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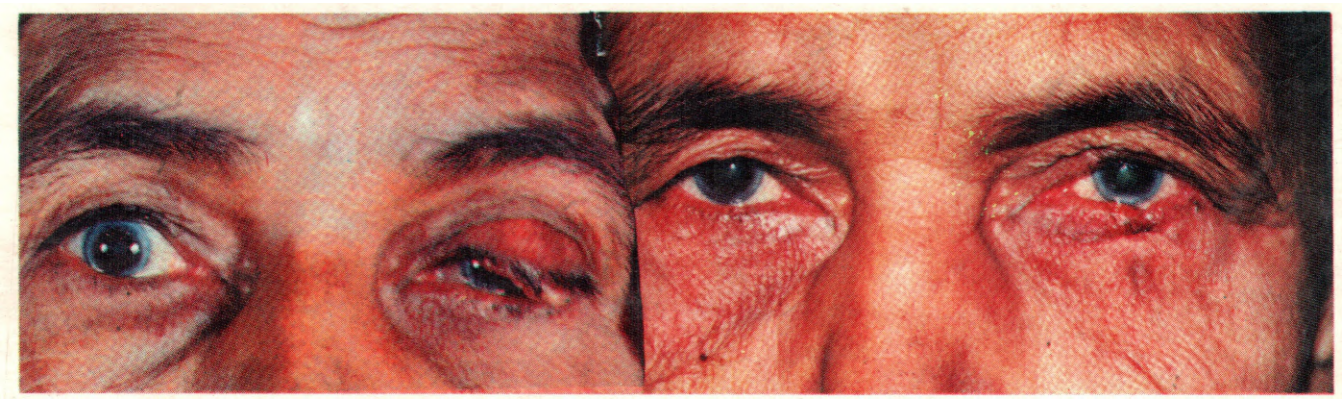

At Page 118 Figures 1: Anterior polar cataract and anterior lenticonus in Alport's syndrome

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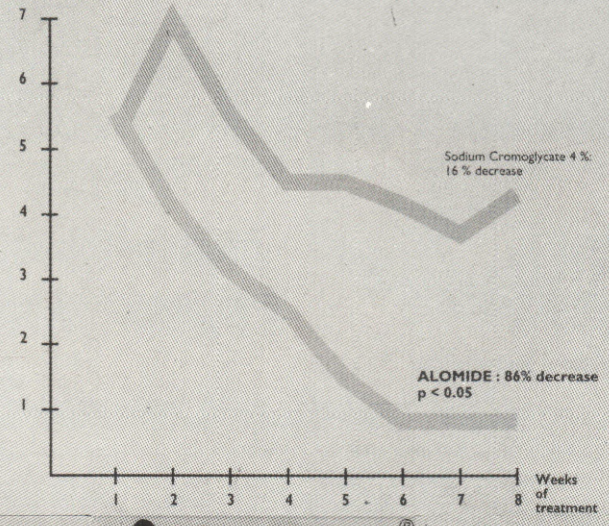

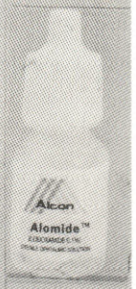

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Guest Editorial

The Land of Paradoxes--Where Intracaps, Extracaps, Phaco and, Yes, Couching Coexist.

Cataract extraction is the commonest surgical procedure in ophthalmology and perhaps commoner than any other procedure in any branch of medicine. Over a million cataracts are removed annually in the U.S. with a current population of around 250 million. In other developed countries of the world the situation is similar. In the developing countries with a larger mass of population and with cataracts developing at a younger age, the number of cataract extractions is astronomical. And the backlog of those needing surgery for cataract keeps growing.

See also PP 103-113

While cataract surgery is constantly being improved in the developed countries, the situation in the developing countries is somewhat more complex. The patients in the former are becoming more demanding and expect the highest level of perfection from their ophthalmic surgeons with minimal discomfort and disruption of their daily activities. This has led to the refinement in the technique of phacoemulsification and conversion of large proportions of cataract surgeons to phaco surgeons in the developed countries. In the developing countries, on the other hand, there are centers of excellence, as good as any in the developed countries, and there are centers with mediocre facilities where intracapsular cataract extraction (ICCE) alone is performed routinely as a standard procedure to remove cataracts. By far these latter facilities are much more common than the former variety. But what is more disturbing is the fact that there are a sizeable number of nonprofessionals still performing primitive procedures, like couching, to remove cataracts from a large population of ignorant, illiterate and poor people, not only in villages, but also in large cities. In our own country these quacks are performing such procedures even in metropolitan areas, where excellent facilities for extracapsular cataract extraction with intraocular lens implantation abound. Not only that, even the more advanced procedure of phacoemulsification has taken root in such areas. The existence of "Rauls" (those performing couching) in these communities, in this day and age, is downright disgusting and a matter of great shame to the profession of ophthalmology. The reasons for the existence of couching and continued existence of routine ICCE alone are obviously socioeconomic. Their remedies need to be considered in a broader context of raising the educational and living standards of the communities at large. There are, however, certain steps that we ophthalmologists individually, as well as, collectively as members of the Ophthalmological Society of Pakistan (OSP) can take to rectify the situation and to improve the standard of ophthalmic care in our communities. Each one of us must try to stop quackery in its tracks. It is suggested that the OSP should create a Legal Division to which all nonprofessional surgery be reported by members and nonmembers. The laws do exist against quackery. The Legal Division must go after getting these implemented to eradicate this menace.

The OSP must also try to educate the public and save the naive and unsuspecting individuals from these quacks in order to save their vision. It must also try to educate, through its Committee on Education (the creation of which was suggested earlier[1]), the ophthalmologists desiring to improve their techniques to bring themselves up-to-date. This can be done through workshops under the auspices of the OSP or by arranging short rotations of the ophthalmologists through selected centers willing and able to train them. Ophthalmologists from District and Tehsil headquarter hospitals may be brought to the hospitals affiliated with the teaching institutions for a few days to a few weeks as desired and as deemed practical. These individuals, in turn, could train others at their respective hospitals or even those in private practice in their towns.

It is high time that we ophthalmologists got organized and started to raise the standard of our specialty so that some semblance of uniformity is

obtained across the country. This uniformity ought to be in the form of an upgradation of the quality in the underserved and underdeveloped segments of our country. The OSP ought to shake off its inertia and take this responsibility seriously. The members must share the burden equally willingly, even though some sacrifices be required. If each one of us could cooperate in such endeavors, we would not only have done our duty to the public at large but also served the country in a patriotic fashion. And in the process, improved ourselves too. Not a bad deal by any means!

REFERENCE

1. Durrani J. Medical education in Pakistan. (Editorial). Pak J Ophthalmol 1995; 11: 60-2.

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Intraocular Lens Implantation: A Review of 2527 Eyes

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ABSTRACT

We retrospectively studied 2527 eyes of patients who underwent cataract extraction with intraocular lens (IOL) implantation. 848 eyes (88 %) achieved the best corrected visual acuity of 6/12 or better, 85 eyes (8.8%) achieved the visual acuity between 6/18 and 6/60, while visual acuity between 6/60 and light perception was present in 30 eyes (3.1%). The causes of persistent poor visual acuity were age- related macular degeneration, branch retinal artery occlusion, branch retinal vein occlusion, optic atrophy, cystoid macular edema, diabetic retinopathy, persistent uveitis, corneal decompensation, retinitis pigmentosa and retinal detachment. The main complications of the procedure were high intraocular pressure 0.8%, wound dehiscence 0.7%, corneal decompensation 0.5%, pupillary membrane 0.4% , cystoid macular edema 0.2%, endophthalmitis 0.1%,and persistent uveitis in 0.1% of the patients.

INTRODUCTION

The removal of cataract must, over the centuries, have provided untold benefits to human beings. The operation removes the fog, dazzle, distortion and other discomforts suffered by the patients as cataracts advance. Aphakic spectacles have only been available for about 300 years, so until they were introduced patients must have enjoyed very little improvement of vision after cataract removal. When spectacles are provided, the visual acuity may be good, but the patients face the problems of enlarged images, prismatic and aberrational effects, limited visual fields, roving ring scotomas and impairment of judgement of distances leading to clumsiness with simple tasks. Also, there is no prospect of binocular vision if the other eye is phakic with good vision. Contact lenses overcome many of these problems, but most aphakic patients are old and slow to adapt and learn. These are unsuitable for use in dusty environment and most unilateral aphakic patients cease wearing a contact lens within 2 years[1]. An appropriate lens placed within the eye in aphakia gives an optical correction which is closer to normal vision than is possible by any other method. If this can be done with safety, it represents a very substantial improvement in the management of cataract[2]. Lately, in a rapidly increasing number of extractions, a prosthetic acrylic intraocular lens (IOL) is being surgically implanted inside the eye.

Cataract surgeons frequently face the challenge of treating open angle glaucoma, corneal opacities, intraocular foreign bodies, traumatic corneoscleral lacerations and vitreoretinal diseases in patients presenting for cataract surgery and intraocular lens implantation. It seems logical to treat these associated problems during the same surgical procedure if it can be done without jeopardizing the results of either. The results of combined keratoplasty, cataract extraction, and intraocular lens implantation after corneolenticular lacerations in children are encouraging[3] Combined extracapsular cataract extraction with posterior chamber lens implantation and pars plana vitrectomy is a well-tolerated surgical procedure for diabetics with non-clearing vitreous haemorrhage attributed to proliferative diabetic retinopathy, age-related macular degeneration and trauma. The procedure is also beneficial in removing the inflammatory vitreous cells and debris associated with chronic uveitis[4]. Intraocular lenses are relatively safe in patients with chronic iridocyclitis[5]. In children one of the major obstacles in intraocular lens implantation has been the subsequent dense opacification of the posterior capsule. The results are encouraging with irrigation/aspiration of the cataractous lens combined with posterior chamber lens implantation, pars plana posterior capsulotomy, and pars plana vitrectomy[6]. Overall the long term results of intraocular lens implantation in paediatric patients demonstrate an improvement in visual acuity and psychological advantage of enhanced visual function without having to use spectacles or contact lenses. However, the residual refractive error is highly unpredictable because of the continued growth of the eyeball, but usually does not exceed 6 dioptres. Also, vigorous occlusion therapy is necessary in unilateral cases[7].

PATIENTS AND METHODS

The study includes 2527 eyes, in which

intraocular lenses were implanted after cataract extraction or as secondary procedures in patients who had had their cataracts removed elsewhere sometime ago. The study was conducted at Shaikh Zayed Postgraduate Medical Institute, Lahore, from June, 1987 to June, 1994, with a follow-up of six months to seven and a half years. Patients' ages at the time of surgery were within a range of 2 to 95 years. 1560 were males (61.7%) and 967 were females (38.3%) (Table 1). 540 patients (21.4%) were diabetic, 336 (13.3%) had hypertension and 121 (4.83%) had glaucoma (Table 2). All these problems were well-controlled before subjecting the patients to surgery.

A thorough eye examination, preoperative refraction, keratometry and ultrasonic axial length measurement for biometry were performed in most of the patients. The power of IOL to be implanted was determined by "Estimation" method in 364 patients and by the "Calculation" method in 2163 patients (Table 3). Binkhorst and SRK formulae were used to calculate the IOL power to be implanted. Facial block and retrobulbar anaesthesia were given using 2% xylocaine with 1:100,000 adrenaline in non-hypertensive and without adrenaline in hypertensive individuals. General anaesthesia was used in patients under forty years of age. Pupils were dilated with 1% tropicamide and 10% phenylephrine.

Fornix based conjunctival flap was made. 10 mm half-thickness incision at the posterior limbus was employed. Can-opener type anterior capsulotomy was done in closed anterior chamber with a 27 gauge needle. The limbal incision was then converted to full-thickness corneoscleral incision. The nucleus was removed by expression, by applying pressure on cornea at 6:00 and on sclera at 12:00 positions. Residual cortex was irrigated and aspirated with balanced salt solution (BSS) using Simcoe cannula. IOL was inserted under a cushion of air in nine hundred and seventy-five patients (38.6%) and with the help of viscoelastic material in fifteen hundred and fifty-two patients (61.4%) (Table 4). Pupil was constricted with intraocular miochol injection where necessary. Subconjunctival injection of 20 mg gentamicin and 20 mg depot medrol was given.

Antibiotic and steroid eye drops were instilled and a patch applied. Oral antibiotic and Indomethacin were given for five days and topical antibiotic and steroid eye drops for six to eight weeks. Patients were discharged on the first or second postoperative day. The postoperative follow-up was at 1,2,4 and 8 weeks. Visual acuity with IOL and pinhole was recorded at each visit. Refraction was done at 8 weeks after surgery and sutures were cut if astigmatism measured more than 2.50 dioptres.

2329 patients (94.6%) received the posterior chamber IOLs, while the remaining 137 (5.4%) had the anterior chamber IOLs (Table 5). Of those receiving anterior chamber lenses most were secondary procedures as they had had intracapsular cataract extraction in the past. Preoperative visual acuity measurements of the operated and the fellow eye are given in Tables 6 and 7 respectively.

Table 1: Sex Distribution

Sex	No. of Cases	Percentage
Male	1560	61.7
Female	967	38.3
Total	**2527**	**100**

Table 2: Incidence of Associated Diseases

Disease	No. of Patients	Percentage
Diabetes Mellitus	540	21.4
Hypertension	336	13.3
Glaucoma	121	4.83

Table 3: Biometry Vs Estimation

	No. of Cases	Percentage
Biometry	2163	85.6
Estimation	364	14.4
Total	**2527**	**100**

Table 4: Air Vs Viscoelastic

	No. of Cases	Percentage
Air	975	38.6%
Viscoelastic	1552	61.4%
Total	**2527**	**100%**

Table 5: IOL Type

IOL Type	No. of Cases	Percentage
PC IOL	2329	94.6
AC IOL	137	5.4

Table 6: Preoperative Visual Acuity

Visual Acuity	No. of Cases	Percentage
6/6 - 6/12	28	2.1
6/18 - 6/60	579	22.9
CF - PL	1895	75.0
Total	**2527**	**100**

Table 7: Visual Acuity in the Fellow Eye

Visual Acuity	No. of Cases	Percentage
6/6 - 6/12	876	34.7
6/18 - 6/60	835	33.0
CF - PL	790	31.3
NO PL	26	1.0
Total	**2527**	**100**

RESULTS

At 8 weeks postoperatively 603 patients (37.6%) achieved a visual acuity between 6/6 and 6/12 with IOL alone, while 6/18 to 6/60 vision was present in 740 patients (46.2%) and a visual acuity of CF to perception of light was present in 260 patients (16.2%) (Table-8).

Table 8: Visual Acuity With IOL

Visual Acuity	No. of Cases	Percentage
6/6 - 6/12	603	37.6
6/18 - 6/60	740	46.2
CF - PL	260	16.2
Total	**1603**	**100**

Three hundred and one patients (26.00%) required no overcorrection for distance vision. 677 Patients (58.4%) required $\pm$ 2.00 spherical equivalent of over-refraction for best corrected visual acuity. Over-correction above $\pm$ 2.00 was required in 182 patients (15.6%) (Table 9).

Table 9: Refraction

Overcorrection	No. of Cases	Percentage
+2.25 - + 5.00	33	2.8
+0.12 - + 2.00	205	17.7
PLANO	301	26.0
-0.25 - -2.00	472	40.7
-2.25 - -6.25	149	12.8
Total	**1160**	**100**

Final visual acuity of 6/6 -6/12 was achieved in 848 patients (88.0%). Visual acuity between 6/18 and 6/60 was present in 85 patients (8.8%), while visual acuity between CF and PL was present in 30 patients (3.1%) (Table 10).

Table 10: Corrected Visual Acuity

Visual Acuity	No. of Cases	Percentage
6/6 - 6/12	848	88.0
6/18 - 6/60	85	8.8
CF - PL	30	3.1
Total	**963**	**100**

The causes for persistent poor vision were age-related macular degeneration in 38 patients (1.50%), diabetic retinopathy in 20 patients (0.80 %), optic atrophy in 9 patients (0.30%) and central retinal vein occlusion, branch retinal vein occlusion, central retinal artery occlusion in 3 patients (one each) (0.1%). Advanced retinitis pigmentosa was present in 2 patients (0.10%) (Table 11).

Table 11: Post. Segment Disease

Disease	No. of Cases	Percentage
Macular lesion (Age-related)	38	1.50
Diabetic Retinopathy	20	0.80
Optic atrophy	09	0.30
Retinitis Pigmentosa	02	0.10
Central Retinal Artery Occlusion	01	0.03
Branch Retinal Vein Occlusion	01	0.03
Central Retinal Vein Occlusion	01	0.03

22 patients (0.8%) had high IOP, 18 (0.7%) had wound dehiscence, 14 (0.5%) had corneal decompensation, 10 (0.4%) had pupillary membrane, 7 (0.2%) had cystoid macular edema, 4 (0.1%) had endophthalmitis and 3 (0.1%) had severe uveitis. (Table 12). Patients with high IOP were well-controlled with antiglaucoma therapy. Pupillary membranes disappeared completely with topical steroids.

Table 12: Complications (Early)

Complication	No. of Cases	Percentage
High IOP	22	0.8
Wound Dehiscence	18	0.7
Corneal Decompensation	14	0.5
Pupillary Membrane	10	0.4
Cystoid Macular Oedema	07	0.2
Endophthalmitis	04	0.1
Uveitis	03	0.1

Late postoperative complications were after-cataract in 84 patients (3.30%) necessitating YAG laser capsulotomy. 10 patients (0.40%) had pupillary capture. 5 (0.20%) had retinal detachments that were successfully reattached with good visual outcome. One (0.03%) had vitreous haemorrhage that resolved completely over a period of three months (Table 13).

Table 13: Complications (Late)

Complication	No. of Cases	Percentage
After-cataract	84	3.30
Pupillary Capture	10	0.40
Retinal detachment	05	0.20
Vit. Hemorrhage	01	0.03

DISCUSSION

Intraocular lens implantation is at present the commonest method of visual rehabilitation after cataract extraction. With the advent of modern surgical techniques the cataract surgeons can now well-manage the associated ocular pathologies, like corneal opacity, uncontrolled glaucoma, advanced diabetic retinopathy etc. It seems logical to treat these problems during the same surgical procedure if it can be done without harming the eye. A triple procedure consisting of cataract extraction along with keratoplasty and IOL

implantation is now standard[8-9]. This has been proven to be a good choice for the treatment of corneolenticular trauma in children when combined with vigorous anti-amblyopia therapy and Nd: YAG laser treatment of after-cataracts. Uncontrolled glaucoma patients with cataracts have been successfully treated with trabeculectomy combined with extracapsular cataract extraction and IOL implantation[10-11]. Patients with cataracts and vitreoretinal pathology, like dense, nonclearing vitreous hemorrhage attributed to PDR, trauma, age-related macular degenerations and others with inflammatory vitreous cells with debris associated with chronic uveitis have been successfully managed with extracapsular cataract extraction, posterior chamber intraocular lens implantation, and pars plana vitrectomy[4]. IOLs are relatively safe in patients with chronic iridocyclitis[5]. Transient elevation of intraocular pressure, cystoid macular edema and uveitis are observed more frequently in diabetic patients undergoing IOL implantation. There is also progression of diabetic retinopathy in these cases[12]. Heparin-surface-modified intraocular lenses have resulted in a better clinical outcome in patients with glaucoma, diabetes, or uveitis[13].

Management of cataracts in children is difficult. Intraocular lens implantation in this age group results in severe intraocular inflammation, unpredictable residual refractive error and high incidence of posterior capsule opacification. The technique of endocapsular cataract extraction, posterior chamber intraocular lens implantation, pars plana posterior capsulotomy, and pars plana vitrectomy has produced better results[6]. Overall, intraocular lens implantation in paediatric age group has demonstrated an improvement in visual acuity and the psychological advantage of enhanced visual function without spectacles or contact lenses[14].

The incidence of cystoid macular edema in our study was 0.2% (7 patients) compared to 3-6% quoted in the literature. About 50% of these patients responded very well to topical and systemic steroid therapy. The incidence of this complication is lower in extracapsular cataract extraction than in intracapsular cataract extraction.

84 patients (3.30%) developed thickening of the posterior capsule several months to years after surgery compared to 2 to 20% given in the literature[15].

In our study five patients (0.20%) developed retinal detachment. These patients were treated successfully with retinal reattachment surgery. The incidence of retinal detachment reported in the Western literature is 2-5% following extracapsular cataract extraction. This incidence rises to 10% if there is vitreous loss at the time of cataract extraction[16].

Endophthalmitis occured in four patients (0.1%). Two of these patients responded to topical, subconjunctival and systemic antibiotics. Infection was very severe in the remaining two patients. These eyes could not be saved despite all the possible measures and ended up in enucleation.

14 patients (0.5%) developed pseudophakic bullous keratopathy. The incidence of this complication has been reported to be 0.1% to 1.0%. Morphologically eyes with decompensated corneas reveal degeneration of endothelial cells, abnormal proliferation of posterior collagenous layer, and edema of stroma and epithelium. Surviving endothelial cell area is less than 50%[17].

We achieved best corrected visual acuity of 6/12 or better in 848 patients (88%) This compares well with Yang and Kline's series of 1000 posterior chamber IOL's (91.6%)[18] and Surgidev corporation's series of 583 PC IOLs (92.75%)[19]. Visual acuity between 6/18 and 6/60 was achieved in 85 patients (8.8%). 30 patients (3.1%) could not achieve visual acuity better than counting fingers. The causes for persistent poor visual acuity in these patients were macular lesions in 38 patients (1.50%), diabetic retinopathy in 20 patients (0.8%), optic atrophy in 9 patients (0.3%), advanced retinitis pigmentosa in 2 patients (0.1%) and central retinal artery occlusion, central retinal vein occlusion and branch retinal vein occlusion in 3 patient (0.1%) (one each). The records of the remaining 44 patients with poor vision could not be traced.

Since the results of intraocular lens implantation at our center are comparable to those of the developed countries and the incidence of complications is also low, it is recommended that this facility should be extended to District and Tehsil headquarter hospitals. Short review courses and workshops will be of benefit in training the budding eye surgeons. This will be of great economical benefit for the patients and will reduce the inconvenience of transport and save their time. This will also reduce the burden on teaching hospitals and the consultants of the teaching institutions will have time to manage the complicated cases in a better way.

REFERENCES

1. Lobasher D et al. Contact lenses in aphakic patients. Br. J. Ophthalmol 1974; 58: 1009.

2. Welsh RC Experimental simulation of aphakia. Br. J. Ophthalmol 1965; 49: 86-89.

3. Vajpayee RB, Angra SR, Honavar SG. Combined

keratoplasty, cataract extraction, and intraocular lens implantation after corneolenticular laceration in children. Am. J. Ophthalmol 1994; 117 (4): 507-II.
4. Foster RE et al. Combined extracapsular cataract extraction, posterior chamber intraocular lens implantation, and pars plana vitrectomy. Ophthalmic Surg 1993; 24 (7): 446-52.
5. Tessler HH, Farber MD. Intraocular lens implantation versus no intraocular lens implantation in patients with chronic iridocyclitis and pars planitis. A randomized prospective study. Ophthalmology 1993; 100 (8): 1206-9.
6. Buckley EG et al. Management of posterior capsule during paediatric intraocular lens implantation. Am J. Ophthalmol 1993; 115 (6): 722-8.
7. Markam HA et al. Results of intraocular lens implantation in paediatric aphakia. Eye 1992; 6: 493-8.
8. Taylor DM. Keratoplasty and intraocular lenses. Ophthalmic Surg 1976; 7:31.
9. Burner WE, Stark WJ, Maumenee AE. Combined keratoplasty, cataract extraction, and intraocular lens implantation. Experience at the Wilmer Institute. Ophthalmic Surg 1981; 12:657.
10. Pfoff VDS. Simultaneous extracapsular cataract extraction, intraocular lens implantation, and posterior lip sclerectomy filtering procedure in glaucomatous patients. CLAOVJ 1984; 10:143-7.
11. Jay JL. Extracapsular lens extraction and posterior chamber intraocular lens insertion combined with trabeculectomy. Br J Ophthalmol 1985; 69: 487-90.
12. Kodama T, Hayasaka S, Setogawa T. Plasma glucose levels, postoperative complications, and progression of retinopathy in diabetic patients undergoing intraocular lens implantation. Graefes-Arch-Clin-Exp-Ophthalmol 1993; 231 (8): 439-43.
13. Lin CL et al. Heparin-surface-modified intraocular lens implantation in patients with glaucoma, diabetes, or uveitis. J cataract Refract Surg 1994; 20 (5): 550-3.
14. Sinskey RM, Stoppel JO, Amin P. Long term results of intraocular lens implantation in paediatric patients. J Cataract Refract Surg 1993; 19 (3): 405-8
15. Durrani et al. A review of 1000 cases of intraocular lens implantation. Pak J Med Res 1993; 32 (4): 252-8.
16. Hilton GF, McLean EB, Norton EWD, eds. Retinal detachment. Manual of American Academy of Ophthalmology 1981; 15.
17. Liu GJ et al. Histopathological study of pseudophakic bullous keratopathy developing after anterior chamber or iris-supported intraocular lens implantation. Jpn-J-Ophthalmol 1993;37 (4): 414-25
18. Yang HK, Kline OR JR. Posterior chamber lens implant surgery. New York: Raven press 1983.
19. Surgidev corporation, Goleta, California. Core study and clinical trials of J-loop posterior chamber intraocular lenses. 1978-79.

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Complications of IOL Implantation: Review of 400 Cases

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ABSTRACT

Records of 400 intraocular lens (IOL) implantations in 374 patients operated on at Chandka Medical College Hospital, Larkana and People's Medical College Hospital, Nawabshah during 4-1/2 years (November, 1990 to March, 1995) were reviewed retrospectively with regard to the incidence of complications and their management.

233(58.25%) were males and 167 (41.75%) were females. Average age of patients was 50.8 years. 80% of the patients achieved final visual acuity of 6/18 or better. Majority of cataracts were senile, followed by traumatic, congenital, diabetic and complicated types. All complications are listed, the main being keratitis, residual cortical matter, posterior capsular rupture and uveitis. The rest of the complications were of little consequence as regards visual disturbance, with the exception of decentration and endophthalmitis. Fortunately, the latter complication was rare. The etiology and treatment of complications are discussed.

INTRODUCTION

We operated on all these patients with the conventional ECCE procedures with irrigation and aspiration (I/A) in an open anterior chamber.

MATERIALS AND METHODS

400 PC IOLs were implanted in 374 patients during a period of 4-½ years from November, 1990 to March, 1995 at Chandka Medical College Hospital, Larkana and People's Medical College Hospital, Nawabshah. Diabetes and hypertension were controlled prior to IOL implantation. Preoperative examination consisted of recording visual acuity, tonometry, colour testing for macular function, slit-lamp examination, direct and indirect ophthalmoscopy and ultrasonography where indicated.

The power of IOL was calculated empirically in 85% of patients. In 10% it was done by clinical evaluation and in 5% by SRK formula.

All cases were done under local anaesthesia except for nervous adults and patients under 15 years of age.

Table 1 shows male and female ratio of 58:42. The minimum age was one year. Two patients were under 3 years of age and visual results in both these patients were disappointing despite close follow-up. They developed copious fibrous exudates covering the visual axis, synechiae and anterior vitreous opacification. Therefore, IOL implantation under 3 years of age was abandoned.

The final visual acuity (VA) achieved was good (6/6-6/24) in 320 (80%) cases (Table-2), but in 80 patients, the VA was 6/36 or less and as most of these patients were lost to follow-up between 2 to 8 weeks following surgery, the final VA could not be ascertained. Our results represent both corrected and uncorrected VA. Astigmatism remained the main obstacle in achieving good uncorrected VA.

Table 1: Demographical Data

Age in Years	Male	Female	Total
01-05	2	4	6
06-10	11	4	15
11-20	18	4	22
21-30	10	14	24
31-40	10	5	15
41-50	32	41	73
51-60	111	66	177
> 60	39	29	68
	233(58.25%)	**167(41.75%)**	**400**

Table 2: Final Visual Acuity

Visual Acuity	Male	Female	Total
6/6	13	12	25(6.25%)
6/9	31	27	58(14.50%)
6/12	52	33	85(21.25%)
6/18	59	35	94(23.50%)
6/24	38	20	58(14.50%)
6/36	28	16	44(11.00%)
6/60	13	9	22(5.50%)
< 6/60	10	4	14(3.50%)
	244(61%)	**156(39%)**	**400**

Table 3 shows the etiology of cataracts in our series: 339 (84.75%) being senile, 29(7.25%) traumatic, 21(5.25%) congenital, 9(2.25%) diabetic, and 2 (0.50%) complicated.

Table 3: Types of Cataracts.

Senile	339 (84.75%)
Traumatic	29 (7.25%)
Congenital	21(5.25%)
Diabetic	9(2.25%)
Complicated	2(0.50%)

IOL insertion with methylcellulose was done in 161(40.25%) cases and insertion under air was done in 239(59.75%) cases (Table-4).

Table 4: Use of Viscoelastic Vs Air

Methylcellulose	161 (40.25%)
Air bubble	239 (59.75%)

Single-piece lenses were used in 116(29%) and multi-piece lenses in 284 (71%) patients (Table-5). Corneal section was given in 31 (7.75%) and limbal section in 369(92.25%) cases (Table-6). Corneal incisions were closed with 10-0 interrupted monofilament nylon sutures; others with 8-0 silk sutures.

Table 5: Type of IOL used

Single-piece IOL	116 (29.00%)
Multi-piece IOL	284 (71.00%)

Peripheral iridectomy was done in only 20(5%) cases (Table-7) 26(6.5%) cases had bilateral IOL implantation. 5(1.25%) cases had secondary IOL implantation.

Table 6: Type of Entry into AC

Corneal Section	31 (7.75%)
Limbal Section	369 (92.25%)

Table 7: Use of Peripheral Iridectomy

Peripheral Iridectomy	20 (5.00%)
Non-peripheral iridectomy	380 (95.00%)

Primary posterior capsulatomy was done in 12(3%) cases where posterior capsule was thick and fibrosed.

Table 8 shows the incidence of complications.

Table 8: Complications

Keratitis	38(9.50%)
Anterior Uveitis	19(4.75%)
Residual Cortical Matter	15(3.75%)
Posterior Capsule Rupture	11(2.75%)
Peaking of Pupil	7(1.75%)
Posterior Cap. Thickening	6(1.50%)
Decentration of IOL	5(1.25%)
Vitritis with CME	3(0.75%)
Pupillary Capture	2(0.50%)
Pigment Dispersion	2(0.50%)
Superior Loop Anterior to iris	2(0.50%)
Inferior Loop Anterior to iris	2(0.50%)
Dislocation of IOL into Vitreous	2(0.50%)
Retinal Detachment	1(0.25%)

DISCUSSION

Keratisis occurred in 38(9.5%) cases and was the commonest complication. We attribute this to the frequent intraoperative use of adrenaline. In cases where miosis occurred during I/A a few drops of adrenaline 1:1000 were added to 10 ml of irrigating fluid. This gave us instant and adequate dilatation of pupil, but was considered to be toxic to corneal endothelium. Subsequently we stopped the intraoperative use of adrenaline and the incidence of keratitis fell dramatically. Some cases were due to tight sutures. Keratitis involved the upper half of the cornea, responded well to the use of 0.1% prednisolone eye drops and gradually subsided over a period of 2-3 weeks.

Recurrent anterior uveitis was seen in 19(4.75%) cases. The incidence of uveitis was a little higher than that reported in the literature[1-3], though Ali reported incidence of 20% in his patients[4]. Uveitis responded well to local depot steroid and systemic NSAIDs. We speculate that early uveitis was a reaction to the lens matter left in the fornices of the capsular bag. Uveitis presenting later than 6 weeks (2 cases) may have a genetic predisposition.

Residual lens matter in 15(3.75%) cases, either anterior or posterior to IOL optic, was managed by I/A with conventional two-way cannula in the immediate postoperative period.

Posterior capsular rupture in 11(2.75%) occurred where we attempted to remove the cortical matter maximally, or because of hypermature fragile capsules or full infusion current of irrigating fluid. Ali reported 3% incidence in a series of 85 patients[4].

Peaking of the pupil in 7(1.75%) was presumably due to improper placement in the bag or sulcus fixation of haptics. IOLs were dialed to correct it or pupilary margin was gently stroked with a dialer to obtain a round pupillary margin.

The incidence of posterior capsular thickening has been previously reported from 8.4% to 50% in two series of IOL implantation[5,6]. It occurred in 6(1.5%) of our patients and was treated by pars plana capsulotomy in five and with YAG Laser in one.

In one F.D.A study the rate of PC IOL subluxation is reported as 0.4%[3]. Our decentration incidence was 1.25% and occurred after zonular dehiscence with one loop in the sulcus and the other in the bag or from overenthusiastic dialing. Small decentrations were ignored but in large decentrations, IOLs were removed and replaced by AC lenses after doing vitrectomy and achieving miosis with intraocular carbachol injection. In late decentrations, sphincterotomy was done or PC IOLs were exchanged by AC IOLs. But this method carries the risk of corneal decompensation as encountered in two patients which were excluded from this study. We did not attempt McCannel suture to the superior loop of decentered lenses.

Vitritis with CME was observed in 0.75% of cases and was refractory to subTenon and retrobulbar steroids and systemic indomethacin. VA remained under 6/60 in all these cases.

Two cases of pupillary capture occurred in 6-and 10-year-old children. Both required capsulotomies and sphincterotomies to clear the visual axis. In literature the incidence has been reported from 0.9% to 3%[7,8]. In our patients with pupillary capture there was no evidence of iridocyclitis or adhesions between the optic and iris. Two useful means of preventing the pupillary capture are suggested:

1. 10° angulation of loops to place the plane of optic more posteriorly.
2. Implanting IOL in the capsular bag.

In 380 (95%) of the cases, peripheral iridectomy (PI) was not done. In the remaining 20(5%) implantations, PI was performed. Like other authors we regard peripheral iridectomy unnecessary. In our series of non-peripheral iridectomy cases, no case of pupillary block glaucoma or shallow AC occurred; even in the literature reports of pupillary block glaucoma are sparse and are based on case reports[9-11].

Secondary implantations were done in 5 cases with intact posterior capsules. Difficulties were encountered with lysis of peripheral posterior synechiae in 3(60%) cases. VA increased by 1 or 2 lines in three cases but in 2 patients (40%) it remained the same compared to the preoperative VA with glasses. Our results compared favourably with Hussain et al, who recently reported VA enhancement Vs no change in 52.92% and 41.48%, respectively, in 17 cases[12].

Astigmatism is a great problem in IOL surgery as regards achieving good postoperative visual acuity. We could not record exact variation in astigmatism in our patients but it reduced or changed after removal of

sutures (6-8 weeks postoperatively) over a period of six months.

REFERENCES

1. Jaffe NS. Intraocular lenses-current status. Ophthalmology 1978 85: 52-8.
2. Kraff MC, Sanders DR, Lieberman HL. The results of posterior chamber lens implantation. J Am Intraocul Implant Soc 1983; 9: 148-50.
3. Worthen DM, Boucher JA, Buxton JN et al. Interim FDA report on intraocular lenses. Ophthalmology 1980; 87: 267-71.
4. Ali SI. ECCE with PC IOL implantations at Rawalpindi General Hospital. Pak J Ophthalmol 1991; 7: 91-94.
5. Sterling S, Wood TO. Effect of intraocular lens convexity on posterior capsule opacification. J Cataract Refract Surg 1986; 12: 655-7.
6. McDonnell PJ, Zarbin MA, Green WR. Posterior capsule opacification in pseudophakic eyes. Ophthalmology 1983; 90: 1548-53.
7. Kline OR Jr, Yang HK. A review of 1400 intraocular lens implant cases. Contact Intraocul Lens Med J 1981; 7: 262-78.
8. Lindstrom RL, Herman WK. Pupil capture: prevention and management. J Am Intraocul Implant Soc 1983; 9: 201-4.
9. John J Alpar. Comparative value of Iridectomy, Iridotomy and No Iris Opening in IOL Implantation Surgery. Pak J Ophthalmol 1991; 7: 95-97.
10. Pearce JL. Experience with 194 posterior chamber lenses in 20 months. Trans Ophthalmol Soc U K 1977; 97: 258-64.
11. Simel PJ. Posterior chamber implants without iridectomy. J Am Intraocul Implant Soc. 1982; 8: 141-3.
12. Hussain M, Durrani J. Secondary Implantation of Intraocular Lenses. Pak J Ophthalmol 1995; 11: 26-31.

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Overview of Phacoemulsification Methods

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The Fundamental goal of Phacoemulsification is to remove a cataract with minimum disturbance to the eye. One should use the least number of surgical manipulations necessary to accomplish the surgery; random, superfluous movements must be actively avoided. Each maneuver should be performed with the minimum force required; maximum efficiency is attained by applying principles of physics and mechanical advantage. Physical manipulation of intraocular tissues can be decreased by taking full advantage of a phaco machine's capabilities by using principles of fluid dynamics. Minimum effort yields maximum safety.

The following method descriptions are relatively brief synopses; please refer to the appropriate books and Journal articles for complete descriptions by the method's originators and proponents.

Nuclear Segmentation

The basic idea behind this method is to fracture the cataract into two or more pieces that can be more easily manipulated and attracted to the phaco tip. Dr. H Gimbel originally described bisecting the nucleus; Dr. J Shepherd extended the technique to quadranting, which is described here. Begin with a capsulorhexis, then use hydrodissection to facilitate nuclear rotation. Begin phaco by sculpting a deep groove from 12 to 6 O'clock. Rotating the nucleus 180° is usually necessary to complete this groove. The nucleus is then split into halves at the base of the groove. Rotate the two halves 90° to carve a groove into the middle of one of them. Perform a second fracture here and then phaco the two quadrants, which should come readily to the phaco tip with minimal manipulation Repeat this procedure on the remaining nuclear half. The epinucleus is then removed, if possible, as an intact bowl using the phaco tip with alternating ultrasound and I/A only.

Tow-handed Technique

This description actually applies to several methods. One hand manipulates the phaco handpiece while the other manipulates a second instrument such as a cyclodialysis spatula or nucleus rotator. This second instrument is inserted through a side-port incision and is used to move the nucleus into optimum position for phacoemulsification. Although a two-handed technique is a virtual necessity for nuclear subdivision methods, it is often associated with Dr. Kratz's method (popularized by Dr. Maloney) of central sculpting followed by removal of the nuclear rim; this is followed by pushing inferiorly at the 6 O'clock nuclear rim; so that the 12 O'clock rim can be prolapsed anteriorly and emulsified. The nucleus is then rotated and more rim is removed until only a nuclear plate remains. This plate is often free-floating and is emulsified by allowing it to carousel into the phaco tip. This method was originally described using a can-opener type capsulotomy, which facilitated nuclear prolapse. However, this type of capsulotomy has several disadvantages. The loose tags of the capsule often interfere with cortical removal by clogging the aspiration port. More importantly, it can lead to posterior capsular tears via extension along one of the anterior capsular can-opener tears. These difficulties can be eliminated by employing a continuous tear capsulotomy, or capsulorhexis, as described originally by H Gimbel and T Neuhann. Although it is possible to perform a two-handed nuclear prolapse technique with a capsulorhexis, it is not generally recommended because of the inherent difficulty in prolapsing the nucleus through the capsulorhexis. Dr. H Fine's "Chip and Flip method" utilizes capsulorhexis, hydrodissection and hydrodelineation followed by a central sculpt. Chipping at the edge of the inner nucleus is done at 6:00 while mobilizing the nucleus towards 12 O'clock with the second instrument. The inner nucleus is then rotated and more rim is removed until only a nuclear plate remains which is then easily emulsified. This is followed by removal of the epinuclear bowl by engaging the 6 O'clock anterior rim and pulling superiorly so as to flip it upside down in preparation for emulsification.

One-handed Technique

Dr. R Sinskey developed this technique; it has been popularized by Drs. M Michelson and R Livernois. Because there is no side-port incision or second instrument, all manipulations are performed

with the phaco tip. Deep central sculpting is followed by nuclear rim removal and rotation and, ultimately, by nuclear plate removal. Although the theoretical advantage of this method is additional control of the phaco handpiece by holding it with both hands, most would feel that it is outweighed by the disadvantage of losing the additional nuclear manipulating capability afforded by a second instrument.

Phaco-chop Techniques

Dr. K Nagahara described the phaco-chop technique in 1993. His method was basically to embed the phaco handpiece in the center of the nucleus and chop the nucleus from 6 O'clock towards the handpiece using a specially developed second instrument. Division follows by forcing the chopper to the left and the phaco handpiece to the right. The nucleus is rotated and the chopping process is repeated after which the then smaller pieces of the nucleus are emulsified. A modification of this method is the stop and chop technique in which an initial central groove is made and the nucleus is divided into two pieces. Each piece is then chopped in a similar fashion to the previous method.

Applying Fundamentals to All Methods

Smooth sculpting that avoids nuclear movement and zonular stress is critical to all methods. Well-controlled deep and peripheral sculpting facilitates cracking in divide and conquer methods and rim removal in one-and two-handed methods. By using just enough ultrasound power to the phaco tip and then backing off to the I/A position, the nucleus can be positively engaged for rotation, manipulation, etc; this extra versatility of the phaco tip is especially important for one-handed techniques.

The best way to learning Phacoemulsification is under the guidance of a surgeon who is adept in the technique and is willing to share his skills. Self-teaching by reading articles and books about the subject is difficult, albeit possible. Case selection and gradual progression is essential. A low threshold for conversion to extracapsular surgery at the first sign of trouble is also advisable. Take videos of your surgery initially in order to be able to criticize your work under less stressful circumstances later and show them to a senior colleague for constructive criticism. Perhaps it is worthy to mention here that a good extracapsular surgeon delivers a vastly superior service to his patients than a mediocre phaco surgeon.

One might question the reason for the dramatically increased interest in phacoemulsification. There is probably no single reason but rather several factors that have tilted the balance towards this procedure. (1) Intraoperatively, the ophthalmologist has the advantage of performing surgery in a pressurized environment. (2) Use of a smaller incision. allows for more accurate wound apposition and closure (3) It is further suggested that greater stability promotes less postoperative astigmatism and more rapid visual rehabilitation for the patient. (4) The use of narrow profile polymethylmethacrylate intraocular lenses and foldable lenses, fabricated from various materials, is consistent with a smaller-sized phacoemulsification technique. Linked to current techniques of in-situ phacoemulsification is the emergence of capsulorhexis, continuous curvilinear capsulotomy, that confines emulsification to a controllable locus.

The obvious question frequently asked is why one should switch to phacoemulsification if the results obtained with ECCE are satisfactory. It is indeed difficult to make a compelling argument for such a switch in the face of a previous record of excellent clinical results. At the present time the data presented of lessened surgical induced astigmatism, rapid visual rehabilitation, and a shortened acute postoperative course support the clinical observations favoring acceptance of phacoemulsification.

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Correction of Congenital Ptosis Using Silicone Material For Frontalis Suspension

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ABSTRACT

In seven cases of congenital ptosis, frontalis suspension was done using silicone band which is routinely used for encirclement in retinal attachment surgery. No recurrence of ptosis was noted after 1-2 years of follow-up. Infection at the surgical site occurred in one case and was controlled with systemic antibiotics. The material proved to be inexpensive and effective.

INTRODUCTION

Fontalis suspension is the preferred surgical procedure for the correction of congenital ptosis when levator function is extremely poor or absent. Fascia lata obtained from the same patient, first used by Payr[1] in 1908, is considered the most suitable material for the suspension procedure because of its potentially permanent effect as a living tissue suture[2].

However, alternative materials are still commonly used. This is because of difficulties in obtaining autologous fascia lata in young children and reluctance of ophthalmic surgeons to perform a surgical procedure on the leg.

Preserved human fascia lata has been reported to be an excellent alternative to autologous fascia lata[3,4].

When banking facilities are lacking, many other materials are considered, including artificial sutures[5], skin[6], silicone[7], sclera[8] and collagen[9].

MATERIALS AND METHODS

The study consists of seven cases of congenital ptosis, four of them unilateral and three bilateral. All these cases had severe congenital ptosis (≥ 4 mm) and poor (< 4 mm) or no levator function. Frontalis suspension was carried out using silicone band, the type used for encirclement in retinal surgery. Surgery was done under general anaesthesia because of the young age of the patients. Slight undercorrection was effected to avoid ultimate corneal exposure.

RESULTS

After a follow-up of 1-2 years no recurrence was noted in any case. In one case there was infection of the material which was controlled with systemic antibiotics. In one case of bilateral ptosis under-correction of 2 mm was noted on one side, on the second postoperative day. The patient was taken to the operation theatre and the band was tightened and thus comparable appearance of lids was achieved.

DISCUSSION

Autologous fascia lata is the most suitable material for a frontalis sling. However, preserved fascia lata is considered nearly as good and is better than the other available materials. But upto 50% of recurrence is reported with preserved fascia lata at 8-9 years after surgery[10]. Katowitz reported poor results in 29% of cases when using silicone material mainly because of recurrence of ptosis[5]. In our study of seven cases, no recurrence occurred even after 1-2 years. Considering the easy availability of the material I intend to continue this study and more cases will be recruited for repair with the silicone material.

CONCLUSION

For the correction of congenital ptosis, particularly in very young children when fascia lata is very difficult to harvest and we lack the facility of preserving human fascia lata, the silicone material is a good alternative. We can prevent amblyopia in children with unilateral ptosis by doing early ptosis correction instead of postponing surgery due to non-availability of fascia lata. Use of silicone material is safe because it is inert, efficient and cost-effective and it lends itself to adjustment on the day after surgery, in case of any under-or over-correction.

Fig. 1: *A four-year-old girl with right ptosis. Photograph after frontalis suspension with silicone material.*

Fig. 3: *A boy of 6 years with bilateral ptosis. Photograph after surgery on both sides.*

Fig. 2: *A boy of 11 years with bilateral ptosis. Photograph showing ptosis correction on the right. (Ptosis of left eye still to be corrected).*

Fig. 4: *A boy of 13 years with ptosis of the right eye. Photograph after ptosis correction.*

REFERENCES

1. Payr E. Plastik Mittels freiers Faszientransplantation bei Ptosis. Dtsch Med. Wochenschr 1909; 35: 822.
2. Wright WW. The use of living sutures in the treatment of ptosis. Arch ophthalmol 1922; 51: 99-102.
3. Wagner RS, Mauriello JA Jr, Nelson LB, Calhoun JH, Flanagan JC, Harley RD. Treatment of congenital ptosis with frontalis suspension: a comparison of suspensory materials. Ophthalmology 1984; 91: 245-8.
4. Broughton WL, Matthews JG 2d, Harris DJ Jr. Congenital ptosis. Results of treatment using lyophilized fascia lata for frontalis suspensions. Ophthalmology 1982; 89: 1261-6.
5. Katowitz JA. Frontalis suspension in congenital ptosis using a polyfilament, cable-type suture. Arch Ophthalmol 1979; 97: 1659-63.
6. Panas P. D'un nouveau procede operatoire applicable au ptosis congenital et au ptosis paralitique. Archives a ophthalmologie 1886; 6: 1-14.
7. Tillett CW, Tillett GM. Silicone sling in the correction of ptosis. Am J Ophthalmol 1966; 62: 521-3.
8. Bodian M. Repair of ptosis using human sclera. Am J Ophthalmol 1968; 65: 352-8.
9. Iliff CE. Surgical management of ptosis. Ethicon Inc. Someville, New Jersey, 1963.
10. Wilson ME, Johnson RW. Congenital ptosis. Long-term results of treatment using lyophilized fascia lata for frontalis suspensions. Ophthalmology 1991; 98: 1234-7.

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Case Report

Lens Particle Glaucoma in Alport's Syndrome

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ABSTRACT

A 20-year-old male patient with Alport's syndrome presented with acute onset of lens particle glaucoma as a result of spontaneous rupture of anterior lens capsule. Though dehiscence or spontaneous rupture of anterior lens capsule has been reported before, lens particle glaucoma as a result of it has not been described in the literature.

INTRODUCTION

Alport's syndrome which is characterised by haematuric nephritis, and progressive sensorineural hearing loss was first described by Alport in 1927[1]. The association of ocular changes was first reported in 1956[2]. It is commonly transmitted as an X-linked dominant trait; however, autosomal dominant and autosomal recessive modes of transmission have also been reported.

Ocular abnormalities associated with Alport's syndrome mainly affect the cornea, the lens and the retina. In the cornea there may be arcus juvenilis, recurrent corneal erosions, subepithelial opacities and posterior polymorphous dystrophy. The lenticular abnormalities are anterior lenticonus, anterior subcapsular opacities, capsular thinning over the conus, spherophakia and posterior lenticonus. In the retina there may be perimacular retinal flecks, midperipheral retinal flecks and retinal pigment epithelial lesions.

We, hereby, report a case of Alport's syndrome that presented with lens particle glaucoma due to spontaneous rupture of the anterior lens capsule. Though spontaneous rupture of the anterior lens capsule has been described before[3-4], lens particle glaucoma, as a result, has not been reported so far, to the best of our knowledge.

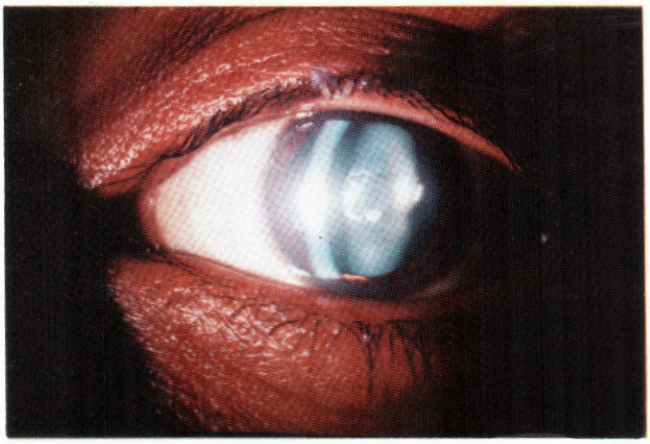

Fig-1: Slit-lamp photograph of anterior segment showing anterior polar cataract and anterior lenticonus

CASE HISTORY

A 20-year-old male patient presented to the Eye outpatient department with a history of sudden deterioration of vision and severe pain in the left eye and vomiting. Visual acuity was 6/18 in the right eye and counting fingers in the left eye. Slit-lamp examination showed corneal oedema, flare, cells, free lens particles in the anterior chamber and anterior polar cataract, on the left side (Fig-1). There was bilateral anterior lenticonus. The intraocular pressure was 21 mmHg in the right eye and 58 mmHg in the left eye. The right fundus was normal, while the left fundus could not be visualised adequately due to corneal oedema. He was admitted to the hospital and was given

intravenous mannitol, oral acetazolamide and topical levobunolol drops to control his intraocular pressure.

His urine analysis revealed 3 + albuminuria, (urine albumin 0.8 G/dl), RBCs 4-6/PHF and pus cells 4-6/PHF. Audiometry was performed which reported a sensorineural hearing loss of 50% on the right side and 30% on the left side.

When the intraocular pressure was controlled and his eye became quiet he underwent an extracapsular extraction with posterior chamber intraocular lens implantation. He achieved an uncorrected vision of 6/12 in that eye.

DISCUSSION

Alport's syndrome is a genetic disease which affects mainly the basement membrane. The genes for Alport's syndrome and the newly recognised α5-chain of type IV collagen are located in the same region on X chromosome (Xq22 region).

The incidence of ocular changes in Alport's syndrome varies between 11-43 percent[6-9]. Though a number of ocular changes have been described in Alport's syndrome, the more specific ocular manifestations, as suggested by Govan, are anterior lenticonus, perimacular and retinal flecks, arcus juvenilis and posterior polymorphous dystrophy[9,10].

The main pathology in the lens, in Alport' syndrome, is the capsular thinning with innumerable dehiscences over the lenticonus. This fragility of capsule explains its spontaneous rupture. In our patient the spontaneous rupture of the capsule led to the release of the lens matter into the anterior chamber and subsequently to blockage of the angle. This resulted in an acute onset of glaucoma. This feature has not been reported before in the literature, to the best of our knowledge.

REFERENCES

1. Alport AC. Hereditary familial congenital haemorrhagic nephritis. Br Med J 1927; 1: 504.
2. Sohar E. Renal disease, inner ear deafness and ocular changes. Arch Intern Med 1956; 97: 627-30.
3. Teekhasaenee C, Nimmanit S, Wutthiphan S et al. Posterior polymorphous dystrophy and Alport syndrome. Ophthalmology 1991; 98: 1207-15.
4. Streeten BW, Robinson MR, Wallace RN et al. Lens capsule abnormalities in Alport's syndrome. Arch Ophthalmol 1987; 105: 1693.
5. Hinglais N, Grunfeld JP, Bois E. Characteristic ultrastructural lesion of the glomerular basement membrane in progressive hereditary nephritis (Alport's syndrome). Lab Invest 1972; 27: 473-87.
6. Faggioni R, Scouras J, Streiff EB. Alport's syndrome. Clinicopathological considerations. Ophthalmologica 1972; 165: 1-14.
7. Perrin D, Jungers P, Grunfeld JP, Delons S, Noel LH, Zenatti C. Perimacular changes in Alport's syndrome. Clin Nephrol 1980; 13: 163-7.
8. Gubler M, Levy M, Broyer M et al. Alport's syndrome. A report of 58 cases and a review of the literature. Am J Med 1981; 70: 493-505.
9. Thompson SM, Deady JP, Willshaw HE, White RH. Ocular signs in Alport's syndrome. Eye, 1987; 1: 146-53.
10. Govan JA. Ocular manifestations of Alport's syndrome: a hereditary disorder of basement membranes? Br J Ophthalmol 1983; 67: 493-503.

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Surgical Management of Pseudotumour Cerebri

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ABSTRACT

Between 1989 and 1994, eleven cases of pseudotumor cerebri were treated. The treatment for this disorder is diuretics and steroids with repeated lumbar punctures in some resistant cases. However, four patients were treated with lumbo-peritoneal shunts when medical management failed and there was progressive visual deterioration.

INTRODUCTION

Pseudotumor cerebri or benign intracranial hypertension is a condition of raised intracranial pressure without any tumour or mass. Patient usually presents with headache, vomiting and visual deterioration. On examination there are no localizing signs. There is papilloedema and enlargement of blind spot. C.T. scan with contrast is normal or shows small ventricles. The C.S.F. pressure is high and C.S.F. contents are normal.

The disease responds to medical treatment by diuretics and steroids. Repeated lumbar punctures are required in some cases. Most of the time, the disease is self-limiting but occasionally recurrences might occur. Sometimes surgical management might be required in patients with rapid and progressive visual deterioration threatening blindness[1].

MATERIALS AND METHODS

The patients included in this study were seen by the author at Quaid-i-Azam Medical College, Bahawalpur, between 1989 and 1994.

All eleven patients were females and between 25 and 40 years of age. Three of the patients were obese and only one had menstrual abnormality.

Plain skull roentegenograms were routinely performed. All patients were investigated by C.T. Magnetic resonance (MR) imaging was also used for a recently treated patient. Narrow ventricles were noted in two patients. Otherwise normal C.T. reassured that neither a mass nor ventricular dilatation existed. Carotid angiography was not performed. A lumbar puncture was performed for diagnostic and in some cases for therapeutic purpose. C.S.F. composition was normal in all the cases.

TREATMENT

The policy in our institution is to treat this condition by means of diuretics along with corticosteroids.

Frusemide in a dose of 160 mg/day was administered for several weeks. Acetazolamide was added with a dose of 30 mg/kg of body weight daily in four patients. Dexamethasone in a dose of 12 mg/day was added in all cases, and was tapered over a few weeks. Serial lumbar punctures were performed in six patients with persistent symptoms and sufficient fluid was removed to lower the pressure to normal. In four of the patients, where all these measures were tried but there was rapid worsening of visual acuity threatening a visual loss, theco-peritoneal shunt was performed. The Lumbo-peritoneal shunt is the procedure of choice in such patients with raised intracranial pressure and normal ventricular system. Bhatti's ventriculo-peritoneal shunt was used for this purpose. The patient was placed in the lateral position. An incision was made over L4-L5 and a limited laminectomy was performed. A small incision was made in the dura, the subarachnoid space was entered and thecal part of the shunt was introduced for a distance of 10 cm, in cephalad direction. The catheter was secured in place with a single dural stitch and then connected to the reservoir and passed subcutaneously to the abdominal incision and passed into the peritoneal cavity by a mini laparotomy (Fig-1).

RESULTS

All eleven patients were started on medical therapy and there was symptomatic improvement with diuretics and steroids within days in seven patients. Four of the patients did not show any improvement and were given acetazolamide and serial lumbar punctures

for C.S.F. drainage. However, despite this aggressive management plan these patients continued to have worsening of their visual acuity and had to be surgically treated by lumboperitoneal shunting. All of them showed dramatic resolution of their symptoms with relief of headache and gradual improvement of visual acuity. However, it took several weeks for papilloedema to disappear. One of these patients complained of occasional sciatic pain which was treated with mild analgesics. Two of the patients managed medically had recurrence of their complaints after several months and had to be treated again with medical measures and in one of these cases with serial lumbar punctures.

Fig-1: Lumbo-peritoneal shunt in a case of pseudotumor cerebri

DISCUSSION

The diagnosis of pseudotumour cerebri is one of exclusion. Patients with this disorder have intracranial hypertension unrelated to tumour, hydrocephalus or brain oedema. The clinical picture can closely resemble that of intracranial tumour[2]. Diagnostic evaluation of patients who present with headache and papilloedema without localizing neurological signs is a common and challenging problem. Before the advent of C.T., pneumoencephalography and angiography were necessary to detect abnormalities of the ventricular system, vascular occlusions, inflammatory conditions and occult intracranial tumours. After excluding all these cases diagnosis of pseudotumour cerebri was usually made. The C.T. scan allows a definitive diagnosis of benign intracronial hypertension (B.I.H.) to be made without subjecting the patient to the discomfort and potential risk of angiography or pneumoencephalography[3]. No tissue density enhancement after contrast is seen in such patients with preliminary negative plain C.T. Yashon et al[4] described patients with similar features having midline posterior fossa tumours and no dilatation of ventricles. Weisberg and Nice[3] demonstrated in such types of patients, aqueduct stenosis, midline posterior fossa tumours with hydrocephalus and supratentorial metastatic lesions. Huckman et al[5] suggested that in all patients suspected of having B.I.H, contrast material infusion should be done despite a negative plain C.T. scan so that bilateral metastatic lesions and arteriovenous malformations which may not cause mass effect, distortion or ventricular enlargement, may be ruled out. Weisberg and Nice[3], however, could not find a patient with intracranial hypertension in whom plain scan showed a normal ventricular system but post-infusion scan demonstrated an abnormality.

REFERENCES

1. Kidron D, Pomeranz S. Malignant pseudotumour cerebri. Report of two cases. J Neurosurg 1989; 71: 443-5.
2. Sidiki AJ. Benign Intracranial Hypertension (Psedotumour cerebri) J Pak Acad Ophthalmol 1987; 1: 3-6.
3. Weisberg L, Nice CN. Computed tomographic evaluation of increased intracranial pressure without localizing signs. Radiology 1977; 122: 133-36.
4. Yshon D, White R, Croft TJ. Midline posterior fossa neoplasms without lateral ventricular enlargement. JAMA 1971; 215: 89-93.
5. Huckman MS, Fox JS, Ramsey RG et al. Computed tomography in the diagnosis of pseudotumour cerebri. Radiology 1976; 119: 593-97.

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Book Reviews

Edited by Khalid J. Awan

Master Techniques in Ophthalmic Surgery, edited by F. Hampton Roy, **1995,** Williams & Wilkins, 428 East Preston Street, Baltimore, MD 21203-3993, USA. Hardbound, 1278 pages, index, illustrated. Price: US$ 225.00.

Since the earliest time the ophthalmic literature came on the medical publishing scene, there have been appearing, in a steady string, "How To" books for eye surgeons and trainees. But with the advent of marvelous modern printing technology, there has occurred a ceaseless flurry of impressive monographs and comprehensive texts on ophthalmic surgical techniques. Roy's *Master Techniques* is one of the best, both in presentation and in usefulness.

The book is a compilation of 149 chapters written by 182 experts representing every ophthalmic subspeciality. These chapters are grouped into seventeen parts. Part I deals with procedures that involve the anterior chamber, and these range from the familiar flat anterior chamber, foreign bodies, etc. to uncommon epithelial downgrowth, late microhyphema from cataract wound vascularization, etc. Part II on choroid has discussions ranging from angioid streaks to choroidal melanomas. Part III contains conjunctival surgical problems. In Part IV, corneal techniques to deal with a spectrum of diseases ranging from band keratopathy to keratoconus are expertly handled. Every imaginable disturbance of extraocular muscle function is included in Part V. Congenital to involutional to traumatic entities of the eyelid constitute Part VI. Even endophthalmitis is included in Part VII on the Globe. The glaucoma procedures in Part VIII are enhanced by inclusion of a discussion on the management of cataract in glaucomatous eyes. Part IX has inflammatory, traumatic, and neoplastic conditions of the iris and ciliary body as its topic. Part X contains discussion of lacrimal system. Cataract, adult and congenital, and traumatic abnormalities of the lens are presented in Part XI. Surgical procedures to manage optic pit macular detachment, optic nerve sheath hematoma, papilledema, and temporal arteritis make up Part XII. Part XIII on orbit contains surgical intervention for almost every type of problem seen in this region. The up-to-datedness of the book is confirmed by the presence in Part XIV of all the currently available procedures for the correction of refractive disorders. Chapters on esoteric subjects such as diffuse unilateral subacute neuroretinitis, Eales' disease, impending macular holes, etc. speaks for the extent of coverage in Part XV on retina. Part XVI has discussion on scleral laceration, scleral staphyloma and dehiscences, scleritis, and scleromalacia perforans. The concluding Part XVII on vitreous has, in addition to the discussion of more common vitreoretinal procedures, a chapter on the surgical management of the vitreous wick syndrome. All in all *Master Techniques* is indeed a masterly work by a very experienced author.

The printing, on paper of superior grade, is of very high quality, except for a bit too dark reproduction of photographs in a few spots. The writing is lucid and to the point throughout. There is some overlapping of contents here and there, but this was out of genuine necessity, as is clarified by the Editor in the preface. A few other minor things could have been given consideration for the greater clarity of subjects, such as adding of a few figures with discussion of the "white cornea," etc. The book is profusely illustrated, perhaps a reason for such insignificant errors as printing for Fig. 100-3 the same photograph as for Fig. 100-2. When everything is considered *Master Techniques* is a masterly and most up-to-date work on its topic. We recommend it very highly.

Current Ocular Therapy, Edition 4 edited by Frederick T. Fraudenfelder and F. Hampton Roy, **1995**, W.B. Saunders Company, The Curtis Center, Philadelphia, PA 19106, USA. Clothbound, 953 pages, index. Price: US$ 85.00.

This book, now a true classic, first appeared fifteen years ago. Since that time, it has gone through four enthusiastically received editions, which establishes two undeniable facts: it is very useful and it is very current. The contents are presented, as in previous editions, under pathologic entities. In this edition there are thirty-five sections: Section I, infectious diseases; Section 2, Parasitic diseases; Section 3, Endocrine disorders; Section 4, Nutritional disorders; Section 5, Disorders of protein metabolism;

Section 6, Disorders of carbohydrate metabolism; Section 7, Disorders of lipid metabolism; Section 8, Other metabolic disorders; Section 9, Hematologic and cardiovascular disorders; Section 10, Dermatologic disorders; Section 11, Connective tissue disorders; Section 12, Skeletal disorders; Section 13, Phakomatoses; Section 14, Neurologic disorders; Section 15, Neoplasms; Section 16, Mechanical and non-mechanical injuries; Section 17, Unclassified diseases or conditions; Section 18, Anterior chamber, Section 19, Choroid; Section 20, Conjunctiva; Section 21, Cornea; Section 22, Extraocular muscles; Section 23, Eyelids; Section 24, Globe; Section 25, Intraocular pressure; Section 26, Iris, ciliary body; Section 27, Lacrimal system; Section 28, Lens; Section 29, Macula; Section 30, Optic nerve; Section 31, Orbit; Section 32, Refractive disorders, Section 33, Retina; Section 34, Sclera; and Section 35, Vitreous. This shows how encyclopedic this publication is. *Ocular Therapy* has become a must for all physicians dealing with ocular disease. This reviewer is no exception, and recommends it highly.

Abstracts

Muhammad Humayun

OPHTHALMIC SURGERY

Prospective Comparison of The Heine Retinometer with the Mentor Guyton-Minkowski Potential Acuity Meter for the Assessment of Potential Visual Acuity Before Cataract Surgery.

Tharp A, Canter L, Yung CW, Shoemaker J.
Ophthalmic Surgery 1994; 25: 576-9

These authors examined 37 eyes just before cataract surgery to compare the hand-held German made Heine retinometer with the Mentor Guyton-Minkowski Potential Acuity Meter. Three eyes were excluded from the analysis because of postoperative complications affecting the visual acuity. The false negative rate was 44% for the PAM (Potential Acuity Meter) and 32% for the HR (Heine Retinometer). There were no false positives with either instrument. Neither was particularly accurate in predicting actual final visual acuity but the HR was deemed easier to use.

Surgical Removal of Congenital Pupillary-Iris-Lens Membrane.

Cibis GW, Tripathi RC, Tripathi BJ.
Ophthalmic Surgery 1994; 25: 580-3

In a case of congenital pupillary-iris-lens membrane with goniodysgenesis, the pupillary membrane was peeled from the lens without cataract formation. Ectopic iris was reported on histopathologic studies. Ectopic iris found in this condition differentiates congenital pupillary-iris-lens membrane with goniodysgenesis as an entity from persistent pupillary membrane, hereditary goniodysgenesis, and Reiger's anomaly. These authors suggest that congenital pupillary-iris-lens membrane with goniodysgenesis is a neurocristopathy. Ectopic iris muscle finding is consistent with avain chimera experiments that suggested that iris sphincter muscle is derived from the neural crest, not neural ectoderm. These membranes can be successfully removed when they cause visual loss and amblyopia.

Air Pump for Retinal Detachment with Macular Hole.

Takenaka C, Ideta H, Watanabe K, Nakatake J, Shinagawa K, Demuizu S.
Ophthalmic Surgery 1994; 25: 590-2

One hundred twenty-eight eyes, from 1984 to 1992, with substantial retinal detachment due to macular hole, underwent vitrectomy. Air was injected by syringe after removal of the vitreous in 76 eyes (group A). In the subsequent 52 eyes, air was injected by a pump while subretinal fluid was aspirated through the macular hole (group B). The rates of retinal reattachment after the first surgery were 63.2% in group A and 82.7% in group B. Thus from this evaluation the use of the air pump was more effective than air injection.

Trans-Nasal Flap For Medial Canthal Reconstruction.

Custer PL.
Ophthalmic Surgery 1994; 25: 601-3

Twenty-two patients had excellent cosmetic results with the trans-nasal flap for repairing the medial canthal defects following Moh's surgery. This procedure transposes redundant skin from the nasal bridge into the defective site. This construction of the flap minimizes the risk of medial canthal webbing.

Results of Trabeculectomy Combined with Phacoemulsification Versus Trabeculectomy Combined with Extracapsular Cataract Extraction in Patients with Advanced Glaucoma.

Stewart WC, Crinkley CMC, Carlson AN.
Ophthalmic Surgery 1994; 25: 621-7.

These authors compared the results of trabeculectomy combined with extracapsular cataract extraction with combination of trabeculectomy with phacoembulsification. There was no significant difference between the two groups in terms of early or chronic postoperative intraocular pressure control or in terms of the number of glaucoma medications prescribed postoperatively. But, by 12 weeks postoperatively, the bleb height and extent were significantly greater in the phacoemulsification group. The two groups had no significant difference in terms of postoperative sphero-equivalent, astigmatism, or cylindrical axis. The final acuity, however, was less in the extracapsular group. In conclusion, the trabeculectomy-phacoemulsification group appears to offer a safe and effective technique to control postoperative intraocular pressure in patients with glaucoma.

Respiratory Arrest After 0.75% Bupivacaine Retrobulbar Block,
Castillo A, Lopez-Abad C, Macias JM, Diaz D.
Ophthalmic Surgery 1994; 25: 628-9.

Respiratory arrest with use of retrobulbar anesthesia is an uncommon complication. The authors analyze the possible causes of this complication in a case where they used 0.75% bupivacaine and 2% lidocaine retrobulbar block. They conclude that the most important cause in their analysis was the use of a relatively higher concentration and volume of the anesthetic and a faulty technique.

Conjunctival Ulcer in a Patient With Crohn's Disease.
Hegab SM, Al-Mutawa SA.
Ophthalmic Surgery 1994; 25: 638-40.

These authors describe what they think to be the first reported case of conjunctival ulceration in a 38-year-old woman with documented Crohn's disease (CD). Shd had a uniocular nodular episcleritis and a limbal nodule with surrounding infiltrate, which when healed, left residual pannus. The episclera was abnormally large in size. A rare manifestation of a localized conjunctival ulceration developed later in the eye. Impression cytology of the ulcer showed pyknotic conjunctival epithelium and absence of goblet cells, lymphocytes, and macrophages. The above features are comparable to those seen in the intestinal mucosa of patients with CD. The unilaterality of the ocular infection together with the good response to local therapy suggests that a local antigen-antibody immune complex reaction was involved. The authors recommended local therapy as a first treatment option.

Herpes Simplex Keratitis Following Argon Laser Trabeculoplasty.
Reed SY, Shin DH, Birt CM, Rhee RK.
Ophthalmic Surgery 1994; 25: 640.

These authors report this recurrence of herpes simplex keratitis following argon trabeculoplasty as a first time occurrence. This complication is only one of several complications reported with argon laser trabeculoplasty.

The Blepharoplasty Rotational Flap.
Weinstein GS.
Ophthalmic Surgery 1994; 25: 646-8.

The author introduces a new procedure in conditions of patients with benign upper eyelid lesions and dermatochalasis. He reports that his procedure for excision of the lesion in combination with blepharoplasty is optimum. He devised a myocutaneous flap to reconstruct defects created by excising upper eyelid lesions peripheral to the blepharoplasty incision lines. The flap is created from skin and muscle that would normally be excised during the blepharoplasty. This technique results in a well-defined upper eyelid crease, without eyelid retraction or epicanthal fold formation.

Procedures Involving Star-shaped Capsulotomy for Managing Congenital Cataracts in Developing Nations.
Berger RR, Kenyeres AM, Cooler BV, Pretorius CF.
Ophthalmic Surgery 1994; 25: 649-53.

Management of congenital cataracts is still challenging, especially in developing countries, where surgical facilities are limited. Twenty-two patients (26 eyes) had congenital cataracts removed: a procedure consisting of a star-shaped anterior capsulectomy and wash-out of lens material (STARWO) was performed in 16 of them (18 eyes) (group A); a procedure consisting of a star-shaped anterior capsulectomy, wash-out, anterior virectomy through the posterior capsulotomy, and repeated tearing of remnants of the anterior capsule (STARWAR) was performed in six patients (eight eyes) (group B). Both groups had implantation of intraocular lenses. In group A, secondary membranes developed in five eyes, postoperative uveitis in four, and late Elshnig pearl in one. In group B, there was one case of secondary membrane formation, and one of posterior uveitis; neither required subsequent intervention. The low rate of postoperative complications encountered in these patients and the inexpensive instrumentation make these two techniques attractive alternatives for managing congenital cataracts in developing nations.

Prophylaxis of Endophthalmitis.
Peyman GA, Daun M.
Ophthalmic Surgery 1994; 25: 671-4.

For prevention of endophthalmitis, prophylactic antibiotics can be administered by various routes. Although topical application is simple and minimally invasive, it provides relatively poor penetration into the vitreous. Collagen shields are effective in delivering therapeutic levels of antibiotics to the cornea and aqueous but not to the vitreous cavity. Systemic administration is questionable because of poor ocular penetration of most drugs (however, some antibiotics, such as imipenem, pefloxacin, and ciprofloxacin, may provide therapeutic levels to the vitreous). Subconjunctival injection may provide significant drug levels in the aqueous for four to six hours. These authors found subconjunctival gentamicin ineffective in experimentally induced *Pseudomonas aeruginosa*

endophthalmitis in postoperative aphakic eyes. They recommend the use of antibiotics in infusion fluid. In cases of trauma, they inject 48 μg gentamicin and 54 μg clindamycin intracamerally or intravitreally.

Subcapsular Fluid Entrapment in Extracapsular Cataract Surgery.

Olson RJ, Younger KM, Crandall AS, Mamalis N.
Ophthalmic Surgery 1994; 25: 688-9.

These authors report five cases of sudden shallowing of the anterior chamber associated with irrigation under the iris. They suspect that irrigation in this context forces fluid through the zonules into the posterior chamber, where it becomes trapped, causing anterior chamber shallowing. In their cases, the phenomenon was most commonly associated with irrigation during cortex removal in cases in which the cornea was open (associated with corneal transplantation) and with zonual dehiscence.

The "Anchor" Anterior Capsulectomy.

Berger RR, Kenyeres AM..
Ophthalmic Surgery 1994; 25: 720-2.

Many ocular surgeons are still uncomfortable with continuous circular capsulorhexis (CCC) even though it has become the preferred anterior capsulectomy in many ophthalmic centres. They are especially uncomfortable when tearing the capsule on its lower semicircle, since this often results in corneal endothelial injury, and, thus, postoperative lower corneal edema. These authors present a modified anterior capsulectomy, which consists of a crescent capsulorhexis and a perpendicular discission, followed by a circular tearing of the resulting capsular flaps. This "anchor" anterior capsulectomy (AAC) was used in 14 cases of elective extracapsular cataract extraction, followed by intraocular lens (IOL) implantation. The capsulectomy and implantation were successful in 12. this procedure was relatively easy to perform and resulted in good "in-the-bag" implantation, regardless of the IOL's overall length and optic's size. These authors feel that AAC can serve as an intermediate step in learning CCC as well as a reliable alternative anterior capsulectomy.

Subretinal Hemorrhage Removal with Multiple Retinotomy Sites in Age-Related Macular Degeneration.

Millsap CM, Peyman GA, Greve MDJ.
Ophthalmic Surgery 1994; 25: 723-5.

These authors report a case of subretinal hemorrhage associated with age-related macular degeneration, in which tissue plasminogen activating factor was used to help remove the subretinal blood. The surgical technique involved using multiple small retinotomy sites and alternating suction and backflushing to produce fluid flow from the subretinal space to the vitreous cavity.

Application for A Corneal Mattress Suture in Anterior Limbal Wound Repairs.

Palmer RM, Burgoyne CF.
Ophthalmic Surgery 1994; 25: 726-9.

These authors describe the use of a corneal mattress suture to manage two complications of trabeculectomy to repair an anterior conjunctival tear/disinsertion in a limbus-based conjunctival flap and to restore wound integrity by reinforcing a focal section of scleromalacia or to close a perforation remaining from a previous cataract wound encountered during complicated trabeculectomy. In each setting, a single double-armed 10-0 nylon corneal mattress suture is used as an anchor to establish a watertight limbal-wound closure. Also, for repairing an area of a scleromalacia/perforation, the corneal mattress suture can be used to incorporate a graft to Tenon's fascia into the wound.

Management of A Partial-Thickness Scleral-Flap Buttonhole During Trabeculectomy.

Brown SVL.
Ophthalmic Surgery 1994; 25: 732-3.

This author feels this technique is worthy of mention in that he uses partial-thickness Tenon's conunctival tissue in the repair of an intraoperative scleral-flap buttonhole that developed during trabeculectomy using adjunctive mitomycin.

Open-Sky Phacoemulsification During Corneal Transplantation.

Lindquist TD.
Ophthalmic Surgery 1994; 25: 734-6.

This author reports that continuous, circular capsulorhexis maintains the integrity of the anterior capsule. During corneal transplant surgery, a capsulorhexis may be combined with phacoemulsification, allowing the cataractous lens to be delivered in small fragments, thereby maintaining the integrity of the anterior capsular margin. This approach allows stable "in-the-bag" placement of a posterior chamber intraocular lens (PC-IOL) during combined cataract extraction and corneal transplant surgery. The procedure also minimizes the risk of radial anterior capsular tears and subsequent decentration of the PC-IOL.

Repair of Retinal Detachment Associated With Congenital Excavated Defects of the Optic Disc.

Brown GC, Brown MM.
Ophthalmic Surgery 1994; 26: 11-5.

Retinal detachment in the macula and beyond has been associated with excavated defects of the optic disc. Some of these defects are congenital pits of the optic disc, optic nerve colobomas, and morning glory syndrome. These authors report eight consecutive patients with congenital, exacavated defects of the optic disc and associated retinal detachment managed with pars plana vitrectomy, laser photocoagulation and intravitreal gas injection.

Masquerades of Macular Holes.

Smiddy WE, Gass JDM.
Ophthalmic Surgery 1995; 26: 16-23.

Finally surgery is an option in treatment of macular holes. However, their clinical features may be subtle and many conditions may masquerade as full-thickness macular holes. To promote diagnostic accuracy and avoid incorrect or unnecessary surgery, these authors present several cases of entities misdiagnosed as full-thickness macular holes in an effort to determine which clinical features likely led to the inaccurate diagnosis. Some of these were epiretinal membranes with pseudoholes, impending macular holes, lamellar macular holes, and macular degeneration. Important features allowing for a more certain diagnosis include: fine, drusen-like yellowish deposits in the base of the hole; a surrounding cuff of subretinal fluid; a distinct and circular margin around the hole; and an overlying operculum. Visual acuity was also often relatively good in non-macular hole cases, while with true macular holes, vision is usually 20/80 or less, or deteriorates to that over a few weeks. Many entities falsely diagnosed as macular holes have a favorable natural history, are not amenable to surgical efforts, or require slightly different surgical surgical procedures. Misdiagnosis and wrongful treatments may be minimized by limiting macular hole surgery to case in which visual acuity is 20/80 or worse or by waiting for clinical changes sufficient to permit distinguishing false from early or atypical true cases.

Prevalence of Posterior Vitreous Detachment in Retinitis Pigmentosa.

Hikichi T, Akiba J, Trempe CL..
Ophthalmic Surgery 1995; 26: 34-7.

These authors retrospectively studied the vitreous condition in 218 eyes of 109 patients with retinitis pigmentosa to investigate the prevalence of posterior vitreous detachment (PVD) and PVD with collapse in relation to age in eyes with retinitis pigmentosa (RP). Two hundred thirty healthy eyes of 115 patients served as controls. The prevalence of both PVD and PVD with collapse, respectively, in the first through the sixth decades of life, and the second through the seventh decades were significantly higher in the RP eyes than in the controls. Their findings demonstrated the early onset and progression of PVD with age in the eyes with RP as compared with the control eyes.

Autoscleral Flap Grafting: A Technique of SCleral Repair.

Gopal L, Badrinath SS.
Ophthalmic Surgery 1995; 26: 44-8.

These authors describe their technique of autoscleral flap grafting in one eye with scleral staphyloma, in two eyes with scleral ectasia, and in one eye with scleral deficiency following excision of a limbal tumor. Follow-up time in three cases was over six months and in the remaining cases it was two months. In one patient, the scleral ectasia recurred, since the scleral flap that could be dissected was thin. The recurrence was managed successfully by a periosteal autograft.

Congenital Absence of Lacrimal Puncta.

Boerner M, Seiff SR, Arroyo J.
Ophthalmic Surgery 1995; 26: 53-6.

These authors report seven cases of congenital absence of lacrimal puncta, a condition that may be either an isolated finding or associated with other developmental anomalies. No additional abnormalities were found in evaluation of two patients with punctal agenesis. The cases were managed by probing and silicone intubation. The other five cases were associated with other significant, clinically obvious abnormalities. Several of the patients required more aggressive management of their lacrimal disorders, including dacryocystorhinostomy and conjunctivo-dacryocystorhinostomy. Previous reports support the impression generated by this series that otherwise normal appearing children with congenital absence of the lacrimal puncta do not require an extensive work-up. Probably many children with absent puncta are asymptomatic and remain undiagnosed.

Microplate Fixation of Prefabricated Subperiosteal Orbital Floor Implants.

Jordan DR.
Ophthalmic Surgery 1995; 26: 78-9.

Miniplating and microplating systems are widely used for repairing fractures involving the orbit, cranium, face, and mandible. They are superior to traditional wiring techniques because the fractured bones are held in position immediately after the plates have been screwed into position (rigid fixation). This

author recently found the T-shaped microplate rather helpful in securing the prefabricated subperiosteal orbital floor implants commonly used to augment orbital volume in anophthalmic sockets.

ND:Yag Laser Treatment of Retained Descemet's Membrane After Penetrating Keratoplasty.

Steinemann TL, Henry K, Brown MF.
Ophthalmic Surgery 1995; 26: 80-1.

These authors report the retention of the host's Descemet's membrane as an unusual complication of penetrating keratoplasty. The membrane can opacify and even threaten the health of the transplant. Following creation of a central opening with the Nd:YAG laser in such a case, visual acuity improved from count fingers at five feet to 20/100.

Knotless Scleral Fixation for Implanting A Posterior Chamber Intraocular Lens.

Eryildirim A.
Ophthalmic Surgery 1995; 26: 82-4.

This author describes a technique for implanting intraocular lens by scleral fixation sutures that has the advantages of knotless fixation of the haptics and an out-in approach for passing the needle through the sclera.

Posterior Lens Dislocation During Attempted Phacoemulsification.

Chern S, Yung CW.
Ophthalmic Surgery 1995; 26: 114-6.

Although mechanisms of posterior lens dislocation during phacoemulsification have been suggested, the actual mechanism involved has not been demonstrated. A review of Indiana University's charts of patients who had cataract surgery from 1991 to present identified nine cases of posterior lens dislocation that occurred during phacoemulsification. In four of the cases, the procedure was converted early to a can-opener capsulotomy. Cadaver eyes studies showed the role of an imperfect capsulorhexis in extending tears while a "trap door" was being formed for posterior nuclear dislocation during phacoemulsification.

Mersilene Sutures for Corneal Surgery.

Frucht-Pery J.
Ophthalmic Surgery 1995; 26: 117-20.

This author reports on complications his department found in using running Mersilene sutures in fourteen patients who underwent penetrating keratoplasty for keratoconus. 11-0 Mersilene and 12 interrupted 10-0 nylon sutures were used in each procedure, and the patients were followed for 22 to 48 months. Although none of the Mersilene sutures broke, four were removed in two patients. Removal of the sutures in one was due to astigmatism or loosening of the suture as a result of sterile ulceration, and in the other, due to herpetic keratitis. Marked scarring manifested along the loops of the sutures in 11 of the Mersilene sutures. He feels these findings warrant further investigation of the use of Mersilene sutures in cases of penetrating keratoplasty.

Argon Laser Trabeculoplasty: Long-Term Results.

Lotti R, Traverso CE, Murialdo U, Frau B, Calabria GA, Zingirian M.
Ophthalmic Surgery 1995; 26: 127-9.

These authors analysed the long-term success of laser trabeculoplasty (ALT) performed in 237 eyes of 175 patients who had been diagnosed with primary open-angle glaucoma. The follow-up period extended to 11 years after treatment. The cumulative proportion of success, defined as the avoidance of glaucoma surgery or an intraocular pressure never exceeding 22 mmHg, was claculated throughout the follow-up using Kaplan-Meier life-table analysis. The success rates were 78% at 1 year, 71% at 3 years, 61% at 5 years, and 40% at 10.5 years. This data confirms that there is a definite decline in efficacy of ALT over a period of time.

Long-Term Results of Molteno Implants.

Price FW, Wellemeyer M.
Ophthalmic Surgery 1995; 26: 130-5.

These authors reviewed 76 Molteno implants in 72 eyes, with a minimum of 18 month's follow-up. Initially in 64 of these eyes the double-plate implants were used. After a follow-up of 33.27 months the intraocular tension was 14.0 mmHg, as compared with 35.31 mmHg preoperatively. With success defined as an IOP greater than 5 mmHg but no greater than 21 mmHg at the last visit, the success rate was 74%. Success rate would be 79% if four cases of chronic hypotony without loss of best-corrected vision are included. The most frequent complications included filtration tube blockage, corneal graft failure, choroidal effusion, and hyphema/vitreous hemorrhage.

Caruncle Malignant Melanoma In A Black Patient.

Kalski RS, Lomeo MD, Kirchgraber PRN, Levine MR.
Ophthalmic Surgery 1995; 26: 139-41.

Over a period of three years a caruncle lesion had

progressively enlarged in an 84-year-old black woman. Surgical excision and cryotherapy were performed. The biopsy of the lesion confirmed the diagnosis of caruncular malignant melanoma, a rare lesion which has not been previously reported in a black patient as thought by the authors.

Low-Power Intraocular Lens Implantation in Patients with Cataracts and Age-Related Macular Degeneration.
Boutros GJE, Boutros HN.
Ophthalmic Surgery 1995; 26: 153-5.

Three patients with age-related macular degeneration who underwent cataract extraction with intraocular lens implant were fitted with low-power intraocular lens implants so as to produce an end spectacle refraction of approximately +6 diopters. This, of course, produces a magnification of about 12%. These authors feel this magnification with use of low-power intraocular lens better benefits the ARMD patients, more so than trying to reach emmetropic refraction with IOLs.

The "Lost Lens": A New Surgical Technique Using the Machemer Lens.
Weinstein GW, Charlton JF, Esmer E.
Ophthalmic Surgery 1995; 26: 156-9.

These authors have used a method of removing a posteriorly dislocated lens involving the use of a Machemer lens to visualize displaced lens remnants. After core vitrectomy, the lens remnants are brought anteriorly and then removed by phacoemulsification. Lens implantation may then be performed with sulcus fixation. Eight out of ten patients who had this procedure resulted in maintaining 20/40 or better visual acuity.

Simple Approach to Secondary Posterior Chamber Intraccular Lens Implantation in Patients Without A complete Posterior Lens Capsule Support.
Tomikawa S, Hara A.
Ophthalmic Surgery 1995; 26: 160-3.

This is a simple new procedure described by these authors of implanting secondary posterior chamber intraocular lenses with ciliary sulcus fixation in patients without complete posterior lens capsule support. Two pairs of PC-9 needles are used, each pair connected by the Girth Hitch method, with a guiding needle on one end and a tying needle on the other. This ab-externo technique overcomes many of the disadvantages mentioned in previous reports on secondary PC IOL implantation.

Securing Silicone Stents in Dacryocystorhinostomy.
Jordan DR, Bellan LD
Ophthalmic Surgery 1995; 26: 164-5.

To help maintain a patent mucosal passageway into the nose, silicone stents are commonly used in dacryocystorhinostomy. It is not unusual for a tube to become displaced or migrate laterally and sometimes it may be difficult to reposition it. These authors describe how stent prolapse may be prevented by using aneurysm clips to secure the silicone stents once they are in place.

Painless Wakeful Peribulbar Block Achieved Safely with A Single Transconjunctival Injection.
Hulquist CR.
Ophthalmic Surgery 1995; 26: 200-4.

The author's single-injection peribulbar technique provides a painless and efficacious block without the need for intravenous supplements. One hundred consecutive patients achieved lid akinesia and complete akinesia and anesthesia of the globe by transconjunctival route. Only 1% needed a supplemental injection, and complications were minor and infrequent.

Combined Topical and Subconjunctival Anesthesia in Cataract Surgery.
Anderson CJ.
Ophthalmic Surgery 1995; 26: 205-8.

Seventy-three patients who underwent scleral tunnel phacoemulsification cataract surgery received a combination of topical anesthesia and subconjunctival anesthesia. This author evaluated each medical report preoperatively, intraoperatively, and postoperatively. A patient questionnaire was ued to obtain subjective intraoperative and postoperative information. Preoperative and intraoperative sedation of varying degrees was necessary. Ninety-five percent of the patients reported no pain. No patients required additional retrobulbar or peribulbar anesthesia. The most frequent postoperative problems were pain, a headache and need for patching. The combined topical anesthesia and subconjunctival technique appeared medically acceptable, cost-effective and safe.

Comparison of Three Corneal Trephines for use in Therapeutic Penetrating Keratoplasties for Large Corneal Perforations.
Ng JD, Nekola M, Permley VC, Richardson M, Mader T.
Ophthalmic Surgery 1995; 26: 209-15.

Large corneal perforations tend to complicate

penetrating keratoplasty due to the increased risk of anterior chamber collapse they pose. These authors suggest that suction trephines should produce more uniform corneal openings than non-suction trephines. Penetrating keratoplasties using Franceschetti-type free-blades, and Hanna and Hessberg-Barron suction trephines were performed on human eye bank eyes with large corneal perforations. The trephined corneas' histologic appearance was graded according to depth, sharpness, and perpendicularity of cut. Suction trephines were easier to use, resulted in less anterior chamber collapse, caused less corneal distortion, and created a sharper, deeper and more perpendicular incision. The Hessberg-Barron and Hanna trephines performed better than the free-blades in this study.

Pars Plana Molteno Implantation in Complicated Inflammatory Glaucoma.
Sheppard JD, Shrum KR.
Ophthalmic Surgery 1995; 26: 218-22.

This study is of seven patients who had pars plana Molteno implantation. All seven had multiple attempts, both medical and surgical, to control intraocular pressure but all attempts failed. A Molteno implant was inserted through the superior temporal vitrectomy port, following a complete pars plana vitrectomy, in an effort to avoid further anterior chamber complications. Two of the seven patients had decreased visual acuity due to pre-existing conditions, and one patient lost vision. Preoperative intraocular pressures ranged from 29 to 57 mmHg and postoperative intraocular pressures ranged from 7 to 20 mmHg.

A Retrospective Study of the Effects of Laser Suture Lysis on the Long-term Results of Trabeculectomy.
Asamoto A, Yablonski ME, Matsushita M.
Ophthalmic Surgery 1995; 26: 223-7.

The effects of laser suture lysis on the long-term results of initial trabeculectomies in 130 consecutive eyes that had an intraocular pressure greater than 21 mmHg during the first 4 postoperative weeks were examined retrospectively by the authors. Forty-six eyes underwent laser suture lysis after the intraocular pressure was noted. The other 84 did not have the lysis. The 2-year cumulative probability of success in the laser suture lysis group was .84 and, in the control group, .82. One and two years after the trabeculectomy the intraocular pressures in the two groups were similar. Laser suture lysis had no discernable effect on the long-term rate of trabeculectomy in these patients.

Ocular Motility Defects in Patients with the Krupin Valve Implant.
Frank JW, Perkins TW, Kushner BJ.
Ophthalmic Surgery 1995; 26: 228-32.

A retrospective case series of all patients receiving a Krupin valve with disk and intraoperative mitomycin-C in a university-based referral practice was conducted to determine the prevalence of ocular motility defects following placement of a Krupin valve with disk and adjunctive mitomycin-C in glaucoma patients. Development of significant primary position heterotropia or limitation of ocular rotations was experienced by seven consecutive patients who underwent placement of a Krupin valve with disk in one eye because of uncontrolled glaucoma. One patient had significant postoperative diplopia. These authors conclude that the Krupin valve with disk used with intraoperative mitomycin-C can be associated with the development of ocular motility defects. The limitation of rotations appears to relate to the combined mechanisms of implant and cyst bulk and the displacement of the oculorotary muscles by the encapsulating cyst.

Compliance in Patients Prescribed Eyedrops for Glaucoma.
Patel SC, Spaeth GL.
Ophthalmic Surgery 1995; 26: 233-6.

One hundred patients being followed in a setting emphasizing correct usage were studied by these authors for the rate of failure to use eyedrops as prescribed for glaucoma. They also studied some of the factors possibly associated with non-compliance. Fifty-nine admitted that they had not used their eyedrops precisely as told. Factors significantly influencing compliance included forgetfulness, daily dose frequency, unaffordability, and inconvenience. Race and gender were marginal factors, with men and blacks reporting somewhat higher rates of missed doses than women and whites. Side effects and age were not significant non-compliance factors.

Effects of Intraoperative Topical Mitomycin-C on Strabismus Surgery in the Rabbits; A Preliminary Study
Cruz OA, Matkovich L.
Ophthalmic Surgery 1995; 26: 237-9.

These authors did a retrospective investigation for the effect of intraoperative topical exposure of mitomycin-C (MMC) on muscle reattachment and scarring in strabismus surgery in he rabbit by performing bilateral recession surgery in which one eye was treated with topical MMC (0.2 mg/ml) and the other eye served as control. The severity of

postoperative adhesions was rated lower in the MMC-treated eyes after one week postoperative. Histology, also, demonstrated decreased fibrosis in the muscle reattachment sites in the MMC-treated eyes. The muscle tension in the reattachment muscles was greater than 100 g in all of the eyes. This preliminary study indicates that topical MMC exposure may inhibit scarring in strabismus surgery without inhibiting muscle reattachment or causing other obvious adverse effects.

Transection of the Superior Rectus Muscle During Intended Superior Oblique Tenotomy: A Report of Three Cases.
Raymond Maj WR, Parks MM.
Ophthalmic Surgery 1995; 26: 244-9.

Complications of superior oblique surgery including postoperative vertical or torsional deviation, Brown's syndrome, head tilt, blepharoptosis, and conversion of an A-pattern to a V-pattern have been reported. McNeer previously reported three cases of postoperative vertical deviation, one of which was attributed to severing of the superior rectus tendon. These authors report three additional cases of inadvertent unrecognized transection of the superior rectus during intended superior oblique tenotomy to emphasize the importance of direct visualization of these tendons during surgery.

Intralenticular Foreign Bodies: Case Reports and Surgical Review.
Macken PL, Boyd SR, Feldman F, Heathcote JG, Steiner M, Billson FA.
Ophthalmic Surgery 1995; 26: 250-5.

Management of intralenticular foreign bodies (ILFBs) stirs controversy. Correlation between foreigh body characteristics, visual outcome, the need for surgical intervention, and the choice of surgical technique are not well established, These authors report five cases of traumatic ILFBs, all managed surgically. Three ILFBs were metal, one was presumably also, metal, and one was wood. They chose to proceed with foreign body removal and simultaneous cataract extraction with intraoculr lens implantation as a single-staged procedure in four cases. In one case of planned extracapsular cataract extraction, a foreign body was identified only after the expressed nucleus was sent for pathological examination. Visual outcomes were 20/30 or greater in all cases at 5 to 18 months follow-up.

An Ultrasound Biomicroscopic Dark-Room Provocative Test.
Pavlin DJ, Harasiewics K, Foster FS.
Ophthalmic Surgery 1995; 26: 253-5.

The relationship of angle structures under any lighting conditions can be imaged by ultrasound biomicroscopy. These authors studied eight patients with narrow angles in the light and in the dark. All of the eyes showed iris thickening and shortening, increased anterior convexity of the iris, and varying degrees of angle narrowing in the dark. In one eye, the angle was completely closed. Iridotomy in this patient flattened the iris profile and opened the angle. The degree of angle opening observed after the iridotomy did not change depending on the lighting conditions. Ultrasound biomicrosocpy alows imaging of dynamic changes in anterior structures as they occur and provides information regarding angle occludability in the dark.

Corneal Endothelial Polymerization of Histoacryl Adhesive: A Report of a New Intraocular Complication.
Markowitz GD, Orlin SE, Frayer WC, Andrews AP, Prince RB.
Ophthalmic Surgery 1995; 26: 256-8.

Small corneal perforations are commonly sealed with tissue adhesives. These authors repot a case of inadvertent instillation of cyanoacrylate adhesive (Histoacryl) in the anterior chamber resulting in polymerization of the glue on the corneal endothelial surface, with iridocorneal and iridolenticular adhesion.

A Simple Punching Device for Use in Penetrating Keratoplasty
Urrets-Zavalia A.
Ophthalmic Surgery 1995; 26: 259-61.

This author describes a method of supporting donor cornea for trephination. On a base of heated and then cooled paraffin, a series of small identations are made with a sterile acrylic ball, 15mm in diameter, about one third of its volume deep. The donor cornea is then placed in one of the identations for trephination.

Orbital Inflammatory Syndrome: An Unusual Presentation.
Loff H, Levine MR.
Ophthalmic Surgery 1995; 26: 262-3.

A 22-year-old woman presented with a right unilateral proptosis. Evaluation revealed a large intraconal orbital mass, consistent with cavernous hemangioma. A lateral orbitotomy was performed to remove the mass. Histopathology was confirmed by electron microscopy, demonstrating fibroblasts with inflammatory histiocytes, but there was no evidence of cavernous hemangioma. To these authors' knowlecge this is the first description of a well-circumscribed intraconal mass diagnosed as orbital inflammatory syndrome.

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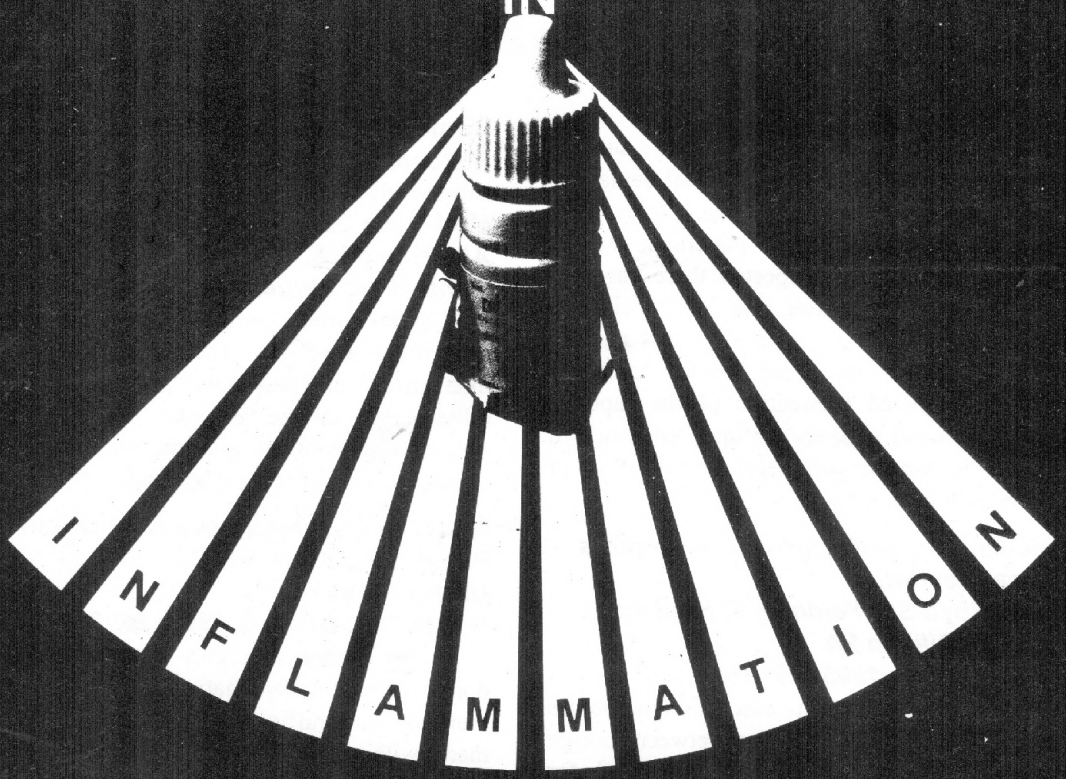

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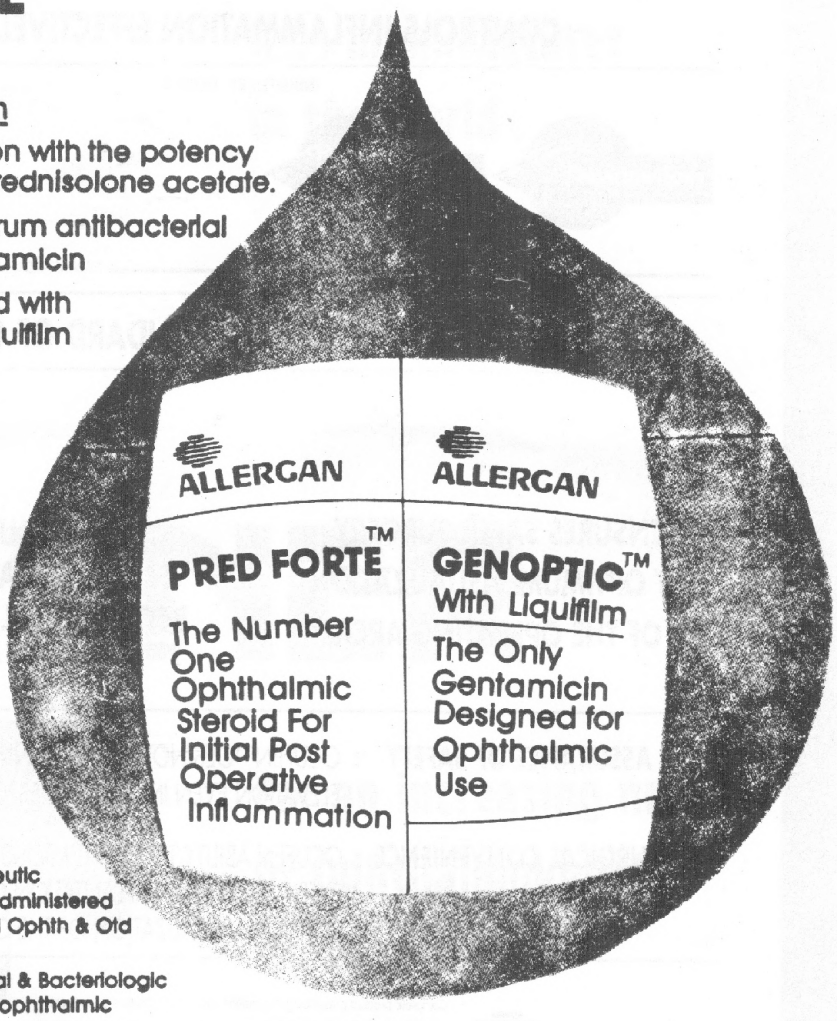

References.
1. Leibwitz Hin, Kupferman A. Bioavailability and therapeutic effectiveness of topically administered corticosteroids Tr Am Acad Ophth & Otd 1975; 79:78-78.
2. Magnuson R Sule T. Clinical & Bacteriologic evaluation of Gentamicin ophthalmic preparation Am J. Ophthalmology 1970; 734-738.

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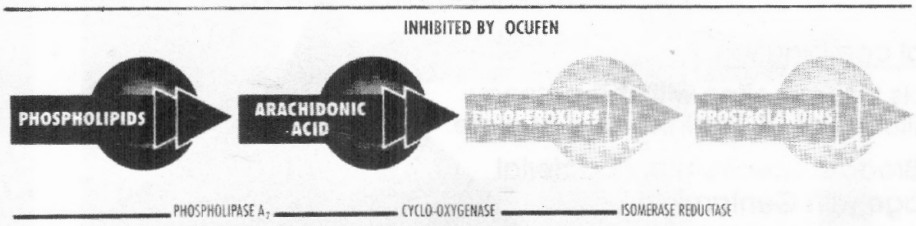

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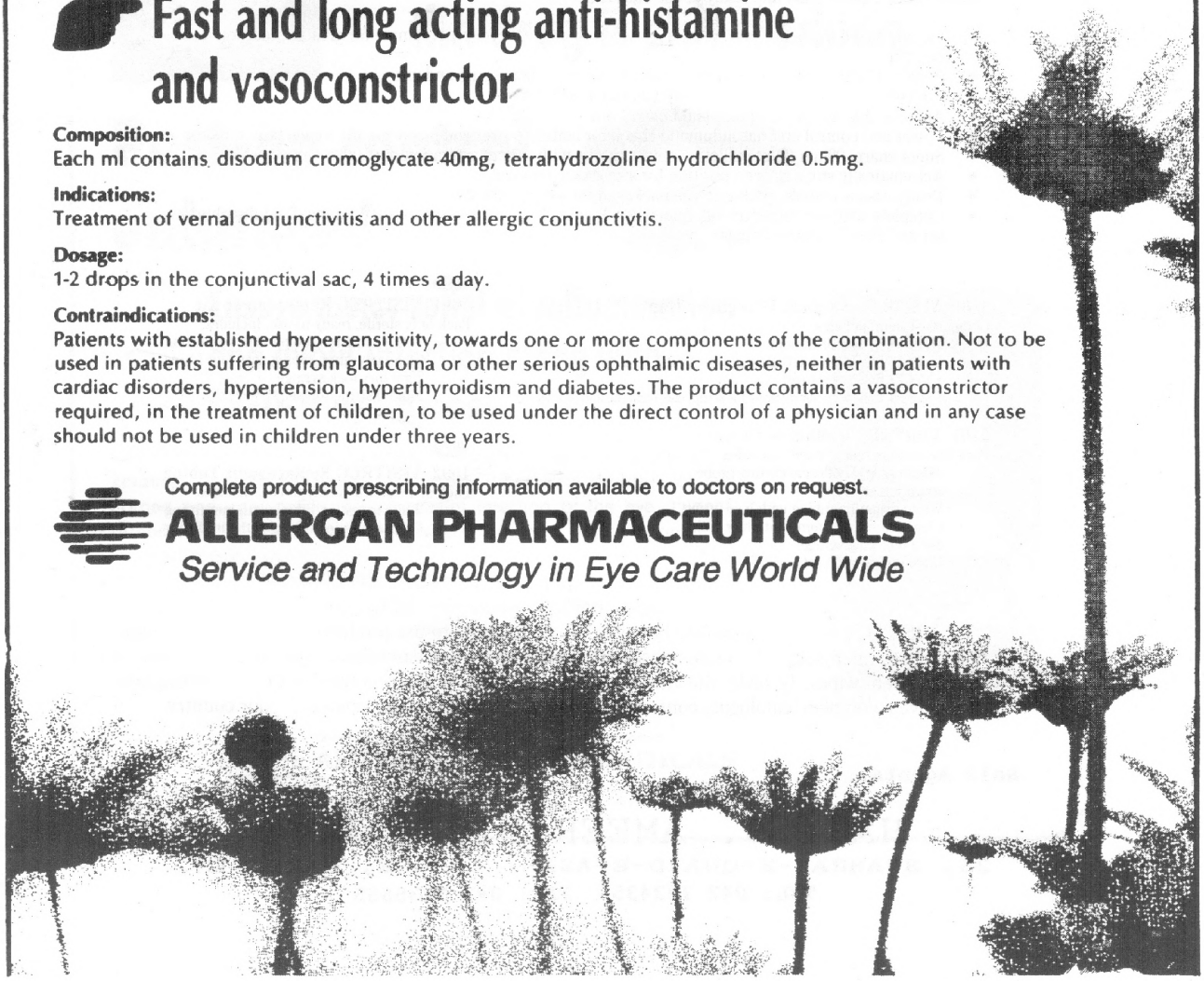

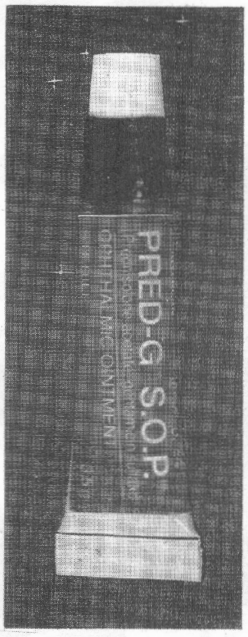

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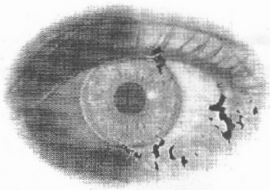

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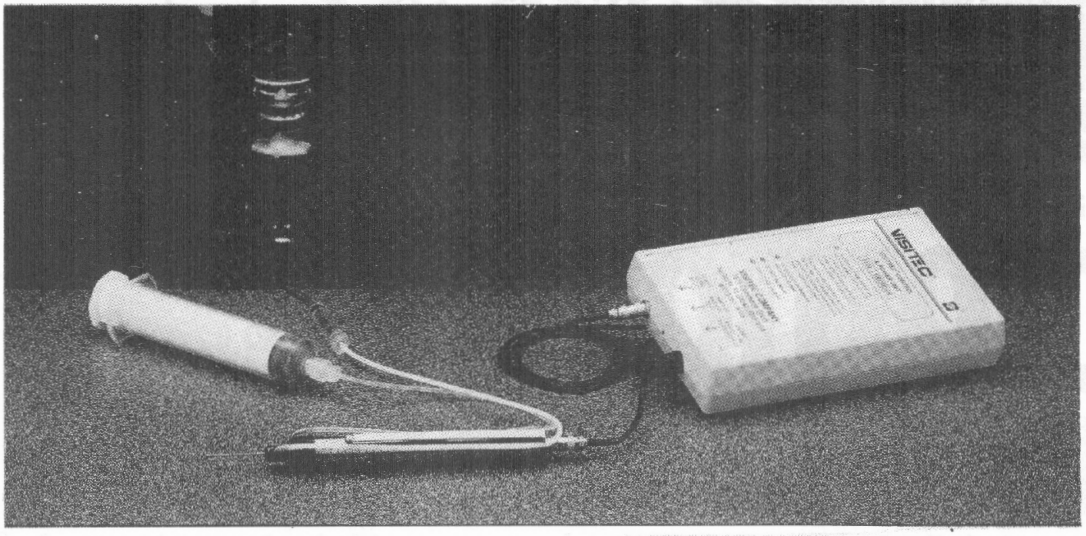

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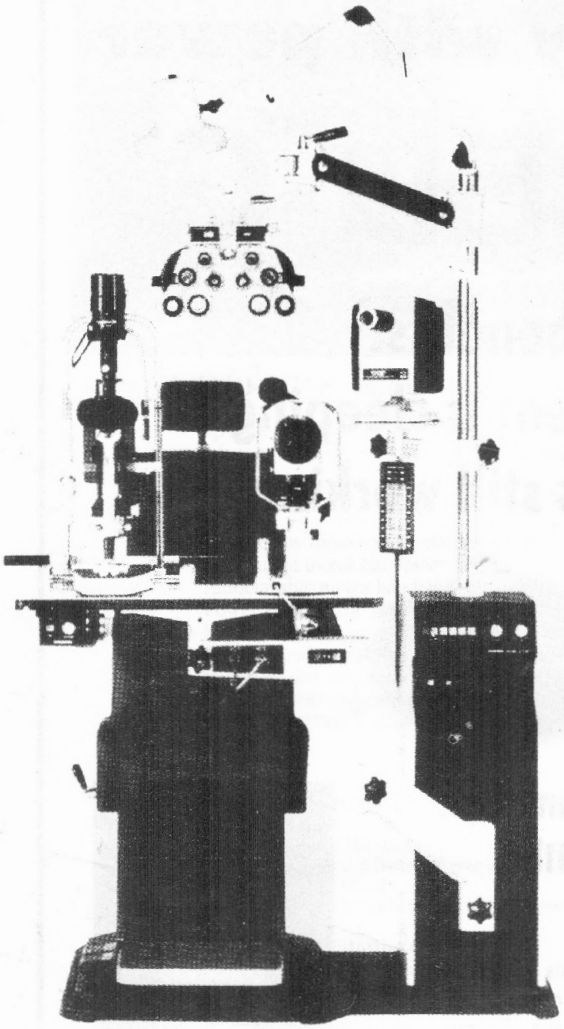

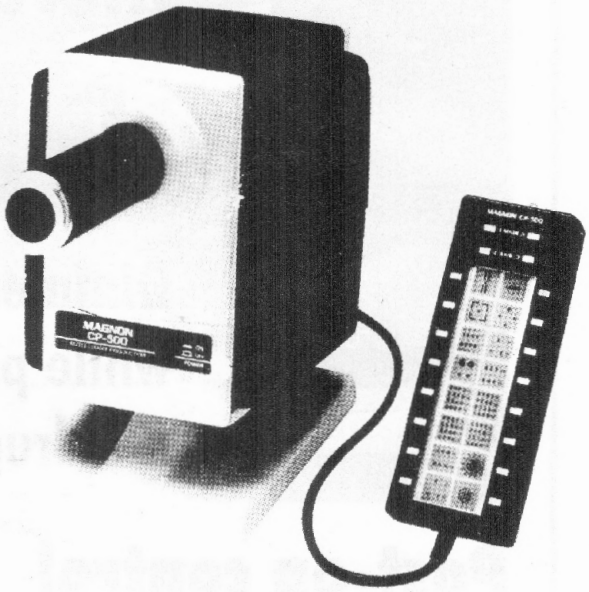

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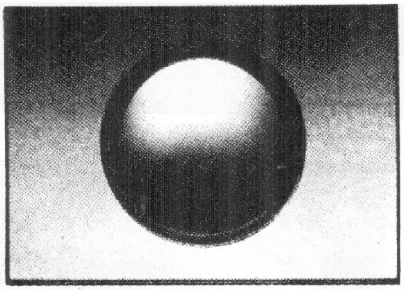

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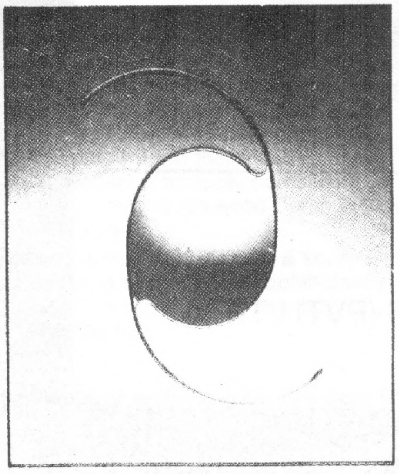

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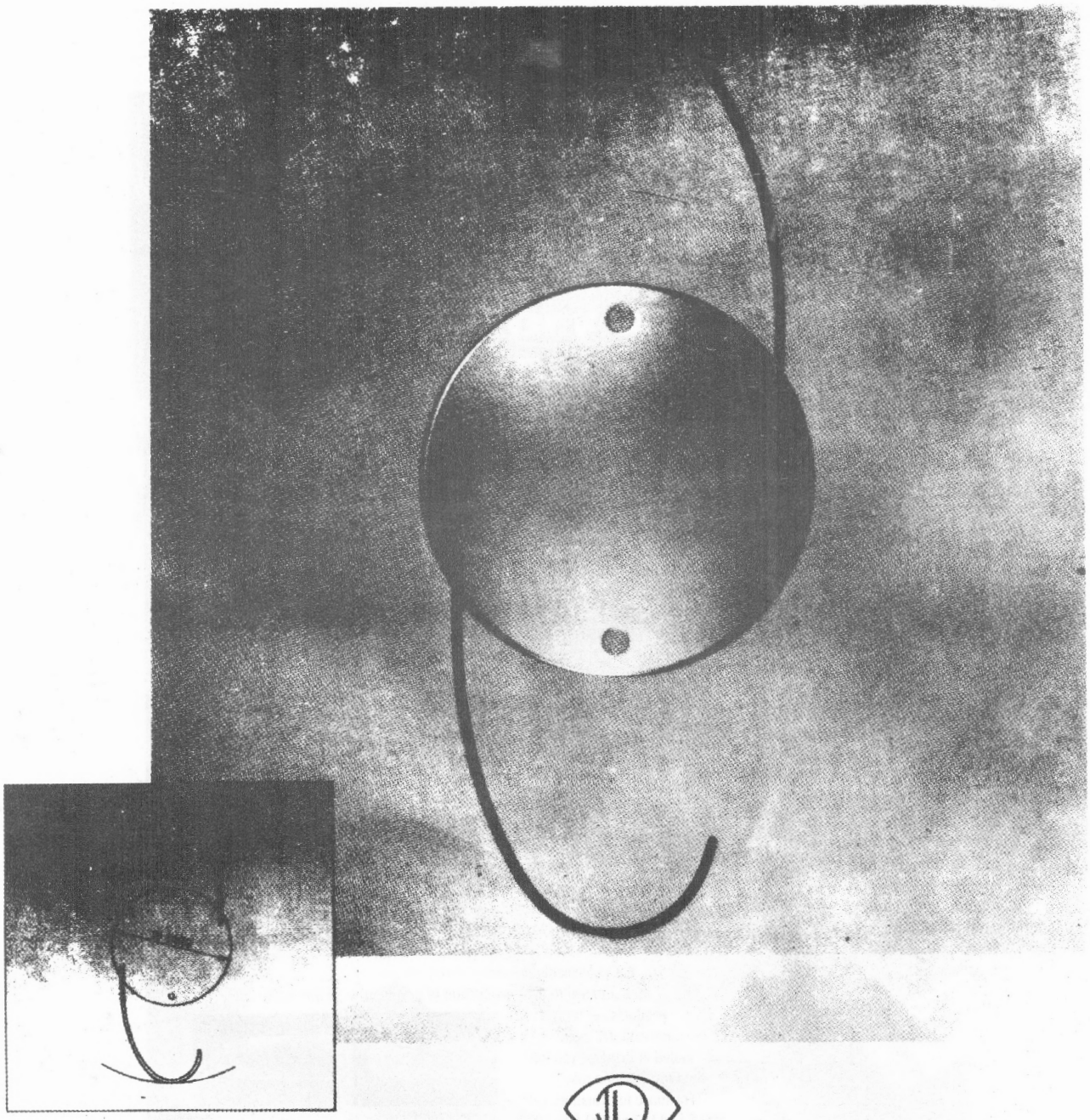

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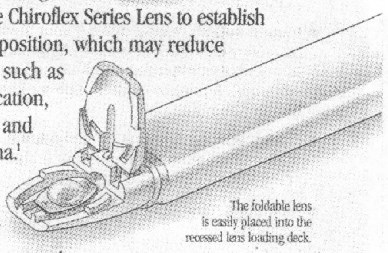

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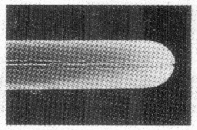
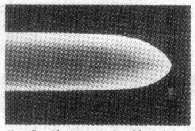


Non-Tumble-Polished Plate Haptic Lens. 100x magnification; side view of plate.



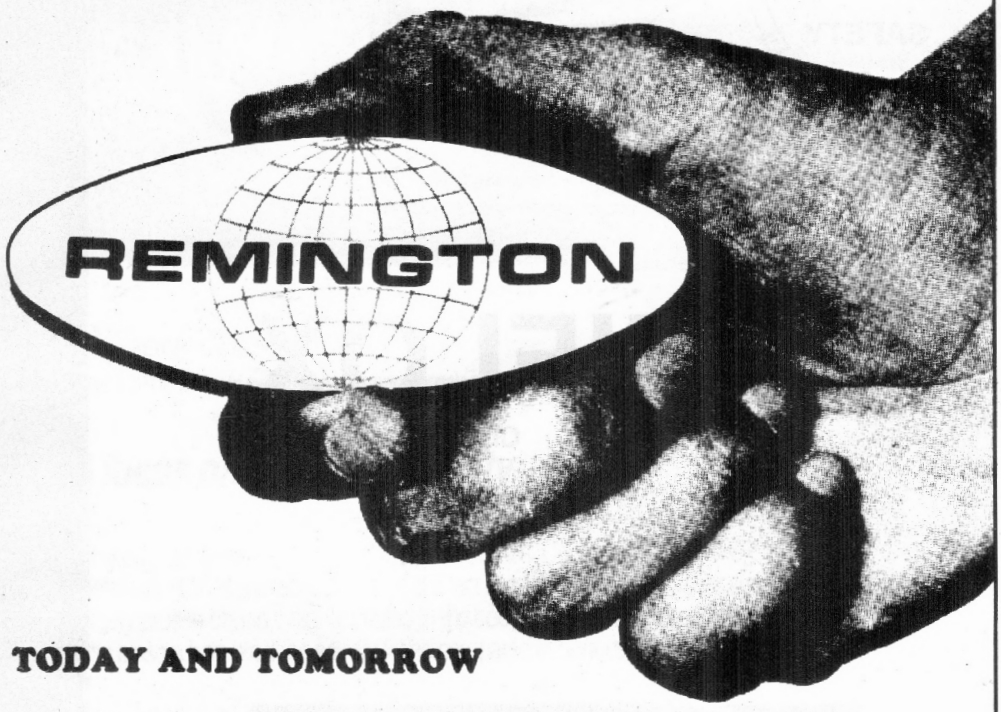
Chiroflex Plate Haptic. Tumble-Polished Lens (patented). 100x magnification; side view of plate.

CHIRON VISION

adatia DOMILENS lalaji TECHNOLAS

For further details please contact :
LATIF INSTRUMENTS (PVT) LTD.
14, Commercial buildings
Shahrah-e-Quaid-e-Azam, Lahore
Tel. 7570309,7591957, Fax. 7570308

THE HOPE OF A PAKISTANI OPHTHALMOLOGIST



TODAY AND TOMORROW

WE ARE THE FIRST ONE

* To challange the foreign company's monopoly.
* To use gamma irradiated vials from PARAS.
* To manufacture eye drops with an ambition to serve.

WE SHALL BE THE FIRST ONE

* To replace the big-names.
* To introduce a complete range in ophthalmological preparations.

THE LEADERS IN EYE-DROPS

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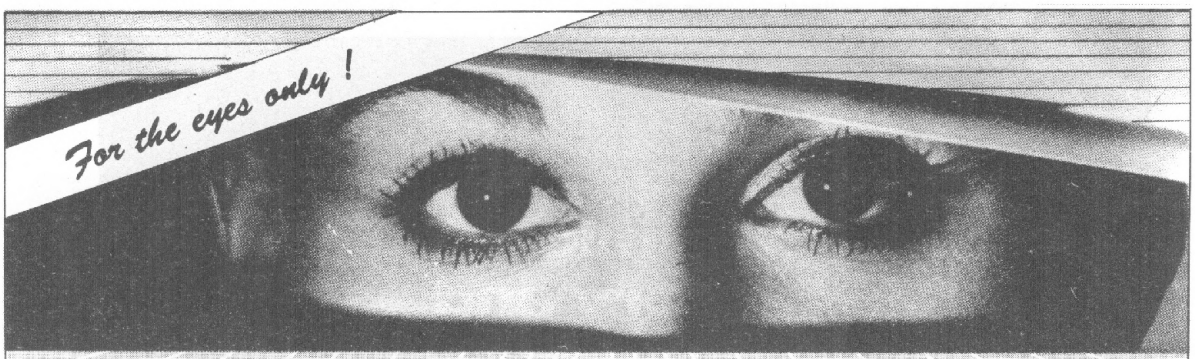

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Neomycin	Bacitracin
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	Hydrocortisone

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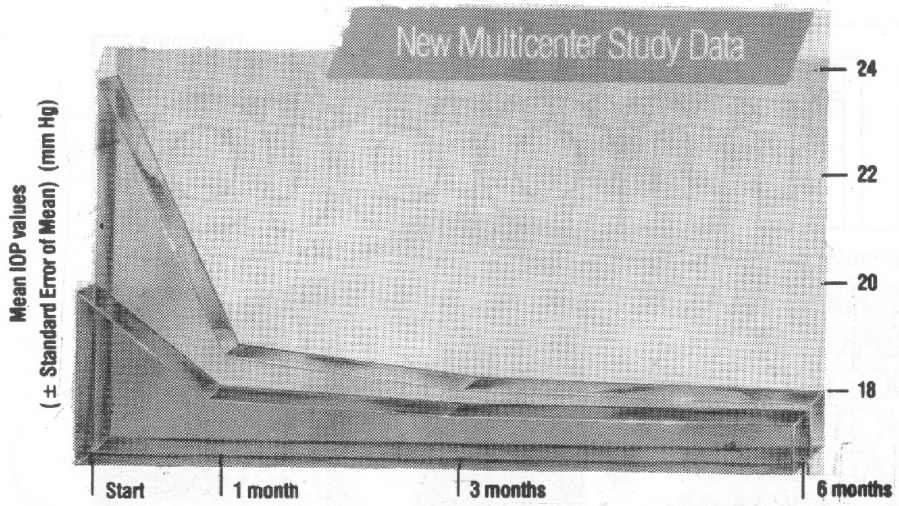
A focus on effective IOP control

Like all beta blockers, BETOPTIC® (betaxolol HCl) Ophthalmic Solution effectively lowers IOP in new patients. It maintains IOP in patients switched from nonselective beta blockers as well.[1]



New BETOPTIC patients (N=1,547)

BETOPTIC patients switched from nonoculoselective beta blockers (N=1,091)

A focus on oculoselectivity

Highly oculoselective BETOPTIC® concentrates its activity in the eye. High lipid solubility ensures good penetration through the cornea. Once absorbed, BETOPTIC (betaxolol HCl) has a reduced potential to act outside the eye. This is because it is largely protein bound,[2] highly diluted in the body fluids[2] and has been shown to have little plasma beta blocking activity when compared to nonoculoselective agents.[3]

A focus on total patient well-being

Oculoselective BETOPTIC produced minimal systemic beta blockade.[3] This means that patients on BETOPTIC Ophthalmic Solution can expect effective IOP control with few clinical complications—an important consideration for glaucoma patients, most of whom are elderly and already compromised by concomitant disease states. Minimal interference with concomitant disease states was noted in over 5,000 BETOPTIC patients evaluated for safety.[1]

BETOPTIC®

(betaxolol HCl) Ophthalmic Solution

The only oculoselective beta blocker

Alcon® INTERNATIONAL