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Severe anterior capsular phimosis after intact continuous curvilinear capsulorhexis: A Case Report.

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Abstract:
Anterior capsular phimosis is the centripetal fibrosis and contraction of the capsulorhexis margin seen after cataract extraction. Individuals with zonular laxity are at increased risk for this condition. It often results in clinically significant visual reduction secondary to central opacification, intraocular lens decentration and tilt. This features as shrinkage and whitening of the anterior capsular opening – capsular contraction syndrome – a well-known complication after uneventful phacoemulsification. Here, a 72-year-old lady presented with complaints of painlessdecrease in vision in right eye since last 2 months. There was no associated redness, or discharge. Visual acuity was hand movement in the right eye. She underwent phacoemulsification with intraocular lens (IOL) implantation 4 months back. Capsular phimosis was diagnosed fromthe history of gradual dimness of vision following uneventful cataract extraction without any objective signs of infection/inflammation and identified by examining the patient under slit lamp. Presumably occurs as a result of imbalance between centrifugal forces of the zonules and the tensile strength of the loop haptic of the IOL on the one hand and the centripetal forces of theproliferative and metaplastic residual lens epithelial cells on the other hand. Can be managed by non-invasive Nd: YAG radial anterior capsulotomy in mild cases, whereas the severe ones may require capsular peeling in the form of continuous capsulorhexis.

Keywords:*Anterior capsular opening, Capsulorhexis, Acrylicoptic IOL, Best Corrected Visual Acuity (BCVA), Nd: YAG radial anterior capsulotomy, Vitrectorhexis.*

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I. Introduction

Shrinkage and whitening of the anterior capsular opening – capsular contraction syndrome, also known as capsular phimosis. It is an exaggerated fibrotic response that can lead to reduction in size of anterior capsulotomy and capsular bag diameter following capsulorrhexis.Such changes can lead to impaired visual function secondary to opacity involving capsular bag in the pupillary area or decentration of intraocular lens (IOL) within the capsular bag.

II. Case Summary

A 72-year-old lady presented with complaints of painless decrease in vision in right eye since last 2 months. There was no associated redness, or discharge.

She had history of undergoing phacoemulsification in her right eyeby anterior continuous curvilinear capsulorrhexis followed by posterior chamber intraocular lens implantation (PCIOL) implantation with Acrylicoptic IOLaround 4 months backand was uneventful.

On examination, vitals were stable. Rest of the general physical examination and systemic examination were unremarkable.

Visual acuity was hand movement in the right eye. The margin of anterior capsular opening and the remaining anterior capsule appeared fibrosed and contracted under slit lamp evaluation (as shown in the figure below). Rest of the ocular examination was within normal limit.

Capsular phimosis was diagnosed fromthe history of gradual dimness of vision following uneventful cataract extraction without any objective signs of infection/inflammation and identified by examining the patient using slit lamp biomicroscope.

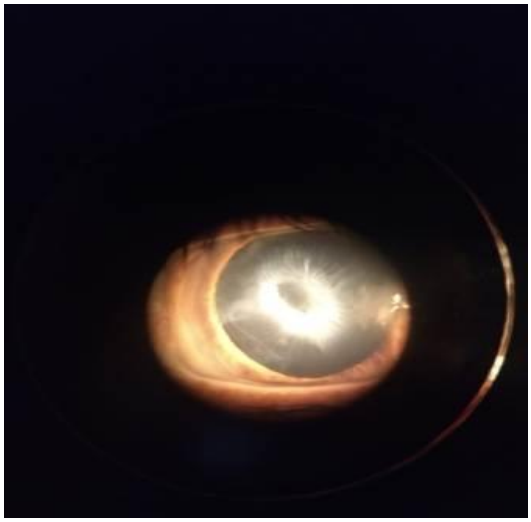

Figure: Showing anterior capsular phimosis under diffuse illumination through Slit lamp biomicroscope on presentation.

III. Investigation

All routine blood tests, Urine RE, CXR (PA) view, ECG were done. All the tests results were within normal limit. Following which, thepatient was taken for repeat surgery of the same (right) eye after obtaining physician clearance and using proper pre- operative measures.

IV. Treatment

Prompt management was done by excision of the fibrous membrane in continuous curvilinear capsulorhexis fashion via side port entry using Utrata's capsulorhexis forceps under proper antiseptic and aseptic measures. Post- operative medications prescribed:

- Topical Moxifloxacin (0.5%) 4 times daily for 4 weeks.
- Topical Difluprednate (0.05%) in tapering doses for 4 weeks.
- Topical Carboxymethylcellulose (1.0%) 4 times daily for 8 weeks.
- Systemic (oral) antibiotic (Amoxycillin + Potassium Clavulanate) 625 mg 3 times daily for 5 days.
- Oral NSAIDs (Aceclofenac + Paracetamol) twice daily for 3 days.

V. Outcome

Following the procedure and maintaining proper personal hygiene, the vision improvedfrom hand movement to 6/18(BCVA) gradually over 2 months follow-up period.

VI. Discussion

Capsular phimosis can be attributed to the imbalance between centrifugal forces of zonules and tensile force of loop haptic of IOL on one hand and centripetal forces of proliferative and metaplastic lens epithelial cells on the other.

It is seen in small size anterior capsular opening, in patients with weak zonules (old age) and in presence ofcertain risk factors viz; pseudoexfoliation, diabetes mellitus, myotonic muscular dystrophy, high myopia, silicone IOL use, trauma etc.

In routine cataract surgery, thorough polishing of the anterior capsule is a useful procedure. In patients at risk for development of capsular phimosis, the use of large PMMA IOLs or even intracapsular PMMA rings have been considered to be useful. Nd: YAG radial anterior capsulotomy can be performed for mild cases, while severe ones as in dense fibrous plaque with invasion of optical zone may require surgical excision of fibrous membrane as capsular peeling or vitrectorhexis.

VII. Conclusion

Anterior capsular phimosis can occur after phacoemulsification with IOL implantation whereby the anterior capsulotomy opening excessively contracts and fibroses partially obstructing the visual axis or causing late secondary complications as IOL decentration/ tilt due to zonular laxity or dehiscence. IOL material/ design and surgical technique apart from other non-modifiable risk factors can influence the final clinical manifestations of capsular phimosis. Awareness of all such and proper pre- and intra- operative steps in management can lead to goodsurgical outcome.

VIII. Recommendations

From the literature, it is seen that use of PMMA IOL is associated with least amount of capsular phimosis and generally do not lead to deleterious clinical sequelae.

So, it is important to diagnose patient at risk for developing capsular phimosis by proper pre-operative evaluation and managing them with recommended IOL material/design and surgical technique to avoid unwanted surgical outcome.

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