Endophthalmitis After Cataract Surgery: Changes in Management Based on Microbiologic Cultures

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Purpose:
To assess the utility of vitreous cultures for the management of endophthalmitis following cataract surgery.

Methods:
This retrospective, single-center, cohort study reviewed all patients treated for endophthalmitis following cataract surgery between 1/1/2016 and 5/31/2018 at a single institution. Endophthalmitis cases were determined from billing records and confirmed with chart review. The primary outcome measure was a major change in clinical management within 2 weeks of initial endophthalmitis culture and treatment. A major change in clinical management was defined as either a repeat injection of intravitreal antibiotics or pars plana vitrectomy. Additional outcomes measures included change in visual acuity and development of secondary retinal detachments.

Results:
Of 111 eyes treated for endophthalmitis following cataract surgery, 57 (51%) were culture-positive. Following initial treatment of endophthalmitis, a change in clinical management following vitreous culture occurred in 9 of 111 eyes (8%), including 6 of 57 (11%) culture-positive eyes compared to 3 of 54 (6%) culture-negative eyes (p = 0.49). Change in clinical management for culture-positive eyes was based on declining vision (3 eyes), worsening clinical exam (2 eyes), and retinal detachment (1 case). Change in clinical management for culture-negative endophthalmitis eyes was based on worsening clinical exam (2 eyes) and declining vision (1 eye). No additional interventions were initiated based on positive-culture results. At final follow up, mean logMAR visual acuity was 1.09 [approximately 20/250] for the culture-positive eyes compared to 0.59 [approximately 20/80] for culture-negative eyes (adjusted difference 0.394; 95% CI= 0.02 – 0.77, p = 0.03). Rhegmatogenous retinal detachments (RRD) or retinal tears occurred in 19 of 111 (17%) eyes after developing endophthalmitis, and culture-positive eyes developed a secondary RRD in 11 of 57 (19%) eyes compared to 3 of 54 (6%) culture-negative eyes (p = 0.03).

Conclusions:
Following endophthalmitis related to cataract surgery, vitreous cultures may have prognostic value for final visual outcomes but have a limited effect on clinical management.