

Allograft Insertion Device for DSAEK surgery

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Technology description

Technology Need

Descemet's Stripping Endothelial Keratoplasty (DSEK) is a procedure to replace diseased corneal tissue of the eye with a thin donor graft of posterior corneal stroma, Descemet's membrane, and endothelium. Specialized forceps, tissue glides are few types of insertion tools used for the DSAEK surgery. These tools cause damage to the allograft during the insertion process and in addition require extensive handling by the surgeon to properly unfold once inside the anterior chamber (AC). This handling induces stress and damages the endothelium cells and has a negative effect on the overall surgery. A new insertion tool which facilitates natural unfolding of the allograft without extensive secondary handling by the surgeon is required.

Invention Description/Solution

UTA researchers have developed a new allograft insertion device to perform DSAEK surgery facilitating the natural unfolding of the allograft without extensive secondary handling by the surgeon. The novel Binocular design of the tip or delivery end of the injector facilitates easier and natural unfolding of the allograft inside the Anterior Chamber (AC). It reduces the probability of AC collapse & utilizes inserter tip space to carry larger diameter allograft. It minimizes the surgical and mechanical trauma experience by the endothelium layer and cells during insertion and unfolding thus increasing the probability and success rate of DSAEK surgery.

Application area

Endothelial keratoplasty surgical procedures

Advantages

Injector Tip Shape: Space efficient tip to accommodate larger allograft sizes.

Reduced Stress: Removal of localized stresses and distribution of bending stresses on strategic locations facilitates better unfolding of the graft.

Better success rate in DSAEK surgery.

Institution

[University of Texas, Arlington](#)

Inventors

[Panayiotis Shiakolas](#)

联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com