

Comparison of air versus 10% SF6 tamponade for the management of idiopathic macular holes

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Purpose: To compare air versus 10% SF6 tamponade in vitrectomies for idiopathic macular holes.

Methodology & theoretical orientation: Patients with idiopathic macular holes were vitrectomized (27-gauge) and received either air or 10% SF6 tamponades after electronic randomization. Gass macular hole stages Ia, Ib, II, III and IV were included, provided the minimum linear diameter was under 600 μm (relevant for stages III and IV). Primary macular hole closure two weeks after surgery was assessed using spectral-domain optical coherence tomography and served as the main outcome parameter. Both groups were compared using the unpaired Student's t-test and a p value below 0.05 was considered significant.

Findings: 18 eyes of 18 patients (13 women; 72%) were recruited and mean patient age at the time of surgery was 67.4 years (range 56-85, SD 8.7). Mean preoperative macular hole minimum linear diameter was 171 μm (range 0-355 μm , SD 140 μm) and 181 μm (range 0-336 μm , SD 116 μm) for the air and 10% SF6 group, respectively ($p=0.87$). There were no statistically significant differences in pre- (air mean 0.27 Snellen, range 0.1-0.5, SD 0.1; 10% SF6 mean 0.35 Snellen, range 0.25-0.5, SD 0.07) or postoperative (air mean 0.46 Snellen, range 0.22-0.78, SD 0.15; 10% SF6 mean 0.59 Snellen, range 0.22-0.8, SD 0.19) visual acuity or axial eye length (air mean 23.77 mm, range 22.82-24.4, SD 0.5; 10% SF6 mean 24.53 mm, range 23.42-26.63, SD 1.2) between both groups ($p>0.05$). All 18 patients were vitrectomized successfully with primary macular hole closure two weeks after surgery confirmed by spectral-domain optical coherence tomography.

Conclusion: Air tamponade showed comparable anatomic results to 10% SF6 in our series.

Biography

Maximilian Gabriel is an ophthalmologist from Graz, Austria. He holds a PhD degree from the Medical University of Vienna and specializes in vitreoretinal surgery.

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