“Glaucoma Tube Implant with Modulated Flow”

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Glaucoma results when elevated intraocular pressure (IOP) damages the optic nerve. This common eye disease affects up to 80 million people worldwide and can result in blindness. The goal of glaucoma tube implant surgery is to reduce IOP, but care must be taken to avoid hypotony (i.e. IOP that is too low). Hypotony is one of the most feared complications of glaucoma tube surgery, resulting in poor vision for patients and requiring unreimbursed resources from surgeons (i.e. additional procedures, appointments, and chair time). In this proposal, we describe a novel glaucoma tube implant device that is designed to reduce the rate of hypotony by incorporating a magnetic switching mechanism which provides surgeons with precise and modifiable control of flow through the tube. Our device was designed with both the patient and surgeon in mind. We expect surgeons to readily adopt this device due to its significant advantages over existing glaucoma tubes on the market. The surgical glaucoma device industry is booming, and the annual tube implant market has increased by over 400% since 1994 to over $21 million. We describe a 2-year strategy for taking our device from concept to validated prototype. Because this device will improve patient outcomes and provide value to surgeons and insurers, we believe there is a clear path to successful commercialization. Our glaucoma tube implant will decrease hypotony-related complications, reduce physician stress and costs, and save vision.