

MINAMI "M"-HOOK

• Chopper • Splitter • Dissector • Spatula
• Rotator • Protector • Manipulator



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AE-2523 Minami M-Hook

The Versatile Phaco Instrument



USING THE MINAMI M-HOOK

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In 1994, Noriyoshi Minami, MD, of Kumamoto, Japan introduced an innovative and interesting device designed to facilitate phacoemulsification. His M-Hook is the most clever instrument I have come across which controls the nucleus, the epinucleus, and the capsular bag in ways not possible with existing choppers, splitters, and spatulas.

The M-Hook is instantly recognized by its several curves, all carefully calculated to conform to the contours of the capsular bag and nucleus. (Figure 1) It can be used in a vertical orientation to

break up a cataract, much like a chopper, or in a horizontal orientation, to protect the capsular bag or its contents. However, unlike choppers, the M-Hook can be pulled, pushed, rotated, and turned while against the posterior capsule, to separate a nucleus, while its round tip is designed to remain in contact with the posterior capsule. It is easily the most efficient device for separating a cataract, for separating a nucleus from the capsule, and for protecting a floppy capsule following zonulysis.



The clever and unique curve of the Minami M-Hook

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Unlike most of our nucleus separating instruments which are limited to fine movements in the eye, controlled mostly by fine fingertip movements, the M-Hook is designed to be used in a wide variety of ways. Some, like the traditional instruments, are back and forth movements. Other options, however, are what make this instrument so interesting. It also has the ability to be rotated and spun within the eye, each movement intended to facilitate nucleus dissection, division, manipulation, and removal.

Here are some ways the M-Hook can be used during cataract surgery.

DISSECTION

Hydrodissection is no longer necessary. The M-Hook is designed to pass between the anterior capsule and the nucleus, all the way out to where it can be slipped around the equator. Once placed, it wraps around the nucleus, from anterior capsule to posterior capsule. The M-Hook can then be moved 360° to free up the nucleus from the capsule fornix. A gentle rotation of the hook will permit its round tip to lift the nucleus up off the posterior capsule, giving the surgeon complete separation and dissection. (Figures 2, 3)

Continued other side →



The M-Hook is slipped beneath the anterior capsule and around the equator of the nucleus



The M-Hook is moved around the circumference of the nucleus completely separating it from capsular adhesions.

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DIVISION



One option is to pull the M-Hook toward the incision, dividing the nucleus, including the posterior plate



The other option is to place the M-Hook 90° away and rotate it, dividing the nucleus in the perpendicular direction

ments. Division can also be performed in the up-down direction. The M-Hook can be slipped around the equator of the nucleus and rotated so that its rounded tip lifts the posterior plate of the nucleus. When the plate is pressed against the stationary phaco tip it will break in half.

After sculpting is performed to remove the bulk of the nucleus, the M-Hook can be moved in either of two directions to divide the cataract into smaller pieces.

It can be placed behind the nucleus directly across from the point where it is inserted into the eye and pulled back towards the incision. The round tip of the M-Hook glides on top of the posterior capsule, gently lifting the posterior plate, while the shaft of the M-Hook divides the nucleus. This division guarantees that the posterior plate is broken and will not be an impediment later in the case. (Figure 4)

The alternate direction is perpendicular to that. The M-Hook can be rotated so that its tips placed behind the nucleus 90° away from the incision. The shaft remains slightly more central within the sculpted crater. The shaft of the M-Hook is rotated and the tip moves across the nucleus in a direction perpendicular to the instrument's handle. Again, the rounded tip lifts the posterior plate gently while the shaft separates the nucleus and plate. (Figures 5, 6, 7)

The two alternatives can be combined, first rotating, then pulling so that the cataract is quickly and efficiently separated into four totally free segments.

NUCLEUS MANIPULATION

As nucleus segments are removed, the M-Hook can be used as a rotator to direct the remaining pieces of nucleus into position for easy access and removal.

Also, once the M-Hook is placed behind a piece of nucleus, it can pull that piece to the phaco tip. This reduces the need for phaco tip occlusion to hold and



When there is a small pupil, the M-Hook can be used not only to push back the pupil, improving access, but also to lift the iris, improving visualization.

at the phaco tip for safe, controlled emulsification. (Figure 8)

If the pupil is small, the M-Hook can be used not only to push back the iris for more room, but also to lift the iris for improved visualization. (Figure 9)

PROTECTION



The M-Hook can be used to hold back a piece of nucleus so it does not fly up toward the cornea while you are working on another piece



The M-Hook can be held horizontal to act as an artificial internal zonule support

The M-Hook is designed to hold back a piece of nucleus or the capsule. For example, if there are several pieces of separated nucleus in the capsular bag and the surgeon wants to remove one of them, the M-Hook can be used to restrain the others, holding them away from the tip so they do not fly up towards the cornea. (Figure 10)

In another situation, if there is an area of zonolysis, the M-Hook can be used as an artificial internal zonule. It is shaped to fit the contour of the fornix, so it can be used to reform the capsular bag with full support while emulsification of the nucleus continues. It can also be used to hold back the posterior capsule when there is full zonular support, but the capsule is floppy and is moving excessively. (Figures 11, 12)



The M-Hook can also be held vertical to hold open and support a loosened bag while working in that quadrant

SUMMARY

The Minami M-Hook is the first, truly original instrument designed to facilitate cataract removal which has been introduced in several years. It can move in several different locations and rotations. The wide range of possible maneuvers facilitates dissection and division of a cataract, control of nucleus movement, and protection of the capsular bag. It has the potential to make cataract surgery easier and safer.



The M-Hook can pull a nucleus segment toward the phaco tip and hold it there for controlled removal or it can pull a large piece of dense nucleus toward the tip to chop it up using more traditional methods