A STUDY ON AFTER CATARACT

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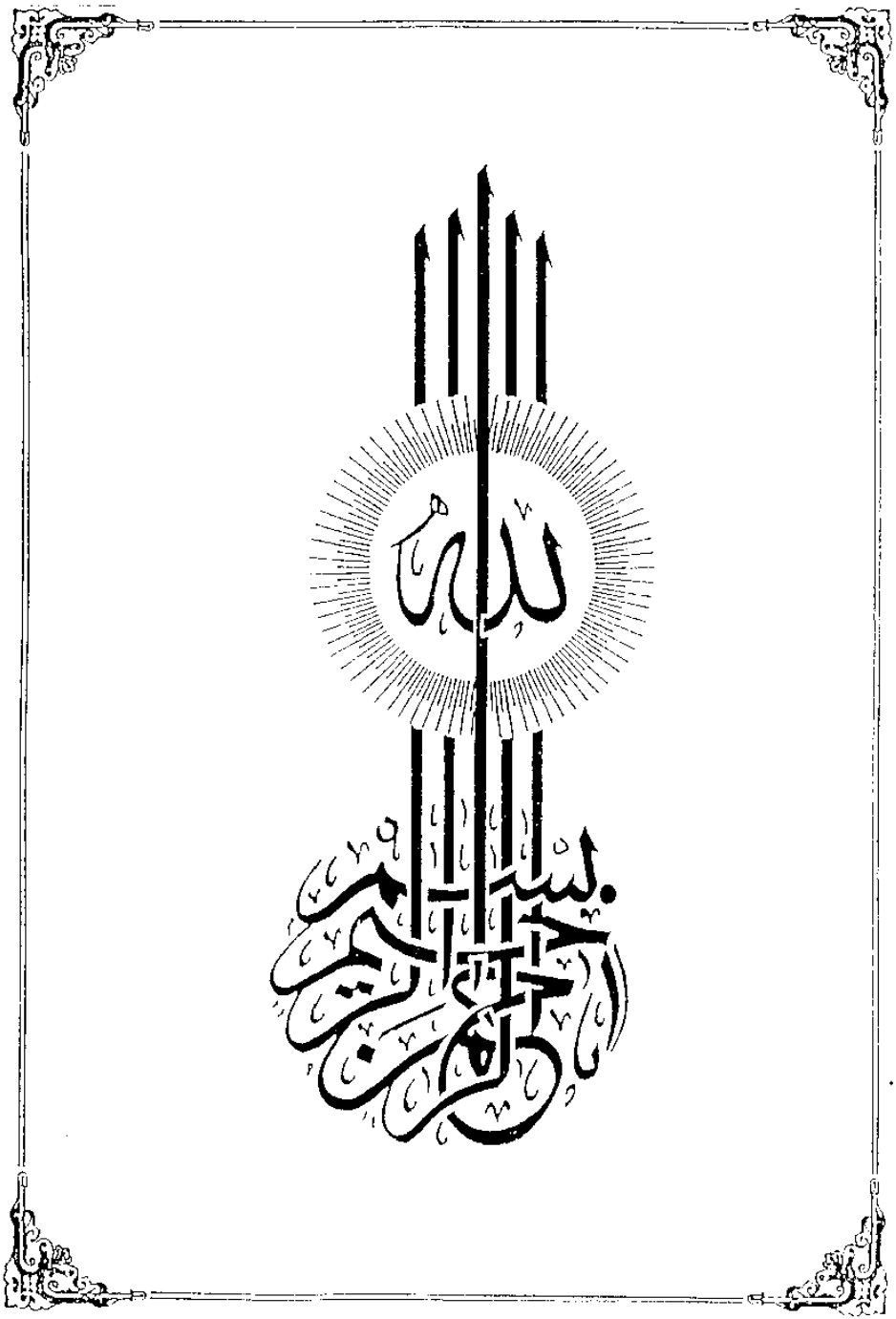

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INTRODUCTION

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In the last few decades, an increasing number of extracapsular cataract extraction has been performed *(Kraff, M.C., 1980)*.

The popularity of extracapsular cataract extraction has increased because of the advantage of the posterior capsule in stabilizing intra-ocular lens implant, as well as anterior and posterior segment structures. This procedure may also be associated with a lower incidence of cystoid macular oedema and aphakic retinal detachment *(Thomas J.L., 1985)*.

With this increasing popularity of extracapsular techniques as aspiration, phacoemulsification and linear extraction, more and more patients are being seen with intact posterior capsules. At first most of these are clear and present no particular problems. But, if followed long enough a very large percentage of these is

going to increase in thickness with fibrosis, wrinkling, pearl formation and a decrease in vision (*Kraff, M. C., 1980*).

With the popular choice of the technique of E.C.C.E. and the increasing numbers of opaque posterior capsules a variety of lines of treatment are new existing. Previous treatments include polishing of the capsule and surgical discission. The neodymium YAG laser recently became available as an alternative means of rupturing the posterior capsule (*Thomas, J. L., 1985*).

PRINCIPLES OF PLANNED EXTRA-CAPSULAR CATARACT EXTRACTION IDEALLY

THIS CONSISTS OF THREE MAIN STEPS:

1- Anterior capsulectomy:

Is carried out using an irrigating cystitome and involves the removal of a large part of the anterior capsule. A number of irrigating cystitomes have been introduced and these have the great advantage of keeping the anterior chamber formed while the anterior capsulectomy is performed under microscopic control.

The selected cystitome is passed into the anterior chamber with the blade lying flat in the plane of the iris and lens capsule, and it is directed to a point about 2 mm infront of the lens equator in the 6 O'clock meridian. Here the cystitome is rotated so that the point of the short blade at right angles to the shaft engages in the capsule. A series of small triangular cuts is made carefully observing that none tend to tear towards the equator. Each cut should lead to the next to outline the piece of capsule to be removed. The individual cuts can

then be joined directly with the cystitome or torn away like perforated paper with the cystitome or suitable forceps (*Stallard, G. 1980*).

2- Delivery of the lens:

A loop (or a spoon) is held in the left hand and is placed upon the scleral lip of the wound at the 12 O'clock position. A lens expressor (or a strabismus hook), held in the right hand, is applied over the lower limbus at the 6 O'clock position, pressure is applied posteriorely below, and counter pressure is applied by the loop on the scleral lip above. As the upper pole of the lens tilts forward and presents in the wound, pressure with the expressor below is changed from a posterior to a posterior-upward direction.

Gentle upward pressure is continued until the nucleus of the lens is delivered and slide on to the loop (*J. H. King, 1981*).

3- Irriqation / Aspiration of the lens cortex (Anterior chamber toilet):

Fragments of soft-lens matter and any flecks of blood are gently washed away by directing a stream of sterile physiological solution at 37° C into the anterior chamber. This lavage is not persisted with for more than one minute. Care is taken not to damage the posterior capsule; suspensory ligament and hyaloid membrane by too great a pressure of fluid and so risk prolapse of vitreous into the pupil. Such irrigation is best done with a cannula, which is flattened and curved like an iris repositor, attached to a disposable plastic syringe which is controlled entirely by the surgeon. The disadvantage of an alternative apparatus of a closed fluid infusion bottle connected by plastic tubing to an anterior chamber cannula is that this apparatus is not entirely under the control of the surgeon and is dangerous in the hands of an inexperienced assistant.

With the end of the irrigator and the gentle stream of sterile fluid, iris and lens capsule may be replaced as this instruments is withdrawn from the eye. By withdrawing the plunger of the syringe, small flecks of

either pigment or blood or soft-lens matter may be sucked into the cannula. When such will not leave the eye by irrigation (*Stallard G. 1980*).

* If necessary, the posterior capsule can be polished using a sand blasted cannula (Kratz scratcher) (*Jack J. Kanski, 1984*).

NOTE:

* If the cataract is soft, the corneoscleral incision may be limited to a distance just large enough to admit the end of the two-way cannula into the lens substance for irrigation.

* If large pieces of capsule or lens nucleus remain, they may be withdrawn gently by the use of smooth intracapsular lens forceps or specially designed forceps.

* Retained lens material may be seen by using an ultraviolet light with the room darkened (*J. H. King, 1981*).

PHACOEMULSIFICATION WITH KELMAN CAVITRON UNIT (KPE)

The cavitron unit basically consists of a hollow 1 mm titanium needle which is activated by an ultrasonic mechanism to vibrate at 40,000 times a second in its longitudinal axis. This mechanical vibration transforms the lens matter into an emulsion which can be aspirated from within the capsular bag and replaced by infusion fluid. The nucleus may be emulsified in the posterior chamber or it can be first dislocated into the anterior chamber, emulsified, and then aspirated. The later technique is less popular due to the operative loss of corneal endothelial cells.

* *Advantages of KPE* include a small incision (much smaller than in simple extracapsular extraction), more rapid wound healing, short convalescence, and early stabilization of refractive error with less astigmatism.

ADVANTAGES OF EXTRA-CAPSULAR OVER THE INTRA-CAPSULAR METHOD OF CATARACT EXTRACTION

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(ADVANTAGES OF INTACT POSTERIOR CAPSULE)

The posterior capsule can be considered a friend of the retina, the macula, the vitreous, and the corneal endothelium (*Little, J. H., 1980*).

The following operative and postoperative complications are less frequent when the posterior capsule is left in place, vitreous loss, with all its sequelae; is infrequent when the posterior capsule is left. Consequently extracapsular surgery is prefered when operative vitreous loss is likely to occur as for example, in myopic eyes (*Little J. H., 1980*).

The vitreo-endothelial touch syndrome leading to corneal oedema is eliminated by the intact posterior capsule, also inability to tolerate contact lenses is much less frequent. This is directly related to the proximity of the hyaloid face, bulging towards, and not

necessarily touching the corneal endothelium (*Little J. H., 1980*).

In 1973, a remarkable clinical observation was made by Binkhorst and confirmed by worst (1978) that extra capsular surgery is highly effective in preventing cystoid macular oedema: It is presumed that the posterior capsule has a barrier action protecting the retina from toxic constituents of the aqueous (*Worst J. F., 1978*).

The incidence of retinal breaks and detachment is lower after extra capsular than after intra capsular surgery. Little (1980), estimated that the post operative detachment rate to be less by approximately one third.

There is less likelihood of a redatchment in patients who have had previous retinal detachment surgery and who require cataract extraction. It is assumed that the posterior capsule (even with a capsulotomy) keeps the vitreous from bulging forwards, thus lessening vitreous shock (*Jaffe W. S., 1981*).

There is also a great reduction of endophthalmodonesis, which refers to the relative