Long-Term Outcomes of Bleb Needling Following Primary Glaucoma Filtering Surgery in Primary Open Angle Glaucoma

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Title: Long-Term Outcomes of Bleb Needling Following Primary Glaucoma Filtering Surgery in Primary Open Angle Glaucoma

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Purpose: To determine the long-term success rate of bleb needling in a predominantly African American population and to identify factors associated with success.

Methods: We conducted a retrospective, observational clinical study in patients with primary open angle glaucoma. Patients who underwent a primary trabeculectomy, with or without an express shunt placement, and then subsequently had a bleb needling procedure were selected for this study. Patients were followed every three months for a period of two years. Failure criteria included achieving an intraocular pressure (IOP) of greater than 20 mmHg or greater than 80% of the pre-needling value on two subsequent visits, an increase in the number of prescribed medications relative to pre-needling quantity, and the occurrence of other complications. Kaplan-Meier survival curves were used to calculate bleb needling success rates and variables associated with failure were analyzed using multivariate Cox regression analysis.

Results: Seventy-four eyes from 71 patients were included in the study, with the majority of eyes from African Americans. The overall success rate at 12 months and two years was 28.1% and 14.3%, respectively. However, the complete success rate (completely weaned off of medications) was 12.7% and 5.1% at 12 months and 2 years, respectively. The most frequent reasons for failure included increased number of glaucoma medications (40%), surgical revision (31.7%), and IOP that exceeded threshold (21.7%).

Conclusions: The two-year bleb needling success rate reported in our study is lower than that reported in other studies, possibly due to the increased severity of glaucoma in our patient population.
Figure 1. Kaplan-Meier survival curve for cumulative overall success.