Rhegmatogenous Retinal Detachment after Intra-Arterial Chemotherapy for Retinoblastoma

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Purpose: To evaluate rhegmatogenous retinal detachment (RRD) in eyes with retinoblastoma treated with Intra-Arterial chemotherapy (IAC)

Methods: Retrospective case series.

Results: Of 167 eyes in 157 consecutive patients, mean patient age at diagnosis of retinoblastoma was 19 months. IAC was primary (75/167, 45%) or secondary (92/167, 55%). There were 10 eyes (10/167, 6%) that developed RRD after IAC. The RRD was mostly related to rapid tumor regression with atrophic retinal hole and occurred within 1 month of IAC in 8 cases and within 12 months in 2. RRD was found following primary IAC (6/75, 8%) or secondary IAC (4/92, 4%). Of primary cases, RRD was found in group D (1/38 (3%), p=0.11) or group E (5/30 (17%), p=0.03). For primary IAC (n=75 eyes), RRD was found in endophytic (5/22 (23%), p=0.007), exophytic (0/29 (0%), p=0.08), or combined endophytic/exophytic growth pattern (1/24 (4%), p=0.66). Primary RRD repair involved pars plana vitrectomy (PPV) in 3, scleral buckle without drainage in 1, laser barricade in 1, and observation in 5 eyes. After 24 months mean follow-up, the retina showed complete reattachment (3/10, 30%), partial reattachment (2/10, 20%), and persistent detachment in all observed eyes (5/10, 50%). Enucleation was necessary for tumor recurrence (4/10, 40%) or neovascular glaucoma (1/10, 10%). There were no tumor-related metastases or death.

Conclusion: Following IAC for retinoblastoma, RRD occurs in 6%, mostly in advanced eyes with extensive endophytic tumor and generally from atrophic retinal hole following rapid tumor regression.