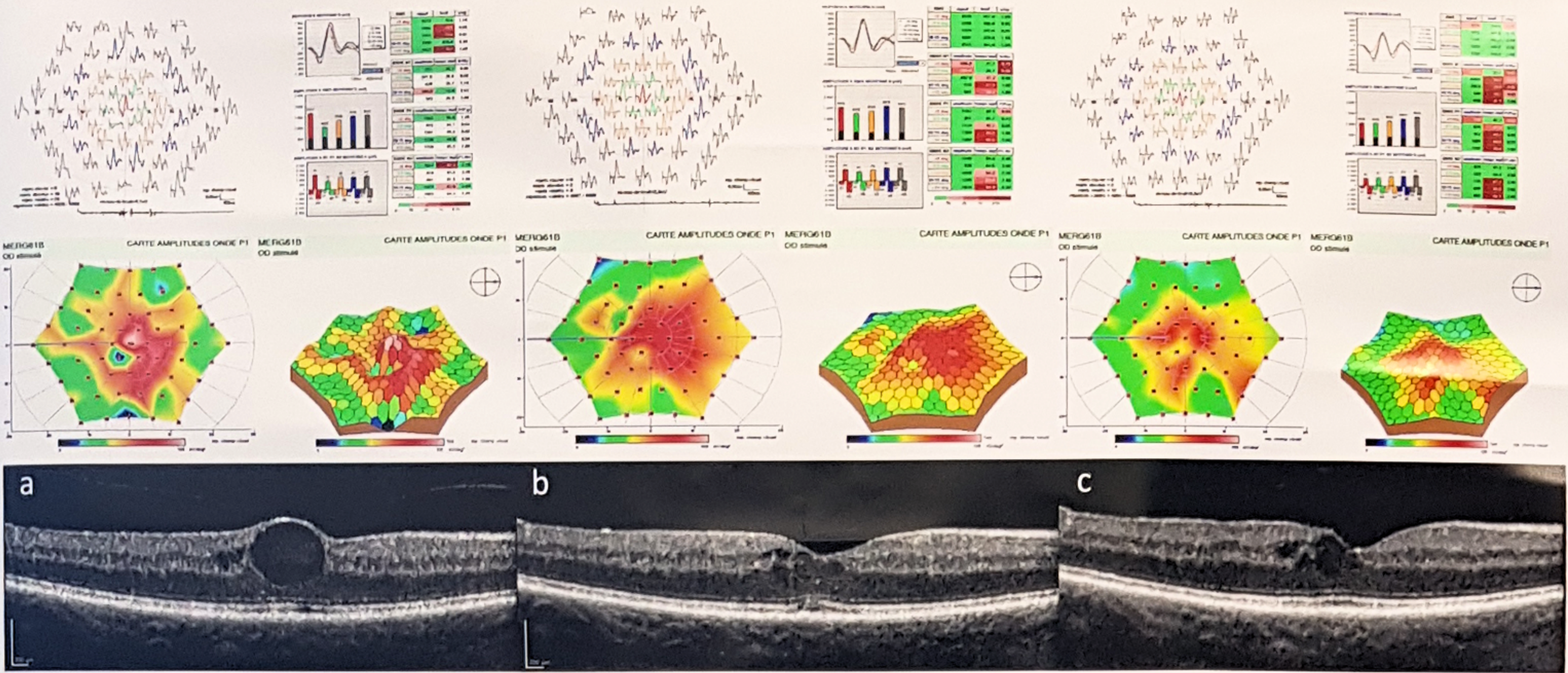
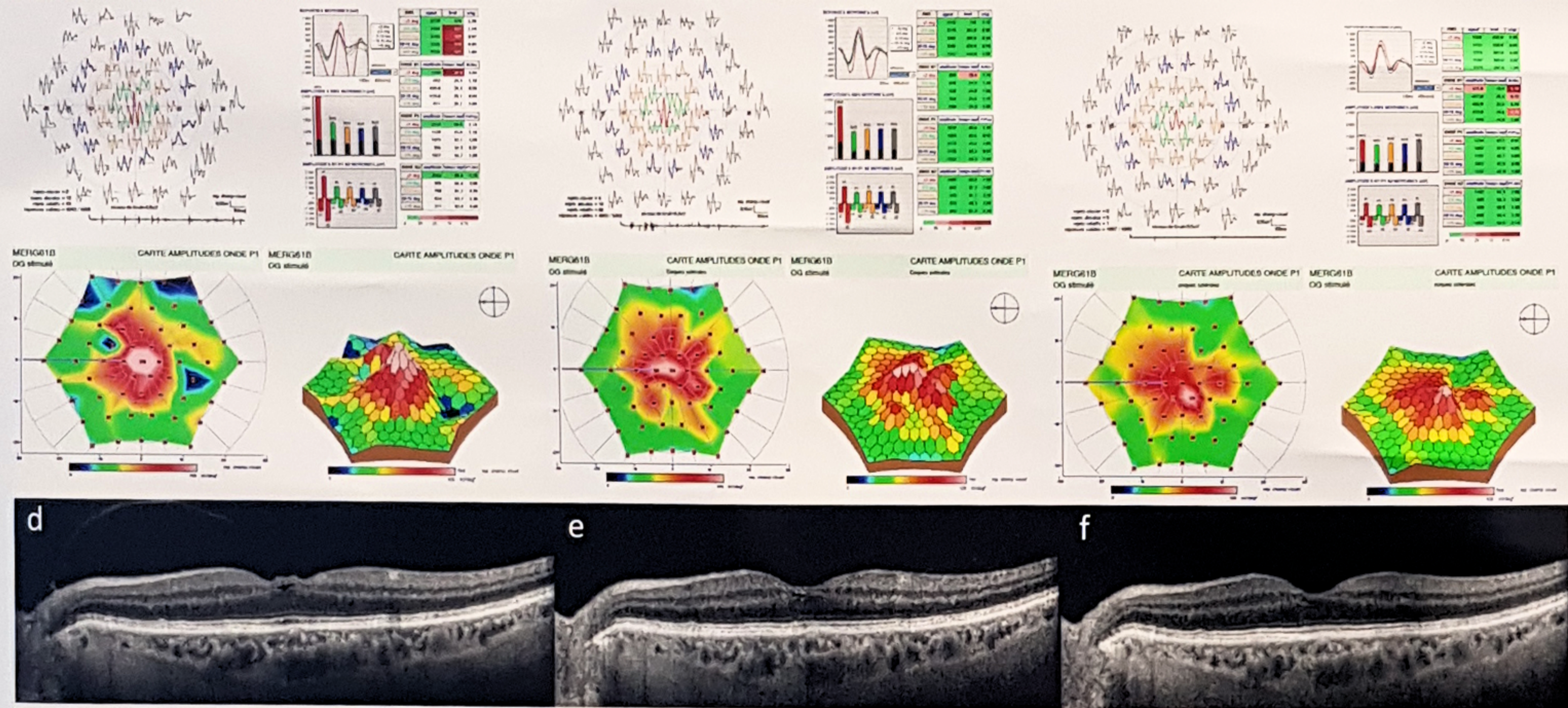


Macular function after pneumatic vitreolysis

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Case 1 : 81year old female patient with type 2 diabetes, pre-injection status (a), one month after injection (b), three months after injection (c) with recurring macular edema probably due to leakage.



Case 2 : 75 year old female, VA was 20/40 before injection (d) and 20/25 one month after injection (e), and 20/25 three months after the injection (f).

Purpose : change of mf ERG parameters at 1 month after a single C₃F₈ gas injection for symptomatic VMT

Methods : A retrospective observation study, on 45 eyes gas injected eyes of 41 patients between October 2016 and April 2022, was performed.

Results : A release of VMT was obtained in 38 of 45 injected eyes (84%) (table 1). In five eyes of four patients, mfERG was recorded prior to injection, one and three months after injection. In 2 cases with reliable recordings a reduction of 52% (case 1) and 44% (case 2) of the P1 amplitude of the central zone (< 2°) was observed after PVD. VMT diameter was significantly smaller (p=0,03) in the PVD group than in the no PVD group (399 +/- 185µm vs 610,6 +/- 422,4µm). MFT was significantly lower (p=0,02) in the PVD group than in the no PVD group (394,5 +/- 116µm versus 533 +/- 257µm). The following adverse effects were observed : 4 MH formation ; enlargement of one pre-existing MH ; no retinal detachment, no retinal tear, no infection.

Discussion : A high rate of VMT release was obtained, consistent with previously published results. Concerning mfERG, no previous study after gas injection or vitrectomy for VMT has been reported. A study of Rossi et al. analysing mfERG for VMT after Ocriciplasmin injection (1) reported a significant increase of N1 and P1 amplitudes. In our 2 patients, a reduction of N1 and P1 amplitudes was observed contrasting with Rossi's results. Other studies analysed mfERG changes after vitrectomy with contradictory results. Wallenten (2) found no modification after vitrectomy in rabbits. Lim (3) found a non-significant decrease of the P1 amplitude after inter limiting membrane peeling contrasting with Faria (4) who reported an increase of N1 and P1 amplitudes but no modification of implicit time after peeling ILM for MH. In the present study despite a significant reduction of macular thickness, a decrease of the P1 amplitude was observed which could be related to PVD induced retinal dysfunction.

		Release at first control	Not release at first control	p-value
Age (y. old)		73,1 +/- 7,4	76,3 +/- 6,4	0,3
Gender	Male	8	4	0,05
	Female	30	3	
Phakic status	Phakic	24	6	0,25
	Pseudophakic	14	1	
BCVA	Before injection	0,33	0,3	0,85
	After injection	0,292	0,257	0,84
Paired T-test before/after injection		0,17	0,29	
Adhesion diameter (µm)	Before injection	399 +/- 185	610,6 +/- 422,4	0,03
Macula foveolar thickness (µm)	Before injection	394,5 +/- 116	533 +/- 257	0,02
	After injection	298,8 +/- 114,6	466,4 +/- 212	0,004
Paired T-test before/after injection		1,45E-06	0,15	

Table 1: demographic visual acuity and OCT parameters

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Abbreviations : BCVA : best corrected visual acuity ; MH : macular hole ; MFT : maximal foveolar thickness ; PVD : posterior vitreous detachment, VMT: vitreo-macular traction.