The goal of the cataract surgeon is to reduce patient trauma and visual rehabilitation time while minimizing astigmatism which is best accomplished with a small incision.

This statement is from the Katena Globe News, summer 1992 issue. At that time the definition of “small incision” was 3 to 7mm. Ten years later the goal remains the same however the definition of small incision has changed. With the development of new instrumentation, cataract surgery is now being performed through incisions of less than 1.5mm.

Professor Jorge Alio, MD of Alicante, Spain has developed a new technique which he describes as “real microsurgery by 2002 standards - a pathway to the future of cataract surgery”. Professor Alio’s MICS technique offers the following advantages:

- total control of fluidics in a closed environment
- decreased surgical aggressiveness
- virtual elimination of surgically induced astigmatism

Katena has worked closely with Dr. Alio to develop a new group of instruments specifically for his Micro Incision Cataract Surgery Technique which we will describe in this issue.

**TRAPEZOIDAL KERATOME**
Dr. Alio uses a trapezoid shaped keratome to make an incision which is 1.25mm at the internal and 1.4 mm wide at the external cornea. This provides adequate space for inserting the MICS instruments with minimal or no leakage and facilitates manipulation without stretching the wound. A line engraved on the blade identifies the 1.25mm margin.

**CAPSULORRHEXIS FORCEPS**
The Alio Capsulorrhexis Forceps has micro-sized triangular tips that can be used to puncture and grasp the capsule to perform the capsulorrhexis with a single instrument. The very delicate 23 gauge shaft allows the surgeon to comfortably use the forceps through a paracentesis.

**MICS SCISSORS**
Designed with a curved 23 gauge shaft and straight blades, the Alio MICS Scissors can be used through a very small paracentesis. Its extremely delicate blunt tipped blades are ideal for cutting synechia, small pupil iridotomies and for enlarging the capsular bag.

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**Akahoshi Combo PreChopper** for soft or hard nuclei

This instrument was designed to enable the surgeon to perform the Akahoshi Phaco Prechop Technique on both soft and hard nuclei. It features a paddle shaped tip which has broad, blunt edges on one side and thin, blunt edges on the opposite side which merge at the tip to create a penetrating point. The broad edges are used to completely divide a soft nucleus without harming the posterior capsule while the pointed tip and thin edges are used to penetrate and split a hard nucleus. The unique cross-action mechanism allows the jaws to fully open for cracking without stretching the incision.

Designed by Takayuki Akahoshi, MD, of Tokyo, Japan
Dr. Herman Sloane of Oak Brook, Illinois has developed a LASEK technique in which he centrally divides and retracts the epithelium. He describes this procedure as the “Curtain Technique”.

The Sloane Epi-Ski Knife features a smoothly polished depth guard and a semi-sharp edge which is precalibrated to 70-microns.

Dr. Sloane uses the knife to centrally divide the epithelium along the long axis.

After applying and removing the alcohol solution, he uses the Sloane Epithelial Dissector to undermine the epithelium from the center to the periphery.

The spatulated instrument is convex on top and flat on the bottom with a semi-sharp tip to easily undermine and separate the epithelium. After dissection, Dr. Sloane retracts the epithelial layer with the Sloane Micro-Hoe. Following laser ablation, the epithelium is returned to its original position using the Sloane Epithelial Repositor.

IRRIGATION HANDPIECES
Dr. Alio designed the MICS Irrigating Fingernail to divide and manipulate soft to medium cataracts in a closed environment. It features a blunt fingernail-shaped tip at the end of an 18 gauge shaft. The 1mm irrigation port is directed toward the posterior capsule to provide stable fluidic control in the anterior chamber when used with a phaco or MICS aspirating tip.

For medium to hard cataracts Dr. Alio has designed an irrigating chopper. It features a sharp pointed triangular shaped tip which is angled downward to chop off nucleus segments. Its large (1mm diameter) irrigation port is directed posteriorly to maintain stable fluidic control in the anterior chamber.

ASPIRATION HANDPIECE
The bullet shaped tip of this instrument is designed for easy entry through the incision and features a 0.3mm diameter port extremely close to its tip. The 18 gauge shaft is designed to seal the incision and maintain the fluidic balance in the anterior chamber when used with the MICS Irrigating Fingernail or Chopper and while aspirating residual cortex.

MICS MANIPULATOR
This conically shaped instrument with delicate blunt tip is inserted into the paracentesis to seal the incision while performing intraocular maneuvers such as IOL manipulation or synechia dissection. It is excellent for use in combination with other MICS instruments.
Nevyas Soft IOL Manipulator

Frequently, after inserting a soft IOL with an injector, the lens must be manipulated to ensure that it is completely in the capsular bag. Dr. Herbert Nevyas of Bala Cynwyd, PA developed this instrument to manipulate a soft IOL after insertion. The textured tip of this instrument is ideal for obtaining a good purchase on the lens haptic for placement in the bag. The tip also provides sufficient traction on the surface of the IOL to rotate it without damaging the optic.

Irrigating Choppers from Katena

K7-5853
Dodick Irrigating Chopper
Features a 1.5mm tip with a rounded distal end to avoid damage to the posterior capsule. Its wedge shaped inferior edge efficiently divides the nucleus.

K7-5857
Fukasaku Irrigating Chopper
The short, wedge-shaped tip is designed for cracking the nucleus in the central “safe zone.” When small pupils are encountered, the smoothly polished superior notch can be used to push back the iris for better visibility.

K7-5851
MicroFinger Irrigating Chopper
Utilizes a curved, finger-shaped tip with a defined inner edge for chopping the nucleus and manipulating nuclear fragments.

K7-5855
Rosen Irrigating Chopper
Designed for the original “Phaco Chop” technique, this instrument utilizes a 1.1mm wedge-shaped tip to split the nucleus and a blunt distal end to avoid damaging the posterior capsule.

K7-5859
Dodick Nucleus Chopper
This instrument was developed for the traditional “phaco chop” technique. It has a wedge-shaped inferior edge and a rounded posterior tip. The 1.5mm long tip provides adequate depth to totally bisect the nucleus, while its smoothly polished blunt end is designed to avoid damaging the posterior capsule.

Your favorite Phaco Chopper is now available with irrigation!

Each instrument has a 20 gauge thin-wall tube for placement through a 1mm paracentesis. Two large sideports provide maximum infusion to help maintain the anterior chamber while chopping, manipulating and emulsifying the nucleus. Katéna offers a variety of tips or will custom make the chopper of your choice with irrigation.

Lu Capsule Polisher

Dr. Luis Lu of St. Mary’s, Pennsylvania designed this 23 gauge irrigating capsule polisher. It features a large olive shaped tip for greater surface contact. According to Dr. Lu, the polisher provides a better “feel” and allows him to apply more controlled pressure on the capsule.
Angelo P. Tanna, MD, Chief of Glaucoma Service at Northwestern University Medical School, has designed an innovative new speculum which allows the surgeon to retract the lids as well as position the globe in preparation for a trabeculectomy procedure. It features a standard Lieberman style adjustable mechanism for positive lid control and looped wire posts along the top of the blades for securing traction sutures. By anchoring to the speculum rather than the drape, the globe can be rotated for full exposure in a controlled fashion.

The Drof Infusion Cannula is a hand-held cannula used for manually infusing the anterior chamber (i.e. it is not “self-retaining”). It is designed to allow sufficient flow of balanced salt solution to prevent the collapse of the anterior chamber when used in conjunction with aspiration devices having a 0.3mm aspiration port. The cannula also allows sufficient flow of balanced salt solution to maintain the anterior chamber while inserting an IOL without the use of a viscoelastic agent.

The tip of the cannula is 22 gauge, beveled at a 45 degree angle, and fits easily into a 1mm paracentesis wound, while the shaft of the cannula is 18 gauge which prevents it from passing into the 1mm paracentesis. By placing the tip of the cannula all the way into the paracentesis, pushing against the 18 gauge portion, the surgeon has considerable control over the movement of the eye. The 22 gauge tip is 3mm in length, thus extending sufficiently into the anterior chamber to be able to mash firm lens material into the orifice of the infusion device when necessary, but not extending so far into the eye that it obscures visualization of various parts of the eye.