Big Bubble Technique

Target Market:
All surgeons performing PK/ALK/DALK
Anwar and Beyond

• Mohammed Anwar, DO, FRCS, of Jeddah, Saudi Arabia introduced the “big bubble” technique (JCRS 2002) of separating the anterior cornea from Descemet’s by injecting air through a 27G syringe

• Since then, “big bubble” has become one of the most common procedures for DALK

• However, Anwar’s technique doesn’t always work
  – Air may not actually separate stroma from Descemet’s membrane
  – There is still risk of accidentally perforating the Descemet’s membrane (which will turn the DALK procedure into a PK procedure)
Anwar and Beyond

• We have been working with Dr. Vincenzo Sarnicola (Italy), Prof. Donald Tan (Singapore), and Dr. Thomas John (USA) to reduce the risk of these complications

• Sarnicola Big Bubble
  – Sarnicola Big Bubble Spatula: AE-2900
  – Sarnicola Big Bubble Cannula: AE-7821

• Tan DALK
  – Tan Micro Lamellar Dissector: AE-2541
  – Tan Large Lamellar Dissector: AE-2547
  – Tan DALK Scissors: AE-5666 and AE-5667
  – Tan DALK Cannula: AE-7803
  – Tan Marginal Dissector: AE-2549
Anwar and Beyond

• John ALK Set
  – John ALK 30G Tracker: AE-7823
  – John ALK 27 Cannulas
    • One-Hole: AE-7822
    • Three-Holes: AE-7824
  – John ALK Scissors: AE-5668 and AE-5668L
  – John ALK Pre-Descemet’s Membrane Spatula: AE-2902
Tan DALK

• Tan Micro Lamellar Dissector:
  AE-2541
  – Used to initiate dissection of the anterior 1/2 corneal stroma after partial trephination of about 2/3 corneal thickness
  – Also used to dissect along the periphery
  – Blade contours to the curve of the cornea
Tan DALK

- Tan Large Lamellar Dissector: AE-2547
  - Used to complete dissection of the anterior 1/2 corneal stroma after initial dissection with the micro dissector
  - Large surface area keeps dissection along the lamellar plane
  - Blade contours to the curve of the cornea
Tan DALK

• Tan DALK Scissors
  – Used to remove the anterior layer of corneal stroma to expose the stromal bed prior to air injection
  – Used to cut the posterior stroma lamella into 4 quadrants and remove after big bubble formation
Tan DALK

• Tan DALK Scissors
  – Jaws are highly polished to glide along DM
  – Unique safety platform and longer lower tine prevent perforation of DM when cutting stroma
  – Available in both left (AE-5667) and right (AE-5666) configurations
Tan DALK

- Tan DALK Cannula: AE-7803
  - Used to create an ideal big bubble when attached to a 5mm air-filled syringe
  - Tip is blunt and smooth to prevent inadvertent perforation
Tan DALK

• Tan DALK Cannula: AE-7803
  – Curved shaft ideal for tunneling through deep stroma
  – Large posterior opening enhances ability to attain big bubble
Tan DALK

- Tan Marginal Dissector: AE-2549
  - Used to effectively separate any remaining stromal attachments from the Descemet’s membrane at the periphery of the big bubble
  - Enables extension of a small bubble right to the margins of the trephination
Tan DALK

- Tan Marginal Dissector: AE-2549
  - Edges are highly polished to prevent inadvertent perforation and at the same time to facilitate easy separation of stromal fibers
  - Curved shaft conforms to DM
Sarnicola Big Bubble

- Sarnicola Big Bubble Spatula: AE-2900
  - Helps to create an inter corneal tunnel
  - Spatula is very smooth to avoid penetrating the Descemet’s membrane
  - Enables the surgeon to reach a very deep plane and increase the percentage of Big Bubble formation
Sarnicola Big Bubble

• Sarnicola Big Bubble Cannula: AE-7821
  – Used to inject air through the intercorneal tunnel created by the Sarnicola DALK Spatula to form the Big Bubble
  – Designed so the air insufflates from top to bottom in a very deep plane and increases the percentage of Big Bubble formation
  – Used to inject viscoelastic in the space between the stroma and the Descemet’s membrane after Big Bubble formation
  – Cannula is very smooth to avoid penetrating the Descemet’s membrane
John ALK

- **John ALK Marker: AE-2849**
  - Helps in uniform suture placement to attach the donor cornea to the anterior recipient corneal bed
  - Features 8 radial marks for the 8-interrupted nylon sutures
    - 4 longer marks are positioned at the 3, 6, 9, and 12 o’clock positions
    - Remaining marks are positioned between the longer marks
John ALK

- John ALK 30G Tracker: AE-7823
  - Helps to create an inner-corneal tunnel within the recipient corneal stroma
  - Allows the larger 27G cannula to have a snug, tight fit within the cornea without any significant air loss when using the cannula to create the big bubble
John ALK

- John ALK 27G Cannulas
  - Helps to create a big bubble within the recipient cornea for air dissection of the corneal stroma
  - Single-port cannula (AE-7822) delivers a focal air release for maximum focal stromal dissection
  - Triple-port cannula (AE-7824) provides larger area of air release with a more diffuse stromal dissection
John ALK

- John ALK Narrow Spatula: AE-2904
  - Facilitates layered separation of the anterior, mid, and deeper corneal stroma
  - Features a flat lower surface and multi-curved convex top surface
John ALK

- John ALK Scissors
  - Specially designed to prevent tearing of DM
  - Top blade is sharp while bottom blade is blunt with a polished, circular disk to push DM away from blades
  - Available in both left (AE-5668L) and right (AE-5668) configurations
• John ALK Pre-Descemet’s Membrane Spatula: AE-2902
  – Effectively dissects corneal stroma adjacent to the recipient DM without any significant added risk of tearing the DM
  – Edges are highly polished, smooth, with a uniform thickness, convex shape
John ALK

- John ALK Compression Disk: AE-2905
  - Designed to be used on the surface of the cornea to press down the donor disk during total ALK with fibrin glue
  - Highly polished, smooth surface protects the corneal surface
  - Inner surface of instrument is concave to contour to the cornea
# DALK Product Reference

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**Required DALK instruments**