
**THE NEW HYDROPHILIC ACRYLIC EXPANDABLE "TORPEDO" IMPLANT
THREE-MONTH EXPERIENCE WITH THE FIRST 32 CASES**

Dr Keiki R. Mehta Bombay

Mediphacos, an Brazilian company conceived of the concept of an expandable acrylic intraocular lens (brand name of Acqua) for the optical correction of Aphakia.

These lenses simplify insertion via a 3.2 mm opening. They need no injector, no folding, and no manipulations. They are simply inserted directly in the bag.

This study was undertaken to assess these lenses, for ease in implantation, stability in the capsule and their optical results over a 3-month period.

Material and Methods

The Acqua "Torpedo" implant is inserted in a dehydrated state, which significantly reduces its diameter and size. It is made out of a 74% water content material, which significantly enhances in size when hydrated.

Its dehydrated specifications are 3.2mm in width by 5.7mm in length, which on hydration become 5.52 mm in width with a length of 10.80mm.

The last 0.5mm of the haptics is deflected out to enhance stability.

The hydration time upto 70% which permits an excellent centration is about 9 minutes while full hydration takes 20 minutes.

The lens is vaulted backwards with a thicker flange in the periphery, which enhances support preventing the IOL from deflecting to the side pr propeller.

The procedure

A small rhexis of 5.00 mm is preferable. The tunnel is widened to 3.2 mm, which will permit easy entry of the IOL. The chamber is filled with methylcellulose and a little methylcellulose is smeared at the edges of the incision.

The implant is held in an angled or straight forceps and simply inserted in a 45-degree angle. From the side port an iris repositor is inserted to be able to direct the edge of the implant under the bag and to stabilize the implant for it is very small. Once inserted, it is allowed to hydrate sufficiently to move both edges under the capsular flap. Though a smaller sized 5.00 mm rhexis is preferable if a larger rhexis is done, it works equally well but will need the surgeon to wait a little longer till stabilization is achieved which is signaled by an overlap of the rhexis edges over the edge of the implant by at least 1.5 mm on each side.

Once the lens hydrates it softens significantly. In

case the IOL is not centered in the bag, it can be simply moved back and fro till it lodges in. Since the flanges are deflected outwards and are stiffer, the lens centers very well.

Post Operatively, the lens is very quiet. Vision on the first postoperative day is usually 6/9-6/6 with a very quiet eye.

Clinical Trial:

These lenses are not really new and have been implanted for the last year with over 6200 patients implanted all over the world with the first clinical human trials almost 6 years ago. Michael Blumenthal of Israel has conducted a fairly large series of these cases and has reported excellent results.

The results of the first 32 cases have been ex-

Results of Soft Torpedo Lens Implants		
Total 32 lenses implanted		
	21(65.6%) in males	
	1134.4% in females	
<u>Age at insertion</u>		
40-49	2	6.3%
50-59	8	25%
60-69	15	46.9%
70+	7	21.8%

tremely gratifying. The lens can be easily inserted and very simply led to under the capsular bag. It has none of the disadvantages of other foldable IOL's c, cannot tear or break even with rough handling, requires no folding, no inserter or injector making the insertion of the lens simplicity itself.

Of specific interest was the clinical observation that this particular design had no patient complaining of glare or flare even with night vision and driving.

Though I have had no experience with Yag laser in the presence of these lenses since none of the capsule have opacified in the short period of usage, Blumenthal reports that though the lens is pitted with the Yag, these pits are not visible the next day.

It is possible that the severe posterior vault with the

The torpedo implant: Dr Keiki Mehta



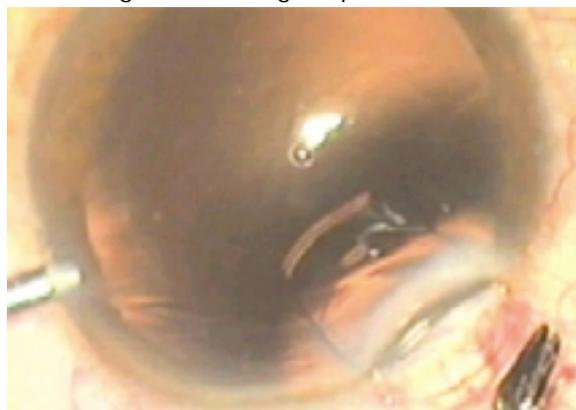
The expandable hydrophilic IOL in its case



Oblique view of the IOL showing the vaulting design and the edge haptic variance



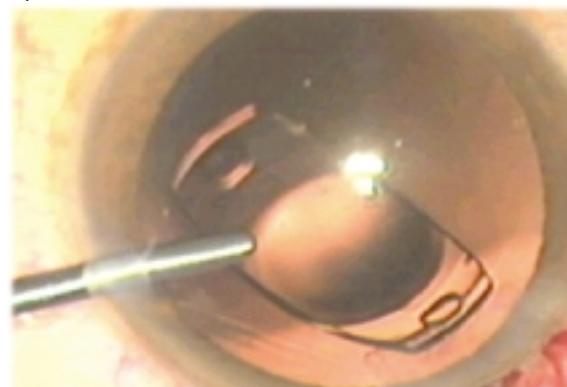
View from above the IOL showing the balanced symmetric optic



IOL being inserted by simply holding in a plain forceps



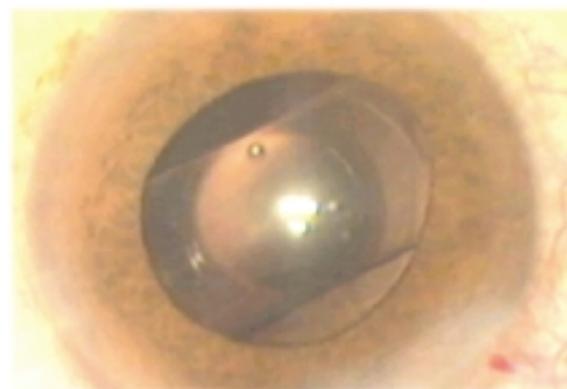
The IOL being supported by an iris retractor to permit easy insertion under the capsule into the bag



IOL being centered in the bag, note rhexis overlap



The almost fully hydrated IOL 70% in the bag.



Postoperative complications		
	Cases	%
Striate keratopathy	2	6.2
Mild iritis	0	0
Slightly decentred IOL	2	6.2
Mild corneal insertion site edema	1	3.1
Obllique lens tilt	1	3.1

square edges of the implant may prohibit posterior growth of cells along the posterior capsule; we will need to wait for at least 18 months to know the full story.

For the short term, the clinical experiences are that it is a very suitable lens, which seems to work well.

Post-operative Visual acuity		
1 day post op		
6/12-6/9	4	12.5%
6/6	28	87.5%
One month post op		
6/9	1	3.1%
6/6	31	96.9%

Material of the Expandable IOL
<ul style="list-style-type: none"> • Material Acryfil CO • High water content hydrophilic acrylic polymer made from pHEMA , vinyl pyrildone and methylmethacrylate with UV A&B absorption • Refractive index 1.409 • water content 73.5% • Linear expansion ratio 1.53 • Light transmittance >98%

I hear and I forget. I see and I remember. I do and I understand.

- Confucius