INNOVATION
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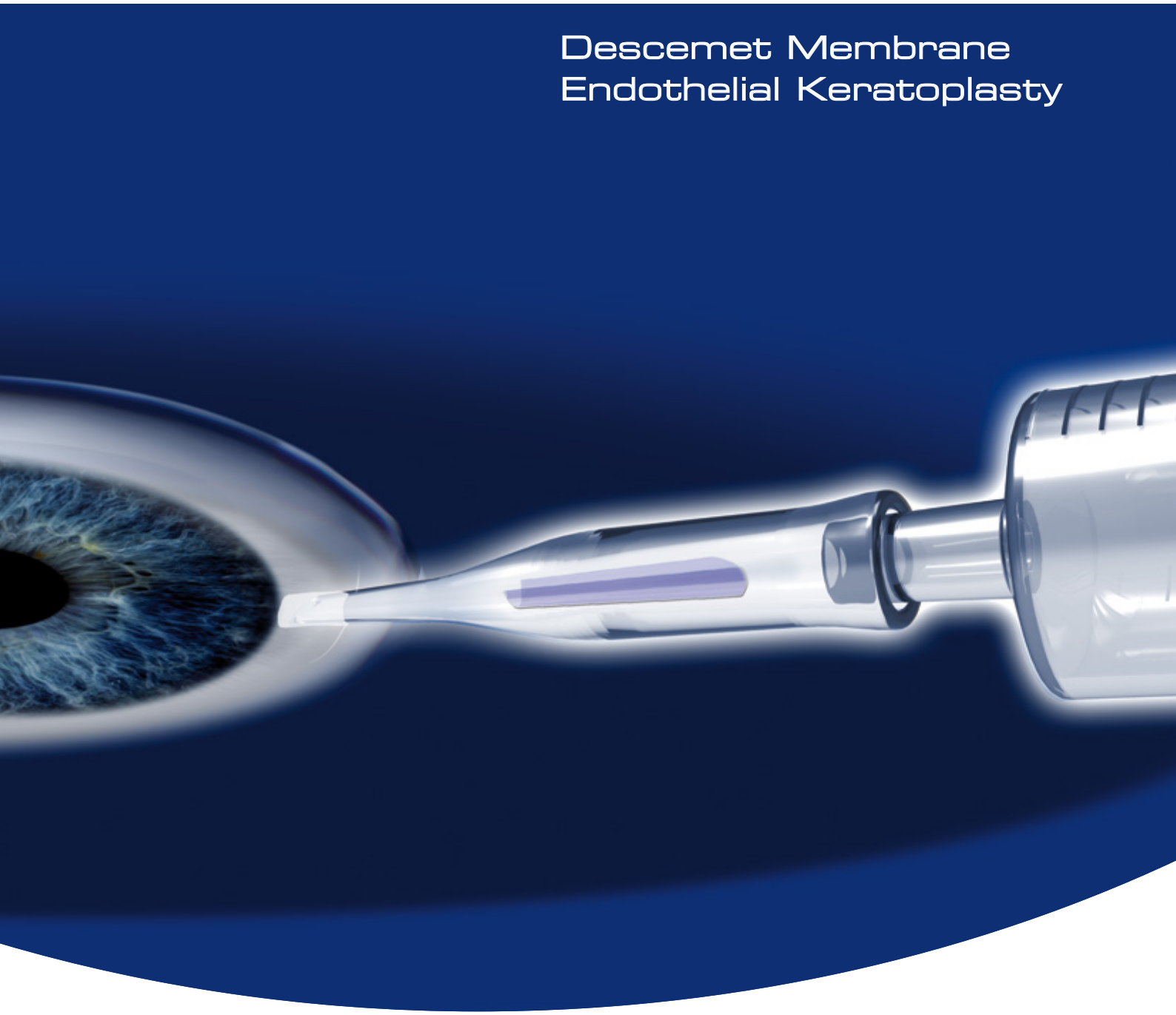
DMEK

Descemet Membrane Endothelial Keratoplasty



THE INNOVATIVE SYSTEM FOR TREATING ENDOTHELIAL CORNEAL DISEASES

Geuder®
Precision made in Germany

THE NEW DMEK INSTRUMENT LINE
NOW WITH EVEN SMALLER CLEAR CORNEA INCISION

THE REVOLUTIONARY SYSTEM FOR TREATING ENDOTHELIAL CORNEAL DISEASES

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Knappschaftskrankenhaus
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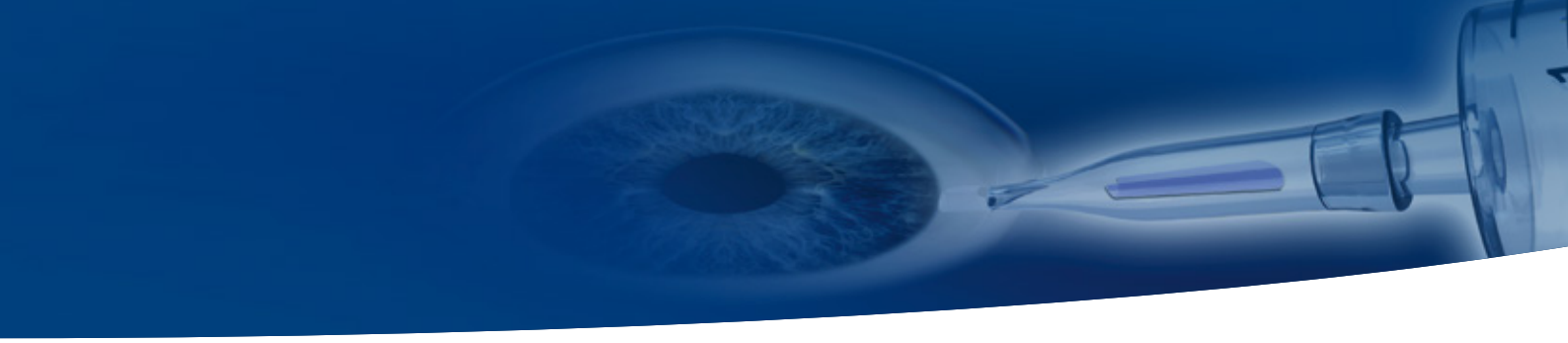
Corneal grafts are the most common tissue transplants. Perforating keratoplasty has meanwhile become clinical routine in many centers.

Transplantation techniques have evolved in recent years and are moving away from perforation towards lamellar keratoplasty.

Endothelial corneal diseases comprise after all 40% of all keratoplasty indications. In many cases, perforating keratoplasty is excessive since the simple transplantation of vital endothelial cells would often suffice. This is why posterior lamellar techniques, especially DMEK, have been able to establish themselves in recent years as an alternative, widely atraumatic, solution for endothelial corneal diseases.

DMEK (Descemet Membrane Endothelial Keratoplasty) is limited to the isolated Descemet membrane and endothelial cells without stroma, with a thickness of only approx. 15µm.



CLINICAL ADVANTAGES OF DMEK

Transplanting extremely thin lamella promotes considerably faster visual recovery than other lamellar keratoplasty techniques. DMEK prevents interface problems, causes neither postoperative astigmatism nor myopia and substitutes more endothelial cells (up to 9.5 mm graft size). As a result, visual acuity improves in many cases by 0.8 or better after only one week. Due to these very good results, DMEK might become the gold standard in the therapy of endothelial corneal diseases.

INSTRUMENTS FOR STANDARDIZATION OF DMEK

The success of this elegant technique is largely dependent on the number of vital endothelial cells and quality of the fragile graft and the gentle manipulation thereof. It is important that the fragile endothelial cells are not touched or stressed mechanically during preparation or implantation. In order to achieve reproducible results a standardized technique and specific instruments, which ensure a touch-free surgical procedure, are necessary. The new Liquid Bubble technique, which was developed in Sulzbach, Germany, uses a liquid in order to gently separate the Descemet membrane from the stroma beneath. It is another step towards the standardisation of DMEK.

On the following pages we introduce a new surgical set which will give experienced surgeons the opportunity to perform DMEK in the clinical routine. This set allows a touch-free preparation of a Descemet lamella and its subsequent transplantation.

Prof. Dr. med. Peter Szurman, MD

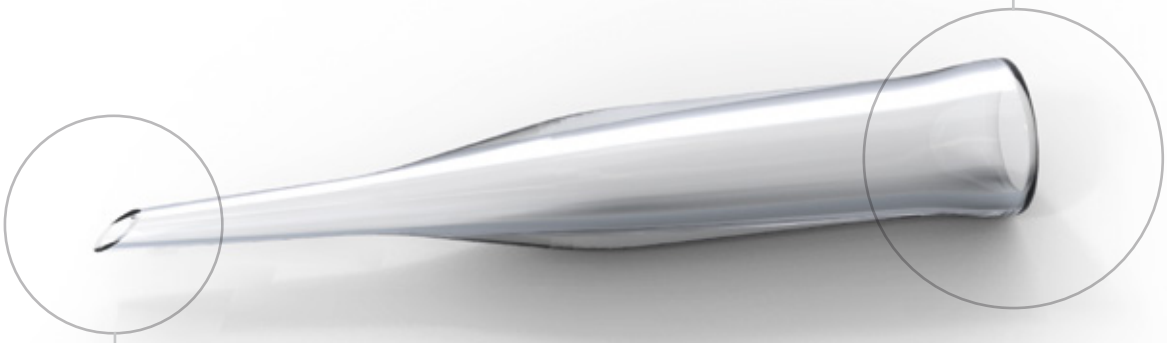
Literature:

1. Melles GR, Ong TS, Ververs B, van der Wees J (2006) Descemet membrane endothelial keratoplasty (DMEK). Cornea 2006; 25: 987-90
2. Cursiefen C, Kruse FE (2009) Descemet's stripping automated endothelial keratoplasty (DSAEK). Ophthalmologe. 106: 939-952
3. Szurman P, Yörük E (2010) DMEK-Step by Step. ESCRS, Paris
4. Yörük E, Szurman P (2010) DMEK Keratoplastik. Augenspiegel 11/2010
5. Yörük E, Szurman P (2011) Autologous Descemet´s Membrane Endothelial Keratoplasty. Cornea; in press

BRILLIANTLY SIMPLE:
THE IMPLANTATION CARTRIDGE

SIMPLIFICATION AND STANDARDIZATION OF DMEK SURGERY WITH TOUCH-FREE AND GENTLE HANDLING OF DESCEMET LAMELLA

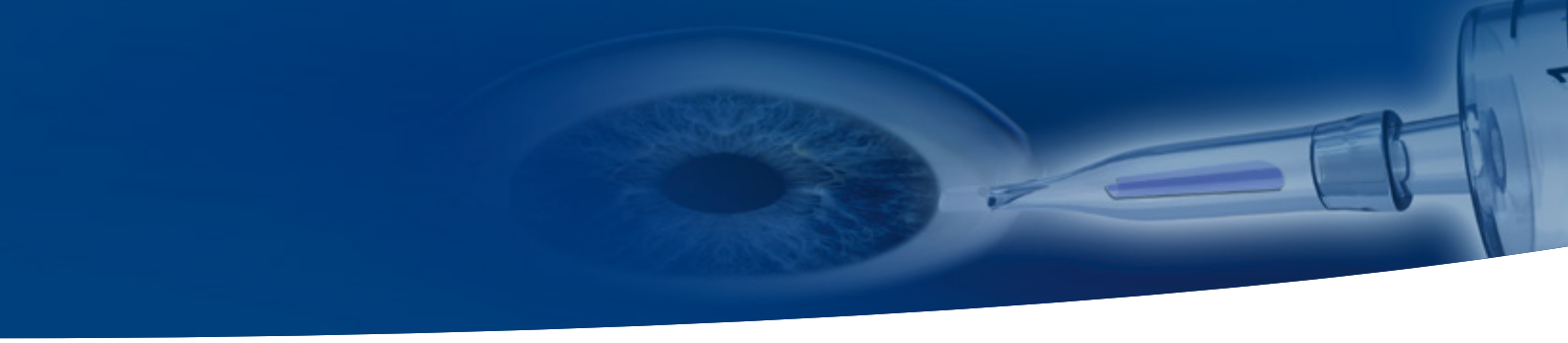
- Safe and easy intake of the graft due to a large rounded opening of the cartridge



- Gentle and atraumatic injection into the anterior chamber
- Available in two sizes for incisions of 2.4 to 2.75 or 3.0 mm

SZURMAN
SINGLE-USE DMEK-CARTRIDGE
for Descemet membrane endothelial keratoplasty, incl. tube connection for loading the cartridge

G-38630	incision 3 mm 14 gauge / 2.0 mm, sterile
G-38635	incision 2.4 to 2.75 mm 16 gauge / 1.6 mm, sterile



INTELLIGENT DESIGN – TOUCH-FREE TECHNIQUE

- Loading the cartridge through its large posterior opening is widely atraumatic for the Descemet lamella. The accompanying tube enables a touch-free and gentle aspiration of the lamella
- The transparent glass cartridge allows a controlled injection of the graft into the anterior chamber. A double irrigation set enables touch-free unfolding and positioning of the Descemet lamella. An air or gas bubble (e.g. SF6) below the graft helps to attach the Descemet membrane to the cornea
- Reduced loss of endothelial cells and reliable preservation of the functionality of the endothelial cells

ELEGANT FUNCTIONALITY – CRYSTAL CLEAR & SMOOTH

- Maximum safety for endothelial cells through streamlined design and smooth surface of the transparent cartridge
- Implantation of lamella under visual control prevents complications caused by wrong alignment of the graft within the eye
- Reduced surface friction saves endothelial cells and preserves high quality of the graft

NO SUTURE – NO ADVERSE EFFECTS

- Minimum incision size of 2.4 to 2.8 or 3.0 mm for fast visual recovery and satisfied patients
- Minimization of surgically induced astigmatism and other unwanted adverse effects

WELL CONCEIVED: THE ACCESSORIES

- Low additional costs through compatible standard accessories:
  - Standard single-use syringe
  - Heidelberg extension tubing
  - Swab

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