

Use of Malugin Pupil Dilator in the Intraoperative Floppy Iris Syndrome

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Abstract: *Objective:* Using Malugin pupil dilator in which patients are male and Tamsulosin and developed intraoperative floppy iris syndrome during their cataract surgery. *Method:* 5-0 polypropylene Malugin ring used in 20 eyes, in 18 patients, in 11 tamsulosin patients who had cataracts. Pupil diameter is measured at the onset and end of surgery. Intraoperative and postoperative complications were observed. *Results:* In our results none of the operated eyes had no Iris prolapse, through a phaco cut. In all eyes corrected visual acuity was at least 8.0. *Conclusion:* Malignant Pupil Ring is highly effective in the spread of myotic pupils in the eyes of IFIS and is a highly effective solution for preventing iris prolapse through surgery. This prevents damage to the iris in the sense of: its rupture, the transplantation and unconscious abnormal losses of the anterior chamber in the iris prolapse through the surgical cut of 2.6 mm.

1. Introduction

We know that severe iris syndromes are characterized by prolapse of the iris through the intraoperative section as well as progressive intraoperative myosis.

It has been demonstrated earlier that when these IFIS events are not known and the risks of complications in terms of damage to iris or rupture of the capsule are not expected. From 2005, when the existence of this IFIS syndrome was first introduced, since then many strategies have been used to modify it satisfactorily. IFIS almost always occurs in patients receiving Tamsulosin.

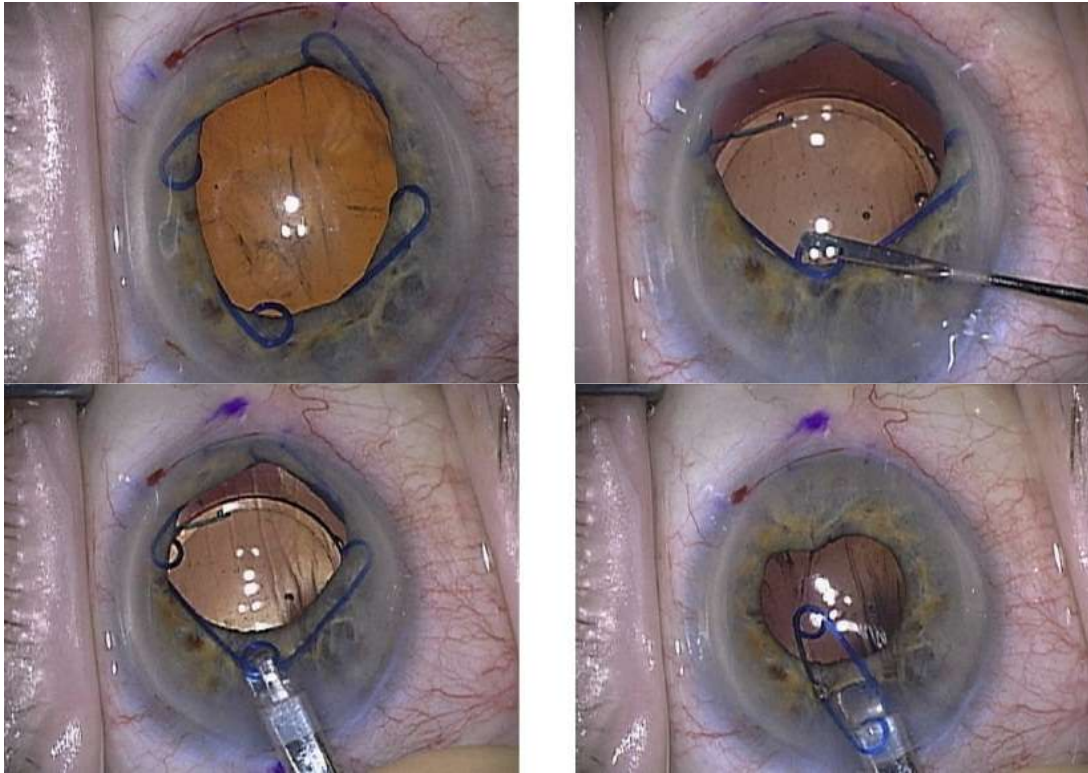
2. Tamsulosin

Tamsulosin is an alpha 1 -adrenergic antagonist who are used in patients with benign hypertrophy on prostate. That leads relaxation on prostate and urinary bladder, and thus helps to rapidly suppress and withdraw symptoms. Still, tamsulosin (FlomaxR) has a number of irritant effects for ophthalmologists. Tamsulosin leads to atony and relaxation of the pupil dilator. During the operation of cataract with phacoemulsification, by irrigation and aspiration it will lead to the accumulation of length and progressive sweating of the pupil, as well as to the prolapse of the iris through the incision. There are three signs that characterize IFIS, described by Chang and Kamble 2005. This abnormal behavior of the iris -during cataract surgery, probably occurs as a result of the turbulence of irrigating fluid in the anterior chamber, and, contrary to this, the contractions of the ciliary muscles have been impaired by the irregular contractions of the dilator's pupil. This poses a risk of increasing both the intraocular pressure and the rupture of the lens capsule. If men can not spread the pupil well, without any satisfactory explanation, the question of taking tamsulosin (Flomax a) or some other drugs of this type is

raised. Discontinuation of these drugs before surgery reduces the risk of IFIS. However, IFIS may still occur after a month (or longer) than the systemic administration of the drug. Various ways of preventing or resolving the iris prolapse during phacoemulsification are used, and this is more preoperative, and it is better to expand the pupil to stabilize the iris during the operation itself. Unfortunately, none of these procedures is completely successful.

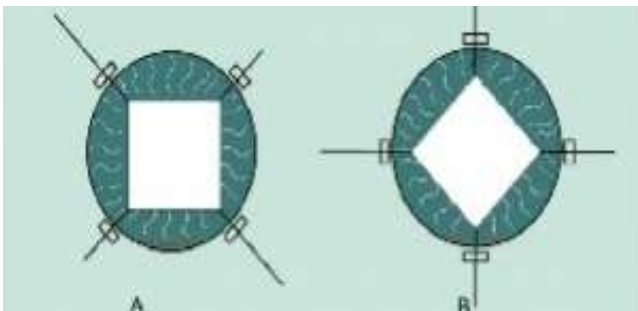
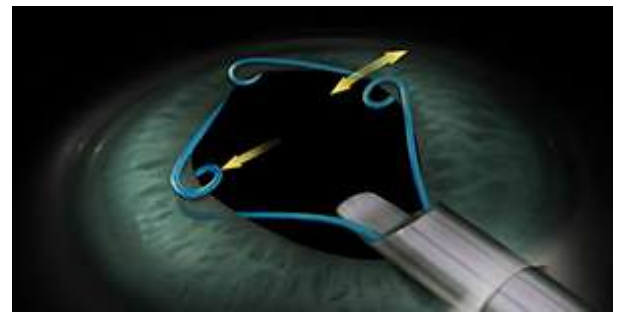
3. Surgical technique in placing the Malugin Ring

After receiving local anesthesia, a corneal incision is performed and injected ophthalmic viscoelastic (OVD) into the anterior chamber to stabilize and protect the corneal endothelium. The first surgical step when placing the Malugin ring in the operation of the cataract with IFIS syndrome is that the ring or Malugin ring is inserted through an incision of 2.2mm through the cornea by which we see it in the anterior chamber. By pressing a button with the thumb it completely releases and the top and the distal part with which we will have the evening is a stretched iris. Subsequently, the operation is carried out by carrying out the Capsulorhexis, which is performed with the aid of pliers and hydrodissection, with that the core can be rotated freely in the inside of the capsule. Followed by phacoemulsification using fast technique, and irrigation and aspiration useful for cleaning the flow axis of cortical fibers of capsular work. It is placed in a viscoelastic and then Malugin is removed from the eye of the eye in the opposite direction is the order of how it is placed. In order to pull the ring completely into the tube with which it is placed, it is necessary to squeeze the instrument on the side of the strange whistle where they will come together and penetrate the tube. After withdrawal of the ring, the iris narrows again.



4. Positive study results

Clinical trials have shown that intra- and postoperative complications with the Malyugin ring have been either reduced or overcome. Our clinical studies have demonstrated superior protection of endothelial cells, as well as the reduction of hyphaemas, fibrinoid reactions and the onset of postoperative hypertension in the Malyugin ring compared to iris retractors. Several Malyugin rings are used because they are placed more easily and quickly, too and they are taken out easier and faster unlike the Iris retractors. Malyugin's rings of the rings are that and do not require 4 additional cuts. But it should be known that they are not a solution when we need a diameter of 7.0 mm or more. In many cases, the problem was sterilization, which caused various complications, so the device is provided in a sterile package.



5. Six advantages

- 1) The Malyugin Disposable Ring is very effective because there are no sharp or pointed ends that can damage the eye. With what we will maintain a gentle iris.
- 2) It ensures the correct position of the iris and prevents too much engagement of the iris, which is often observed in the irregular arrangement of the iris retractors.
- 3) The edge of the iris is fixed in the loops of the ring and there is a risk of iris aspiration during phacoemulsification.
- 4) Additional cuts are not needed. This preparation is introduced through one major cut, which reduces surgical trauma and minimizes the risk of postoperative inflammatory reactions.
- 5) Sufficient space is available for phacoemulsification of the core and removal of the affected lens.
- 6) The ring is inserted and removed from the eye with an additive, to reduce the risk of pollution and disrupt the architecture of the incision.

6. Patient and methods

case	patient	Eye	Age	Preop.	Intraop.	IFISDifficulties	Intraop. Complications	Postpaid. Complications
1	1	R	80	5.5	3.0	moderate	-	ST
2	2	R	73	4.5	3.0	moderate	Iris prolapse	TD
3	3	L	70	4.5	2.5	heavy	Iris prolapse	
4	4	R	69	5.5	3.0	heavy	Iris prolapse	IOP 26
5	4	L	69	5.5	3.0	heavy	-	
6	5	L	72	5.5	3.0	heavy	-	
7	6	L	81	6.0	4.0	heavy	Iris prolapse	TD
8	7	R	80	4.5	3.5	heavy	Iris prolapse	TD
9	8	L	78	5.5	2.0	heavy	Iris prolapse	IOP 30
10	9	R	78	4.0	2.5	heavy	Iris appalling	ST
11	10	R	85	5.5	4.0	easy	-	ST
12	11	R	86	4.5	3.5	heavy	Iris prolapse	
13	12	R	77	6.0	2.5	heavy	-	IOP 26
14	12	L	77	6.0	2.5	heavy	Iris prolapse	ST
15	13	R	76	4.5	3.0	moderately	Iris prolapse	
16	14	L	72	4.0	3.0	easy	Iris prolapse	
17	15	R	80	6.0	2.5	heavy	Iris prolapse	
18	16	L	74	6.0	2.0	heavy	Iris prolapse	
19	17	L	81	5.5	4.0	heavy	Iris prolapse	
20	18	R	80	5.5	4.0	heavy	-	

IFIS- intraoperative floppy iris syndrome; ST - sfinkter tear ; TD -transillumination defect ; IOP - intraocular pressure

7. Discussion

Cataract surgeries in these patients that were analyzed and who received the drug, in all of them, had anterior-chamber ventricular depth at normal limits. The front eye depth of 2.5mm - 3.5mm Operacijata work in a local topical anesthetic, and is bimanuelna phaco technique and the main section is placed on 12chasot while auxiliary incisions of 3 and 9 o'clock. Due to the unduly enlarged pupil in the anterior chamber we have the administration of adrenaline solution, but in this we often have unsuccessful extension of the pupil to the desired diameter of at least 6 mm. Injected viscosochemical viscoelastic, but also the desired width of the pupil is not reached. All have a circular capsule rex with cyst. The first prolapse of iris in all eyes was noticed during the chrysoextraction itself prior to phacoemulsification. In irrigation aspiration we come to a permanent prolapse of the iris, and then a low flow rate of less than 10.0 aspiration rate is used. Also, iris retractors for pupil width are used. Early retractors placed in position 10 and 14 hour (needs a picture of the work of Ivanovitz). Il and when the development of the techniques related to iris rectifiers is set, an iris rectifier is put on 12 aces immediately after the phaco cut (a picture of a Iovanovitz. This is how this is done until 2011 when the ophthalmologist is already facilitated by introducing the new expansion ring and the Malugen Ring These rings or buds dilators led to significantly improved results and practically minimized the iris prolapse of the operative cut in patients with IFIS syndrome. This is a great application of this ring in pseudoexphilia uveitis, posterior syndrome, etc. The first Malyugin ring in the Republic of Macedonia was placed in 2012 by Dr Naumce Trpenoski, at the CGO's eighth grade on September 8th.

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