

FOCUSED ON ADVANTAGE



USER REPORT CORNEA SURGERY

THE REVOLUTIONARY SYSTEM FOR THE THERAPY OF ENDOTHELIAL CORNEAL DISEASES THE NEW DMEK CARTRIDGE



Prof. Dr. med. Peter Szurman
Knappschafts Krankenhaus Sulzbach
Sulzbach, Germany

Corneal transplantation is the most common tissue transplantation worldwide – the penetrating keratoplasty is by now an inherent part of clinical routine in many centers.

Transplantation technique has further developed in recent years, increasingly away from penetrating to lamellar keratoplasty techniques. Endothelial corneal diseases after all amount to 40% of all keratoplasty indications. A penetrating keratoplasty for this indication rather appears like overtreatment, because solely the transplantation of endothelial cells would mostly be sufficient. Therefore posterior lamellar techniques have established themselves as an alternative for endothelial corneal diseases.

While in the DSAEK (Descemet Stripping Automated Endothelial Keratoplasty) the endothelial cells including a stromal lamella with a thickness of app. 150 µm are transplanted, the DMEK (Descemet Membrane Endothelial Keratoplasty) is limited to the isolated descemet membrane with endothelial cells excluding stromal parts with a thickness of only app. 15 µm.

CLINICAL ADVANTAGES OF DMEK

The transplantation of the extremely thin lamella promises a significantly quicker visual recovery than the DSAEK. The DMEK avoids the interface issue, induces no postoperative astigmatism or myopia and substitutes more endothelial cells (up to 9.5 mm transplant size). Therefore in many cases a visual improvement of 0.8 or more is achieved within a week. Due to the very good results the DMEK could become the standard procedure for the therapy of endothelial diseases.

INSTRUMENTS FOR THE STANDARDIZATION OF DMEK

The success of this elegant technique is mainly dependent on the quality of the sensitive transplant and its careful manipulation. Decisive is that the sensitive endothelial cells at no point of preparation or implantation are touched or mechanically stressed. For a reproducible result we require standardized technology and an instrument which warrants a no-touch surgery procedure.

In cooperation with Geuder a surgical set was developed, which allows experienced anterior segment surgeons to apply the DMEK as part of the routine. With this set a descemet lamella can be prepared without being touched and transplanted via a 3.0 mm clear cornea incision. It is desirable that the promising advantages of the DMEK are confirmed by large numbers of cases and the DMEK emerges as the method of choice.



The DMEK Instrument Set

The large rounded opening of the cartridge allows for the safe and easy intake of the graft.



Injection into the anterior chamber over the small opening is gentle and atraumatic.