Trabeculectomy - A Short Term Follow-up

Pages with reference to book, From 193 To 196

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Abstract

Sixty one Trabeculectomy Operations were done on 53 patients with different types of Glaucoma. The study included 29 males and 24 females. Their ages ranged from 5-7O years. Primary angle closure and Chronic Simple Glaucoma had a similar frequency. Hyphaema was the most common complication, but it had no effect on the ultimate outcome of the operation. The immediate results of the procedure have been encouraging (JPMA 51:193, 1981).

Introduction

Trabeculectomy has become an established operative procedure for Chronic Simple Glaucoma since first described by Cairns (1968, 1969, 1970). This report presents the frequency of various types of glaucoma and the results of Trabeculectomy in this common ocular disorder.

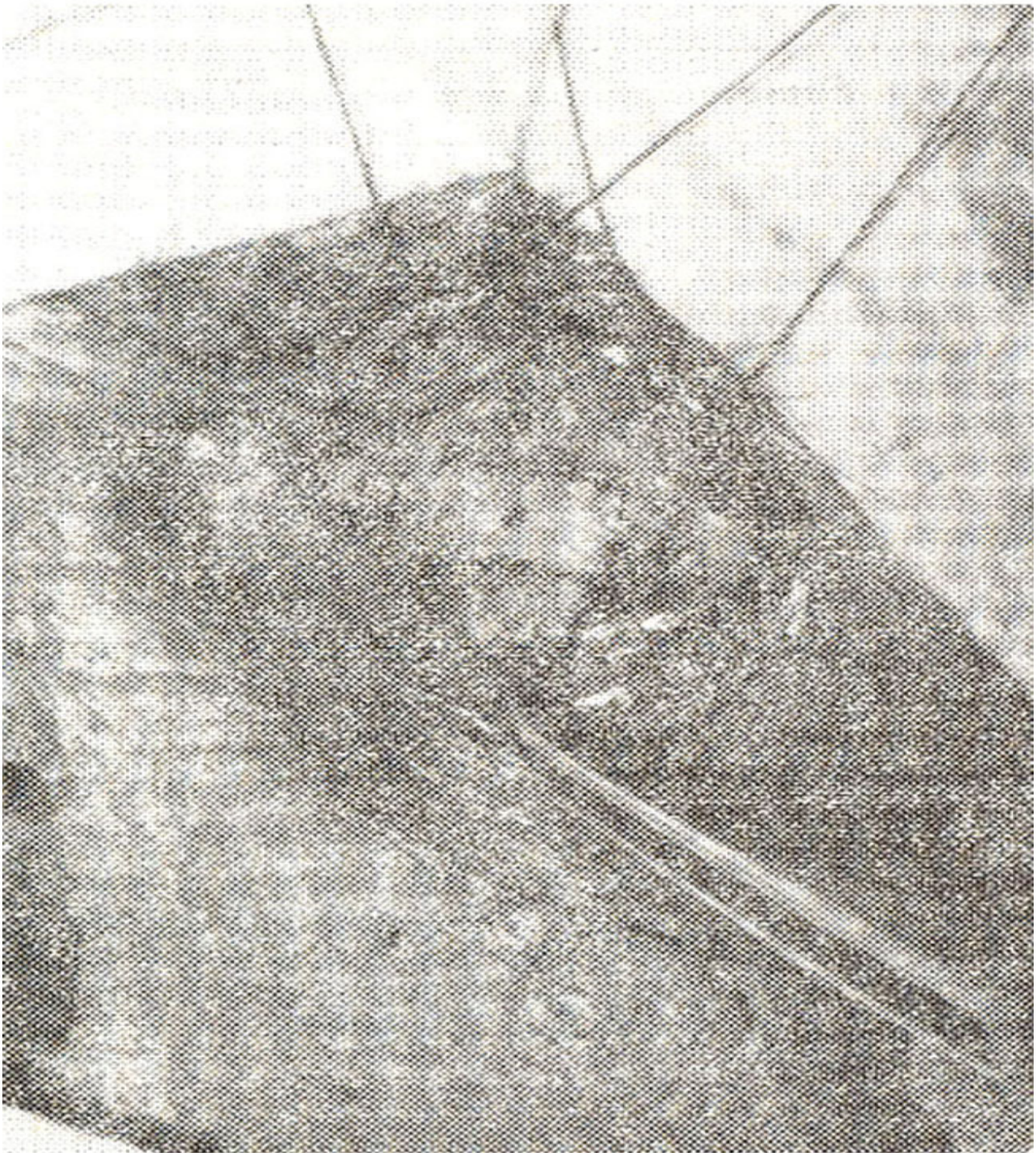
Material and Methods

Sixty one Trabeculectomy operations were done at the Department of Ophthalmology, Dow Medical College and Civil Hospital, Karachi, over a period of twelve months. The study included 53 patients (29 males and 24 females), whose ages ranged from 5-70 years.

The modified procedure of Watson (1970) was adopted and the operations were largely carried out under local and basal anaesthesia at the upper part of the globe except in 5 cases where it was done inferiorly. Keeler's operating glasses with x 2.4 or x 4 magnification were used.

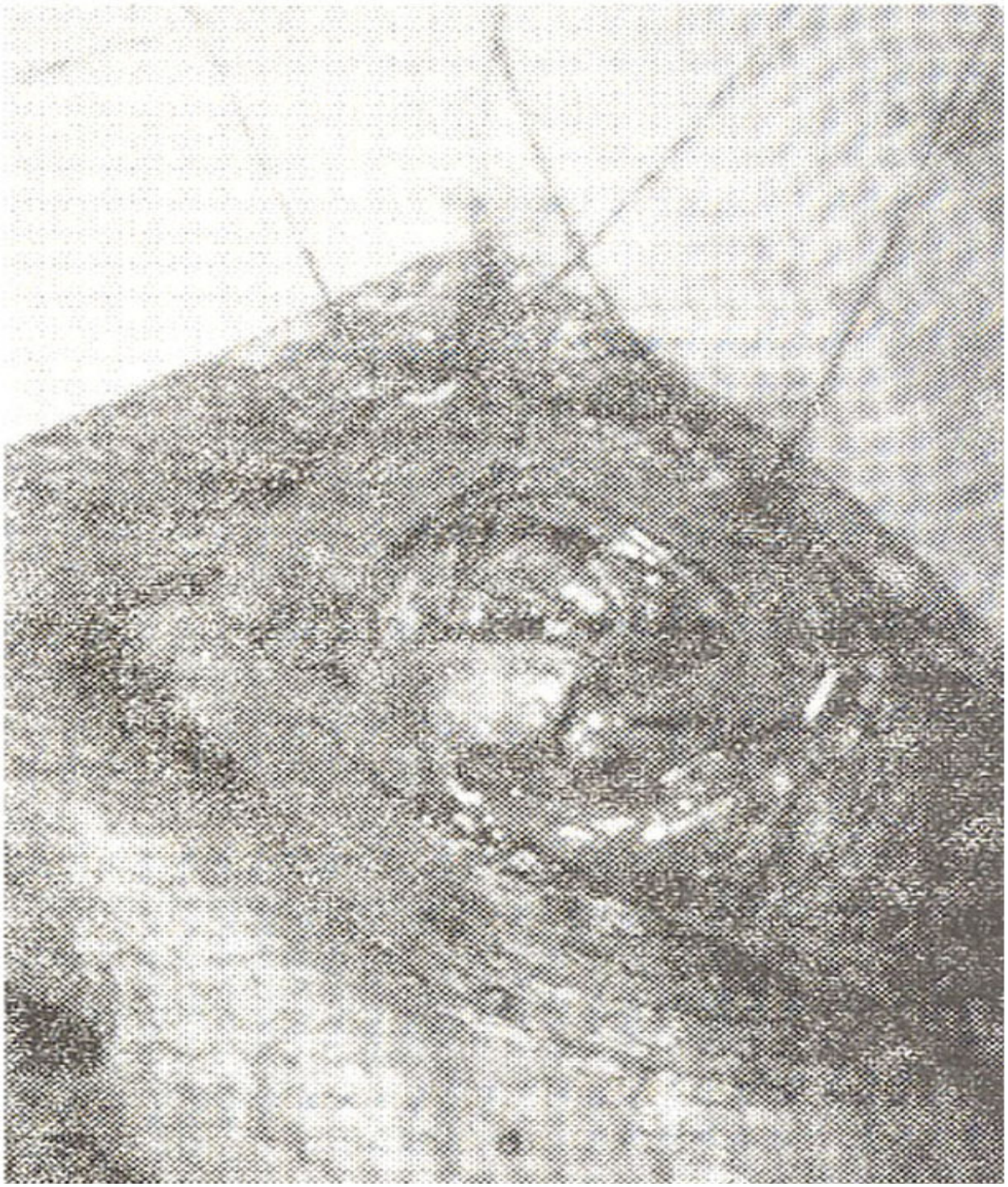
After reflecting the conjunctival flap from the superior fornix and exposing the surgical limbus thoroughly, a lemellar Scaleral flap of approximately 5x6 mm was fashioned. Dissection of the flap was carried well into the cornea at the surgical limbus. (Fig. 1).

*Fig.*1 : Dissection of the flap.



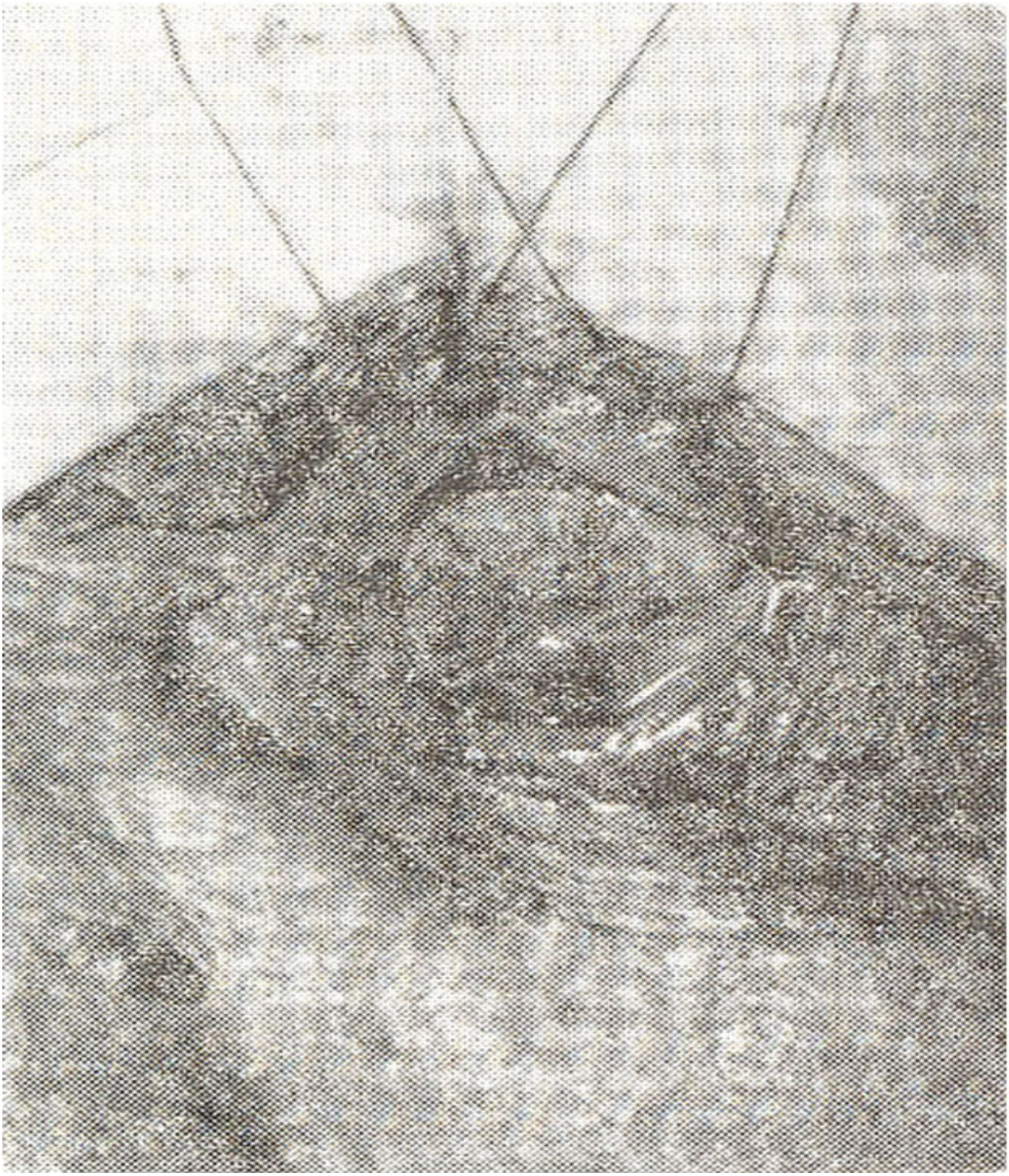
Two pre-placed 8/0 virgin silk sutures were applied in the scleral flap. (Fig. 2).

*Fig.*2 : Two preplaced 8/0 virgin silk sutures applied in scleral flap.



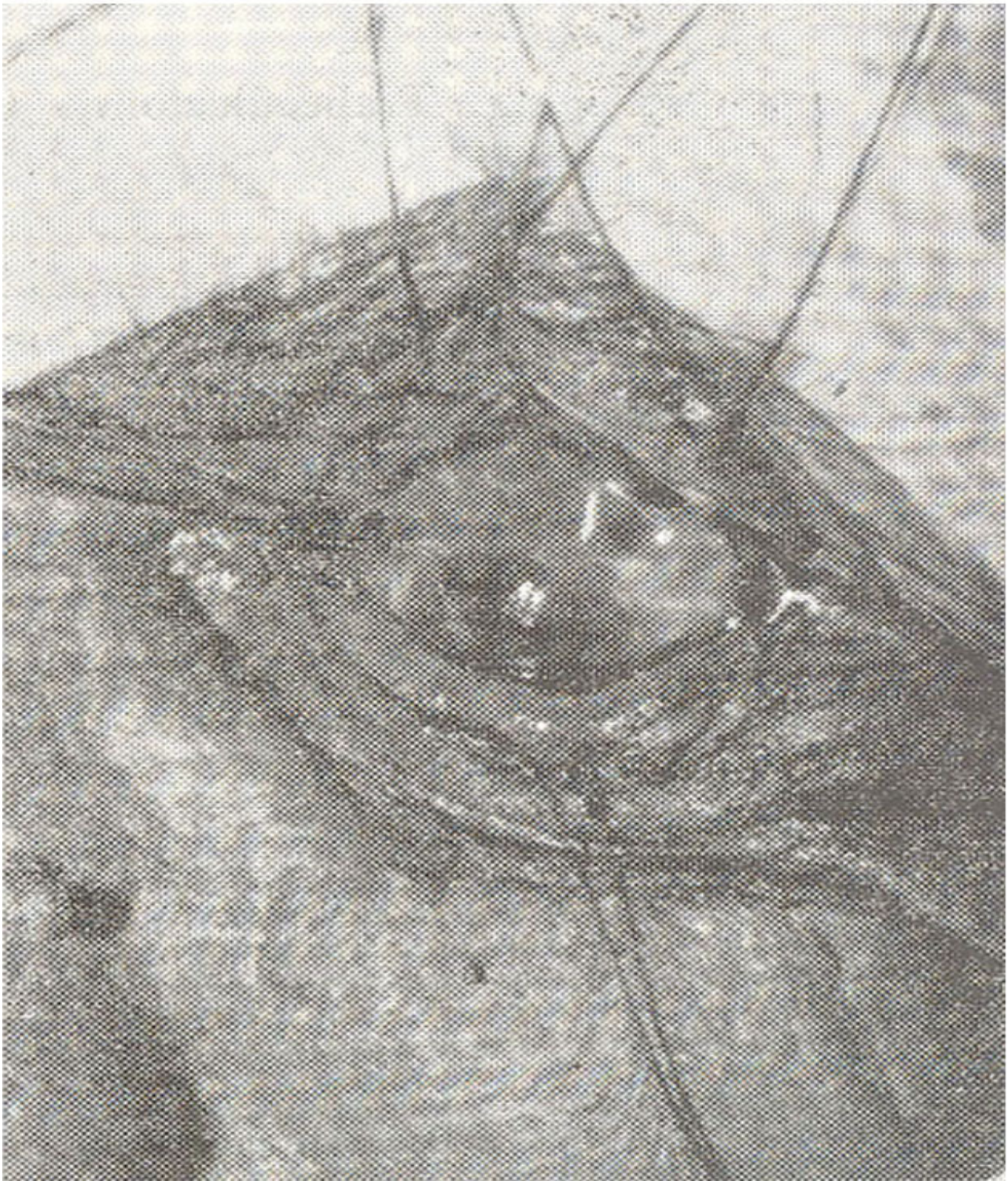
A corneoscleral piece measuring about 3x3 mm from the remaining deep corneoscleral lamella was then excised (Fig. 3).

Fig. 3 : Excision of Corneoscleral piece from deep corneosclarol lamella.



No attempt was made to identify the Schlemm's Canal or the Trabeculum. However, a number of excided pieces were sent for histology. Peripheral Iridectomy was performed. The corneo-scleral flap was returned to its bed using three extra virgin silk sutures (Fig. 4).

Fig. 4 : Corneo scleral flap returned to its bed.



The conjunctival flap replaced and sutured.

The operation was not confined to Chronic Simple Glaucoma only, but included many types of glaucoma, such as Congenital, Primary angle-Closure, Secondary Angle-Claosure, Glaucoma in Aphakia and Absolute or near Absolute Glaucoma.

Results

Table 1

Age and Sex Distribution of Different Types of Glaucoma

S.No.	*Type*	Male	*Female*	*Age*	*Total*
1.	Primary Angle-Closure	7	14	18-70 Years	21
2.	Chronic Simple.	13	8	35-70 Years	21
3.	Absolute or near Absolute	6	3	50-70 Years	9
4.	Glaucoma in Aphakia	4	2	50-70 Years	6
5.	Secondary Angle Closure. (Following Penetrating Keratoplasty)	—	2	25-40 Years	2
6.	Congenital.	2	—	5-14 Years	2

Table 1 shows the age and sex distribution of various types of glaucoma. The most common were Chronic Simple and Primary Angle Closure types. The former variety occurred more frequently in males and the latter in females.

The different complications encountred in 61 operations are shown in Table II.

Table 2

Trabeculectomy Complications in Operations on 61 Eyes.

S.No.	*Complications*	*No. of Eyes=14*
1.	Hyphaema	4
2.	Perforation of deeper layer of the Sclera.	
	(*a*) At the beginning of disection	1
	(*b*) Near the limbus.	2
3.	Uncontrolled Pressure	3
4.	Vitreous Haemorrhage	1
5.	Catract Formation	1
6.	Post-Operative Anterior Uveitis (Exudative)	1
7.	Hypotony	1
8.	Flat Anterior Chamber	Nil
9.	Intraocular Infection	Nil

Hyphaema which occurred mostly in cases of Absolute Glaucoma was absorbed within three to four days, but vitreous haemorrhage took a longer time to settle.

In one case due to a nick in the deeper layer of sclera at the beginning of the dissection, the operation was postoponed and carried out successfully at a later date at the lower part of the globe. In one of the two perforation cases near the limbus the intraocular pressure was not controlled post operatively without medical treatment.

Mature cataract was removed successfully within three months of Trabeculectomy in one case. This

patient had only lens opacities pre-operatively so the rapid formation of cataract must have been due to damage to the lens at the time of surgery. In this patient with Chronic Angle-Closure Glaucoma, there was difficulty in prolapsing the iris for iridectomy, hence an iris repositor was introduced into the anterior chamber to open up to angle, which may have damaged the lens.
Post-operative plastic anterior uveitis in one case was possibly due to the inadvertant damage to the ciliary body. Uveitis was controlled with large dose of systemic corticosteriods. The patient attained the pre-operative visual acuity of 6/12 with normal intraocular pressure.
In none of the cases the anterior chamber was completely lost. However, it remained shallow for six to seven days in a number of cases.
In this series three cases, one each of Chronic Simple Glaucoma, Congenital Glaucoma and Secondary Angle Glaucoma following penetrating Keratoplasty post-operatively required medical treatment for the control of intraocular pressure.
The eye with hypotony was that of near Abdulute Glaucoma in Aphakia.
Longest follow-up of Patients in this study is about one year and the shortest three weeks. In spite of inadequate follow-up the results of this operation have been very encouraging. No long term follow-up of this operation is avail-in this country. However, recent series from Russia (Abramov et al. 1979) and America (D'Ermo et al., 1979) have described the long term effect of Trabeculectomy in Chronic Simple Glaucoma as 71 per cent only. Surgery in Chronic Simple Glaucoma was not considered as effective in coloured races as in white.

Discussion

In Chronic Simple Glaucoma, the increased pressure is due to decreased facility of aquous out-flow. This invisible obstruction probably resides in the trabecular meshwork. Trabeculectomy is based on this proposition (Cairns, 1970) However, in Cairns (1970) series of 49 operations for Chronic Simple Glaucoma 50% were controlled without external drainage and 50% with external drainage. In the present series a large number of patients with low intraocular pressure had a minimal to moderate diffuse conjuctival drainage bleb. It is of patricular advantage. Commonly our patients particularly the elderly have thin conjunctive and Tenon's Capsule. In such patients the filtering bleb resulting from other drainage surgery such as Scheie's operation or anterior flap sclerectomy is often thin and cystic. It is liabile to rupture resulting in late infection and flat anterior chamber. These complications are unlikely to take place in Trabeculectomy since the Sclerostomy is well guarded by the sclera itself and the drainage bleb is minimal or moderate in size and diffuse in nature. The filtering nature of the operation is un-questionable but it is not exceptional to see eyes with filtering bleb and presenting with a high intraocular pressure (Villa Mascarell et al., 1979). Fernendez de la Fuente and Castro Munez (1979) consider the hypotensive effect of Trabeculectomy to be due to transfusion of aquous through the scleral bed and intrascleral, the episcleral and conjunctival diffusion of the aquous.

References

1. Abramov, V.G., Valkurin, E.A., Ilyin, V.P., and Shiryaeva, N.V., (1979)1 Late results of Trabeculectomycin open-angle glaucome In Russia Vesta Oftal, 96:15.
2. Carins, J.E. (1968) Trabeculectomy. preliminary report of a new method Am. J. Ophthalmol, 66:673.
3. Cairns, J.E., (1969) Trabeculectomy; a surgical method of reducing intra-ocular pressure in chronic simple glaucoma without sub-conjunctival drinage of aquous humour. Trans. Ophthalmol Soc U.K., 88:231.
4. D'Ermo, F., Bonomi, J.I., and Doro, D., (1979). A critical analysis of long term results of Trabeculectomy Am. J. Ophthalmol, 88:829.

5. Fernendez de la Fuente J.P., and Castro Munez J.B. (1979). Contributions to the study on the Mechanism of Trabeculectomy. Arch. Esp Oftalmol, 39:155.
6. Cairns, J.E. (1970) Trabeculactomy for chronic simple open angle glaucoma. Trans Ophthalmol Soc. U.K., 89:481.
7. Villa Mascarell E., Taboada J., and Menezo J.L. (1979). Long Term Evolution of Trabeculectomy. Arch. Soc. Esp. Oftalmol, 39:53.
8. Watson P.G. (1970). Trans Ophthal Soc. U.K., 89:523 (Discussion of paper by R.J. Smith).