Arch. Soc. Amer. Oftal. Optom. (1970) - 8 - 15 -

BILATERAL CATARACT EXTRACTION WITH REVIEW OF 1000 CASES.

BY

J. M. PAHWA, M. D.

Sitapur, U. P. - India

No doubt Bilateral Cataract Extraction in one sitting may appear new and exciting and has been condemned by many ophthalmologists because of the dangers of simultaneous loss of both eyes by one or other complication which may occur during or after the operation. But with the recent advances in cataract surgery particularly in the field of premedication, proper anaesthesia and akinesia, various corneo-scleral sutures and modern anti-biotics etc. it can be seriously considered particularly in developing countries where many eyes are lost because of delay in the operation due to hypermaturity, phacolytic glaucoma or due to couching. It is our common observation that most of the old persons living in remote villages do not seek the advice or undergo operation till they become completely blind in both the eyes or some painful complication supervenes. The poor daily wageearner cannot afford to stay out of home for long time as long as he can manage with one eye. It has also been our observation that bilateral cases if operated in one eye do not turn up for the second eye till some complication supervenes and the eye may be lost.

The present study has been made in 1000 consecutive cases (or 2000 eyes) during last 5 years and the results compared with similar 1000 unilateral cases.

Only simple uncomplicated bilateral mature cases or one eye hypermature and morganian and the other eye immature were selected. No special selection of the patients was made but it was proposed to have senile uncomplicated cases as far as possible. Cases of traumatic, complicated and glaucomatous cataract were

excluded. Cases who were unruly, mentally dull or uno-operative were also avoided for the study. The cases of diabetes, hypertension and with chronic bronchitis and cough were also excluded and with them only one eye was operated. The comparison of results was done in almost similar type of cases in the 2 groups who were treated alike before and after surgery.

Technique:

On the night before the operation the patient was given a tablet of Largactil 25 mg. to ensure good sleep and allay anxiety and worry. This was again repeated half an hour before the operation. For surface anaesthesia, Anethaine 1% drops were used. For retrobulbar injection 1 c. c. of 4% Procaine hydrochloride mixed with. 2 c.c. Adrenaline hydrochloride (1 in 1000) was used while 2% Procaine was used for Von-lint type of akinesia. After the bridal stitch in the superior rectus muscle, small conjunctival flap was made and a single pre-placed conjuncti-vo-episclero- limbal stitch was used in every case. It was supplemented by two additional sutures at 11 and 1 o'clock after the lens was removed.

The incision was made from 2.30 to 9.30 o'clock in left eye and 9.30 to 2.30 o'clock in right eye with a Graefe's knife. The keratome was reserved only for cases with deep endophthalmic eyes or with shallow anterior chambers. A small one or two peripheral buttonhole iridectomies were done before removal of the lens in almost all the cases to have a round pupil. The lens was taken out by Arruga's intra-capsular forceps which was used to grasp the anterior lens capsule in the lower part (Tumbling method).

Barraquer Erisophake was used in cases where lens capsule was rather slippery and could not be grasped with forceps and to the subluxated lenses in which there was no viscid anterior to the lens. Direct separation of zonule was not undertaken in any case.

In the intumescent cataracts I have found a method of micro-puncture i. e. anterior capsule is sharply perforated by fine needle in the upper part through peripheral coloboma of iridectomy and soft cortex allowed to pass to the anterior chamber. Gentle massage is then applied to the corneo-scleral margin below and soft cortex lying in the lower part of the lens, still in capsule, is massaged upwards. In this way extraction in toto is completed by holding the anterior capsule in its lower part which is now no longer streched and can be easily grasped.

Alphachymotrypsim was used only in young individuals.

I have not found two iridectomies of any extra advantage and it is my observation that it is the complete reposition of iris which is important. One

should always reposit the iris completely by several manoeuvres of iris repositor. Due regard should be given to the corneal endothelium from injury. A sub-conjunctival injection of one lac units of crystalline Penicillin dissolved in half c. c. of distilled water is given in every case. 4% Pilocarpine drop is instilled in all intracapsular cases before the bandage is applied.

Post-Operative Care:

The patient after the operation was sent to the ward on a stretcher though we have now relaxed it in many cases. The patient was given absolute rest for 6 hours after which he could turn to the un-operated side and was allowed to have liquid feeds only. The first dressing was done after 24 hours and any complication was carefully noted. On the second day the patient was allowed to sit for a few minutes supported by back rest or by means of a Fowler's bed. He was allowed to get out of the bed and go to the bath room only on the 4th day. After the second dressing which was done after 48 hours, the subsequent dressings were done on alternate days or every 4th day. In a few cases where extracapsular extraction was done, the dressings were done rather daily. Usually as far as possible the dressings were avoided on the 5th or 6th day for fear of hyphaema which could follow even after slight strain or squeezing of the lids during dressings. The bandage was opened on the tenth day and the conjunctivo-episclero-limbal stitsch was removed on the ninth day.

REVIEW OF 1000 CASES:

TABLE I

Sex	*Group* 1 (*Bilateral*)	*Group* 2 (*Unilateral*)
Male	611 cases	590 cases
Female	389 cases	410 cases
Total.....	1000 cases or 2000 eyes	1000 cases or 2000 eyes

TABLE II

Type of Cataract	*Group* 1 (*Bilateral*)		*Group* B (*Unilateral*)	
1. Both mature (includes cases of black and intumescent cataracts)	=	522 cases	1. Mature	608 cases
2. Both inmature	=	62 cases		
3. Mature one eye, immature other eye	=	182 cases	2. Immature	= 232 cases
4. One eye mature and the other eye hypermature	=	204 cases	3. Hypermature	= 160 cases
5. Both eyes Hypermature	=	30 cases		
Total	=	1000 cases	Total	= 1000 cases

TABLE III

Age	*Group* 1 (*Bilateral*)	*Group* 2 (*Unilateral*)
20 — 30 years	2 cases	24 cases
31 — 40 years	42 cases	57 cases
41 — 50 years	402 cases	464 cases
51 — 60 years	378 cases	312 cases
over 60 years	176 cases	143 cases
Total	1000 cases	1000 cases

TABLE IV

Type of operation

Group 1 (*Bilateral*)		*Group* 2 (*Unilateral*)	
1. Both intracapsular including cases where enzyme was used	682 casos	1. Intracapsular extraction	752 cases
2. Both extracapsular including cases where capsule broke	102 cases	2. Intracapsular with enzyme	31 cases
3. One eye intracapsular and the other extracapsular	216 cases	3. Extracapsular	185 cases
		4. Capsule ruptured so completed like Extracapsular	32 cases
Total	1000 cases	Total	1000 cases

TABLE V

Complication	*Complications* Group (*Bilateral*) *Nº of cases* 2000 *eyes*	*Percentage*	Group 2 (*Unilateral*) *Nº of cases* 1000 *eyes*	*Percentage*
1. Vitreous loss	84 eyes	4.2	18 eyes	1.8
2. Striate keratitis	14 eyes	0.7	10 eyes	0.1
3. Iris prolapse	50 eyes	2.5	18 eyes	1.8
4. Hyphaema	74 eyes	3.7	41 eyes	4.1
5. Opening of wound	2 eyes	0.01	—	—
6. Non-formation of Anterior Chamber	31 eyes	1.65	16 eyes	1.6
7. Choroidal detachment	24 eyes	1.2	9 eyes	0.9
8. Expulsive haemorrahage	Nil	—	Nil	
9. Iridocyclitis	24 eyes	1.2	5 eyes	0.5
10. Phako - anaphylactic endophthalmitis	Nil —	—	Nil	—
11. Infection	—	—	Nil	—
12. Disoriented or Post-operative delirium	9 cases	0.9	1 case	0.1
13. Retinal detachment	6 eyes	0.3	3 eyes	0.3
14. Post - operative glaucoma	7 eyes	0.35	3 eyes	0.3
15. Vitreous syndrome of Irvine	7 eyes	0.35	2 eyes	0.2
Total	2000 eyes		Total 1000 eyes	

TABLE VI

State of Hyaloid	*State of Hyaloid* Group 1 (*Bilateral*)	Group 2 (*Unilateral*)
Intact hyaloid	1820 eyes	949 eyes
Rupture hyaloid	180 eyes	51 eyes
Total	2000 eyes	1000 eyes

From the comparison of results it is evident that vitreous loss is more i.e. 4.2% in Group 1 as compared to 1.8% in Group 2 but it must not be forgotten

that in Group 1 there were many cases of hypermature cataracts where vitreous is rather much degenerated and in fluid state. Similarly the cases of ruptured hyaloid membrane were more in Group 1 as compared to Group 2. Iris prolapse was also slightly more but probably may be not of much significance. No case of post-operative infection was met with in any group. This is due to the routine use of Penicillin sub-conjunctivally. Hyphaema in Group 1 is slightly less as compared to Group 2 though it is not of much significance but it can be said that it may be due to the fact that both eyes were bandaged and the movements of the patients were restricted. It is interesting to observe that most of the hyphaema occurred on the 5th or 6th day. It is probable that it may have something to do with the repair of the wound where capillary buds can easily bleed even on little provocation or strain etc. Hence, as far as possible, post-operative dressings were avoided on the 5th or 6th day.

Post-operative delirium:

It is another condition whose incidence was more in our bilateral cases. Some of the cases actually became violent and got up from the bed and even removed bandage etc. It is our observation that it occurs more in poor class females who may have some nervous background. Whether prolonged 8-10 days binocular bandaging has something to do with it is not yet quite clear.

Phaco-anaphylactic endophtalmitis: was no noticed in any case in both the Groups. In Bilateral cases there are very few chances of developing any allergy to lens proteins as both the eyes are done at one sitting even it may be by extracapsular method.

No serious attempt has been made to evaluate the long term post-operative complications as there seems to be no reason to think that it will be in any way different than in the usual uniocular extraction cases.

With the figures submitted there appears to be enough justification for the adoption of bilateral procedure in selected cases and in my experience most of our patients welcome this opportunity of accepting what is to them in fact a single operation. Even in complicated cases I am sometimes requested to undertake both the eyes in one stage. No doubt the critics of this surgical procedure will suggest that no greater catastrophe could occur than the simultaneous loss of both eyes by one or other complication during or after the operation. But it may be said that with the modern development of akinesia, technique and corneoscleral sutures and various antibiotics its likelihood is negligible. The results submitted speak so eloquently about it specially if we compare the number of eyes lost in India because of hypermaturity, iridocyclitis and phacolytic glaucoma

or couching etc. It rather gives an added confidence to the operating surgeon. Not a single case of loss of both eyes has been met with. Phaco-anaphylactic endophthalmitis will be a remote possibility in Group 2 or bilateral cases even if both eyes are operated by extra-capsular method.

Summary

With the advent of proper akinesia, various corneoscleral sutures and improvements in surgical technique and introduction of modern antibiotics, it can be said that there is enough justification for the adoption of bilateral procedure in selected uncomplicated cases. It is my experience that our patents welcome this opportunity which to them is in fact a single operation. In making selection of cases for the intervention, one should avoid complicated and unco-operative patients with diabetes or hypertension.

REFERENCES

1. *Irvine, S.* R. Vitreous Syndrome after Cataract surgery Am. J. O.: 36:599 (May) 1953.
2. *Jervey, J. W.* Cataract surgery as an out-patient procedure. Trans. Am. Pph. Soc. Vol. 60:208, 1962.
3. *Pahwa, J. M.* Bilateral Cataract Extraction Paper presented at the International Ophthalmic Conference held in Brussels in September 1958.
4. *Pahwa, J. M.* Early Ambulation in Cataract surgery Paper read at the International Ophthalmological Conference held in Munich in August 1966.

Nehru Institute of
Ophthalmology and Research
Eye Hospital.