

TITLE : ENDOCAPSULAR PMMA RINGS FOR CATARACT SURGERY

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ABSTRACT :

Purpose:

Capsular related complications may occur during and/or following cataract surgery.

Méthods:

We used endocapsular PMMA rings (EPR) to prevent such complications in eyes with pre or peroperative zonular dehiscence, high myopic eyes and eyes with: exfoliation syndrome which have weak zonules. EPR can be implanted easily through the phaco-incision before aspiration of the cortex or just before the injection of a foldable IOL.

Results:

The advantages of EPR are : to stabilize the bag ; to prevent the asymmetrical retraction of the bag and thus prevents foldable IOL decentration ; prevents the retraction of the anterior capsule observed with small capsulorhexis. More over EPR may provide a better quality of the vision by eliminating folds and wrinkles in the capsule and may delay the proliferation of lens epithelial cells and posterior capsule opacification in combination with antimetabolite drugs.

Conclusion:

The combination of rigid EPR with foldable IOL may represent a very safe surgical option to prevent capsular complications.

EFFICACY OF ORGANIC Vs. INORGANIC BIOADHESIVES IN CATARACT SURGERY THROUGH 8mm SCLERAL TUNNEL IN HIGH MYOPES.

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To show the efficacy of two bioadhesives (cyanoacrylate and fibrinogen) in sealing scleral tunnel in cataract surgery, we have done a controlled clinical study over 126 patients with high myopia (axial length >28mm), divided into three groups operated for cataract by phacoemulsification technique and posterior chamber lens implantation. The lenses were hyperconcave with 8mm optic (PNC Domilens, Lyon France).

The phacoemulsification technique was done through 8mm of arch double valved scleral tunnel, then adequately closed using anchor suture of 10/0 nylon in the first group, using inorganic bioadhesive as cyanoacrylate (Histoacryl) in the second group and using organic bioadhesive as fibrinogen (Tissucol) in the last group.

The induced astigmatism in the three groups at 12 weeks was 0.18D in the group sutured with 10/0 nylon, 0.5D in the group closed with cyanoacrylate and 0.43D in the group closed with fibrinogen.

The difference between the induced astigmatism after closure with bioadhesives and that after suturing was statistically insignificant ($P < 0.01$).

Just mild inflammatory reaction was observed in the cyanoacrylate group, however various cases closed by fibrinogen presented postoperative hypotony requiring reclosing with sutures, thus they were not included in the refractive study of this group.

The results of this study show that bioadhesives especially the inorganics offer an effective alternative to sutures in cataract surgery through scleral tunnel.

Future improvement in bioadhesives would permit extending their application in other types of incisions in ocular surgery.

CONCENTRATION OF VANCOMYCIN IN IRRIGATING SOLUTIONS FOR CATARACT SURGERY.

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Purpose : To evaluate the bioavailability of vancomycin in irrigating solution for cataract surgery and the accuracy of dilution.

Methods : Vancomycin was injected in the BSS solution at an estimated concentration of 40 µg/ml. A sample of the irrigating solution was collected at the beginning of cataract extraction. A sample of aqueous humor was obtained at the end of surgery in 40 patients operated on cataract. All samples were assessed by an HPLC assay.

Results : 40 patients (16 men and 24 women) participated in the study. Mean age was 71±13.6. Manual cataract extraction was performed in 3 and phacoemulsification in 37 patients. Vancomycin concentrations were 49.1±5.9 µg/ml and 45.9±6.1 µg/ml, in the irrigating solution and the aqueous humor at the end of surgery respectively.

Conclusions : Vancomycin when given in irrigating solutions during cataract surgery remains at expected concentrations in anterior chamber of the eye being operated on. Therefore vancomycin is a very interesting antibiotic as far as local antibiophylaxis is concerned.

Visual outcome following traumatic wound dehiscence in post-cataract surgery

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Purpose: To evaluate the visual outcome of patients experiencing ocular trauma subsequent to cataract surgery.

Methods: Twenty-one charts of post-cataract surgery patients who had traumatic wound dehiscence were evaluated. Eighteen patients were re-examined for the purpose of this study and three were lost to follow-up. A complete eye examination of both eyes was performed three to 84 months after trauma. Patients were divided into group A, n=14, who sustained minor trauma and group B, n=7, who had major trauma.

Results: In group A, visual acuity was 20/40 or better in four patients, 20/50 to 20/80 in five patients and 20/300 or less in three patients. In group B visual acuity was 20/60 or better in three patients and less than 20/200 in three patients. Post-traumatic poor visual acuity was associated with endophthalmitis and bullous keratopathy in group A, and globe rupture or recurrent retinal detachment in group B. In 14 of the 18 patients the final visual acuity in the traumatized eye was similar to the vision in the fellow eye, sharing the same ocular pathologies.

Conclusion: This study suggests that the pre-existing ocular disease is an important factor in determining the final visual outcome in patients with traumatic wound dehiscence after cataract surgery.