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Cataract and glaucoma often co-exist in elderly and geriatric people, which is also common in this part of country. We combined trabeculectomy and intra-capsular lens extraction for patients in whom cataract and chronic simple glaucoma co-exist. A single procedure which accompanies two purposes in much more desirable than two separate operation. It has got obvious advantages. Patient is financially less burdened because of one surgery and one time hospitalisation. The avoidance of prolonged use of medication, early restoration of vision, avoidance of problems of aphakic glaucoma and second operation.

For these various reasons, a number of authors have recommended the combined procedure. They include anterior sclerotomy with lens extraction (Wright, 1937; Lee & Weih, 1950), iridencleisis (Birge, 1952). Sclerotomy with iris inclusion (Hughes, 1959), sclerotomy with cautery (Stocker, 1965). Though on the whole results have been good and operations justified, all were concerned about the complications.
The commonest complications are - (1) syndrome of profuse filtration: flat anterior chamber hypotony and choroidal detachment; (2) haemorrhage; (3) endophthalmitis and, (4) loss of vitreous.

So the choice of which combined operation is to perform. Trabeculectomy has been shown to be a effective and safe operation in co-exist patients of glaucoma with cataract (Shmeleva, 1972; Hilsdorf, 1974). The trabeculectomy has the advantage of guarded filtering wound. So better glaucoma control can be attained and there is possible avoidance of shallow or flat anterior chambers post-operatively. So trabeculectomy and cataract extraction simultaneously were done in the present study for its further evaluation.

This series consisted of 20 patients of chronic simple glaucoma with cataract. All 20 eyes were operated for cataract extraction with trabeculectomy and follow-up was done.

**Age and Sex:**

The age of the patients varied from 31 to 70 years. The average age of the patients was 56.3 years. The maximum number of patients recorded in the six and seventh decade.
This shows that the co-existing condition of cataract and glaucoma is basically a problem of geriatric people.

As for sex is concerned 17 (85%) were female, while 3 (15%) is male.

The most common type of cataract associated with glaucoma were mature cataract 15 (75%) and immature cataract 5 (25%).

Maximum patients 12 (60%) belongs to the rural and sub-urban area and on 8 (40%) from urban area, indicates that this disease is more common in villagers. We further observed that 15 (75%) patients belongs to lower and lower middle class.

The pre-operative visual acuity was very low in our study because of advanced lenticular opacities with glaucoma.

In 19 (95%) eyes the vision was counting finger or less than that. Only one(5%) eye had visual acuity 1/60.

As the major disadvantages considered with combined cataract extraction and trabeculectomy is higher risk of complication. So this part will be discussed first.
OPERATIVE COMPLICATIONS:

Rupture of lens:

The rupture of lens or unplanned extra-capsular cataract extraction occur in 2 (10%) eyes. Its incidence in cataract extraction alone could be 12% (Towan & Casey, 1955). In other reported series of combined cataract extraction, its incidence are (Hughes et al, 1963) 5%; (Maumenee et al, 1970) 5%; (Gordon et al, 1979) 2.7%; (Singh et al, 1979) 20%; (Edwards, 1980) 8.5% and (Romem et al, 1982) 6%.

So its incidence is not higher than cataract extraction alone.

Hyphaema:

In this series of cases operated. The blood in the anterior chamber is seen in 2 (10%) eyes. The literature had only a few reports with the blood in the anterior chamber as operative complication. Dhar et al, (1984) reported 7.4% cases had blood in the anterior chamber.

Iris injury:

In our study it was seen in one (5%) eyes. It was reported in 11.4% eyes by Singh et al (1979). This incidence is not frequently mentioned in the literature.
Vitreous prolapse:

In our study it was seen in one (5%) case. The incidence have been reported 3% (Luke Elder, 1969). The incidence of vitreous loss had been reported by different authors. Using similar combined procedure, it was 5.4% (Gorden et al, 1979); 5.7% (Singh et al, 1979); 3.4% (Edwards, 1980) and 4.3% (Alemetti and Kalima, 1982).

Thus vitreous loss of 5% is quite comparable with other reported series of combined cataract extraction with trabeculectomy.

POST-OPERATIVE COMPLICATIONS:

Striate Keratitis:

In our study it was seen in 6 (30%) eyes. It was mild striate keratitis, which cleared up in all these eyes by the time of discharge. It does not produce any adverse effect on the visual outcome. Its incidence could have further been reduced by minimising the instrumental handling.

Iritis:

Post-operative iritis was observed in 3 (15%) cases. It is the common complication after surgery. It is moderate in nature. It was controlled in all
the cases. Its incidence in other reported series of similar combined extraction is 10.2% (Edward, 1980) and 4.3% (Singh et al, 1979).

**Hyphaema:**

It was seen in 2 (10%) eyes in our series. It appeared on second day which was about 1/3 of anterior chamber and absorbed in the all eyes at the time of discharge. Its incidence in the same combined procedure as reported by the various workers are 25% (Witmer, 1976); 41% (Jerndal and Lundstrom, 1976); 31% (Stewart and Loftis, 1976); 10.8% (Gordon et al, 1979); 25% (Edwards, 1980) and 35% (Manzoor et al, 1981). As the hyphaema resolved in all the cases, it did not interfere with the visual outcome.

The incidence of hyphaema in combined cataract extraction with trabeculectomy is obvious because of open schlemm's canal and cut vessels of scleral lamellae.

**Hypotony:**

It was seen in 2 (10%) eyes. In simple trabeculectomy incidence of hypotony was 33.3% (Dutta, 1975) and 21.4% (Mital et al, 1979). In combined cataract extraction and trabeculectomy Klematti & Kalima (1982) recorded hypotony
in 37.2% of cases. Calvin et al (1969) reported persistent hypotony in one (2.17%) eye when used cataract extraction with cyclodialysis.

The chances of hypotony are justifiable in combined extraction as it could be because of over filtration itself.

**Shallow anterior chamber:**

It was seen in one (5%) eye. It was persistent and was associated with a small subconjunctival iris prolapse.

Shah (1971) observed 13.5% cases of shallow anterior chamber in a series of 500 cases of cataract extraction. Its incidence in combined extraction with trabeculectomy were 6.8% (Gordon et al, 1979); 6.8% (Edwards, 1980); 9.6% (Klematti and Kalima, 1982) and 6% (Romem et al, 1982). So the incidence in our series is 5% only and not more than cataract extraction alone.

**Late post-operative complication:**

**Iris prolapse:**

It was seen in 1 (5%) case only. It was seen in 1 (1.7%) out of 59 eyes (Edwards, 1980) and in 5.9% (Jerndal & Lundstrom, 1976) in similar combined procedure.
Vitreous opacities:

It was observed in 2 (10%) eyes. It could be degenerative or haemorrhagic in origin. Vitreous haemorrhage has been recorded by Homem et al (1982) in 2 (4.35%) eyes, out of 46 eye using similar combined procedure.

Distortion of pupil:

It was observed in 3 (15%) eyes. It is a minor post-operative complication. It does not have any deleterious effect on the visual outcome.

In our series of study no eye developed infection either of wound or filtering bleb throughout the follow up period. Minimum changes of infection in trabeculec-tomy is because of the fact that filtering bleb is not much prominent and moreover, the filtering bleb is covered by superficial scleral lamellae.

TENSION CONTROL:

The control of intra-ocular pressure was achieved without medical therapy in 17 (85%) eyes. The success rate for eyes not receiving post surgical treatment in a series of similar combined operation varied from 80 to 95% (Hilsdorf, 1974; Bregeat, 1975; Jerndal & Lundstrom, 1966; Manzoor et al, 1981; Edwards, 1980; and Wechsler &
Robinson, 1980; and Prasad et al, 1988). Our results are favourably comparable with these results. The control of intra-ocular pressure with medical therapy was achieved in 2 (10%) eyes both by the end of two months and in only 1 (5%) eye tension was not controlled even after medical therapy. In this uncontrolled eye filtering bleb was not formed.

The average reduction of pressure post-operatively at the end of 15\(^{th}\) day was 19.05 mm. of Hg. This lowering was highly significant \((P \leq 0.001)\) statistically.

The average reduction of pressure at the end of one month follow-up was 18.52 mm. of Hg. This lowering was again highly significant \((P \leq 0.001)\) statistically.

The average reduction of pressure at the end of two months of follow-up was 16.52 mm. of Hg. This lowering was also highly significant \((P \leq 0.001)\).

The average reduction of pressure is more at first four weeks of follow-up. As this was because of transient hypotony.

In our series 19 (95%) eyes had filtering bleb out of 20 eyes. Filtering bleb was seen in 45 (74\%) out of 61 surgically controlled eyes (Klemetti & Kalima, 1982).50\% (Jerndal & Lundstrom, 1976) and 55\% (Manzoor et al, 1981).
Wechsler & Robinson (1980) operated 70 eyes in 4 groups and analysed the results. The success rate in tension was 40.5% in cataract extraction alone.

The success rate was 65.5% when drainage operation was followed by cataract operation and success rate was 79% with combined operation, other than trabeculectomy and success rate was 91%, when combined with trabeculectomy. So the best results were obtained in the last procedure.

**VISUAL PROGNOSIS:**

As the pre-operative visual acuity was less than 1/60 to only PL. Probably because of advanced lenticular opacities. Some improvement of vision was expected in all the cases.

Our criteria for visual improvement was when the visual acuity improved at least by (3) snellen's line. This visual improvement was recorded in 18 (90%) eyes, but in two (10%) eye vision is improved but not according to our criteria.

In these eyes pre-operative vision was only PL and post-operative vision in one eye was 6/60 and in other eye it was only 2/60.
In first eye fundus examination revealed marked optic atrophy and in second eye, there is optic atrophy alongwith vitreous opacities.

The marked visual improvement in 90.3% eye is favourably comparable with the result of similar procedure in other studies such as – 50% (Kuroda & Takatsuki, 1978); 74% (Stewart and Loftis, 1976); 82.3% (Jerandal & Lundstrom, 1976); 64.9% (Gordon et al, 1979); 82.9% (Singh et al, 1979); 85% (Manzoor et al, 1981); and 86.36% (Prashad et al, 1988).

Recording of visual field was not possible in our study pre-operatively, because of marked diminution of vision.

The control of intra-ocular pressure and visual improvement in our study are rewarding at the expense of slight increase in the rate of complications and it is needed long term follow-up to establish the final outcome of the combined procedure.