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360-degree Trabeculotomy for Medically-refractory Glaucoma Following Cataract Surgery and Juvenile Open Angle Glaucoma

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ABSTRACT

PURPOSE: While angle surgeries show good success in primary congenital glaucoma, reported success in glaucoma following cataract surgery (GFCS) and juvenile open angle glaucoma (JOAG) is variable and with relatively short follow-up. We evaluated longer-term outcomes of 360-trabeculotomy for medically-refractory GFCS and JOAG.

DESIGN: Retrospective case series.

METHODS: First operated eyes of consecutive patients with medically-refractory GFCS and JOAG in a single-surgeon pediatric glaucoma practice who underwent illuminated microcatheter-assisted 360-trabeculotomy from 2/2008-6/2015 were reviewed. Baseline characteristics, time to failure or last visit, surgical details, final intraocular pressure (IOP), and complications were recorded. Success required IOP≤22mmHg and 20% reduction without additional glaucoma surgery or devastating complication.

RESULTS: Thirty-five eyes (35 patients) were included: 25 GFCS and 10 JOAG (mean age at surgery 5.6 vs. 16.7 years, respectively, p<0.001). Success for GFCS and JOAG was 18/25 (72%) versus 6/10 (60%) eyes at mean f/u 31.9±26.1 versus 24.5±19.7 months, respectively. IOP was significantly reduced from baseline for both GFCS and JOAG (31.5±7.5 vs. 19.2±7.7 mmHg, p<0.001; and 29.5±10.3 vs. 15.8±6.6, p<0.001, respectively). Fewer glaucoma medications were needed after surgery (p=0.01) for GFCS but not JOAG. Complications (all but two spontaneously resolving) included: choroidal effusion (1), vitreous hemorrhage (3), Descemet detachment (1) and persistent hyphema (2). Three-year Kaplan-Meier success for GFCS vs. JOAG was 75.3% vs. 53.3%, respectively.

CONCLUSIONS: Illuminated micro-catheter assisted 360-trabeculotomy is a useful, low-risk, modestly successful initial surgical treatment for both medically refractory GFCS and JOAG.