CASE BASED DISCUSSIONS : APPLICATIONS OF ABERROMETRY IN DAY TO DAY CLINICAL PRACTICE

Case 1 : a 47 year old lawyer presented with complaint of difficulty in driving at night. His visual acuity improved to 20/20 with a refraction of -1.0 D spherical. A dilated slitlamp evaluation revealed only few cortical spokes in the peripheral area of the lens. However, the central optical axis was clear. Another ophthalmologist had advised her against cataract surgery because of very minimal cortical changes in the very periphery of the lens. However, performing an iTrace evaluation showed HOAs, which were predominantly spherical and were found to originate from the internal optics of the eye. Spherical aberrations from inside the eye usually arise from the lens, and could indicate an early nuclear sclerosis which was difficult to pick up on slitlamp evaluation. The patient was counseled to have early cataracts and advised surgery for the same.

Thus, aberrometry not only helped us clinch the diagnosis, but also, was very useful in explaining to the patient and thus managing the situation.

Case 2 : A 52 year old male was scheduled for cataract surgery. He had never used cylindrical correction in his glasses. However, keratometry was performed, which was : K1 – 45.7 and K2 – 44.5 diopters, with a regular with the rule corneal astigmatism on topography. Based on this, patient was counseled to have a Toric IOL. The patient, however, could not believe that he needed a Toric IOL since he had never required a cylindrical correction in his glasses. Performing an iTrace evaluation here, again (Figure 1), showed that the patient did have significant corneal astigmatism. However, he also had an internal astigmatism (presumably from the lens) which was equal in magnitude but in the exact opposite meridian. This was neutralizing the corneal astigmatism, and thereby, the patient did not require astigmatic correction. This data came in very useful to understand and also explain to the patient that removing the crystalline lens will lead to loss of internal compensation, thereby manifesting the corneal astigmatism. Following Toric IOL implantation, the patient was very happy and postoperative aberrometry showed once again, neutralization of corneal astigmatism with internal astigmatism from the Toric IOL.
Figure 1. Preoperative iTrace evaluation showing internal and corneal astigmatism neutralizing each other