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Macular Displacement Following Rhegmatogenous Retinal Detachment Repair using either silicone oil or gas tamponade: A comparative study

Purpose: To investigate the incidence of unintentional macular displacement by using fundus auto-fluorescence (FAF) imaging in eyes undergoing PPV for repair of primary rhegmatogenous retinal detachment (RRD) and tamponated with either silicon oil (SO) or gas, its association with symptoms of visual disturbance.

Methods: Prospective study including 40 eyes with fresh RRD. 3 port pars plana vitrectomy was done with gas or silicon oil tamponade. Three months after surgery macular displacement was evaluated by fundus autofluorescence.

Results: Of the 40 cases, after silicon oil removal or complete gas absorption, macular displacement was evaluated by fundus autofluorescence fundus autofluorescence images showed retinal displacement in 11 eyes (27.5%) after surgery. In SO group, 3 eyes showed retinal displacement upwards with incidence (15%). In Gas group, 8 eyes showed retinal displacement downwards with incidence (40%). In the patients with evidence of retinal displacement on FAF, metamorphopsia and micropsia were present in 81.8% (9/11) eyes and 18.2% (2/11) respectively, on the other hand in those with no evidence of retinal displacement on FAF, metamorphopsia and micropsia were present in 58.6%.

Conclusion: Unintentional displacement of the retina after repair of primary and uncomplicated detachments with PPV may be observed using either SO or gas, but slightly more in gas tamponade, this displacement doesn't affecting BCVA of patients.