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DEEP SCLERECTOMY IN EXFOLIATIVE GLAUCOMA AND PRIMARY OPEN-ANGLE GLAUCOMA.

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Purpose: *To compare the surgical outcomes of non-penetrating deep sclerectomy in Exfoliative Glaucoma (ExG) and Primary Open-angle Glaucoma (POAG) patients.*

Patients and Methods: *Deep sclerectomy performed in 20 eyes with ExG and 25 eyes with POAG. Postoperative intraocular pressure (IOP), number of glaucoma medications, visual acuity, surgical success rate and complications were assessed for 12 months. Complete success was defined by the achievement of postoperative IOP $\leq$ 21 mmHg without medication.*

Results: *The mean postoperative IOP was significantly lower ($P < 0.05$) in ExG and POAG eyes than preoperative. The mean IOP was 17. 6 ± 3.5 mmHg in ExG eyes and 16. 1 ± 4.6 mmHg in POAG eyes. At 12 months, complete success had been achieved in 45% of ExG eyes and 40% of POAG eyes. Qualified success had been achieved in 45% of ExG eyes and 52% of POAG eyes. No statistically significant differences in visual acuity, number of postoperative glaucoma medications, visual field changes and number of complications were found in ExG eyes and POAG eyes.*

Conclusions: *Deep sclerectomy is effective in controlling IOP, lowers the need for postoperative medications, and lowers the rates of serious complications in both ExG and POAG eyes.*

INTRODUCTION

Deep sclerectomy was introduced by Krasnov [1] and developed further by stegmann et al. [2], who added viscocanalostomy. Deep sclerectomy is a nonpenetrating filtering procedure that facilitates aqueous outflow through trabeculo-Descemet's membrane,exposed to obtain slow and continous aqueous percolation. This technique is effective in terms of intraocular pressure reduction and it allows to reduce the complication of penetrating surgery[3]. Deep sclerectomy was designed in an attempt to lower the risk of incidence of such complications,thus offering both the surgeon and patient a safer and more convenient option. [4]

Exfoliative glaucoma(ExG) constitutes 20-40 percent of all open-angle glaucoma. [5] Exfoliation glaucoma is known to be more aggressive and less responsive to medical treatment than primary open-angle glaucoma(POAG). The progression of visual field loss is usually faster than in POAG and optic nerve damage is more pronounced.

Exfoliation glaucoma is a part of pseudoexfoliation syndrome which is characterised with progressive accumulation of an abnormal extracellular fibrillar material in anterior structures of the eye and extraocular tissues including skin and connective portions of various visceral organs. [6] Exfoliation glaucoma represents a more advanced stage of the disease,with more pronounced microvascular alterations, such as peripupillary tufts,stromal tufts,and radial arterioles. [7]

Medical therapy is reported to be less effective in exfoliative glaucoma than in primary open-angle glaucoma. This means that surgical interventions are often required in these patients. Trabeculectomy is considered as the primary procedure in exfoliative glaucoma,as it is in glaucoma in general. Because the high intraocular pressure in exfoliative glaucoma is probably related to restriction of outflow, a filtering procedure is a plausible treatment in these patients. Indeed, trabeculectomy is reported to be less effective in exfoliative glaucoma as in POAG. [8]

Recently, deep sclerectomy has become an alternative treatment for the treatment of glaucoma. The results are comparable with those of trabeculectomy, but there are fewer complications and they are usually mild. [9]

The aim of this study was to compare the surgical outcomes of deep sclerectomy in exfoliative glaucoma and primary open-angle glaucoma.

SUBJECTS AND METHODS

This study was conducted on 45 eyes of 35 patients with medically uncontrolled exfoliative glaucoma and primary open-angle glaucoma attending Mansoura University Ophthalmic Center. Surgery was performed in eyes with uncontrolled glaucoma, defined as certain progression of glaucoma in terms of deterioration of visual field confirmed in at least three consecutive examinations or impossibility to achieve target IOP with medical therapy. Patients with secondary glaucoma or types of primary glaucoma other than ExG or POAG, or had previous ocular surgery, and advanced lens opacities were excluded from this study.

The selected patients were classified into

Group I: This group included 20 eyes of 15 patients with exfoliative glaucoma had deep sclerectomy. Their age ranged from 45 to 60 years.

Group II: This group included 25 eyes of 20 patients with primary open-angle glaucoma had deep sclerectomy. Their age ranged from 43 to 62 years.

Preoperative Assessment

All patients were subjected to full ophthalmic examination including; best-corrected visual acuity measuremnt with snellen chart at 5 m, Goldmann applanation tonometry,visual field testing with Humphrey 24-2 full threshold program,gonioscopy with Goldmann lens,and slit-lamp examination of anterior and posterior segment.

In addition,clinical data as age,gender,history of any surgical intervention, and the use of antiglaucomatous medications were recorded.

Surgical Procedure

General anaesthesia was used in all patients. A lid speculum was applied in the eye. A bridle superior rectus traction suture used to inferoduct and manipulate the globe during the procedure.

Deep sclerectomy

The surgery was performed as follow: after making a fornix-based conjunctival flap **(Figure 1)**, A 5x5 mm rectangular superficial scleral flap 1/3 scleral depth was dissected **(Figure 2)**. Careful haemostasis of the exposed sclera using wet field cautery was performed. The superficial scleral flap has to be continued 1-1. 5mm anteriorly into clear cornea. A second deep scleral flap 4x4mm and leaving a thin layer of scleral tissue over the choroid and ciliary body was dissected. A horizontal dissection was performed starting posteriorly and moving anteriorly using a crescent blade. Schlemm's canal was automatically unroofed by removing the endothelial layer near the limbus **(figure 3)**. To facilitate the identification of the Schlemm's canal, the assistant should keep the dissection area dry. Also, the tissue can be pushed laterally with the cutting blade for a clearer vision of the Schlemm's canal. The dissection was continued anteriorly using a blunt spatula or sponge to find the natural cleavage plane between Descemet's membrane and corneal stroma. When Descemet's membrane has been exposed for 1mm, the second deep scleral flap was excised. At this stage, aqueous was seen percolating through the anterior trabeculum and Descemet's membrane. The superficial scleral flap was sutured with 10-0 nylon sutures (usually 2 sutures, one at each corner) **(Figure 4)**.

Following surgery, all eyes received topical antibiotic and corticosteroid three times daily, then they tapered and discontinued after 4-6 weeks. The patients were followed up for 12 months. Patients were examined one day postoperative, then every week in the first month, then monthly.

Follow-up of patients:

The outcome of the surgical procedures were evaluated according to:

▪ Intraocular pressure (IOP) without medication. Three measurements with Goldmann applanation tonometer were recorded in each eye, the mean of which was used in the calculation.

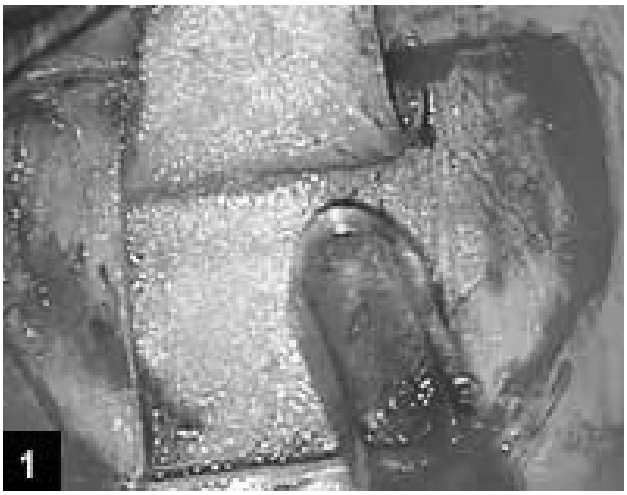

Fig. 1. Fornix-based conjunctival access in the upper quadrant. A 5x5mm superficial scleral flap is performed

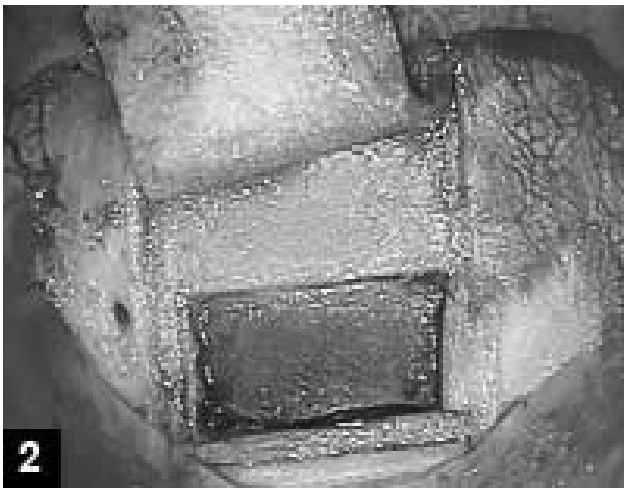

Fig. 2. Dissection of deep scleral flap in the posterior part of the scleral bed.

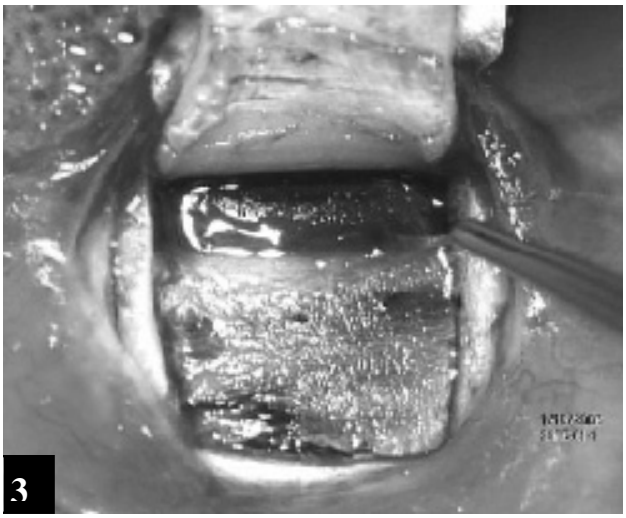

Fig. 3. Deroofing of the inner wall of Schlemm's canal.

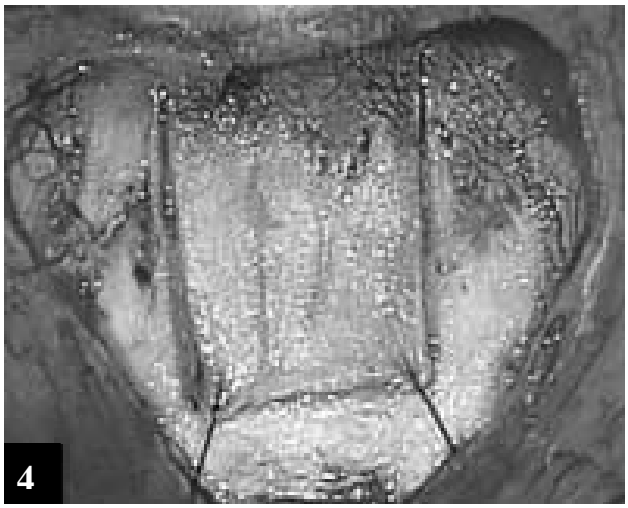

Fig. 4. Closure of the superficial scleral flap.

▪ Visual field testing with a Humphrey automated visual field analyzer (Humphrey Zeiss, Dublin, CA) program 24-2 central threshold was carried out before surgery and 6, 12 months after surgery.

▪ Best-corrected visual acuity was measured using snellen line chart, and the logarithm of the minimum angle of resolution visual acuity was calculated and used for all statistical analysis. An increase or decrease in visual acuity was defined as a change of more than 0. 2 in logarithm of the minimum angle of resolution visual acuity.

▪ Biomicroscopic classification of the filtering bleb (Picht G, and Grehn F)[10] into: type 1 bleb, presence of microcysts, diffuse borders and no or little vascularization (favourable bleb). Type III bleb, presence of corkscrew vessels, prominent vascularization, dense scar tissue and demarcation of bleb borders (unfavourable bleb). Type II bleb, intermediate bleb (less favourable bleb).

▪ Presence of complications such as; perforation Descemet's membrane, shallow anterior chamber, hypotony, IOP spike, hyphema were recorded.

▪ Need for further treatment [needling, 5-fluorouracil injection (0. 2ml/5mg), and Nd: YAG Laser goniopuncture]. Goniopuncture was done using YAG Laser in the free running Q-switched mode, energy ranging from 4 to 8 mj, 4-15 shots were applied. The aiming beam was focused on the semitransparent trabeculo-Descemet's membrane, with a gonioscopy contact lens.

Success of the procedure was defined as a complete success with an IOP $\leq$ 21 mmHg without glaucoma medications. A qualified success was defined as an IOP $\leq$ 21 mmHg with medical therapy. A failure was defined as an IOP $\geq$ 21mmhg with or without glaucoma medications or when further glaucoma interference was required.

Statistical analysis

Was done using SPSS program version 10. Student's t test was for comparing means of quantitative data. To evaluate the difference in IOPs between follow-up intervals, the paired t test was used. All t test were tailed. Categoric variables were evaluated with the chi-square test, or the Spearman rank correlation as appropriate. A level of P <0. 05 was considered statistically significant. Success was evaluated on the basis of Kaplan-Meier cumulative probability (long-rank test).

RESULTS

The study included 45 eyes of total 35 patients with medically uncontrolled exfoliative glaucoma and primary open-angle glaucoma. 20 eyes with exfoliative glaucoma had deep sclerectomy(Group I), and 25 eyes with primary open-angle glaucoma had deep sclerectoy (Group II).

Table (1): List preoperative demographic and clinical characteristics of patients in the studied groups. There was no statistically significant difference in age, gender, mean IOP, mean cup: disc ratio, mean deviation, logarithm of minimum angle of resolution of best-corrected visual acuity and number of antiglaucoma medication between both groups (P= 0. 65, P= 0. 75, P= 0. 85, P= 0. 57, P = 0. 73, and P= 0. 67, P= 0. 61 respectively, chi-square test and unpaired t test).

Table (1)

Preoperative demographic and clinical data of the studied patients

Parameters \ Group	ExG Group	POAG Group	P*
Number of eyes	20	25	
Mean age (years)	52.5 ± 3.5	54.4 ± 3.44	0.65
Gender (M:F)	7:13	9:16	0.75
Mean IOP (mmHg)	24.5 ± 3.1	22.1 ± 2.3	0.85
Mean cup: disc ratio	0.61± 0.51	0.63± 0.26	0.57
Mean deviation (dB)	-18.0 ± 6.14	-16.62± 5.42	0.73
Log MAR best corrected V.A	0.625±.81	0.575 ±0.31	0 .67
No. of antiglaucoma medications	3.1 ± 2.1	2.8± 1.8	0.61

M:F = Male: Female, IOP = Intraocular Pressure, V. A = Visual acuity

Log MAR = Logarithm of minimum angle of resolution, No. = number

*Results of the paired t test and chi-square test.

Table (2): Showed that there was significant reduction (p < 0. 01) in IOP at all visit through out the follow-up period in both groups. On the other hand, there was no significant difference in mean postoperative IOP between the two groups at intervals of one day,one week, one month, three months, six months, nine months, and twelve months visits (P= 0. 65,P=0. 34 P= 0. 28, P= 0. 65, P= 0. 46, P = 0. 36, and P= 0. 61 respectively).

Table (3): List postoperative complications and adverse events in both groups. The postoperative complications were mild,and no statistically significant differences between the both groups were found. The most complications were intraoperative perforation of trebeculo-Descemt's membrane,shallow anterior

chamber,minimal hyphema,hypotony,and IOP spikes. Two eyes (one in each group) developed choriodal detachment two months postoperatively and healed under observation within three months.

Table (2)

Postoperative IOP (mmHg) results of the studied patients

Parameters \ Group	ExG Group	POAG Group	P*
Befor surgery	25.2± 1.4	24.1 ± 1.6	0.81
0ne day postop	11.2±2.1	10.6±2.3	0.65
One week postop.	14.1 ± 3.1	14.3 ± 2.0	0.34
One month postop.	15.1 ± 3.2	15.9 ± 2.6	0.28
Three months postop.	15.9 ± 3.6	16.7 ± 2.1	0.65
Six months postop.	16.4 ± 2.4	17.6 ± 3.8	0.46
Nine months postop.	16.1 ± 3.2	16.4 ±3.0	0.36
Twelve months postop.	17.6 ± 3.5	16.1 ± 4.6	0.61

mmHg = Millimeters of mercury, postop. = postoperatively
*Unpaired t test for intraocular pressure

Table (3)

Surgical complications and adverse events of the studied patients

Parameters \ Group	ExG Group	POAG Group	P*
Perforation of TDM	2 (10%)	3 (12%)	0.65
Shallow anterior chamber	2 (10%)	2 (8%)	0.65
Hyphema (≥ 2mm)	3 (15%)	2 (8%)	0.81
Hypotony (< 5mmHg)	1 (5%)	2 (8%)	0.36
IOP spikes (≥ 30mmHg)	2 (10%)	3 (12%)	0.68
Cataract progression	1 (5%)	2 (8%)	0.68
Choroidal detachment	1 (5%)	1 (4%)	0.65
Endophthalmitis	0 (0%)	0 (0%)	

TDM= Trabeculo-Descmet'c membrane
* Results of chi-square test

Table (4): Showed that mean deviation ± SD in Humphrey visual field analyzer testing results at baseline was -18. 60±6. 31dB in the ExG group, and -17. 81±6. 61dB in the POAG group (P = 0. 68). Improvement of mean deviation was -17. 43 ± 4. 19 dB at 6 months and -16. 92±5. 31 dB at 12 months in the ExG group, and -16. 96 ± 6. 17dB at 6 months and -16. 17±6. 42 dB at 12 months in the POAG group (P = 0. 48 at 6 months; P= 0. 81 at 12 months). At 12 months, the mean deviation in the POAG group was better than that in the ExG group, but this improvement was not statistically significant.

Regarding corrected pattern standard deviation (CPSD) ± SD in Humphrey visual field analyzer testing results at baseline was 7. 15+5. 6 dB in the ExG group, and 6. 81±3. 1dB in the POAG group (P = 0. 71). Improvement of CPSD was 6. 85 ± 3. 6 dB at 6 months and 6. 21±4. 1 dB at 12 months in the ExG group, and 6. 51 ± 2. 1dB at 6 months and 5. 81±3. 7 dB at 12 months in the POAG group (P = 0. 84 at 6 months; P= 0. 56 at 12 months). At 12 months, the CPSD in the POAG group was better than that in the ExG group, but this improvement was not statistically significant.

In both groups, all eyes showed an increase of more than 0. 2 in logarithm of the minimum angle of resolution best corrected visual acuity at 12 months compared with the preoperative level. At 12 months, the mean best corrected visual acuity in the POAG group was better than that in the ExG group, but this improvement was not statistically significant.

Table (4)

Changes in visual field and best-corrected visual acuity in the studied patients

Parameters \ Group	ExG Group	POAG Group	P*
▪ Mean deviation (dB)			
Baseline	-18.60±6.31	-17.81±6.61	0.68
6 months	-17.43±4.19	-16.96±6.17	0.48
12 months	-16.92±5.31	-16.17±6.42	0.81
▪ Corrected pattern standard deviation (dB)			
Baseline	7.15±5.6	6.81±3.1	0.71
6 months	6.85±3.6	6.51±2.1	0.84
12 months	6.21±4.1	5.81±3.7	0.56
▪ Best corrected visual acuity			
- base line (%)			
≥ 0.5	5(25%)	4(16%)	
0.1-0.4	11(55%)	16(64%)	
< 0.1	4(20%)	5(20%)	
Mean ± SD (log MAR)	0.617±0.84	0.646±0.18	0.61
- 12 months (%)			
≥ 1.0	13(65%)	19(76%)	
0.5 – 0.9	5(25%)	5(20%)	
0.1 – 0.4	2(10%)	1(4%)	
< 0.1	0(0%)	0(0%)	
Mean ± SD (log MAR)	0.016±0.064	0.019±0.013	0.26

Log MAR = Logarithm of the minimum angle of resolution
SD = Standard Deviation * Results of the paired t test

Table (5): Revealed the bleb outcomes in both groups. In ExG group, a type I filtering bleb was present in 14 eyes, a type II filtering bleb was present in 4 eyes, and a type III bleb was present in 2 eyes. But in POAG group, a type I filtering bleb was present in 18 eyes, a type II filtering bleb was present in 5 eyes, and a type III bleb in 2 eyes. No significant difference in clinical bleb outcome between the two groups.

Table (5)

Bleb outcomes in the studied patients

Parameters \ Group	ExG Group	POAG Group	P*
No. of eyes	20	25	
Bleb 1	14 (70%)	18 (72%)	0.34
Bleb 2	4 (20%)	5 (20%)	0.71
Bleb 3	2 (10%)	2 (8%)	0.46

Bleb 1= Favourable bleb Bleb 2 = Intermediate bleb with scar slight
Bleb 3 = Unfavourable bleb with progressive scarring
* Results of chi-square test

Table (6): Revealed the surgical outcomes at 12 months in both groups. 18 eyes (90%) in the ExG Group and 23 eyes (92%) in the POAG group were considered to be successes, whereas 8 eyes (40%) in the ExG group and 11 eyes (44%) in the POAG group were considered to be complete successes (P=0. 7). Failure was recorded in 2 eyes (10%) in the ExG group, and 2 eyes (8%) in the POAGgroup (P=0. 4).

Table (6)

Surgical outcomes at 12 months in the both groups

Parameters \ Group	ExG Group	POAG Group	P*
No. of eyes	20	25	
Overall success	18 (90%)	23 (92%)	0.36
Complete success	9 (45%)	10 (40%)	0.69
Qualified success	9 (45%)	13 (52%)	1.00
Failure	2 (10%)	2 (8%)	0.41

* Results of chi-square test

Table(7): Showed the use of glaucoma medications pre-and postoperatively in both groups. The mean number of antiglaucoma medication decreased from a preoperative level of 3. 1±2. 1 to a postoperative level of 2. 1±1. 2 in the ExG group, and from a preoperative level of 2. 8±1. 8 to a postoperative level of 1. 8±1. 5 in the POAG group. There was no statisticaly significant difference between ExG and POAG groups in the pre-and postoperative number of antiglaucomatous medications used.

Table (7)

Pre-and posoperative use of antiglaucomatous drugs in both groups

Parameters \ Group	ExG Group	POAG Group	P*
NO.of eyes	20	25	
Preop. number of glaucoma medications	3.1±2.1	2.8±1.8	0.61
Preop. number of doses per day	4.5±3.1	3.7±1.6	0.73
Postop. number of glaucoma medications	2.1±1.2	1.8±1.5	0.51
Postop.number of doses per day	1.8±1.6	1.4±1.8	0.71

Preop. = Preoperative,Postop. =Postoperative
* Results of chi-square test

DISCUSSION

As a disease, glaucoma may be more aggressive in eyes with pseudoexfoliation and surgery is often needed. [11] Trabeculectomy showes long-term success in exfoliative glaucoma,and certain study have been reported that trabeculectomy might be more effective in exfoliative glaucoma than in POAG. [8] After trabeculectomy,however, the risk of complications such as long-standing hypotony is relatively high. [12]

The major advantages of nonpenetrating surgery is that it precludes the sudden hyoptony that occurs following trabeculectomy by creating progressive filtration of aqueous humor from the anterior chamber to the surgically created intrascleral space, through the trabeculo-Descemet's membrane. [13]

Hamarad et al [14],have shown that the membrane peeled in deep sclerectomy consists of the inner wall of Sclemm's canal,and the juxta-canalicular tissue,which are considered to be the site of highest outflow resistance. Also, the creation of the trabeculo-Descemet's membrane dramatically increases facility of outflow,but at the same time offers enough ressistance to prevent sudden globe decompression that commonly occurs after trabeculectomy. [15]

Deep sclerctomy is an operation that has a slow and difficult learning as perforation of the anterior chamber may occur frequently. With the introduction of a trabeculotome into the Schlemm's canal prior to the dissection of the second flap,short learning curve is achieved with less icidence of perforation of the anterior chamber. [16]

As, the pathogenesis for high IOP in exfoliative glaucoma eyes is probably a reduction in the trabecular outflow caused by the pseudoexfoliative material, thus the material might progressively accumulate on the trabeculo-Descemet's membrane and,after a long time,obstruct the filtration. However, the present study considered the successfull of surgery after 12 months.

The present study,was to compare the surgical outcomes of deep sclerectomy in exfoliative glaucoma and primary open-angle glaucoma eyes.

In the present study,the mean IOP decreased significantly to 17. 6±3. 5 mmhg in the ExG group,while the mean IOP in POAG was decreased significantly to 16. 1±4. 6 mmhg after 12 months. There was no significant statistical difference in IOP reduction between ExG and POAG eyes during the mean follow-up of 12 months. This similarity in results has been reported by Rekonen et al. [17]

Cosidering the postoperative complications and adverse events,there was no significant ststistical difference between ExG and POAG eyes. The rate of shallowing of the anterior chamber,hyphema,hypotony,and choriodal detachment was comparable to the data in previous studies. [18,19] Intraoperative microperforation of trabeculo-Descemt's membrane,and postoperative IOP spikes were more observed in POAG group. This consistent with Klink et al [20]. Perforation of the thin trabeculo-Descemt's membrane during dissection was reported to occur in 8-33% of patients. When dissecting with a blade,the major problems are either perforation into anterior chamber or insufficient tissue removal. Schlemm's canal a valuable landmark in this procedure. Thus,only the roof could be removed and the lumen of the canal was preserved as guiding landmark. However,laser dissection offers improved safety to locate Schlemm's canal and dissect the important structures by enabling the surgeon to proceed layer in layer in a highly controlled manner. [20]

At last follow-up, mean deviation and corrected pattern standard deviation of ExG group was -16. 92±5. 31dB,6. 21±4. 1dB respectively,and of POAG group was -16. 17±6. 42dB,5. 81±3. 7dB respectively. This difference between both groups was not significant. Improvement of mean deviation and corrected pattern standard deviation were observed in both groups. The preoperative range of visual acuity in ExG group was 0. 62±0. 84 and in POAG group was 0. 65±0. 18. At last follow-up,improvement of visual acuity in ExG group was 0. 02±0. 06,and in POAG group was 0. 02±0. 01 at 12 months. No statistically significant in improvement of visual acuity were observed between both groups (P=0. 26). Failure of visual acuity improvement postoperatively included poor visual fields,glaucomatous optic neuropathy,and cataract progression. This comparable with Klink et al. [20]

Considering the postoperative bleb outcome, the current study found that favourable blebs were 70% in ExG group and 72% in POAG, with no statistically significant difference between both groups. Postoperative blebs were flat and localized.

The mean number of the preoperative anti-glaucoma medications was 3. 1 in the ExG group,and 2. 8 in the POAG group. At the last follow up,average number of medications was 2. 1 in the ExG group,and 1. 8 in the POAG group at 12 months. The difference between two groups was not significant (p=0. 51). The number of postoperative medications used and the level of IOP tended to be lower in the POAG group compared with the ExG group up to 12months postoperatively.

This may lead to speculation that, there is greater trend towards increasing IOP and the need for more glaucoma medications in the ExG group. This result may attributed to the hypothesis that pseudoexfoliation material might accumulate in the inner trabecular meshwork in the operation region and subsequently obstruct the outflow. This consistent with Wishart et al[21]. On the other hand, Drolsum L[18], found no difference between ExG eyes and POAG eyes treated with deep sclerectomy.

In the current study, the overall success rates of achieving IOP <21mmHg at postoperative 12 months were 90% in the ExG group and 92% in the POAG group, with no statistically significant difference between both groups. Furthermore, the rate of complete success was higher in the ExG patients. The number of the cases of qualified success, however, tended to be higher in the POAG group compared with the ExG group. This consistent with Drolsum L[22].

The advantage of deep sclerectomy over trabeculectomy is the development of fewer postoperative complications which can in some instances precipitate or accelerate surgical failure. Moreover,trabeculectomy is associated with susequent cataract formation,and hypotony resulting in increased breakdown of the blood-aqueous barrier and increased inflammatory mediator release and it has been associated with decreased survival time of blebs. [23]

Nonpenetrating filtering deep sclerectomy seems especially appropriate in exfoliation glaucoma,as it increases permeability of the blood-aqueous barrier,as well as minimises the risk of fibrinous reaction in intraocular surgery such as trabeculectomy,and it minimises intraocular inflammatory response. [22]

Deep sclerctomy has previously proved itself a good and safe of treating POAG surgically. The present study, showed that this procedure had comparable results for the treatment of both ExG and POAG.

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ГЛУБОКАЯ СКЛЕРЭКТОМИЯ ПРИ ЭКСФОЛИАТИВНОЙ ГЛАУКОМЕ И ПЕРВИЧНОЙ ОТКРЫТОУГОЛЬНОЙ ГЛАУКОМЕ.

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Проведено сопоставление результатов непроникающей глубокой склерэктомии у больных эксфолиативной глаукомой (ЭГ) и первичной открытоугольной глаукомой (ПОУГ).

Операции проведены на 20 глазах с ЭГ и на 25 глазах — с ПОУГ. Послеоперационное внутриглазное давление (ВГД), количество применяемых антиглаукоматозных препаратов, острота зрения, успех операции и количество осложнений определялись у пациентов обеих групп спустя 12 месяцев. Полным успехом лечения считалось достижение послеоперационного уровня ВГД ≤ 21 мм рт. ст. без медикаментозной терапии.

После операции средний уровень ВГД при обоих видах глаукомы был значительно ($p \leq 0,05$) ниже предоперационного. В глазах с ЭГ он составил ($17,6 \pm 3,5$)мм рт. ст.

Через 12 месяцев полный успех достигнут в 45% глаз с ЭГ и в 40% глаз с ПОУГ. Относительный успех — в 45% и 52% глаз соответственно.

По остальным изучавшимся показателям существенных различий между группами больных не отмечено.

Авторы приходят к заключению о том, что глубокая склерэктомия является эффективным средством снижения уровня ВГД, уменьшает необходимость в послеоперационном медикаментозном лечении, а также способствует снижению частоты серьёзных осложнений при обеих формах глаукомы.