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Autologous platelet concentrate as an adjunct in macular hole healing: a pilot study

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Abstract

Purpose

A pilot study was undertaken to assess the efficacy of autologous platelets in macular hole healing.

Patients and methods

Eight eyes of eight patients with stage 3 or 4 macular holes, two of which had failed to heal after previous vitrectomy and gas tamponade, were included. The procedure consisted of pars plana vitrectomy with removal of posterior cortical vitreous, stripping of associated epimacular membranes, 15% perfluoroethane-air tamponade, and instillation of autologous platelet concentrate onto the posterior pole. Strict postoperative facedown positioning was observed for 12 days. Postoperative evaluation included visual acuity measurement, biomicroscopic macular appearance and scanning laser ophthalmoscope examination. The follow-up period ranged from 3 to 13 months (mean, 7 months).

Results

Of eight eyes, flattening of the surrounding retina and closure of the hole were achieved in seven (87.5%). Visual acuity improved two lines or more in four eyes (50%) Four eyes (50%) reached a postoperative visual acuity of 20/50 or more. Increased nuclear sclerosis was observed in six eyes (75%), and retinal detachment occurred in two eyes (25%).

Conclusions

Autologous platelet concentrate administered peroperatively in full-thickness macular holes seems to be a safe and effective adjunct to vitrectomy with removal of posterior hyaloid and gas tamponade. A larger multicenter randomized prospective study is underway to verify these encouraging results before advocating the use of autologous platelets in macular hole surgery.