

A Novel Treatment for Leaking Blebs (Mor)

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Background

Glaucoma is a disease characterized by intra-ocular pressure sufficient to damage the optic nerve and cause permanent impairment of vision. Glaucoma is rarely cured, but its progression can be greatly delayed by reducing the intra-ocular pressure with medicines, laser procedure or surgery.

Glaucoma filtration (trabeculectomy) is the most common surgery for glaucoma. During the procedure, a hole is created in the scleral wall to allow fluid to flow out of the eye. The goal is to create a new passageway by which aqueous fluid inside the eye can escape, thereby lowering the pressure. The fluid escapes to a 'pocket' (filtering bleb) created between the conjunctiva (the outermost covering of the eye) and the sclera (the underlying white of the eye). The fluid is then absorbed by local blood vessels.

In time, blebs tend to grow and develop thin walls that are at risk for rupture and leakage, resulting in severe complications such as very low eye pressure and infections, that might lead to permanent loss of eyesight. During the first five years after the procedure, 17.9% of patients will develop bleb leakage, and 7.5% will suffer from infections.

Many techniques have been attempted to reduce the size of the bleb or to seal the leak. Overall, the long-term success rate of these techniques has been less than 50%. Surgical revision provides a better outcome (covering, excising or grafting the bleb). However, leaks can still recur, or the filtration effect can be lost, if the intraocular pressure increases once again.

Our Innovation

The Invention uses sterile Talc, a common medical substance, to seal leaking blebs (a common cause of complications after glaucoma surgery).

Sterile Talc is the best sclerosis product available, and it is already being used for many medical applications that treat fluid accumulation, such as in malignant spontaneous pneumothorax. Talc poses several advantages over other agents used to seal leaking blebs. Moreover, it does not involve a surgical procedure but only local administration by injection. It is a familiar and commonly used substance.

The Opportunity

An estimated 67 million people suffer from glaucoma worldwide, and this is only half the estimated number (i.e., half the cases probably go undiagnosed). Each year, more than 100,000 people in the US are diagnosed with glaucoma, and around one third of these need surgery.

Glaucoma therapies comprise over 40% of the U.S. ophthalmology market, worth \$US1.5 billion in 2004 and forecasted at \$US2.81 billion by 2011. As with other ophthalmic categories, the aging population contributes to an optimistic market outlook. The number of older Americans has increased more than tenfold since 1900, and the U.S. Census Bureau estimates that by 2030 20% of

Americans will be 65 or older. The number of Americans with age-related eye diseases and the resulting vision impairment is expected to double within the next three decades.

The United States is a relatively young country when compared with other developed nations. In some industrialized countries, 15% or more of citizens are already 65 or older. In Japan the glaucoma market is currently estimated to be over \$US500 million, and the total number of patients there is expected to increase as well.


Status

Efficacy studies on animal models (rabbits) have been performed confirming the safety and efficacy of Talc for the treatment of leaking blebs, as compared with conventional agents. Human POC will be performed.

Patent Status

National phase - Filed in USA and Israel. Will be filed in Canada and Europe on 2009.

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