

EVALUATION OF SUBMACULAR FLUID ABSORPTION AFTER SUCCESSFUL SURGERY FOR DIABETIC TRACTIONAL RETINAL DETACHMENT WITHOUT INTERNAL TAMPONADE

Ahmed Magdy Bedda, Ahmed Mahmoud Abdelhadi, Basma Mohamed Mahmoud Mohamed
Department of Ophthalmology, Faculty of Medicine, Alexandria University

Introduction

Diabetic retinopathy is a potentially blinding complication of diabetes mellitus. Reasons for loss of vision are diabetic maculopathy and complications of proliferative diabetic retinopathy (PDR) such as vitreous hemorrhage and tractional retinal detachment. TRD has been the most frequent indication for vitrectomy in diabetic patients, accounting for 40% of diabetic vitrectomy.

The idea that an endotamponade is not necessary in an eye with a TRD if the traction is relieved surgically without creating retinal breaks.

Persistent subretinal fluid may exist after surgery for tractional retinal detachment (TRD), even when the retina appears fully attached on examination.

Optical coherence tomography (OCT) has been observed to be a useful diagnostic test for the follow-up of patients with persistent subretinal fluid after successful PPV.

The presence of increasing subretinal fluid postoperatively does not necessarily imply surgical failure. Subretinal fluid may accumulate rapidly over a few days and may spontaneously resolve over 2 weeks to 3 months.

METHODS: The study is a prospective study. Patients enrolled in this study will be subjected to: **Full history taking including:** (Age, Gender, Past ophthalmic history, Medical history, Surgical history and Presenting symptoms). **Full ophthalmologic examination including:** (Visual acuity (corrected and uncorrected), Fundus examination, colored fundus photography, OCT of macula if possible and Any other associated findings). **Operative description including:** (Pars plana vitrectomy, Delamination of fibrovascular tissue and No tamponade. **Post operative evaluation including:** (Fundus examination, Colored fundus photography, OCT evaluation of the macula and This evaluation is done in the first postoperative day if possible, first week if possible, 1 month, and 3 months).

Results

A total of twenty eyes from twenty patients with diabetic retinopathy complicated by macula off underwent pars plana vitrectomy without tamponade were included, including 14 (70%) males and 6 (30%) females. We used automatic measurement of submacular fluid height after successful reattachment of the retina without internal tamponade in patients with diabetic tractional retinal detachment involving the macula undergoing vitrectomy surgery which run on ZEISS OCT. The mean age (\pm SD) at the time of surgery was 44.60 \pm 11.64 years. (table 1).

Table 1: Distribution of the studied cases according to demographic data (n = 20)

Demographic data	No.	%
Age (years)		
≤40	6	30.0
>40	14	70.0
Min. – Max.	21.0 – 67.0	
Mean \pm SD.	44.60 \pm 11.64	
Median (IQR)	45.50 (39.0 – 53.50)	
Sex		
Females	6	30.0
Males	14	70.0

Twenty eyes from twenty patients with pars plana vitrectomy without tamponade showed presence of subretinal fluid first day post vitrectomy.

OCT findings that twenty eyes from twenty patients showed that subretinal fluid still present 1 week post vitrectomy with statically significance ($p=1.000$). (table 2). Five eyes from twenty eyes showed that the amount of subretinal fluid by OCT was the same 1 month post vitrectomy (25%), thirteen eyes from twenty patients showed decrease of subretinal fluid one month post vitrectomy (65%) and two eyes from twenty eyes showed that subretinal fluid was totally absorbed 1 month post vitrectomy (10%) which was statically significant ($P=0.001$). (table 2).

Eight eyes showed decrease of subretinal fluid 3 months post vitrectomy in comparison to first day after surgery (40%) and twelve eyes showed that the subretinal fluid was totally absorbed 3 months post vitrectomy (60%), this was statically significant ($P<0.001$). (table 2).

Table 2: Comparison between the different periods according to subretinal fluid absorption

Subretinal fluid absorption	Post vitrectomy								Fr	p		
	1 day		1 week		1 month		3 months					
	No.	%	No.	%	No.	%	No.	%				
Present (unchanged)	20	100.0	20	100.0	5	25.0	0	0.0				
Decrease	0	0.0	0	0.0	13	65.0	8	40.0	52.671*	<0.001*		
Absorbed	0	0.0	0	0.0	2	10.0	12	60.0				
p_1			1.000		0.001*		<0.001*					
Sig. bet. periods			$p_2=0.001^*$ $p_3<0.001^*$, $p_4=0.027^*$									

Fr: Friedman test, Sig. bet. periods was done using Post Hoc Test (Dunn's)

p: p value for comparing between different periods

p_1 : p value for comparing between 1 day and each other period

p_2 : p value for comparing between 1 week and 1 month

p_3 : p value for comparing between 1 week and 3 month

p_4 : p value for comparing between 1 month and 3 months

*: Statistically significant at $p \leq 0.05$

Conclusion

The ocular endotamponade may not be essential for the treatment of tractional retinal detachment in eyes with proliferative diabetic retinopathy.

The retina reattached after pars plana vitrectomy without ocular endotamponade, and remained attached until the end of follow up.

Subretinal fluid completely absorbed in most of the eyes within 3 months after surgery and BCVA improved in all eyes