Purpose: To compare the endothelial cell loss and surgical outcomes between two different Ahmed Glaucoma Valve (AGV) implantation method, ciliary sulcus implantation and anterior chamber implantation. Methods: The medical records of 20 eyes with ciliary sulcus implantation of AGV (csAGV) were reviewed and were compared with 20 eyes with the anterior chamber AGV implantation (acAGV). Both the case and control groups were matched for glaucoma type, age, sex, underlying disease, and preoperative intraocular pressure (IOP). The postoperative endothelial cell density (ECD), glaucoma medications, complications, success rate and IOP in the 2 groups were compared. Results: The average follow-up period was 17.29 ± 14.70 months for the csAGV group and 22.00 ± 14.77 months for the acAGV group. The average ECD loss at 12 months for the csAGV and acAGV groups were 4.84 ± 3.56 % and 11.00 ± 10.36 %, respectively, with significant difference between the 2 groups (P = 0.02). Success rates at final follow-up were similar, 80.0% for the csAGV group and 85.0% for the acAGV group. Kaplan-Meier survival curve analysis showed no significant difference between the 2 groups (P=0.495). No difference in IOP control, the number of glaucoma medications and complications were observed between the 2 groups. Conclusions: ECD loss in the csAGV group appeared to be less than that in the acAGV group while maintaining similar level of IOP control in pseudophakic/aphakic eyes. Therefore, ciliary sulcus implantation of AGV may be preferred for glaucoma patients with decreased endothelial cell count. Financial Disclosure: No