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Descemet's membrane endothelial keratoplasty injector

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We describe and demonstrate a novel device for insertion of donor tissue during Descemet's Membrane Endothelial Keratoplasty (DMEK). The device is a double cylinder with air outlet openings on the inner cylinder. Human corneas not suitable for transplantation were prepared using standard "SCUBA" technique for Descemet's Membrane Endothelial Keratoplasty. While still submerged and the tissue is completely free from the donor stroma, it is gently placed over the inner cylinder of the device and allowed to wrap around it. The device with the donor endothelium lifted into the air and allowed to coil around the central cylinder completely with the endothelium side out. The protective outer cylinder slid with respect to the inner cylinder and donor endothelium to cover and protect it while inserting it through the corneal incision. The device has markings to maintain sidedness and location of the tissue. When inside the anterior chamber, the outer cylinder retracted and air injected through the inner cylinder and through holes, that unfolds the graft towards the iris, so the endothelium orients posteriorly. The device removed from the eye. The last step commonly performed with DMEK surgery where air removed from between the graft and the host cornea and then reinjected under the tissue specifically between the iris and the graft. In conclusion, we demonstrate a novel device capable of inserting DMEK donor tissue into an eye atraumatically, maintain the orientation and unfold the tissue, simplifying the major challenging steps of DMEK surgery.

Biography

Michael Banitt is an Associate Professor of Ophthalmology at the University of Washington and practices clinical ophthalmology in the area of Cornea and external diseases. He has published over 35 articles in peer-reviewed journals.

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