BILATERAL CATARACT EXTRACTION AND INTRAOCULAR LENS IMPLANTATION AT ONE SITTING

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SUMMARY: Bilateral cataract extraction (BCE) with posterior chamber intraocular lens implantation (PCIOL) were performed on 252 patients (504 eyes). Comparison our findings with that of unila- teral cataract surgery revealed no untoward complications. Furthermore, the results of bilateral cataract surgery was found reliable and predictable. The study was retrospective and conducted over a 7 years period.

No major intra or post operative complications related to surgical procedure was encountered.

The incidence of minor intraoperative complications observed in 7.34% of the patients.

The results were encouraging and indicative of safety and efficiency of this procedure. Final visual acuity of 20/40 or better was achieved in 86.7% of the patients.

Our results in this study suggested that there are no specific intra or postoperative risk factors of bilateral cataract surgery and the visual results are good. We therefore conclude that if the operation is indicated, under particular plan this procedure is practicable.

Key Word: Bilateral cataract extraction.

INTRODUCTION

Surgery of the lens has been practiced for at least several thousand years. There is a wide diversity of opinion whether the second cataract extraction should be performed on the same day, only a day apart, after several days or following a long interval.

Bilateral cataract extraction on the same day is warranted and the arguments in favor of this are as follows: One hospitalization, one convalescent period, and avoidance of the monocular problems while simultaneous rehabilitation of both eyes provide cost savings (1-8).

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Therefore it may be claimed that the advantages of this procedure outweigh the potential bilateral hazards, while the medical and socio-economical factors, may prove preferable.

MATERIALS AND METHODS

Study was conducted over 7-years period between 1993 and 2000 at the ophthalmic department of Rah-Ahan Hospital, Yazd Medical Sciences University. The study was retrospective on 252 patients (504 eyes), who were operated after a complete evaluation.

All of the patients in this group who underwent cataract surgery were in the old age when cataract is usually bilateral. In this study, the selected cases had

Table 1: Intra- postoperative difficulties and complications of bilateral and uniteral cataract surgery (among 1008 eyes).

Complications	Bilateral		Unilateral		P value*
	Eyes No.	%	Eyes No.	%	
Intraoperative					
Wound bleeding	14	2.77	20	3.96	0.295
Pupillary	18	3.57	21	4.1	0.624
Iris trauma	5	1	6	1.2	0.761
Posterior cupsular rupture	-	-	2	0.39	0.50
Postoperative					
Transient IOP up to 39 mmHg	18	3.57	20	4	0.74
Descements folds	8	1.58	12	2.3	0.366
Hyphema	5	1	5	1	1
Pupillary membrane formation	4	0.8	5	1	1
Filamentary Keratitis	2	0.4	3	0.6	1
Persistent corneal edema	1	0.2	1	0.2	1
Cytoid macular edema	4	0.8	5	1	1
Chronic uveitis	-	-	1	0.2	1
Retinal detachment	-	-	1	0.2	1
Mid dilated pupil	8	1.28	10	2	0.634
Pupillary lens capture	4	0.8	5	1	1
Posterior capsular opacity	42	8.35	48	9.54	0.489

* (Fisher's exact test) Non-significat.

minimum of ocular or systemic problems before categorizing for surgery. Advantages and disadvantages of the procedure were discussed with patients and their family as well.

All of the cataract surgery was performed under general anesthesia. The procedure was done as two separate operations under one anesthesia. Exact and careful scrubbing with povidone iodine (Betadine 5%) on the operative field has been done separately for each eye. The surgeon, assistant and instrument nurse rescrubbed and regowned before operating on the second eye. A separate irrigation system and operating room trolley were used for each operation. A cardinal point is that if the first eye operation ended without any unusual complication we proceeded with the second eye surgery. Intraoperative difficulties were mainly minor and routine.

Implants consisted of (in the bag) and (ciliary sulcus) insertions. Fortunately in this series of cataract surgery we had no serious unilateral or bilateral complications. All cases received subconjunctival antibiotics and steroids at the inferior cul-de-sac as prophylaxis against infection and inflammation. The operated eyes were dressed over night by eye pads and protective shields. The day after the procedure a complete check-up and then usual and necessary eye examination was done during follow up time.

We used two separate antibiotics and steroid eye drops for each eye and the nursing care exercised excessive measures against contamination.

RESULTS

Total of 252 patients (504 eyes) were included in this study, 122 were males (48.4%) and 130 were females (51.6%) and aged between 54 and 90 (mean 71.3 year).

The follow up time ranged between 12 and 360 weeks, and the mean was 58.13 weeks. All proce-

dures were performed at the Rah-Ahan Hospital, Yazd Medical Sciences University by ophthalmic surgeons and assistants. In no case serious complications in the first eye operation necessitated the cancellation of surgery on the other eye.

Included criteria of the patients were senile cataract surgery and excluded glaucoma, retinal problem, chronic uveitis in this patient category.

Preoperative routine and essential examination and intraocular lens power calculation (Basong on the measurement of eye ball length and corneal refraction) have been done for all cases.

Major intraoperative complications were not noticed. Some minor complications were seen in (7.34%) such as a little wound bleeding in 14 eyes (2.77%). In 18 cases (3.57%) bilateral pupillary miosis occurred due to surgical trauma while phenylephrine irrigation ($1/10^6$) was applied.

In five eyes with semi atrophy of iris, small sphincter rupture (iris trauma, 1%) occurred during nucleus expression and lens implantation.

Postoperative minor complications consisting of lid edema, subconjunctival hemorrhage, injection flare and cells in the anterior chamber, operative-hyphema were found in some cases. Few cases had mild discomfort while many patients had no post operative ocular pain. In no case deep pain was observed.

Postoperative transient intraocular pressure went up to 39 mmHg in 18 cases (3.57%), and bilaterally in one case. Folds were observed in 8 eyes (1.58%), one of them was bilateral. Macroscopic hyphema developed in 5 eyes (1%), while pupillary membrane formation probably due to IOL reaction probably due to the midriatic drug used was seen in 4 eyes (0.8%). Filamentary keratitis developed in 2 eyes (0.4%), and semi dilated pupil in 8 cases (1.58%), pupillary lens capture in 4 cases (0.8%), posterior capsular opacity and thickening were seen postoperatively in 42 eyes (8.35%). In 4 cases bilateral Nd: YAG occurred following which subcapsular laser capsulotomy was done. In addition persistent corneal edema developed in 1 eye (0.25%) and significant cystoid macular edema occurred in 4 eyes (0.6%). No cases of unilateral or bilateral endophthalmitis or other serious complications occurred during early or late follow up time in this group of bilateral cataract surgery.

However final approximate visual acuity (VA) of 20/20 was attained in 185 eyes (36.7%). In 136 eyes (27%) the VA achieved was better than 20/40. In 116 eyes (23%) the VA nearly achieved was 20/40. The corrected VA between 20/40-20/20 due to the postoperative astigmatism and IOL power calculation error gained in 37 eyes (23%) and 30 eyes (6%) was gained VA 20/60 or better.

Final VA of 20/40 or more was seen in 86.7% and totally spectacles corrected and uncorrected VA of 20/40 or more was gained in 94% of cases.

Table 1 displays and compared the complication of unilateral and bilateral cataract surgery and IOL implantation and Table 2 shows visual acuity out come.

Table 2: Final visual acuity (VA) of bilateral and uniteral cases.

V.A.	Bilateral		Unilateral	
	No.	%	No.	%
20/20	185	36.7	162	32.14
Better than 20/40	136	27	130	25.8
20/40	116	23	120	23.8
Corrected V.A. between 20/40-20/40	37	7.34	40	7.93
20/60 or better	30	5.96	52	10.31
Total	504	100	504	100

DISCUSSION

Despite so much controversy about lens surgery for a long time there is a wide diversity of opinion on the need for cataract surgery on the second eye during the same day, only a day or several days apart.

Bilateral cataract extraction on the same day is warranted and arguments in favor of this preference are as follows: one hospitalization, one convalescent period, convenience related to employment, patients and their families' satisfaction, particularly in elderly cases for early recovery, period of hospitalization, shorter and reduced insurance expenditure. This group of patients discussed here was given only one general anesthesia for extraction of both lenses which consequently provided reduction in morbidity and mortality by avoiding an additional anesthesia. It also provided the improved bilateral visual acuity, less steropsis, lower sensitivity thresholds and less glare disability, avoidance of the monocular problems, may also be considered in favor of bilateral cataract extraction. Postoperative complications related to bilateral cataract extraction in one session was mostly minor and routine. These results of 504 unilateral cataract extractions and IOL insertions at the same session under the same conditions and criteria compared favorably with those of the methods. In addition, there are no specific risk factors for bilateral cases. We conclude that there were no statistically significant differences according both criteria between the unilateral and bilateral cataract surgery. There were also no significant differences in intra or postoperative complications as determined by Fisher's exact test (all $p>0.05$) and with reference to others' studies, such as reported in the literature (9-14). Our results demonstrated safety, efficacy, reliability and predictability of this procedure. No serious case of unilateral or bilateral problems such as endophthalmitis were seen early or late within 7 years follow up time.

No complications specific to bilateral cataract surgery in this group were observed. Our results suggested that the bilateral cataract extraction in one session is safe and provides as satisfactory results as unilateral approaches.

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