

## Supplementary Materials

### **RECURRENCES AND MACULAR COMPLICATIONS AFTER PERFLUOROCARBON-LIQUID-FREE VITRECTOMY FOR PRIMARY RHEGMATOGENOUS RETINAL DETACHMENT**

Maria Vittoria Cicinelli, MD,<sup>1,2,3</sup> Eleonora Benatti, MD,<sup>1</sup> Vincenzo Starace, MD,<sup>1</sup> Francesco Nadin, MD,<sup>1,2,3</sup> Edoardo di Nisi,<sup>2</sup> Francesco Bandello, MD,<sup>2,3</sup> Michele Coppola, MD<sup>1,2</sup>

1 Ophthalmology Unit, Azienda Ospedaliera di Monza, Monza, Italy

2 School of Medicine, Vita-Salute San Raffaele University, Milan, Italy

3 Department of Ophthalmology, IRCCS San Raffaele Scientific Institute, Milan, Italy

#### **Correspondence to:**

Maria Vittoria Cicinelli, MD,

Orcid ID 0000-0003-2938-0409

Department of Ophthalmology, IRCCS San Raffaele Scientific Institute, Via Olgettina 60, Milan, 20132, Italy

Tel: +390226433512, Fax: +390226433643

Email: cicinelli.mariavittoria@hsr.it

**Supplementary Table 1.** Demographic and clinical characteristics of patients divided according to the presence of cystoid macular edema (CME) after pars plana vitrectomy (PPV) for rhegmatogenous retinal detachment (RRD).

	<b>CME (n=36)</b>	<b>No CME (n=310)</b>	<b>P-value</b>
Age (years)	61.9±10.7	57.7±10.6	0.02*
Gender (%)			
• Male	28 (78)	207 (67)	0.2
• Female	8 (22)	103 (33)	
Refraction (diopters)	-4.95±4.94	-4.57±4.00	0.7
Pseudophakia (%)	9 (25)	71 (23)	0.9
Combined FACO+PPV (%)	12 (33)	91 (29)	0.6
Surgery time (min.)			
• PPV	41.7±9.3	44.9±13.9	0.3
• FACO+PPV	58.5±16.4	58.2±16.7	0.9
Gauge (%)			
• 23	2 (6)	13 (4)	>0.5
• 25	34 (94)	296 (95)	
• 27	0 (0)	1 (0)	
Macula-off (%)	13 (36)	77 (25)	0.2
Multiple tears (%)	11 (31)	125 (40)	0.6
Tear location (%)			
• Superior	11 (31)	140 (45)	0.04*
• Nasal/temporal	9 (25)	68 (22)	
• Inferior	13 (36)	92 (30)	
• Posterior	3 (8)	5 (2)	
• Not found	0 (0)	5 (2)	
Giant tear (%)	3 (8)	12 (4)	0.5
PVR pre (%)			
• Grade A	3 (8)	10 (3)	<0.001*
• Grade B-D	6 (17)	9 (3)	
Tamponade agent (%)			
• Gas	30 (83)	299 (96)	0.002*
• Silicon oil	6 (17)	11 (4)	
Complicated RRD	10 (28)	62 (20)	0.3
Recurrent RRD	7 (19)	8 (3)	<0.001*

<b>Postoperative SD-OCT findings</b>			
EZ/IZ damage (%)	6 (17)	15 (5)	0.01*
ERM (%)	11 (31)	21 (7)	0.003*
Macular hole (%)	2 (6)	8 (3)	0.6
ORF (%)	4 (11)	13 (4)	0.2
Residual subretinal fluid (%)	2 (6)	12 (4)	0.9

EZ/IZ: ellipsoid zone/interdigitation zone; ERM: epiretinal membrane; FCO phacoemulsification; ORF: outer retinal folds; PVR: proliferative vitreoretinopathy; SD-OCT: spectral-domain optical coherence tomography

P-values refer to linear or logistic regression models having the presence of CME on follow-up as dependent variable.

**Supplementary Table 2.** Demographic and clinical characteristics of patients divided according to the presence of epiretinal membrane (ERM) after pars plana vitrectomy (PPV) for rhegmatogenous retinal detachment (RRD).

	<b>ERM (n=32)</b>	<b>No ERM (n=314)</b>	<b>P-value</b>
Age (years)	59.9±7.9	57.4±10.4	0.1
Gender (%)			0.9
• Male	22 (69)	213 (68)	
• Female	10 (31)	101 (32)	
Refraction (diopters)	-4.18±4.58	-4.67±4.06	0.7
Pseudophakia (%)	10 (31)	70 (22)	0.4
Combined FACO+PPV (%)	15 (47)	88 (28)	0.08
Surgery time (min.)			
• PPV	42.7±10.5	44.2±12.9	0.6
• FACO+PPV	51.4±13.4	58.4±16.0	0.2
Gauge (%)			0.001*
• 23	6 (19)	9 (3)	
• 25	25 (78)	305 (97)	
• 27	1 (3)	0 (0)	
Macula-off (%)	10 (31)	80 (25)	0.8
Multiple tears (%)	17 (53)	119 (38)	0.09
Tear location (%)			0.9
• Superior	16 (50)	135 (43)	
• Nasal/temporal	6 (19)	71 (23)	
• Inferior	9 (28)	96 (31)	
• Posterior	0 (0)	8 (2)	
• Not found	1 (3)	4 (1)	
Giant tear (%)	4 (13)	11 (4)	0.02*
PVR pre (%)			
• Grade A	1 (3)	12 (4)	0.2
• Grade B-D	4 (13)	11 (4)	0.03*
Tamponade agent (%)			0.9
• Gas	32 (100)	297 (95)	
• Silicon oil	0 (0)	17 (5)	
Complicated RRD	10 (31)	62 (20)	0.5

Recurrent RRD	3 (9)	12 (4)	0.5
<b>Postoperative SD-OCT findings</b>			
EZ/IZ damage (%)	4 (13)	17 (5)	0.7
CME (%)	12 (38)	24 (8)	0.002*
Macular hole (%)	2 (6)	8 (3)	0.4
ORF (%)	6 (19)	11 (6)	0.02*
Residual subretinal fluid (%)	1 (3)	13 (7)	0.7

CME: cystoid macular edema; EZ/IZ: ellipsoid zone/interdigitation zone; FCO phacoemulsification; ORF: outer retinal folds; PVR: proliferative vitreoretinopathy; SD-OCT: spectral-domain optical coherence tomography

P-values refer to linear or logistic regression models having the presence of ERM on follow-up as dependent variable.

**Supplementary Table 3.** Demographic and clinical characteristics of patients divided according to the presence of persistent ellipsoid zone (EZ)/interdigitation zone (IZ) damage after pars plana vitrectomy (PPV) for rhegmatogenous retinal detachment (RRD).

	<b>EZ/IZ damage (n=21)</b>	<b>No EZ/IZ damage (n=325)</b>	<b>P-value</b>
Age (years)	61.6±10.1	57.9±10.6	0.2
Gender (%)			0.9
• Male	15 (71)	220 (68)	
• Female	6 (29)	105 (32)	
Refraction (diopters)	-3.84±2.29	-4.67±4.21	0.3
Pseudophakia (%)	10 (48)	70 (22)	0.7
Combined FACO+PPV (%)	6 (29)	97 (30)	0.9
Surgery time (min.)			
• PPV	45.9±16.6	44.5±13.2	0.7
• FACO+PPV	50.0±18.7	58.8±16.4	0.3
Gauge (%)			0.9
• 23	0 (0)	15 (5)	
• 25	21 (100)	309 (95)	
• 27	0	1 (0)	
Macula-off (%)	6 (29)	84 (26)	0.8
Multiple tears (%)	8 (38)	128 (39)	0.9
Tear location (%)			0.9
• Superior	9 (43)	142 (44)	
• Nasal/temporal	3 (14)	74 (23)	
• Inferior	8 (38)	97 (30)	
• Posterior	1 (5)	7 (2)	
• Not found	0 (0)	5 (2)	
Giant tear (%)	1 (5)	14 (4)	0.7
PVR pre (%)			0.03*
• Grade A	3 (14)	10 (3)	
• Grade B-D	1 (5)	14 (4)	
Tamponade agent (%)			0.05*
• Gas	18 (86)	311 (96)	
• Silicon oil	3 (14)	14 (4)	
Complicated RRD	4 (19)	68 (21)	0.8

Recurrent RRD	2 (10)	13 (4)	0.2
<b>Postoperative SD-OCT findings</b>			
CME (%)	6 (29)	30 (9)	0.01*
ERM (%)	4 (19)	28 (9)	0.5
Macular hole (%)	2 (10)	8 (2)	0.1
ORF (%)	2 (10)	15 (5)	0.3
Residual subretinal fluid (%)	0 (0)	14 (4)	0.9

CME: cystoid macular edema; ERM: epiretinal membrane; FCO phacoemulsification; ORF: outer retinal folds; PVR: proliferative vitreoretinopathy; SD-OCT: spectral-domain optical coherence tomography

P-values refer to linear or logistic regression models having the presence of EZ/IZ on follow-up as dependent variable.