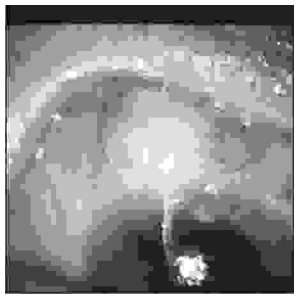
ORIGINAL PROF-1147

TRABECULECTOMY;

A COMPARISON BETWEEN PRESSURE PATCHING AND BLEB REPAIR IN MANAGEMENT OF EARLY ONSET LEAKING BLEB



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ABSTRACT... Objective: To compare the final outcome of management of early bleb leak after trabeculectomy by pressure patching versus bleb stitch repair. **Setting:** Department of Ophthalmology Allied hospital/ Punjab Medical College Faisalabad. **Study Design:** Interventional Therapeutic Trial and prospective. **Period:** May 1999 to July 2003. **Materials and Methods:** 110 glaucoma patients who developed complications after trabeculectomy were included in the study. The occurrence of relative frequency of various complications was noted. Out of these 110 patients, 44 patients having early wound leak were further selected for the study. They were divided into two groups A and B. A was treated with pressure patching for 48 hrs while B was treated with stitch repair with 10 0/0 Nylon. The final outcome of the results of management was noted and compared. **Results:** the frequency of various complications after trabeculectomy in 110 patients were found to be early wound leak 43.64 %, failed trabeculectomy 38.18%, hyphema 6.36%, cataract 3.64%, blebitis 3.64%, tenon's cyst 1.82%, malignant glaucoma 1.82%, scleral flap disinsertion 0.9%. The success rate in Group A was 59.1% while in Group B it was 86.4% while the failure rate remained in Group A 40.9% while in Group B 13.6%. **Conclusion:** The success rate for managing wound leak after trabeculectomy was better in repairing the bleb as compared to pressure patching (significant at $p< 0.05$).

Key words: Trabeculectomy, Complications, Wound Leak, Leaking Bleb, Bleb Repair, Pressure Patching.

INTRODUCTION

According to WHO, Glaucoma is responsible for 12.3% of global blindness and is the second most common cause of blindness in the world[1]. 7% population of Pakistan is suffering from glaucoma meaning thereby that there are about 700,000 patients of glaucoma in a 10 million population of Faisalabad and around. Trabeculectomy is the most popular form of glaucoma

filtration surgery and remains the gold standard for surgical reduction of intra ocular pressure in uncontrolled primary open angle glaucoma and chronic angle closure glaucoma whose incidence in Pakistan has been found 26% and 44% among all glaucomas respectively[2]. It is a partial thickness filtration operation that decreases eye pressure via the establishment of a limbal fistula through which aqueous humour drains into the sub conjunctival space forming a filtration bleb. It is a sight saving and cost effective procedure with very good rate of success of surgery. In spite of this, a number of complications still threaten its final outcome like wound leak, shallow AC, failed trab, cataract, choroidal detachment, malignant glaucoma etc. the early wound/bleb leak, being the most common, needs special attention for the study of different modalities of management of this very complication. Early bleb leak is defined as developing within two weeks post operatively. This may be more common with fornix based than limbal-based flap. [3,4] A focal leak can be seen in the presence of a formed or shallow anterior chamber and is best appreciated by Seidle test using Fluorescein strips. These leaks can be medically managed by reducing the aqueous flow (with Diamox and beta blocker), providing full cycloplegia (with Atropine), reducing the steroid drops and adding slightly irritating antibiotic like Gentacin to enhance a modest amount of inflammation in hopes of promoting healing[5]. In addition for these early wound leaks, there are other methods like sustained pressure patching, large soft contact lenses of 16 to 24 mm size[6], shell temponade with large plastic shell with or without contact lens underneath [7,8], large spot Argon Laser application for focal leak [9], application of cyanoacrylate tissue adhesive glue[10] and the simplest one is resuturing the area with 100 Nylon[11].

PURPOSE OF STUDY

The early bleb leaks after trabeculectomy has been the commonest problem and needs to be tackled promptly as not only the success of the surgery depends on it but it is also related to sight threatening complication of end-ophthalmitis. With the increasing popularity of anti-metabolites, the higher rate of bleb leak is being recognized. The plethora of treatment options for bleb leaks described in literature reflects the widespread nature of this problem. The purpose of this study is to compare the success and failure rate in managing the complication of bleb leak after trabeculectomy by using pressure patching and wound repair techniques and hence to advocate the better procedure to be adopted for this most common post trabeculectomy complication.

MATERIALS AND METHODS

110 glaucoma patients who develop some complications after trabeculectomy either at Department of Ophthalmology Allied Hospital/ PMC Faisalabad or admitted through its OPD from referred cases were included for interventional therapeutic trial and prospective study for the management. The frequency of various complications in these 110 patients was noted. Out of these 110 patients, 44 patients of either sex with early wound leak after under going first trabeculectomy with fornix based conjunctival flap were selected. Patients with age less than 20, with uncontrolled hypertension or diabetes and other systemic diseases like SLE, skin and Joint diseases were excluded. There was shallow or normal A.C. with low IOP and shallow or no bleb in these patients. Wound leak was confirmed by Seidle test using Fluorescein strips and S/L biomicroscope. These patients were equally divided into two groups A and B by simple random sampling. Group A was treated by applying pressure patching for 48 hrs and oral Diamox 250mg t.i.d. Group B was treated by repairing the bleb with 10/0 Nylon stitches. The criteria of success was taken as the appearance of formed bleb, filtering fistula, successful IOP control (IOP < 21 mm Hg) without medication and negative Seidle test. Results of both groups were compiled and tabulated using the data analysis package SPSS- 8 for windows. The comparison was made between the two groups.

DISCUSSION

Trabeculectomy has always been a tricky procedure, So that the surgeons are always worried about the final out come of trabeculectomy. The early wound leak is the commonest (43.64%) complication (table-I).A still higher rate of incidence of bleb leak (59%) has been quoted in a study done at Moorefield's eye hospital; London[12].

Table-I. Frequency of Complications				
Complications	Sex		Total	% Age
	Female	Male		
Early wound leak	28	20	48	43.64%
Failed trabeculectomy	23	19	42	38.18%
Hyphema	03	04	07	6.36%
Cataract	01	03	04	3.64%
Belbitis	00	04	0	03.64%
Tenon's cyst	02	00	02	1.82%
Malignant galucoma	01	01	02	1.82%
Scleral flap disinsertion	01	00	01	0.90%
Total	59	51	110	100%

Table-II. Age Wise Distribution				
Age In Years	Group A		Group B	
	No. of Pts	% Age	No. of Pts	% Age
21-30	0	0	0	0
31-40	0	0	0	0
41-50	06	27.27	05	22.72
51-60	13	59.0	15	68.18
6170	03	13.63	02	9.1
71-80	0	0	0	0
Total	22	100	22	100

The main thing regarding its management depends upon its location and size. Schuster JN, at al published his study in Arch Ophthalmology saying that the fornix based conjunctival flap carries more risk of bleb leaks as compared to limbus based flaps[13]. In a multi center randomized clinical trial, Schiffman JC recommended limbal-based flap with superior location of wound & with two-layered closure[14].

Table-III. Sex Wise Distributions				
Sex	Group A		Group B	
	No. of Pts	% Age	No. of Pts	% Age
Male	10	45.45%	09	40.91%
Female	12	54.55%	13	59.09%
Total	22	100%	22	100%
Male to female ratio is 1:1.2Male to female ratio is 1:1.44				

Table-IV. Study Results (Management of Early Wound Leaks)			
Group	Management	Success	Failure
A (22 eyes)	Pressure patching	13 eyes (59.1%)	9 eyes (40.9%)
B (eyes)	Repair with 10/0	19 eyes (86.4%)	3 eyes (13.6%)

In our study, only those wound leaks were included in which the trabeculectomy was done with fornix based flap and site of leakage was from the wound closure site. For wound leaks, first we managed conservatively using 1% atropine eye drops, reduction in frequency of topical steroid, adding beta-blocker and some irritating antibiotic like gentacin to enhance modest inflammation but most of the time, the leaks did not close. So a sustained pressure patching for 48 hrs along with the above medical regimen was tried in Group A. The pressure patching is non-invasive technique in which pressure is applied directly over the trabeculactomy flap to limit outflow. We could not use mega soft bandage lens or tissue adhesive, as they are not available in Pakistan. In patients of Group A, the success rate with pressure patching was 59.1% while the failure rate was 40.9%.(Table IV).

In Group B, after failure with conservative management the invasive technique of repairing the wound with 10/0 suture was carried out which produced the success rate of 86.4% and failure rate of 13.6%only (Table IV). In a study by Van de Geign, the success rate in terms of IOP

control & bleb formation after surgical repair of leaking bleb was found 86.1% which is very comparable to our study[15]. Comparing the results in both groups it is obvious that the pressure patching carries less success rate but it is non-invasive procedure as compared to surgical revision, which carries more success rate but is an invasive technique.

CONCLUSION

Early bleb leak is the commonest post filtration complication and its early detection, proper and timely management carries better prognosis.

Success rate for managing early bleb leaks was better in repairing the bleb as compared to pressure patching (significant at $p < 0.05$).

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