“ROLE OF ZONULAR ASSESSMENT BY ULTRASOUND BIOMICROSCOPY BEFORE CATARACT SURGERY IN PSEUDOEXFOLIATION SYNDROME TOWARDS ENSURING SATISFACTORY PCIOL IMPLANTATION”

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KEYWORDS: PSEUDOEXFOLIATION, ULTRASOUND BIOMICROSCOPY, ZONULAR ASSESSMENT, ZONULAR PATTERN, CATARACT SURGERY.

ABSTRACT

INTRODUCTION:

Pseudoexfoliation syndrome is an age related, generalized disorder of the extracellular matrix characterized by the excessive production of elastic micro fibrils and their aggregation into mature Pseudoexfoliation fibrils. Its prevalence increases dramatically with age with female preponderance. The etiology of XFS remains unidentified; the disease seems to depend on genetic factors around the Lysyl oxidase like 1 gene. The incidence of cataract formation and glaucoma are relatively high in XFS. Poor pupillary dilation, loss of zonular tensile strength, obstruction of the angles, blood aqueous barrier defect is commonly encountered. In cataract surgery complications are often encountered are sphincter tear, difficult in nucleus delivery, zonular dialysis, posterior capsule rupture, vitreous loss, decentration of IOL, retained lens matter. This makes cataract surgery potentially challenging.

AIM AND OBJECTIVE

To detect the morphology of zonules by UBM before doing cataract surgery. To predict the intraoperative complications during cataract surgery. To prevent the zonular instability by using capsular tension ring during surgery.

METHODOLOGY

Prospective, observational study. It was done in patients presenting to the cataract clinic of the Department of Ophthalmology of Government Rajaji Hospital, Madurai for a period of 8 months. A total of 50 patients with senile immature cataract associated with pseudo exfoliation in pupillary margin and anterior lens capsule were studied. Age of the patient between 50 to 80 years detailed history should be noted. Their visual activity was recorded by
Snellen’s chart. Anterior segment examination for pseudo exfoliative material deposition, pupillary size, anterior chamber depth, grading of lens opacity was made with slit lamp. Tension by applanation tonometer, angles by gonioscopy was recorded. Fundus examination was done using 90D. Retinoscopy refraction done. Ascan ultrasound biometries for determining axial length, keratometry for corneal curvatures were done. With SRKII formula IOL power was calculated. Then Ultrasound biomicroscopic assessment was studied for these patients and different types of zonular pattern were noted and classified into granular, fan and winding type. In my study, the study groups are classified into granular, fan and winding type, if a particular group is present in three or more quadrants. Intraoperative complications in cataract surgery for different patterns were noted. Statistical analysis of the different groups of patients was studied.

RESULTS

Among the 50 studied population, 8 were less than 60 years, 20 were between 61-65 years, 17 were between 66-70 years & only 5 were above 70 years. 54% were males and remaining 46% were females. Unilateral pseudo exfoliation was 15 cases and bilateral pseudo exfoliation was 35 cases. Granular type showed an average pupillary size of 6.7 mm in 36 cases, fan type showed average pupillary size of 5.5 mm in 11 cases and winding type showed average pupillary size of 6.3 mm in 3 cases. For 38 cases SICS WITH PCIOL done in which for 4 cases CTR/CTS were placed, for 11 cases SICS WITH MULTIPLE SPHINCTEROTOMY done in which for 3 cases CTR/CTS were placed and for 1 case SICS WITH SFIOL was done. The complications noted are 9 cases had PC RENT, 8 cases had ZONULAR DIALYSIS and rest of the 33 cases had no complication. Among 50 cases 36 cases were granular type which is 72% of the total cases; the operative complication in granular type is 7 cases of total 36 cases which is 19%. 11 cases were fan type which is 22% of the total cases; The operative complication in fan type is 9 cases of total 11 cases which is at 80 percentage. 3 cases were winding type which is 6% of the total cases. The operative complication in winding type is 1 cases of total 3 cases which is at 33 percentage. Depending upon the number of cases and complications noted for granular and winding type vs fan type that is 8/39 vs 9/11 from this chi square value obtained is 11.76, Significant is less than 0.001.

Among the 50 studied populations the POST OPERATIVE VISION were 6/12 in 8 cases, 6/12 partial in 2 cases, 6/6 in 11 cases, 6/6 partial in 2 cases, 6/9 in 23 cases, 6/9 partial in 4 cases were noted.

CONCLUSION

This study concluded that preoperative zonular characteristics by Ultrasound biomicroscopy showed statistically significant incidence of intraoperative complications in fan type of zonules when compared to granular and winding type of zonules. Hence in patients with pseudo exfoliative syndrome before undergoing cataract surgery UBM assessment is essential to identify different zonular patterns. This helps in prediction of operative complications earlier and necessary precautions can be taken to improve the visual outcome.