions encountered were error of refraction (77.1%), blepharitis (5.2%), hordeola (4.3%), conjunctivitis (3.8%) avitaminosis (1.7%), leukoma (1.3%), microphthalmus (0.8%) and injury (0.8%). So far 7.04% of the children population of 18,277 were examined in a community confined in a area of 3,487 hectacres containing 11,270 households and 64,581 people.

COMMUNITY OPHTHALMOLOGY IN DEVELOPING COUNTRIES. Hussain R. & Billson F. *Dept. of Clinical Ophthalmology University of Sydney.* Community Ophthalmologists must have the skills of Epidemiologists so that they can participate in the public health questions that must be solved to effectively eradicate avoidable blindness. The Authors' present the concept of Community Ophthalmology as it has been developing in Bnagladesh since 1978, including the course development of the Diploma of Community Ophthalmology, now awarded by Chittagong University. The Authors' review the results of the program in establishing an extension of the Health service in Bangladesh to rural areas, and show how it forms a framework for further eye care and research in the future.

EXPERIENCE WITH THE PERTH IOGEL INTRAOCULAR LENS. G. Barrett Fraco and I.C. Fraco. *Dept. of Ophthalmology, Royal Perth Hospital, Perth 6000, Western Australia.* The IOGEL intraocular lens is made of soft HEMA and has been designed primarily for posterior chamber implantation after extracapsular extraction but new models are being developed as an alternative for anterior chamber implantation also. Rigorous laboratory testing has shown the lenses to be free of monomer contaminants and to be free of bacterial contamination. Experiments in animals reveal that the lens does not damage the corneal endothelium on contact in contradistinction to more commonly used acrylic PMMA lenses. The IOGEL lens will not adhere to scar tissue and is well tolerated in animal eyes. Follow-up for one year in over 50 human cases reveals no significant complications.

VISCOSURGERY, HEALON VS. METHYLCELLULOSE. Akira Momose and Toshiki Baba. *Institute of Clinical Ophthalmology, Kiryu, Japan.* The advent of Healon has changed anterior segment surgeries, such as lens implantation, keratoplasty etc. dramatically. Healon has sufficient viscosity to maintain the anterior chamber during the surgery. However, it is not so watersoluble and it is difficult to wash it out of anterior chamber after the wound is closed. If, a large amount of Healon is left in the anterior chamber, it obstructs the trabecular meshwork and the pressure is elevated after the surgery. Therefore, Diamox should be administered at least for three days after the surgery. Healon is an expensive substance. Hydroxypropyl methylcellulose has a slightly less viscosity than Healon. It is water-soluble and it is easy to irrigate it out from the anterior chamber. It has a much lower molecular weight than that of Healon. It does not obstruct the trabecular meshwork after the surgery and elevation of the IOP is

less. Experimentally, Hydroxypropyl methylcellulose has proved to have no toxicity to the corneal endothelium. It is much less expensive than Healon. In our clinical experience, Hydroxypropyl Methylcellulose has an equal effect to protect the corneal endothelium as Healon.

A NEW EXTENDED WEAR GAS-PERMEABLE HARD LENS, BES-CON III, OXYGEN MEASUREMENTS AND CLINICAL RESULTS. Jae Ho Kim, Sun Jae Lee, Irving Fatt, and Richard M. Hill. *Department of Ophthalmology, Kangnam St. Mary's Hospital, Catholic Medical College and Center, 505 Banpo-dong, Kangnam-ku, Seoul 135, Korea.* By using the gas-permeable hard-contact lens, Bes-Con-III, a new product of silicone-PMMA copolymers from International Contact-Lens Lab. Seoul, Oxygen measurements were made by the polarographic cell method (DK & DK/L) and by measurement of EOP in a goggle over the eye based on air containing 21% oxygen. The DK value of Bes-Con II (daily-wear, center thickness 0.12 mm) showed 17.9×10^{-11} (cm^2/sec) (ml 0^2/mlxmm Hg) in 35°C, and DK/L 14.9×10^{9} (cm/sec) (ml0^2/mixmm Hg) in 35c, and DK/L 14.9×10^{9} (cm/sec) (ml 0^2/mixmm Hg). The DK value of Bes-Con III ranged from 33.9 to 35.1×10^{-11} (cm^2/sec) ml 02/mixmm Hg), and Dk/L value of Bes-Con III ranged from 28.7 to 29.8×10^{-9} (cm/sec) (ml 0^2/mixmm Hg). For clinical study on Bes-Con III, extended-wear gas permeable hard lens, 55 patients (95 eyes) including of astigmatism, keratoconus, corneal scar, myopia, aphakia and post-keratoplasty were selected and the patients have worn continuously these lenses up to seven days without removal. Following results were obtained after 6 months of observation. 1) Excellent corrected visions with Bes-Con III were maintained without any decrement with time. 2) Five cases (52%) among ninety five cases of eyes were discontinued from continuous wear of Bes-Con III due to complication. 3) Five cases (9.6 %) among remained 52 patients have replaced their lenses because of lenses lost (4 cases) and lens torn (1 case). 4) The most common subjective symptoms are foreign body sensation (30% in group A, about 50% in group B, about 70% in group C). 5) By slit-lamp examination, mild hyperemia and corneal erosion were observed in a few cases of each group. 6) Satisfaction of Bes-Con III fitting according to patients complaints showed 88-86% in group A and C, and 55% in group B. 7) Bes-Con III did not influence the corneal sensitivity. 8) Corneal thickness also was not changed inspite of 7 days extended-wear during the observation of 3 months.

IOL IMPLANTATION IN GLAUCOMA PATIENTS USING VISCOELASTIC SURGERY. B.T. Philipson, B. Calel and A. Holmberg. *Department of Ophthalmology, Karolinska Hospital, Box 60500, Stockholm, Sweden.* Extracapsular cataract extraction using visco-surgery and posterior chamber IOL implantation have been performed in a series of 50 patients with glaucoma. Different steps in the surgical procedure using viscosurgical techniques will be discussed. The patients have been followed from 6 months to 3 years. The outcome of surgery with special reference to the IOP, VA and endothelial cell count is reported. Although IOL implantation in glaucomatous eyes with miotic pupils is a more complicated procedure, it may be greatly facilitated using visco surgery. With this technique we do not consider glaucoma being a contraindication to IOL implantation. The postoperative IOP is not increased except for an occasional rise on the first post operative day when the properative antiglaucomatous therapy was discontinued.

OCULOSPORIDIOSIS. Md. Humayun Kabir. Sylhet Medical College and Hospital, Sylhet, Bangladesh. Four cases with clinical presentations, different from each other, were studied. The first case came with bleeding eye through lacrimal puncta. When the sac was opened a small bleeding polypoid; growth was found. The second one presented with mucocele of the lacrimal sac. A good number of papillomatous growths were seen inside the sac when it was removed. In the third case there was a polyp in the lid margin. the fourth one had a haemangioma like flat lesion over the bulbar conjunctiva. The patients were male including one child. The lesion was unilateral in each case. Under microscope all the growths were diagnosed as Oculosporidiosis caused by the fungus Rhinosporidium seeberi.

RISK OF BLINDING MALNUTRITION IN RURAL BANGLADESH HOUSEHOLDS. Nicholas Cohen and M. Mitra. *Helen Keller International, P.O. Box 6066, Gulshan, Dhaka-12. Bangladesh.* Each year 100000 preschool-age children in Bangladesh have serious corneal eye lesions due to vitamin A deficiency: 15000 survive bilaterally blind. Young children of households with little or no land were found to be most vulnerable. Poorer households with access to less than 0.3 acre land or no garden or without a tin roof, wristwatch, radio or cycle were two-three times more likely to have a child under six years with any type of xerophthalmia. Risk differentials were greatest for the more serious active corneal lesions. Almost 80% of blind children came from landless households. Yet even a very small garden reduced considerablely the chances of a household having a child with xerophthalmia.

MANAGEMENT OF OPTIC NERVE INJURY. Makoto Inatomi. *1-9-10, Horinouchi, Suginami-ku, Tokyo Japan.* The principle of treatment is the surgical decompression of optic nerve. We performed about 900 cases of operation by transethmoidal route in the past 15 years. Among them improvement of visual function was seen in about 40% of cases. Better surgical results were obtained in the cases operated within two weeks after trauma. From these data, we presume that the operation should be done at the early days after trauma.

GLAUCOMA IN BANGLADESH. M.D. Mustafizur Rahman. *Islamia Eye Hospital, Dhaka, Bangladesh.* A

study had been carried out on glaucoma at Islamia Eye Hospital, Dhaka. The study period was between July, 1983 and June, 1984. A total number of 152 patients were examined. The author gives his observation on the incidence of various types and stages of glaucoma in Bangladesh. Ninety percent of them had already glaucomatous cupping and 60% had constricted field less than 6° isopter. Medical treatment was tried in 40 patients. Ninety-four percent failed to comply with medical treatment. Trabeculectomy under microscope with about 1/3rd thickness superficial scleral flap with 6 stitches were done in 40 eyes. Intraocular pressure was controlled below 20 in 38 eyes. Six needed application of local drops in addition. Success rate is 95%. Post-operative complications were hyphaema in 5 cases which cleared up and flat A.C. in one case which ultimately needed lens extraction. While majority of them attended the hospital at an advance stage, compliance to medical treatment was almost nil. The author recommends trabeculectomy as first therapeutic step in the early as well as in the late stage of primary open angle glaucoma where medical treatment was felt to meet poor compliance.

CANALICULORHINOSTOMY. M.D. Mustafizur Rahman. *Islamia Eye Hospital, Dhaka, Bangladesh.* In developing countries where there is dearth of ophthalmologists who can perform dacryocystorhinostomy, epiphora following dacryocystectomy is not very uncommonly met with. The 11- to 40-year age group patients usually surrender for second operation. Canaliculo-rhinostomy with silicone intubation is an answer to this troublesome problem. The technique and results of 15 cases of canaliculo-rhinostomy are thoroughly discussed. A single anterior flap and dissection of all sac remnants around canaliculi and keeping the silicon rod for about 6 months are the key points of success of this operation. Post-operative steriod and antibiotic drops in the eye and nose prevent granulation tissue formation and subsequent failure from occlusion of nasal canalicular opening from scarring. Out of 15 cases 14 got relief from epiphora. The success rate was 93.3%.

WILL SMOKING INFLUENCE THE COURSE OF DIABETIC RETINOPATHY? F.A. Hosni *P.O. Box No. 309, Military Hospital, Abu-Dhabi, U.A.E.* This is retrospective study of 324 male diabetics attending the Eye Clinic, Military Hospital, Abu-Dhabi. In 70% the duration of diabetes mellitus was less than 5 years. Diabetic retinopathy was observed, in 33%. The ratio of BGR: PR was 3:1. In the smoking group the prevalence of diabetic retinopathy was lower than the nonsmokers. A similar prevalence was seen on comparing obese nonsmokers and smokers. It is assumed that the smoking-hypoxia has a relatively little influence on the retinal tissues which have been affected over a long period by the diabetic process.

TOXIC EFFECT OF DETERIORATED HEALON ON HUMAN CORNEAL ENDOTHELIUM. Jae Ho Kim and Chan Ju Lee. *Department of Ophthalmology, Catholic Medical College, Kangnam St. Mary Hospital Seoul, 135 Korea.* Authors have seen three patients with iatrogenic corneal endothelial damage induced by misuse of deteriorated sodium hyaluronate (Healon) during ECCE and PCL implanation. Very small amount of Healon which is retianed inside of the syringe needle can not be removed completely out by routine sterilization without ultrasonic procedure because of its viscosity, and exposed Healon can also be easily deteriorated in its chemical property in time at room temperature, or/and in some sterilizing solutions. A day after, same syringe needle which contained deteriorated Healon inside was reused for Healon injection into the anterior chamber in three patients. Injected Healon showed change of transparency because of mixture of deteriorated and normal Healon.

All cases developed corneal edema and uveitis from first postoperative day. In first patient, ocular symptoms appeared more severely, and finally pseudophakic bullous keratopathy developed. Penetrating keratoplasty was performed and clear corneal graft with good vision was maintained until one year follow-up. Corneal specimen showed extensive endothelial damages. Authors recommend disposable syringe needle for Healon injection (don't use it again). Manufacturer should add a disposable needle with a syringe in a Healon pack.

A ROLE OF THE ANTAGONISTIC MUSCLE CONTRACTURE IN PARALYTIC STRABISMUS. Hisashi Kimura, Shunsaku Ohmi, Sakuko Fukai, Tomoe, Hayakawa and Jun Tsutsui. *Department of Ophthalmology, Kawasaki Medical School, 577, Matsushima, Kurashiki-city, Okayama, 701-01, Japan.* In extraocular muscle palsy, paralytic strabismus occurs, in certain cases but not in all. To clarify the mode of occurrence of strabismus, electromyographic (EMG) study was carried out. In 8 cases (oculomotor palsy 4 cases, abducens palsy 4 cases) of external ophthalmoplegia with strabismus, EMGs were recorded from the paralytic muscle and the antagonist. EMG of paralytic strabismum was characterized by an increased discharge from the antagonistic muscle accompanied with a decreased discharge from the paralytic muscle at the deviated position. Consequently, it was suggested that the appearance of strabismus in external ophthalmoplegia depended on the contraction of antagonistic muscle rather than the hypotony of the paralytic muscle, the mode of the cooperation between oculomotor and abducens nucleus, and the disturbance of proprioceptive projection from the paralytic muscle.

VERNAL CONJUNCTIVITIS. Mohammad Mehdi Aryana. *Dr. Aryan's Ophthalmic Clinic, Modarres Avenue, Building No. 14, Second floor, Meshad, Iran.* Vernal conjunctivitis or spring catarrh, an allergic eye disease, usually occurs in spring, summer, or early

autumn and aggravated in hot season. The affected people are mostly the youths, specially females between the ages of 20 to 24, who use the cosmetics. Pollination, nutrition, drugs, microorganisms, cosmetic agents and plastic materials might be responsible. There are two clinical forms of the disease, palpebral and limbal. In palpebral type, large flattened granulations or papillae occur on the palpebral conjunctiva and resemble strawberries or cobble stone pavement. The chief symptoms are exudation, itching, lachrymation and photophobia. Conjunctival smear contains numerous eosinophils. During the attack, mast cells are found in the conjunctival smear. This stage is characterized by reddish gelatinous, swelling around the cornea. If keratoconus causes decrease in sight, operation of cornea should be done. Nondrug treatment consist of cold water compress, ice, airconditioned room and traveling to cool places.

NEURO-OPHTHALMOLOGICAL EXAMINATIONS IN PINEALOMA. Nobuaki Taoka, Tyugo Haruta, Keiko Inoue, Osamu Mimura and Masahi Shimo-oku. *Department of Ophthalmology, Hyogo college of Medicine, 1-1 Mukogawa-cho, Nishinomiya, Japan, 663.* Neuro-ophthalmological examinations, including ophthalmoscopy, pupillary reaction, quantitative perimetry and eye movement examinations were performed on 14 patients with pinealoma. In 10 of 14 patients ophthalmoscopic abnormalities were found and in 8 patients disturbances of pupillary reaction were detected. Visual field defects were shown in 2 patients and eye movement disorders were found in 10 patients. In the case with convergence nystagmus the high speed electro-oculography showed that unilateral divergent movements frequently preceded convergence nystagmus. The neural mechanism of this divergent movement is briefly discussed.

Scholarship Schedules

Ophthalmological Society of Pakistan
1986 Annual Meeting, Quetta
March-April - (Dates to be announced)
Contact: Professor Sardar Ali Sheikh, President OSP
Nishtar Medical College, Multan, Pakistan

Pakistan Academy of Medical Sciences
1985 Board of Trustees Meeting
November 9, 1985
Baltimore, Maryland, U.S.A.

Association of Pakistani Physicians
7th Annual Meeting, July 18-21, 1985
Anaheim, California
Contact: APP 1300 Fairmount Avenue
Fort Worth, Texas 76104

Islamic Medical Association of North America
17th Annual Convention
Niagara Falls, New York - July 4-7, 1985
Contact: Bashir A. Chaudhary, M.D.
Department of Pulmonary Diseases
Medical College of Georgia
Augusta, GA 30912

American Academy of Ophthalmology
1985 Annual Meeting - September 29-October 3
San Francisco, California
Contact: Paul R. Lichter, M.D.,
Program Secretary AAO 1010 Wall Street
Ann Arbor, Michigan 48105

The Pakistan Academy of Medical Sciences (PAMS)
The Pakistan Academy of Medical Sciences (PAMS) is holding its Convocation in Lahore in December, 1985. Gen. Muhammad Zia-ul-Haq, the President of Pakistan has accepted the invitation to present the Certificates of Fellowship to elected Fellows of the Academy. For further details contact:
Mushtaq A. Khan, M.D., Ph. D., The Secretary of PAMS. 9454 Ellsworth Court. Fulton, Maryland 20759 U.S.A., Telephone (301) 490-3009

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Dorado Beach, Puerto Rico
March 17-21, 1986, and March 16-20, 1987
Vail, Colorado
Contact: Office of Continuing Education, Johns Hopkins University School of Medicine, Turner 22, 720 Rutland Ave., Baltimore, MD 21205.

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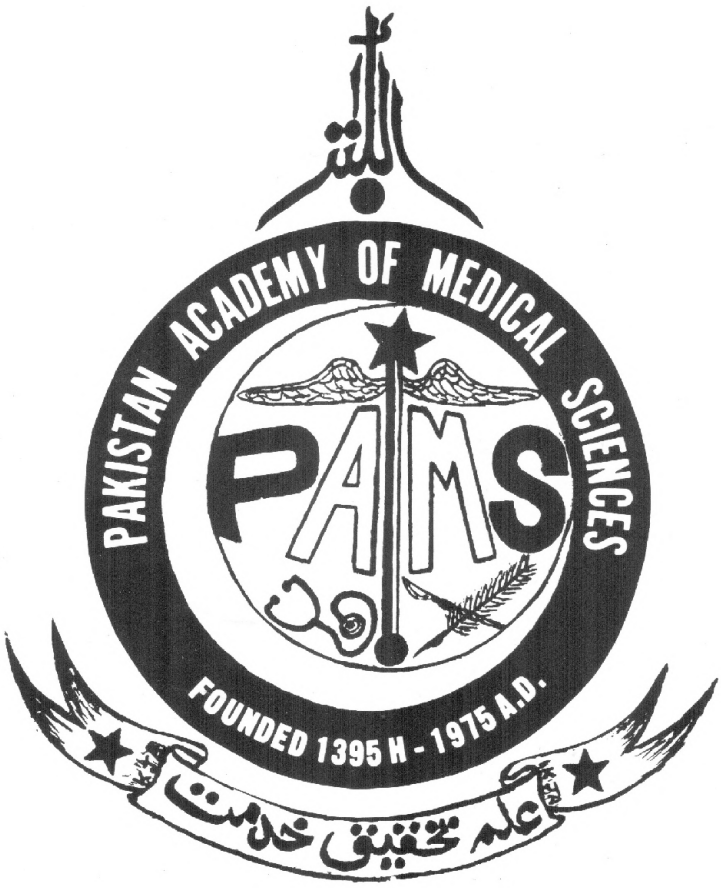

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IN THE NAME OF ALLAH, THE BENEFICENT, THE MERCIFUL

INSTRUCTIONS FOR PREPARING MANUSCRIPT FOR PAKISTAN JOURNAL OF OPHTHALMOLOGY

We consider current concepts, original ideas, and up-to-date reviews of practical significance.

1. Arrangement of contents: TITLE PAGE with the title of the paper, names of the authors, and in a footnote, the affiliations of authors, address for reprints and inquiries, and the names of sponsoring organizations: ABSTRACT of no more than 200 words on a single page; TEXT of the paper with introduction, materials and methods, case reports, and comments or discussion: ACKNOWLEDGEMENTS; REFERENCES; TABLES; KEY WORDS; and LEGENDS FOR FIGURES.

2. Every part should be typewritten, in DOUBLE SPACING, on one side only of white, 8½ x 11 inch paper. A margin of at least ONE inch should be left on all sides. Nothing should be underlined. A RUNNING TITLE, the last names of the authors, and the page number should be provided in the upper right hand corner of all pages.

3. Include sufficient references to the previous work on the subject of the paper.

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1. Awan, KJ: Arterial vascular anomalies of the retina. Arch. Ophthalmol. 95:1197, 1977
2. Rahi, AHS, and Ashton, N: Reticulin fibres in relation to retinal vessels.Brit. J. Ophthalmol. 61:339,1977

B. For Books:

1. Newell, FW: Ophthalmology: Principles and Concepts. 5th ed., St. Louis, C V Mosby Company, 1982, p 73
2. Duke-Elder, S, and Leigh, AG: Diseases of the Outer Eye. Cornea and Sclera. In Duke-Elder, S (ed): System of Ophthalmology, vol. 8, pt. 2. St. Louis, C.V. Mosby Company, 1965, pp 110-114

6. Figures should be numbered in order of appearance in the text. Each figure should have on its back: 1. Figure number, 2. Names of authors, and 3. An arrow indicating the top. Legends for the figures should be typewritten in doube spacing and should include names of the authors, names of structures, kind of stain, magnification, etc. Example:

Fig. 1 (Khan, Chaudhary, and Sheikh). Right eye. Histologic section of tumor (hematoxylin and eosin, X40).

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7. Manuscripts will be accepted only in ENGLISH or URDU. Authors of manuscripts in any other language are requested to provide a copy of English translation.

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9. Letters, short notes on useful diagnositic and therapeutic tips, announcements, and interesting photographic documentations are invited.

10. Send the manuscripts and all the communications to the Editor at the following address:

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