



Innovations for Today's
Corneal Procedures



Instrumentation and tips from the experts

DALK

DSAEK

DMEK

Basics

Featured:

Prof. Donald Tan, Assoc. Prof Jod Mehta, Dr. Charles Ahn, Dr. Jose Guell,
Clin. Assoc. Prof. Thomas John, Dr. Vincenzo Sarnicola, Clin. Assoc. Prof. Akira Kobayashi

This booklet made possible by the following Cornea Experts



Prof. Donald Tan
Singapore

“DALK , DSAEK, and now DMEK represent the latest innovations in corneal transplantation surgery which present a new paradigm in our field, translating to better outcomes for our patients. Innovations in new surgical instrumentation and devices clearly enhance our ability to perform these challenging new procedures with a higher level of sophistication which leads to safer, and more effective surgery.”

Dr. Tan specializes in the DALK and DSAEK corneal procedures.



Assoc Prof Jod Mehta
Singapore

“ASICO’s products allow the user to preform DALK surgery safely and protect the DM from intraoperative rupture. Having the correct instrumentation is vital to the success of the surgery: my conversion rate to PK is less than 1% and I have only converted one case in the last 3 years, mainly due to good case selection, patience and good instrumentation.”

Dr. Mehta specializes in the DALK and DSAEK corneal procedures.



Dr. Charles Ahn
Downers Grove, IL

“DMEK is the next step in the progression of surgical treatment for endothelial disease. Transplantation of Descemet’s membrane with the absence of stroma is what sets DMEK apart from the other endothelial keratoplasties. The advantages of this procedure have convinced me to consider DMEK as not only an alternative surgical treatment for DSAEK, but a replacement for my patients.”

Dr. Ahn specializes in the DMEK corneal procedure.



Clin. Assoc. Prof.
Thomas John
Chicago, IL

“DMEK is a surgically challenging technique for the corneal surgeon. However, it is very gratifying to both the patient and the surgeon with regard to the level and quality of vision. DMEK has several distinctive advantages compared to DSAEK, including the restoration of the recipient corneal anatomy to near normal corneal structural configuration. Unlike DSAEK, which is an additive procedure, DMEK is to be considered as a substitution procedure that appears to be superior to DSAEK.”

Dr. John specializes in the DALK, DSAEK, and DMEK corneal procedures.



Clin. Assoc. Prof.
Akira Kobayashi
Japan

“DSAEK for Asian eyes is sometimes quite challenging especially at the donor insertion step, since they tend to have a shallow anterior chamber. To circumvent such difficulty, donor pull-through technique using both Busin glide and IOL sheets glide (termed double-glide technique) was developed. DMEK is a new type of endothelial keratoplasty in which only the Descemet membrane with endothelial cells are replaced. As is the case with DSAEK, DMEK is also technically demanding for Asian eyes. Currently, I am developing DMEK surgical instruments with ASICO to make the surgery safer and more consistent.”

Dr. Kobayashi specializes in the DSAEK and DMEK corneal procedures.



Dr. Vincenzo Sarnicola
Italy

“With these instruments I designed with ASICO, risk of perforation is greatly reduced. DALK can be performed safely while increasing the percentage of Big Bubble formation.”

Dr. Sarnicola specializes in the DALK corneal procedure.

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DALK - Your Questions Answered

Prof. Donald Tan &
Assoc Prof Jod Mehta

Clin. Assoc. Prof.
Thomas John

Why do you recommend surgeons perform DALK and under what conditions should they perform it?

"The results are better in long term than for PK, they should perform it for any patient with mid to posterior stromal scarring in a patients with a healthy endothelium."

"DALK may be considered in any potential corneal transplant surgery, where the corneal endothelium is healthy and the disease process involves the anterior regions of the cornea causing visual compromise. It is one of the selective cornea transplant (SCT) procedures. Since the patient's healthy endothelium is retained, it removes the unwanted, corneal endothelial graft rejection from the equation after such a SCT procedure. The indications for DALK could include contact-lens-failed keratoconus, corneal scar involving the deeper corneal stroma or corneal stromal dystrophies with healthy endothelium."

Who should be a "first patient" for DALK?

"The ideal patients are those with keratoconus who require transplantation since they are young and it is vital for them to retain their own endothelium in the longterm."

"It may be a good idea to first try the DALK procedure on a case where a full-thickness penetrating keratoplasty (PK) is the planned procedure. This gives the surgeon an opportunity to try lamellar keratoplasty dissection, air-injection to create a big-bubble, etc., in stages without any added surgical pressure, and then convert to the pre-planned PK procedure."

What are the Dos and Don'ts of DALK?

Dos

"Take your time. This is not a fast surgery and patience is a virtue, choose more straightforward cases first and use PK grade tissue as stand by when starting off. The most important thing is to have the correct instruments. DO try to practice your technique at a course or wetlab before surgery. Email and ask more experienced surgeons for tips since it is very difficult to learn all these at once."

Don'ts

"Do not attempt difficult cases initially. Do not rush the surgery."

Dos

"Use appropriate instruments to facilitate DALK procedure. Soften the eye by aqueous egress via a side-port incision before getting very close to the DM during the lamellar dissection. Use viscoelastic material when needed to safely perform deep dissection without tearing the DM. The John ALK scissors are especially useful in protecting the DM while excising the deep, DM-adjacent stroma, without tearing the DM and converting to a PKP procedure."

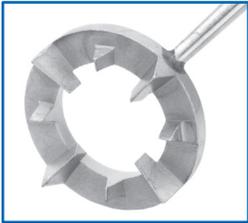
Don'ts

"Do not use sharp scissors pointing downwards while excising the recipient corneal disc. Don't use oversized donor graft. Don't place the air cannula in the thinnest portion of an advanced keratoconus cornea and inject air with force."

Instruments for DALK

Markers

AE-2849 JOHN ALK MARKER



"The longer bars on this marker help in the cardinal suture placements and the shorter bars help in completing the remaining sutures. This will serve as a guide for optimal suture placement and potentially decrease the amount of post-operative astigmatism when used with a circular ring light, intraoperative keratometer, astigmatic ruler, or a sterile safety pin to appropriately adjust the suture tension."

-Clin. Assoc. Prof. Thomas John



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Dissectors & Spatulas for Initial Stromal Separation

AE-2902 JOHN ALK PRE-DESCEMET'S SPATULA



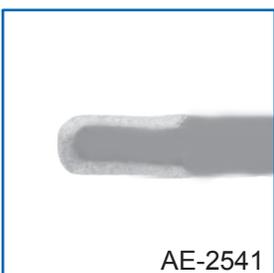
"John ALK Pre-Descemet's spatula is designed to work deeper in the recipient corneal stroma, close to the DM with less chance of accidentally tearing the DM. The instrument has smooth, rounded margins that can be used close to DM in facilitating DALK dissection."

-Clin. Assoc. Prof. Thomas John



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AE-2541 TAN MICRO LAMELLAR DISSECTOR AE-2547 TAN LARGE LAMELLAR DISSECTOR



AE-2541



AE-2547

"The Tan Micro Lamellar Dissector (AE-2541) is used to initiate half-stromal depth dissection at the 12 o'clock position. This lamellar dissector may be used along the periphery which may be hard to reach with the larger dissector. The Tan Large Lamellar Dissector (AE-2547) is used to complete dissection, and has a larger surface profile to help stay within the lamellar plane."

-Prof. Donald Tan



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Instruments for DALK

Cannulas

AE-7803 TAN DALK kaniulė, 27 dydžio



14. 1. AE-7803 TAN DALK CANNULA, 27 GAUGE

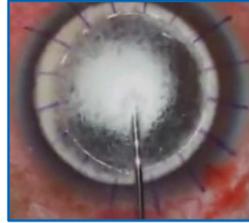
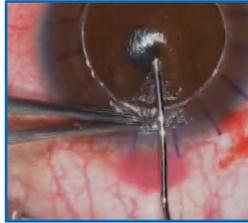


Fig. 3

Fig. 4

“Insert the DALK Cannula attached to a 5mm air-filled syringe into the opening created by the needle (Fig. 3). The cannula should be parallel to the stromal surface, bevel down, and tunnel towards the mid-central cornea. The cannula tip should approach the corneal apex, and about 3-4mm of the needle shaft should be within the corneal stroma.

Also Available in disposable AS-7803

There will be some resistance as the cannula is deliberately blunt-tipped to prevent inadvertent perforation, but gentle “wiggling” or side-to-side movements will assist in tunneling forward. Gradually apply a mild, constant, downward pressure on the syringe to release the air. As the stromal threshold is reached, feathery opacities will appear in the stroma, indicating air entry into the stroma. Continue to maintain pressure, or increase pressure slightly until a circular, silvery opacity develops and extends the trephination margins by about 1mm. This indicates successful formation of the big bubble and the detachment of the Descemet’s membrane (Fig. 4).”

-Prof. Donald Tan

AE-7821 SARNICOLA didelio burbulo kaniulė, 27 dydžio

14. 2. AE-7821 SARNICOLA BIG BUBBLE CANNULA, 27 GAUGE



Fig. 5

Fig. 6

Fig. 7

“Used to inject air through the inter corneal tunnel created by the Sarnicola DALK Spatula to form the Big Bubble (Fig. 5). Designed so the air insufflates from top to bottom in a very deep plane and increases the percentage of Big Bubble formation. Also used to inject viscoelastic in the space between the stroma and the DM after Big Bubble formation (Fig. 6) and to create an Air-Visco Bubble if a successful Big Bubble was not achieved (Fig. 7). This cannula is very smooth so as to avoid penetrating the DM.”

-Dr. Vincenzo Sarnicola

JOHN ALK CANNULA: AE-7822 27 GAUGE, 1 HOLE & AE-7824 30 GAUGE, 3 HOLES



“The John ALK 1-hole cannula will help in the formation of a raised, focal big-bubble, while the 3-hole cannula will facilitate a more diffused big-bubble, DM separation.”

-Clin. Assoc. Prof. Thomas John

Instruments for DALK

Probe

AE-7823 JOHN ALK modelo zondas, 30 dydzio

14. 3. AE-7823 JOHN ALK PROBE, 30 GAUGE



"AE-7823 John ALK probe 30g and AE-7822 John ALK cannula 27g should be used together. The probe has a smaller gauge as compared to the cannula, and allows for the initial, smooth tracking into the paracentral, recipient cornea. This should be followed with the use of the larger gauge John ALK cannula, thus providing a tight fit before air injection. Vision blue may be used to highlight the track before introducing the cannula. A slight lift of the cannula may be followed by controlled, forced-air injection, to attempt to create the big-bubble in DALK procedures."

-Clin. Assoc. Prof. Thomas John

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Scissors

TAN DALK SCISSORS: AE-5666 LEFT & AE-5667 RIGHT



Fig. 8

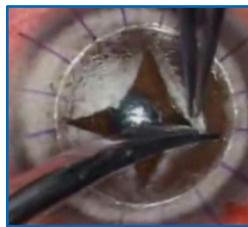


Fig. 9



"The scissors enable access to the inferior half of the corneal stroma (Fig. 8). To ensure a vertical edge without a ledge at all times, make sure the base plate of the scissors remains flat and opposed to the lamellar surface. A stromal bed of 200-250µ should be achieved at the initial stage when removing the first part of the stroma to aid in deep placement of the Tan DALK Cannula (AE-7803) for maximal big bubble success. These scissors are also used to cut the posterior stromal lamella into 4 equal quadrants similar to the lens in the "divide and conquer" phaco technique. The longer blade should be inserted into the razor blade cut and the base plate of the scissors should be on DM to prevent inadvertent perforation (Fig. 9). Each quadrant cut should extend about 2mm from the trephination margin."

-Prof. Donald Tan

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Spatula for Inter-Corneal Tunnel

AE-2900 SARNICOLA BIG BUBBLE SPATULA



Fig. 2

"Helps to create an inter corneal tunnel (Fig. 2). This spatula is very smooth to avoid penetrating the DM, and enables the surgeon to reach a very deep plane and increase the percentage of Big Bubble formation."

-Dr. Vincenzo Sarnicola

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Instruments for DALK

Dissector & Spatula for Remaining Stromal Separation

AE-2549 TAN MARGINAL DISSECTOR



"Used to effectively separate any remaining stromal attachments from the Descemet's membrane at the periphery of the big bubble. The T-shaped design dissects in such a manner which allows better fitting between the donor-host interface. Edges are highly polished to prevent inadvertent perforation."

-Prof. Donald Tan

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AE-2904 JOHN ALK NARROW STROMAL SPATULA



"This John ALK narrow spatula is helpful in manual lamellar dissection in DALK. Additionally, the stroma overlying the spatula may be incised as needed during DALK."

-Clin. Assoc. Prof. Thomas John

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Compression Disc

AE-2905 JOHN ALK COMPRESSION DISC



"This disc is useful in the uniform approximation of a donor corneal disc devoid of endothelium to the recipient DM with the application of tissue adhesive. The compression disc help prevent unwanted DM membrane folds, or the creation of a false anterior chamber."

-Clin. Assoc. Prof. Thomas John

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DSAEK - Your Questions Answered

Prof. Donald Tan &
Assoc Prof Jod Mehta

Clin. Assoc. Prof.
Thomas John

Why do you recommend surgeons perform DSAEK and under what conditions should they perform it?

"DSAEK is becoming the gold standard for endothelial replacement, the visual acuity results are outstanding compared to PK and now with new insterter devices the endothelial cell counts long term are proving to be better. It should be performed for any patient with endothelial dysfunction without significant stromal scarring e.g. Fuch endothelial dystrophy, aphakic/pseudophakic bullous keratopathy, regrafts and other causes e.g Endothelitis."

"DSAEK is a SCT procedure. I recommend DSAEK over a PK since there is no circular, corneal wound, and the elimination of corneal sutures. Both of these have great advantages in corneal transplantation. DSAEK should be considered in any permanent, corneal endothelial decompensation with a clear corneal stroma."

Who should be a "first patient" for DSAEK?

"Ideally choose a patient with pseudophakic bullous keratopathy."

"Patients with endothelial decompensation with medium clouding of the cornea may be considered as a good first DSAEK case. Avoid the totally cloudy cornea with poor visualization of the anterior chamber as your first DSAEK case."

Dos

"Do go through a certified course. This will help you get orientated with tips and tricks of the procedure, there are several courses available in USA, Europe (Italy), Middle East, Asia (Singapore). Do choose a straightforward case in the beginning."

Dos

"Select cases with endothelial decompensation with clear central corneal stroma. May consider the initial cases as those with a larger corneal diameter and deeper anterior chamber. Select pseudophakic eyes to perform DSAEK. If there are synechiae, perform anterior synechiolysis before introducing the donor disc into the recipient anterior chamber. If there is vitreous in the anterior chamber, perform anterior vitrectomy and clear all vitreous from the anterior chamber prior to donor disc placement into the recipient eye. Perform inferior iridectomy/iridotomy."

What are the Dos and Don'ts of DSAEK?

Don'ts

"Dont try cases with glaucoma tubes/ TRABS, or aphakic and ACIOL cases and repeat PK since these are the most difficult."

Don'ts

"Avoid phakic eye with clear lens and aphakic eye for DSAEK especially during the initial stages of learning. If there is a seton tube or functional, patent trabeculectomy expect some amount of difficulty in sustained, large air bubble in the anterior chamber following DSAEK. Do not use Viscoat in the anterior chamber. Remove all Healon from the anterior chamber prior to disc placement."

Instruments for DSAEK

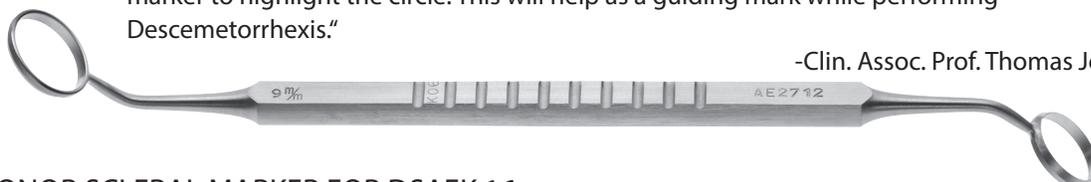
Markers

AE-2712 JOHN DSAEK DOUBLE ENDED MARKER 8-9mm



"The commonly used diameter for Descemetorrhexis is 8.0 or 9.0 mm. Hence, this single marker has both the commonly used diameters in one marker. This will provide a circular mark on the recipient corneal epithelium after using a sterile marker to highlight the circle. This will help as a guiding mark while performing Descemetorrhexis."

-Clin. Assoc. Prof. Thomas John



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AE-2851 KOBAYASHI DONOR SCLERAL MARKER FOR DSAEK 16mm



"The benefit of a large corneoscleral rim is required for holding the donor cornea on the artificial anterior chamber for a microkeratome cut. It is equally useful for the eyebank technician when making the corneoscleral rim for DSAEK."

-Clin. Assoc. Prof. Akira Kobayashi



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AE-2868 KOBAYASHI DSAEK MARKER 8-9mm



"While most DSAEK Markers mark in a complete circle which causes the ink to run, the Kobayashi DSAEK marker marks in dots along the circumference. This prevents the ink from running so that visibility is good through out the procedure."

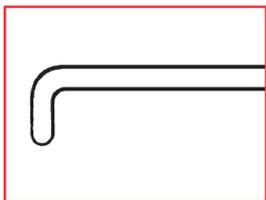
-Clin. Assoc. Prof. Akira Kobayashi



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Descemet's Removal & Donor Prep

AE-2209 NEW SINSKEY LENS MANIPULATOR, NO HOLE, W/ PEG



AE-2872 JOHN DEXATOME DSAEK/DMEK SPATULA (PATENT PENDING)



"This is a must have spatula for any and all DSAEK/DMEK surgeon. The unique design of this spatula helps in smooth, uniform Descemetorrhexis and removal of the Descemet's membrane as a single disc. It allows easy contact with almost all parts of the patient's inner corneal surface due to its special design."

-Clin. Assoc. Prof. Thomas John



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Instruments for DSAEK

Descemet's Removal & Donor Prep

AE-2874 JOHN DSAEK DESCOMET'S STRIPPER



"This instrument is especially useful in removing Descemet's membrane in cases of failed penetrating keratoplasty, where there is firm adhesion of the Descemet's membrane to the patient's corneal stroma especially in the regions of the circular wound."

-Clin. Assoc. Prof. Thomas John



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AE-2878 JOHN DSAEK STROMAL SCRUBBER



"The stromal scrubber helps roughen the inner corneal stroma at the peripheral regions of the Descemetorrhexis and facilitates disc adhesion to the recipient cornea. This surgical step is thought to decrease the rate of disc detachment following DSAEK surgery."

-Clin. Assoc. Prof. Thomas John



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AE-4227 JOHN DSAEK INSERTION FORCEPS



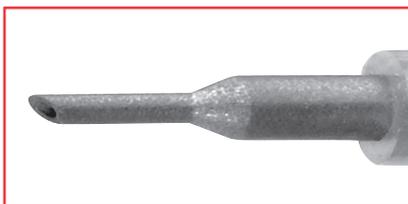
"The insertion forceps help insert the donor corneal disc into the recipient anterior chamber. It is reusable and hence cost-saving, and avoids the use of disposable, delivery cartridge systems for DSAEK."

-Clin. Assoc. Prof. Thomas John

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Chamber Maintenance

AE-7802 KOBAYASHI CHAMBER MAINTAINER CANNULA, 25 GAUGE



"The Kobayashi Chamber Maintainer was designed for DSAEK but can be used for various procedures in maintaining the AC. The surface of the cannula has been sandblasted so that it stays in place. I recommend using a 24G MVR blade to create the incision."

-Clin. Assoc. Prof. Akira Kobayashi

Implantation

KOBAYASHI DSAEK DONOR ADJUSTER: AE-7806-30 GAUGE CURVED



"Usually after inserting the donor button into the AC, a Sinsky hook is inserted to position the button in place and then an air injection cannula is inserted to release the air bubble into the AC. This instrument exchange tends to cause the donor button to shift so that it does not adhere properly. The surgeon is forced to readjust the button in place. In order to simply this process, the Kobayashi DSAEK Donor Adjuster acts as both a hook and cannula. Now the surgeon can simultaneously hold the button in place while injecting the air bubble. With this new cannula, successful adherence can be achieved safely and easily."

-Clin. Assoc. Prof. Akira Kobayashi

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Instruments for DSAEK

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Implantation

AE-4226 TAN DSAEK FORCEPS, 23G



"Safely and effectively inserts the donor button with the pull-through technique using a lens glide. These 23G forceps maneuver easily through the sideport incision. The jaws are specially designed so that only the tips meet, minimizing contact with the stroma. As the forceps pinch only the upper stromal layer of the donor button, no contact is made with the endothelium. Atraumatic ridges on the tips secure grip of the stromal layer in the presence of visco. Other features include an ergonomic handle and an all-titanium body."

-Prof. Donald Tan



ALSO AVAILABLE IN 25 GAUGE - AE-4221 KOBAYASHI-TAN DSAEK FORCEPS, 25G

AE-2335 KOBAYASHI-BUSIN GLIDE FOR DSAEK



"This new glide is characterized by the circular marker for better centering of the donor while keeping same internal diameter with the original one. Device protects the endothelium both when it is held outside the wound and also when inserting the donor into the 5.0 wound, because the tissue is not compressed as it passes."

- Clin. Assoc. Prof. Akira Kobayashi

AE-2879 JOHN DSAEK GLIDER



"The glider helps smoothen the corneal surface and clear any fluid in the donor-recipient interface during DSAEK surgery."

-Clin. Assoc. Prof. Thomas John



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AE-2899 KOBAYASHI DSAEK INTERFACE DRAINAGE SPATULA



"For successful DSAEK, complete donor attachment at the end of the surgery is necessary. For this purpose, mid-peripheral corneal stab incision is frequently used to drain residual fluid between donor and recipient cornea. After the anterior chamber is filled with air, this new spatula is inserted into the venting incision (created by either 24 or 25 gauge V-lance) and torque the venting incision to release trapped fluid. The tip of the spatula is blunt to avoid accidental stabbing donor stroma."

-Clin. Assoc. Prof. Akira Kobayashi



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DMEK - Your Questions Answered

Dr. Charles Ahn

Clin. Assoc. Prof
Thomas John

Why do you recommend surgeons perform DMEK and under what conditions should they perform it?

"DMEK should be considered the procedure of choice for corneal endothelial disorders such as Fuch's Dystrophy, pseudophakic bullous keratopathy, and endothelial trauma. Selective replacement of diseased corneal endothelium and Descemet's membrane appears to provide superior visual results in both acuity and quality over DSAEK or PKP with faster recovery. The absence of stroma in the graft with DMEK appears to be responsible for clearer vision with sharper acuity. An additional advantage to the thin graft in DMEK is little to no hyperopic shift with surgery."

"I recommend DMEK since it appears to be a superior procedure as compared to DSAEK in having better post-operative vision. DMEK is indicated in conditions with permanent, endothelial decompensation that is due to Fuchs' dystrophy, iatrogenic damage, or due to trauma, in the presence of a clear central corneal stroma. The early visual recovery with DMEK is a welcome postoperative result for the present day active patients."

Who should be a "first patient" for DMEK?

"An ideal 'first patient' for DMEK will be one that is pseudophakic with no iris defects, appliances such as tube shunts in the anterior chamber, or previous glaucoma filtration surgery. A tube shunt will make management of the graft in the eye difficult and cause significant trauma during placement and manipulation. Iris defects or previous filtration surgery may create difficulty with management of the air bubble. An anterior chamber that is either too shallow or too deep would also make manipulation and placement of the endothelial graft difficult."

"A pseudophakic patient with a normal to large corneal diameter, and a normal to deep anterior chamber may be considered for the initial patient selection. Additionally, visualization of the anterior chamber should be fairly good to facilitate the procedure during the early learning curve of the corneal surgeon. Make sure that the patient does not have any impediments to DM insertion into the AC, such as PAS, vitreous bands, AC IOL, or seton tubing."

What are the Dos and Don'ts of DMEK?

Dos

"Do consider DMEK for endothelial corneal disorders. Take a course and practice both harvesting and placement of the graft before your first case. Do have the appropriate instruments for the case. Do prepare the patient for a back-up plan. Do select an ideal 'first patient.' Do use Trypan Blue to stain the graft."

Dos

"Do stain the donor Descemet's membrane with trypan blue. Remove the epithelium if visualization into the anterior chamber is poor. Perform inferior iridectomy/iridotomy. Use DMEK instruments to facilitate the procedure."

Don'ts

"Don't rush the steps. Minimize trauma to the endothelium. Minimize manipulation of the graft in the eye."

Don'ts

"Do not attach the donor Descemet's membrane upside-down to the patient's cornea. Do not overinflate the AC. Excess air will find its way via the pupil to the retro-iris region and compromise the AC. Avoid aphakic eye and large iris defect."

Instruments for DMEK

Tissue Preparation

AE-1586 JOHN DMEK TWIN BLOCK

ASICO
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DESIGN



"The twin block is extremely useful while working on the donor cornea and harvesting the donor Descemet's membrane. The first well is used to strip the donor Descemet's membrane as a single disc without any tears, while the adjacent second well has the trypan blue stain in it and ready to receive the donor Descemet's membrane disc. This twin block helps in proper handling and staining of the donor Descemet's membrane disc."

-Clin. Assoc. Prof. Thomas John

Descemet's Removal

AE-2327 AHN DMEK RAKE

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"The Ahn DMEK Rake allows for careful separation of the donor Descemet's membrane without direct contact to the endothelial surface. The wider, flat surface allows for gentle manipulation of the donor tissue while harvesting the endothelial graft."

-Dr. Charles Ahn



AE-2872 JOHN DEXATOME DSAEK/DMEK SPATULA (PATENT PENDING)

ASICO
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DESIGN



"This is a must have spatula for any and all DSAEK/DMEK surgeon. The unique design of this spatula helps in smooth, uniform Descemetorrhexis and removal of the Descemet's membrane as a single disc. It allows easy contact in almost all parts of the inner patient's cornea due to its special design."

-Clin. Assoc. Prof. Thomas John



AE-4210 Guell DMEK Forceps

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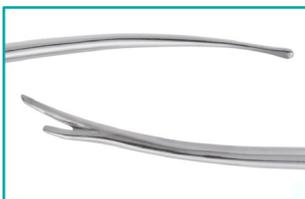
"The Guell DMEK forceps are highly polished and offer a broad grasping surface to peel the endothelium membrane with one hand, diminishing the risk of tearing the membrane. Of all the forceps I have tried for endothelium dissection, these are by far the safest and most effective."

-Dr. Jose Guell



AE-2336 Tan Marginal DMEK Dissector

ASICO
EXCLUSIVE
DESIGN



"The Tan DMEK Stripper is an instrument designed to facilitate DMEK donor dissection with minimal risk of radial Descemet's membrane (DM) tearing. The instrument is double ended. The double tipped end is designed for cutting the peripheral margins of DM circumferentially without radial tears, while the curved single tipped end is designed for lamellar separation of DM from the stroma."

-Prof. Donald Tan



Instruments for DMEK

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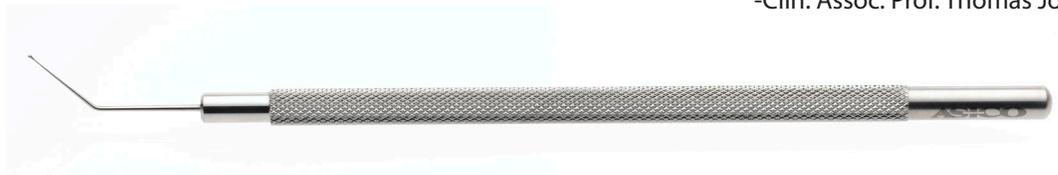
Descemet's Manipulation

JOHN DMEK CRYSTAL SPATULAS: AE-2328 LARGE & AE-2329 SMALL



"The large crystal spatula can be used to unravel the Descemet's membrane in the anterior chamber and help with the proper orientation of the Descemet's membrane prior to air-attachment to the patient's cornea. The smaller spatula helps achieve the same when there is limited space in the anterior chamber. When a no-touch technique is not successful these special DMEK spatulas will help complete the procedure."

-Clin. Assoc. Prof. Thomas John



Descemet's Manipulation

AHN DMEK CANNULAS: AE-7002 23 GAUGE & AE-7004 27 GAUGE



"The Ahn DMEK 23G Cannula allows for manipulation of the endothelial graft within the anterior chamber, with short bursts of fluid.

The smaller 27G, Ahn DMEK Cannula allows for a more controlled release of a small air bubble during opening and positioning of the endothelial graft within the eye."

-Dr. Charles Ahn



ASICO
EXCLUSIVE
DESIGN

AE-7003 JOHN DMEK CANNULA, 30 GAUGE



"The DMEK 30G cannula helps in the fluidics to facilitate proper positioning and unrolling of the donor Descemet's membrane prior to air injection into the anterior chamber. DMEK, for the most part, should be performed as a no-touch surgical technique to minimize iatrogenic donor endothelial cell loss during the procedure."

-Clin. Assoc. Prof. Thomas John



Overcoming Complications

How do you handle complications for DSAEK?



“It is important to perform an inferior, peripheral iridectomy to avoid air-bubble associated angle closure post-operatively. If too much air is injected with retro-iris air bubble and flattening of the anterior chamber, this can be reversed by sterile balanced salt (BSS) injection into the anterior chamber. If there is decentration of the donor disc, this should be corrected intra-operatively by gentle, exterior corneal massage as needed or by using a reverse Sinsky hook to reposition the donor corneal disc. It is not usually necessary to perform venting corneal incisions into the donor-recipient corneal interface. If there is

post-operative donor disc detachment, reattach with repeat air-injection with the usual intra-operative sterile precautions. If there is retention of interface fluid that is loculated, allowing time for fluid resorption may be a good option. However, if there is an open communication of aqueous from the interface to the anterior chamber, repeat air injection may be the only choice in most cases to seal and reattach the donor corneal disc to the recipient inner corneal stroma.

- Clin. Assoc. Prof. Thomas John



The main complications of DSAEK are iatrogenic graft failure and graft dislocation. New inserter devices have reduced the rates of graft failure and we have been performing venting incisions from our very first case and we have a very low dislocation

- Prof. Donald Tan & Assoc Prof Jod Mehta

How do you handle complications for DALK?

There are lots of tips available in the published literature on handling complications by us and others, generally avoiding the complications in the first place is ideal but if they do occur managing them correctly can lead to good outcomes.

- Prof. Donald Tan & Assoc Prof Jod Mehta

Overcoming Complications

How do you handle complications for DALK?

The best way to handle complications in DALK is to try to avoid potential complications by using appropriate, surgeon-friendly instruments that are specially designed to facilitate the dissection process and decrease the chances of Descemet's membrane (DM) tears during the procedure (See John-DMEK set, ASICO, Inc.). Hurdles for DALK include the non-reproducibility issues associated with creating a "big-bubble." Hence, it is important that the surgeon learns alternative surgical techniques as a fall-back position, namely, manual lamellar dissection, visco-assisted lamellar dissection, and the use of fluid to hydrate and dissect the corneal stroma such that the DALK procedure can be completed. One of the significant complication in DALK is accidental DM tear. If the tear is small, one can inject air into the anterior chamber to tamponade the focal area of dehiscence and continue lamellar dissection to complete the DALK procedure. If the DM tear is too large for air tamponade one may have to convert to a PK. It is also important to attain uniform donor-recipient corneal approximation to avoid iatrogenic, false anterior chambers. Also, it is important to avoid DM folds following DALK procedure.

- Clin. Assoc. Prof. Thomas John

How do you handle complications for DMEK?



Common complications of DMEK include inability to harvest a viable graft and poor adherence of the graft postoperatively. Dr. Art Geibel described harvesting the graft manually under "water" utilizing his "SCUBA" technique. With much practice and patience, one can consistently and successfully harvest the graft. A back-up cornea for DSAEK may need to be available if the harvest is unsuccessful. Postoperative detachments are usually partial and can occur in up to 50% of cases. However, they can be managed with repeat air injections performed in the office. A minimum age of 40 for the donor tissue appears to

be beneficial for both harvesting the graft as well as placement.

-Dr. Charles Ahn

The best way is to avoid complications. Make sure that the Descemet's membrane is properly oriented before injecting air into the anterior chamber for Descemet's membrane attachment. Also, confirm that the tip of the cannula is between the unrolled DM and the iris before injecting air to attach the DM to patient's cornea. If there is any post-operative Descemet's membrane separation, re-inject air into the anterior chamber to attach the Descemet's membrane to the patient's cornea.

-Clin. Assoc. Prof. Thomas John

Basic Cornea Instrument Set

AE-1002



AE-2321



AE-1318



AE-2072



AE-2757



AE-2743



AE-4820



AE-4041



AE-4101



AE-4300



AE-4381



AE-4800



AE-1002	Speculum
AE-1318	Flieringa Ring
AE-2321	Paton Spatula
AE-2072	Cyclodialysis Spatula
AE-2743	Keratometer
AE-2757	Corneal Transplant Marker
AE-4041	Corneal Forceps
AE-4101	Bishop Harmon Forceps
AE-4300	Suturing Forceps
AE-4381	Tying Forceps
AE-4800	Towel Clamp
AE-4820	Serrefine

Basic Cornea Instrument Set

AE-7195



AE-8205



AE-4815



AE-8205H



AE-6140



AE-5048



AE-8002



AE-5049



AE-8140



AE-5012



AE-5013



AE-7000



AE-7200



- AE-4815 Mosquito Forceps
- AE-5012 Castroviejo Scissor, 6mm, Right
- AE-5013 Castroviejo Scissor, 6mm, Left
- AE-5048 Corneal Transplant Scissors
- AE-5049 Corneal Transplant Scissors
- AE-6140 Needle Holder w/ Lock
- AE-7000 Air Injection Cannula
- AE-7195 Silicone Bulb
- AE-7200 Irrigating Cannula
- AE-8002 Blade Handle
- AE-8140 Diamond Knife
- AE-8205 Trehphine
- AE-8205H Trehphine Handle



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