TRABECULECTOMY
With Subconjucntival Biodegradable Implant

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INTRODUCTION

The most common cause of failure of trabeculectomy is subconjuntival fibrosis at the site of filtering bleb. Antifibrotic agents are used to prevent this fibrosis, hence to increase the success of trabeculectomy surgery. Commonly used antifibrotic agents like MITOMYCIN C and 5 FLOUROURACIL have their own side effects like leaking bleb, corneal epithelial damage, hypotony, blebitis. A novel biodegradable material is implanted subconjunctivally to prevent fibrosis. We present pilot study of five cases of trabeculectomy with phacoemulsification.

AIM To study the effect of biodegradable Subconjunctivalcollagen implant in trabeculectomy

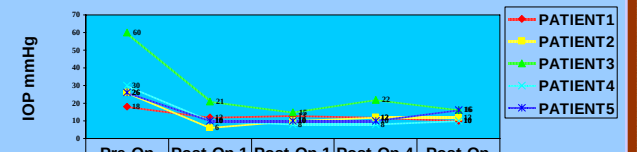
STUDY DESIGN Surgical case series.

METHODS Five consecutive patients with chronic angle closure glaucoma underwent trabeculectomy with cataract extraction (phacoemulsification with Posterior Chamber IOL). Fornix based conjunctival flap was made. Triangular partial thickness scleral flap, rectangular window was made, with standard stop and chop technique of phacoemulsification and in the bag intraocular lens implantation. Single suture with 10-0 nylon to close the Scleral flap was used. Conjunctiva closed with 8-0 vicryl with two wing sutures. Preoperative IOP with maximum medication was noted for the eye. Post op IOP was noted on first day, first week, fourth week, tenth weeks and twentieth weeks.

RESULTS

There were two female and three male patients. Age ranging from 50 to 70 years. Preop IOP, with maximum medical treatment was, ranging from 18 to 60 mmHg. The details of the pre and post op IOP is given in the adjoining table. Patient no. 3 had preoperative IOP of 60 mmHg which did not reduce below 22 mmHg in post op week four. We gave five subconjuntival injections of 5Fluorouracil of 1mg/0.1ml on alternate days starting from end of fourth post op week. The IOP was 16 mmHg at the end of 20 weeks postop. All other four patients had IOP reduction of 45% to 66%. All these four patients` IOP was 16 mmHg or less. The last follow up of these five patents is ranging from 10 to 23 weeks. There were no immediate postop complications like hypotony, extrusion of implant. Patient no.2 had conjunctival leak in first week post op which required suturing. The bleb formation in all these patients was uniform and diffuse.

PREOP AND POSTOP IOP of 5 PATIENTS



	Pre-Op IOP	Post-Op 1 Day	Post-Op 1 Week	Post-Op 4 Weeks	Post-Op 10 to 23
PATIENT1	18	12	13	12	10
PATIENT2	26	6	10	12	12
PATIENT3	60	21	15	22	16
PATIENT4	30	10	8	8	10
PATIENT5	26	10	10	10	16

Post Op Weeks

PATIENT 1: 10 WEEKS POSTOP PATIENT 2: 10 WEEKS POSTOP PATIENT 3: 6 WEEKS POST OP (Sub conj Hemorrhage of 5FU injection) PATIENT 5: 1 DAY POSTOP 15 DAYS POST OP 8 WEEKS POST OP

DISSCUSSION

Implantation of a biodegradable, porous collagen matrix in the subconjunctival space offers the potential for a new means of avoiding early scar formation and maintaining long-term IOP control by creating a loosely structured filtering bleb[1].Chen et al did a study with 17 rabbit eyes showing histologically loosely structured subconjuctival scarring response. In our study of five patients, we found well formed bleb in all five cases with good IOP control except one case who required needling and 5FU injections postoperatively whose IOP was very high (60mmHg) preoperatively. This shows that most of the eyes have good IOP control with collagen matrix implant. How ever higher the preoperative IOP higher will the postop IOP after implanting the collagen matrix. More studies with case-control comparison and longer follow up is required with collagen matrix implant in Trabeculectomy.

CONCLUSION

Biodegradable Collagen Matrix implant in trabeculectomy keeps bleb formed and IOP Controlled without post op hypotony.

REFRENCES

1.Chen HS, Ritch R, Krupin T, Hsu WC. **Control of filtering bleb structure through tissue bioengineering: An animal model. Invest Ophthalmol Vis Sci. 2006 Dec;47(12):5310-4.**